MINFILE NUMBER: **092B 001**

NATIONAL MINERAL INVENTORY: 092B13 Cu1

NAME(S): **LENORA (L.35G)**, TWIN J MINE, MOUNT SICKER, LENORA-TYEE, TYEE, RICHARD III, BARITE ORE

STATUS: Past Producer Underground
MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 52 02 N
NORTHING: 5412996
LONGITUDE: 123 47 22 W
EASTING: 442105
ELEVATION: 350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located in the centre of Lot 35G (NTS Map 092B13). See also Tyee (092B 002) and Richard III (092B 003).

COMMODITIES: Copper, Gold, Silver, Lead, Zinc, Cadmium, Barite

MINERALS

SIGNIFICANT: Chalcopyrite, Sphalerite, Galena, Barite, Pyrite
ASSOCIATED: Barite, Quartz, Calcite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Stratiform
CLASSIFICATION: Volcanogenic, Syngenetic, Exhalative
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Irregular
MODIFIER: Folded, Faulted
DIMENSION: 650 x 45 x 6 Metres
STRIKE/DIP: 110/50S
TREND/PLUNGE:
COMMENTS: Dimension of South orebody; attitude of enclosing sediments.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian Upper Triassic	Sicker	McLaughlin Ridge	Unnamed/Unknown Informal

LITHOLOGY: Cherty Tuff
Schist
Graphitic Schist
Rhyolite Porphyry
Diorite
Gabbro

HOSTROCK COMMENTS: The Upper Triassic intrusive is informally known as the Mount Hall Gabbro.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: MOUNT SICKER
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1952
QUANTITY: 317485 Tonnes

COMMODITY	GRADE	
Silver	140.5400	Grams per tonne
Gold	4.1100	Grams per tonne
Copper	1.6000	Per cent
Lead	0.6500	Per cent
Zinc	6.6000	Per cent

COMMENTS: Reserves based on mapping, geochemical and geophysical surveys, trenching and diamond drilling.
REFERENCE: Northern Miner - September 25, 1969.

CAPSULE GEOLOGY

Several past-producers are located on Mount Sicker in the Cowichan uplift, one of three geanticlinal uplifts that expose rocks of the Paleozoic Sicker and Buttle Lake groups on Vancouver Island. Cretaceous sediments of the Nanaimo Group unconformably overlie the Paleozoic rocks; the contact is marked by a basal conglomerate

CAPSULE GEOLOGY

containing volcanic fragments derived from the Sicker Group. The local stratigraphy is disrupted by folding, faulting (pre-Triassic as well as Tertiary) and the intrusions of two gabbro sills (informally known as the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation. The target of exploration activity has been the volcanogenic, polymetallic massive sulphides that are hosted within felsic volcanic tuffs of the McLaughlin Ridge Formation (Sicker Group) and restricted to a belt running from Chipman Creek to Mount Richards, in the hangingwall of the Fulford fault.

Massive sulphides were discovered on Mount Sicker in the late 1800's and production issued from three separate underground mines (Lenora - 092B 001, Tyee - 092B 002 and Richard III - 092B 003) for several years. These mines were later held as one operating mine, the Twin J mine (1942-1952). The Twin J mine was examined by J.S. Stevenson in the 1940's and the following description is derived from his paper (Geology of the Twin J Mine; Structural Geology of Canadian Ore Deposits, Volume 1, The Canadian Institute of Mining and Metallurgy, 1948).

The rocks in the mine, and nearby, include cherty tuffs, graphitic schists, rhyolite porphyry and diorite. The chert and graphitic schists together form a band of sediments 30 to 45 metres wide that near the workings are at least 640 metres long. The trend of the band and the strike of the sediments are 110 degrees. The dip of the sediments is 50 degrees southwest. Where relatively undeformed, the rocks are slaty, where moderately deformed their laminae are bent into small canoe-shaped folds, and where intensely deformed, either by close folding or shearing, they are highly schistose.

Rhyolite porphyry and diorite are the two most widespread rocks in the area. Rhyolite porphyry sills follow the folding of the sediments and dykes cut early phases of the diorite. Two phases of the diorite, fine grained and coarse grained, are present. Fine-grained diorite occurs as sills in the sediments; coarse-grained diorite is found as irregular intrusive bodies, and as well-defined dykes. Although all phases of the diorite are younger than the sediments, some phases are older and others younger than the rhyolite porphyry.

Two types of ore are found in association with cherty tuffs and graphitic schists: a barite ore consisting of a fine grained mixture of pyrite, chalcopyrite, sphalerite and a little galena in a gangue of barite, quartz and calcite; and a quartz ore consisting of mainly quartz and chalcopyrite.

The two main orebodies, known as the North orebody and the South orebody, are long, lenticular bodies lying along two main dragfolds in the band of sediments. The North orebody measures about 500 metres along strike, 37 metres downdip and from 0.3 to 3 metres in thickness. The South orebody, which is 46 metres from the North, and has its upper limit 45 metres higher, measures 640 metres along the strike, 45 metres downdip and is about 6 metres in thickness. Most of the ore mined in the early period came from the South orebody, but most of that mined by Twin J came from the North orebody.

Two main faults, striking east and nearly vertical, displace the orebodies. The north fault is between the two orebodies, and in going westward strikes into the South orebody at a small angle. This fault displaces the south orebody about 60 metres upward and an unknown distance eastward with respect to the North orebody. Long sections of barite drag-ore may be seen in the north fault below the South orebody. The south fault is south of the South orebody. Several diagonal faults cut the orebodies, but displace them only slightly horizontally and vertically. A few flat, or very gently dipping faults also cut the orebodies; but these displace the ore even less than most of the diagonal faults. In addition to movement along well-defined faults, considerable slippage has occurred between sharply folded beds in the graphitic schists.

A regional silicified and pyritized fracture zone can be traced by widely separated, mineralized outcrops, from Mount Richards on the east through the Twin J on Mount Sicker To Mount Brenton on the west, a total of 13 kilometres. The displacement along this break is unknown. At the Twin J, the fracture zones are manifested by vertical silicified zones on the south sides of both the North and South orebodies and by post-mineral breaks such as the north and south faults.

The first claim in the area was staked in 1895 by F.L. Sullivan, T. McKay and Henry Buzzard. The partners were later joined by Harry Smith.

The Lenora mine, worked between 1898 and 1903 (inclusive) and in 1907, produced 321,886 grams of gold, 8,706,817 grams of silver and 3,226,034 kilograms of copper from a total of 71,650 tonnes mined. The Tyee mine was worked intermittently from 1901 to 1909 producing

CAPSULE GEOLOGY

762,553 grams of gold, 13,725,069 grams of silver and 5,840,593 kilograms of copper from a total of 152,668 tonnes mined. The Richard III mine produced, in three years between 1903 and 1907, 22,830 grams of gold, 522,714 grams of silver and 113,604 kilograms of copper from a total of 4,903 tonnes of ore mined (Mineral Policy data).

The three mines were amalgamated and operated intermittently between 1942 and 1952 as the Twin J mine. From a total of 48,082 tonnes mined, the operation produced 63,730 grams of gold, 2,002,971 grams of silver, 364,755 kilograms of copper, 164,587 kilograms of lead, 1,926,111 kilograms of zinc and 4,546 kilograms of cadmium (Mineral Policy data).

The property has undergone steady exploration by various companies from 1964 to present. Based on mapping, geochemical and geophysical surveys, trenching and diamond drilling from 1967 to 1970, ore reserves were estimated at 317,485 tonnes grading 1.6 per cent copper, 4.11 grams per tonne gold, 140.54 grams per tonne silver, 0.65 per cent lead and 6.6 per cent zinc (Northern Miner - September 25, 1969).

BIBLIOGRAPHY

EMPR AR 1897-567; 1898-809,852; 1900-928,929,944; 1901-1117,1112; *1902-238-250; *1903-206-209; 1904-252; 1905-216; 1906-207; 1907-154; 1916-311; *1924-252,368; 1925-303; 1926-334; 1927-339; 1928-365; 1929-371; 1930-289; 1931-264; 1935-G46; 1936-F63; 1939-90; 1940-74; 1942-70; 1943-69; 1944-67; 1946-191; 1947-183; 1949-224; 1950-180; 1951-199; 1952-214; 1964-A53,168; 1967-79; 1968-107

EMPR ASS RPT 1104, 1714, 3741, 3950, 3951, 5164, 8264, 12317, 14735, 16716, 17834, 18859, 19754

EMPR BC METAL MM00051, MM00058

EMPR EXPL 1978-E119; 1980-153

EMPR FIELDWORK 1982, p. 46; *1987, pp. 81-91

EMPR GEM 1969-224; 1970-291; 1972-240; 1974-163

EMPR INDEX 3-203,217; 4-123

EMPR OF 1988-8; 1999-2

EMPR P 1991-4, pp. 102,104,105

EMPR PF (The Tyee Mines, Report by Pacific Tidewater Mines, April 1928; Geology map of Mount Sicker mines area by J.S. Stephenson, Scale 1:1200, 1940's(?) Nelson, N.E. (1940): Report on the Tyee Consolidated Gold Mines; The Geology and Mineralizaton of the Lenora-Tyee Mine, Preliminary notes by J.S. Stephenson, Feb.13, 1942; Tyee-Lenora, Report by H. Sargent, June 26, 1942; Summary of Monthly Report, Twin J Mines, April 1944; General Comments by R.B. Gayer, May and April 1944; Twin J Mines, Report by V. Dolmage, April or May 1945; Report on the Mount Sicker Mine, Feb.7, 1945; Suggestions on Future Explorations by J.S. Stephenson, Aug.7, 1945; Various mine plans, 1940's; Sheppard, E.P. (1966) Geology - Mount Sicker Mines)

EMR MP CORPFILE (Tyee Copper Company Limited; Ladysmith Smelting Corporation Limited; Ladysmith Tidewater Smelters Limited; Pacific Tidewater Mines Limited; Tyee Consolidated Mining Company Limited; Tyee Mining and Milling Company Limited; The Twin J Mines Limited; Jason Mines Limited; Vancouver Island Base Metals Limited; Base Metals Mining Corporation Limited; Mount Sicker Mines Limited)

EMR MIN BULL MR 223 (1989) B.C. 88

EMR MP Metal Controller File 167-Z1-2-17 C

GSC MAP 42A; 1386A; 1553A

GSC MEM *13, pp. 180-187; 36; *96, pp. 387-390

GSC OF 463

GSC P 1972-44; 1975-1A, p. 23; 1979-30

CIM Transactions *Vol.XLVIII, 1945, pp. 294-308

CIM *Vol.1, pp. 88-93

CMH 1972-1973, p. 232

GCNL #64,#218, 1984

N MINER Sept.25, 1969

Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

Holbek, P. (1980): Geology and Geochronometry of the Sharron Volcanogenic Prospect, Mt. Brenton Area, Southwestern B.C., B.Sc. Thesis, University of British Columbia

Hudson, R. (1997): A Field Guide to Gold, Gemstone and Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 92-93

Times Colonist, Feb.16, 1997, p. C8

Chevron File

BIBLIOGRAPHY

EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1997/04/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 002** NATIONAL MINERAL INVENTORY: 092B13 Cu1

NAME(S): **TYEE (L.36G)**, TWIN J, MOUNT SICKER, RICHARD III, LENORA , LENORA-TYEE

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 51 53 N NORTHING: 5412713
LONGITUDE: 123 46 59 W EASTING: 442571
ELEVATION: 520 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Tyee adit on Lot 36G (NTS MAP 92B/13W). See also Lenora (092B 001) and Richard III (092B 003).

COMMODITIES: Copper, Gold, Silver, Zinc, Lead, Cadmium, Barite

MINERALS
SIGNIFICANT: Chalcopyrite, Sphalerite, Galena, Barite, Pyrite
ASSOCIATED: Barite, Quartz, Calcite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Stratiform
CLASSIFICATION: Volcanogenic, Syngenetic, Exhalative
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Irregular
MODIFIER: Folded, Faulted
DIMENSION: 640 x 45 x 6 Metres STRIKE/DIP: 110/50S TREND/PLUNGE:
COMMENTS: Dimension of South orebody. Attitude of enclosing sediments.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Cherty Tuff
Graphitic Schist
Rhyolite Porphyry
Diorite
Gabbro

HOSTROCK COMMENTS: The unnamed intrusives, coeval with the Karmutsen Formation (Vancouver Group), are informally called the Mount Hall Gabbro.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

CAPSULE GEOLOGY

Volcanogenic massive sulphides were discovered on Mount Sicker in the late 1800's with production from one main orebody issuing from three independent underground mines (Lenora - 092B 001, Tyee - 092B 002 and Richard III - 092B 003) for several years. These mines were later amalgamated and operated as the Twin J mine (1942-1952).

The massive sulphides are hosted within rhyolitic tuffs and associated sediments of the McLaughlin Ridge Formation, Sicker Group. The rocks in the mine include cherty tuffs and graphitic schists which together form a band of folded and/or sheared sediments 30 to 45 metres wide that near the workings are at least 640 metres long. The trend of the band and the strike of the sediments are 110 degrees. The dip of the sediments is 50 degrees southwest. See the Lenora deposit for further details of the geology.

Two types of ore are found in association with the cherty tuffs and graphitic schists: a barite ore consisting of a fine grained mixture of pyrite, chalcopyrite, sphalerite and a little galena in a gangue of barite, quartz and calcite; and a quartz ore consisting of mainly quartz and chalcopyrite.

The two main orebodies, known as the North orebody and the South orebody, are long, lenticular bodies lying along two main dragfolds in the band of sediments. The North orebody measures about 500 metres along strike, 37 metres downdip and from 0.3 to 3 metres in thickness. The South orebody, which is 46 metres from the North, and

CAPSULE GEOLOGY

has its upper limit 45 metres higher, measures 640 metres along the strike, 45 metres downdip and is about 6 metres in thickness. Two main faults, striking east and nearly vertical, displace the orebodies. A fracture zone is manifested by vertical silicified zones on the south sides of both the North and South orebodies.

The area was staked by Harry Smith in 1897. The Tyee mine was worked intermittently from 1901 to 1909 producing 762,553 grams of gold, 13,725,069 grams of silver and 5,840,593 kilograms of copper from a total of 152,668 tonnes mined (Mineral Policy data). See Lenora (092B 001) for the combined production and reserve figures that were derived after the three mines were amalgamated as the Twin J mine. Zinc, lead and cadmium are also reported in the Twin J production records.

BIBLIOGRAPHY

EMPR AR 1897-567; 1898-809,852; 1900-928,929,944; 1901-1117,1112; *1902-238-250; *1903-206-209; 1904-252; 1905-216; 1906-207; 1907-154; 1916-311; *1924-252,368; 1925-303; 1926-334; 1927-339; 1928-365; 1929-371; 1930-289; 1931-264; 1935-G46; 1936-F63; 1939-90; 1940-74; 1942-70; 1943-69; 1944-67; 1946-191; 1947-183; 1949-224; 1950-180; 1951-199; 1952-214; 1964-168; 1967-79; 1968-107
EMPR ASS RPT 1104, 1714, 3741, 3950, 5164, 8264, 12317, 14735, 16716, 17834, 18859, 19754
EMPR BC METAL MM00058
EMPR EXPL 1978-E119; 1980-153
EMPR FIELDWORK 1982, p. 46; *1987, pp. 81-91
EMPR GEM 1969-224; 1970-291; 1972-240; 1974-163
EMPR INDEX 3-216
EMPR OF 1988-8; 1999-2
EMPR P 1991-4, pp. 102,105
EMPR PF (The Tyee Mines, Report by Pacific Tidewater Mines, April 1928; Nelson, N.E. (1940): Report on the Tyee Consolidated Gold Mines; The Geology and Mineralizaton of the Lenora-Tyee Mine, Preliminary notes by J.S. Stephenson, Feb.13, 1942; Tyee-Lenora, Report by H. Sargent, June 26, 1942; Summary of Monthly Report, Twin J Mines, April 1944; General Comments by R.B. Gayer, May and April 1944; Twin J Mines, Report by V. Dolmage, April or May 1945; Report on the Mount Sicker Mine, Feb.7, 1945; Suggestions on Future Explorations by J.S. Stephenson, Aug.7, 1945; Various mine plans, 1940'S; Sheppard, E.P. (1966) Geology - Mount Sicker Mines)
EMR MP CORPFILE (Tyee Copper Company Limited; Ladysmith Smelting Corporation Limited; Ladysmith Tidewater Smelters Limited; Pacific Tidewater Mines Limited; Tyee Consolidated Mining Company Limited; Tyee Mining and Milling Company Limited; The Twin J Mines Limited; Jason Mines Limited; Vancouver Island Base Metals Limited; Base Metals Mining Corporation Limited; Mount Sicker Mines Limited)
EMR MP Metal Controller File 167-Z1-2-17 C
GSC MAP 42A; 1386A; 1553A
GSC MEM *13, pp. 180-187; 36; *96, pp. 387-390
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CIM Transactions *Vol.XLVIII, 1945, pp. 294-308
CIM *Vol.1, pp. 88-93
CMH 1972-1973, p. 232
GCNL #64,#218, 1984
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Hudson, R (1997): A Field Guide to Gold, Gemstone and Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 92-93
Times Colonist, Feb.16, 1997, p. C8
Chevron File
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1997/04/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 003** NATIONAL MINERAL INVENTORY: 092B13 Cu1

NAME(S): **RICHARD III (L.39G)**, TWIN J, MOUNT SICKER, LENORA, TYEE

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 51 53 N NORTHING: 5412711
LONGITUDE: 123 46 47 W EASTING: 442815
ELEVATION: 580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Richard III shaft on Crown grant Lot 39G (Assessment Report 19754, Figure 3). See also Lenora (092B 001) and Tyee (092B 002).

COMMODITIES: Copper, Gold, Silver, Lead, Zinc, Cadmium, Barite

MINERALS
SIGNIFICANT: Chalcopyrite, Sphalerite, Galena, Pyrite, Barite
ASSOCIATED: Barite, Quartz, Calcite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Stratiform
CLASSIFICATION: Volcanogenic, Syngenetic, Exhalative
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Irregular
MODIFIER: Folded, Faulted
DIMENSION: 640 x 45 x 6 Metres STRIKE/DIP: 110/50S TREND/PLUNGE:
COMMENTS: Dimension of South orebody. Attitude of enclosing sediments.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Cherty Tuff
Graphitic Schist
Rhyolite Porphyry
Diorite
Gabbro

HOSTROCK COMMENTS: The unnamed intrusives, coeval with the Karmutsen Formation (Vancouver Group), are informally known as the Mount Hall Gabbro.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

CAPSULE GEOLOGY

Volcanogenic massive sulphides were discovered on Mount Sicker in the late 1800's with production from one main orebody issuing from three independent underground mines (Lenora - 092B 001, Tyee - 092B 002 and Richard III - 092B 003) for several years. These mines were later amalgamated and operated as the Twin J mine (1942-1952).

The massive sulphides are hosted within rhyolitic tuffs and associated sediments of the McLaughlin Ridge Formation, Sicker Group. The rocks in the mine include cherty tuffs and graphitic schists which together form a band of folded and/or sheared sediments 30 to 45 metres wide that near the workings is at least 640 metres long. The trend of the band and the strike of the sediments are 110 degrees. The dip of the sediments is 50 degrees southwest. See the Lenora occurrence for further details of the geology.

Two types of ore are found in association with the cherty tuffs and graphitic schists: a barite ore consisting of a fine grained mixture of pyrite, chalcopyrite, sphalerite and a little galena in a gangue of barite, quartz and calcite; and a quartz ore consisting of mainly quartz and chalcopyrite.

The two main orebodies, known as the North orebody and the South orebody, are long, lenticular bodies lying along two main dragfolds in the band of sediments. The North orebody measures about 500 metres along strike, 37 metres downdip and from 0.3 to 3 metres in thickness. The South orebody, which is 46 metres from the North, and

CAPSULE GEOLOGY

has its upper limit 45 metres higher, measures 640 metres along the strike, 45 metres downdip and is about 6 metres in thickness. Two main faults, striking east and nearly vertical, displace the orebodies. A fracture zone is manifested by vertical silicified zones on the south sides of both the North and South orebodies.

The Richard III mine operated in three years between 1903 and 1907, producing 22,830 grams of gold, 522,714 grams of silver and 113,604 kilograms of copper from a total of 4903 tonnes of ore mined (Mineral Policy data). See Lenora (092B 001) for the combined production and reserve figures that were derived after the three mines were amalgamated as the Twin J mine. Zinc, lead and cadmium are also reported in the Twin J production records.

BIBLIOGRAPHY

EMPR AR 1897-567; 1898-809,852; 1900-928,929,944; 1901-1117,1112; *1902-238-250; *1903-206-209; 1904-252; 1905-216; 1906-207; 1907-154; 1916-311; *1924-252,368; 1925-303; 1926-334; 1927-339; 1928-365; 1929-371; 1930-289; 1931-264; 1935-G46; 1936-F63; 1939-90; 1940-74; 1942-70; 1943-69; 1944-67; 1946-191; 1947-183; 1949-224; 1950-180; 1951-199; 1952-214; 1964-168; 1967-79; 1968-107
EMPR ASS RPT 1104, 1714, 3741, 3950, 3951, 5164, 8264, 12317, 14735, 16716, 17834, 18859, 19754
EMPR BC METAL MM00055
EMPR EXPL 1978-E119; 1980-153
EMPR FIELDWORK 1982, p. 46; *1987, pp. 81-91
EMPR GEM 1969-224; 1970-291; 1972-240; 1974-163
EMPR INDEX 3-210
EMPR OF 1988-8; 1999-2
EMPR P 1991-4, pp. 102,105
EMPR PF (The Tyee Mines, Report by Pacific Tidewater Mines, April 1928; Nelson, N.E. (1940): Report on the Tyee Consolidated Gold Mines; The Geology and Mineralizaton of the Lenora-Tyee Mine, Preliminary notes by J.S. Stephenson, Feb.13, 1942; Tyee-Lenora, Report by H. Sargent, June 26, 1942; Summary of Monthly Report, Twin J Mines, April 1944; General Comments by R.B. Gayer, May and April 1944; Twin J Mines, Report by V. Dolmage, April or May 1945; Report on the Mount Sicker Mine, Feb.7, 1945; Suggestions on Future Explorations by J.S. Stephenson, Aug.7, 1945; Various mine plans, 1940'S; Sheppard, E.P. (1966): Geology - Mount Sicker Mines)
EMR MP CORPFILE (Tyee Copper Company Limited; Ladysmith Smelting Corporation Limited; Ladysmith Tidewater Smelters Limited; Pacific Tidewater Mines Limited; Tyee Consolidated Mining Company Limited; Tyee Mining and Milling Company Limited; The Twin J Mines Limited; Jason Mines Limited; Vancouver Island Base Metals Limited; Base Metals Mining Corporation Limited; Mount Sicker Mines Limited)
EMR MP Metal Controller File 167-Z1-2-17 C
GSC MAP 42A; 1386A; 1553A
GSC MEM *13, pp. 180-187; 36; *96, pp. 387-390
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CIM Transactions *Vol. XLVIII, 1945, pp. 294-308
CIM *Vol.1, pp. 88-93
CMH 1972-1973, p. 232
GCNL #64,#218, 1984
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 92-93
Times Colonist, Feb.16, 1997, p. C8
Chevron File
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1997/04/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 004** NATIONAL MINERAL INVENTORY:

NAME(S): **VICTORIA (L.21G)**, ELMORE FRACTION, CANAMERA, COPPER CANYON (L.22G)

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 52 02 N NORTHING: 5413011
LONGITUDE: 123 48 33 W EASTING: 440659
ELEVATION: 180 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit location on Crown grant Lot 21G, adjacent Chemainus River (Assessment Report 6972). See also Lenora (092B 001).

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Vein Disseminated
CLASSIFICATION: Volcanogenic Hydrothermal
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Schist
Cherty Tuff
Rhyolite Tuff
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: UNDERGROUND WORKINGS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1902
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	17.1000	Grams per tonne

REFERENCE: Minister of Mines Annual Report, 1902, page 253.

CAPSULE GEOLOGY

The Victoria past-producer is located on the east bank of the Chemainus River, west of, and along the strike of, the Lenora-Tyee volcanogenic massive sulphide past-producers on Mount Sicker (see 92B 001).

The deposit is located within the Cowichan uplift, one of three geanticlinal uplifts that expose rocks of the Paleozoic Sicker and Buttle Lake groups on Vancouver Island. Cretaceous sediments of the Nanaimo Group unconformably overly the Paleozoic rocks; the contact is marked by a basal conglomerate containing volcanic fragments derived from the Sicker Group. The local stratigraphy is disrupted by folding, faulting (pre-Triassic as well as Tertiary) and the intrusions of gabbro and diabase sills and dykes (informally known as the Mount Hall Diorite) that are coeval with the Upper Triassic Karmutsen Formation.

The Sicker Group rocks mainly comprise felsic volcanic tuffs of the McLaughlin Ridge Formation. The rocks in the mine, and nearby, include graphitic schists and cherty sediments and tuffs which form a band within the rhyolitic volcanics. This is the same band of sediments which hosts the massive sulphides of the Lenora-Tyee deposit to the east. The strike of the sediments along the Chemainus River is about 080 degrees and the dip is 70 degrees south.

On the property a tunnel has been driven in for 46 metres at 110 degrees. From the end of the tunnel a crosscut has been run to the south for about 8 metres ending in diorite. Another crosscut was

CAPSULE GEOLOGY

made to the north for about 11 metres in the schist, of which about 3 metres is mineralized with pyrite and chalcopyrite. A sample of this assayed 17.1 grams per tonne silver and trace copper and gold (Minister of Mines Annual Report 1902, page 253). On the steep banks of the river, outcrops of massive iron sulphides with a small amount of copper were exposed and tested by adits. Small pits have exposed quartz veins and stringers up to 75 centimetres wide mineralized with iron sulphides and chalcopyrite.

The mine has a combined production from 1904, 1905 and 1907 totalling 115 tonnes of ore, from which was recovered 124 grams of gold, 3,452 grams of silver and 4,346 kilograms of copper (Mineral Policy data). Details of the deposit and workings were not reported after 1902.

BIBLIOGRAPHY

EMPR AR 1897-567; 1901-1118; *1902-239,252; 1905-250; 1907-221; 1916-312; 1920-222; 1928-365
EMPR ASS RPT 3099, 4626, 6600, 6599, 6972, 7183, 7435, 16871, 17836
EMPR BC METAL MM00059
EMPR EXPL 1977-E104; 1978-E120; 1979-122; 1988-C71
EMPR FIELDWORK 1987, pp. 81-91
EMPR GEM 1973-224
EMPR INDEX 3-217
EMPR OF 1988-8; 1999-2
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 92

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 005** NATIONAL MINERAL INVENTORY:

NAME(S): **BAMBERTON**, ELFORD

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 35 11 N NORTHING: 5381611
LONGITUDE: 123 31 30 W EASTING: 461283
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of the lower main quarry (NTS Map 92B/12).

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Silica
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 700 x 150 Metres STRIKE/DIP: 120/75W TREND/PLUNGE:
COMMENTS: Main lens

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Greenstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Hosted in ocean rift volcanics adjoining the Wark and Colquitz gneiss.

CAPSULE GEOLOGY

The Bamberton limestone quarry is located on the west shore of Saanich Inlet, 23 kilometres northwest of Victoria.

The region is underlain by the Mesozoic and/or Paleozoic Wark Gneiss and volcanics of the Lower Jurassic Bonanza Group. The deposit is part of a discontinuous carbonate horizon that extends from Cordova Bay northwestward across Saanich Inlet to the east shore of Shawnigan Lake. Its general fine-grained, massive character and its association with greenstones and magnetite-sulphide skarns suggests that this horizon is correlative with the Upper Triassic Quatsino Formation, Vancouver Group.

The deposit is comprised of several limestone lenses. The main lens extends northwest from the shore of Saanich Inlet for 700 metres and is up to 150 metres thick. Bedding within the lens strikes 120 degrees and dips 60 to 90 degrees northwest. The lens is intercalated with tabular greenstone bodies, of similar orientation, that vary from less than a metre to 15 metres in thickness. These are basaltic in composition and likely represent flows. Faults, generally trending northwest and dipping steeply northeast, are exposed in the quarries.

The limestone of the main lens is generally dark bluish grey and fine grained. Several thin sections reveal small irregular quartz grains, detrital calcite fragments and spherical radiolaria and foraminifera in a very fine, limy mud cement containing rare patches of carbonaceous matter. The main lens mainly consists of calcium to high calcium limestone. Bands and irregular masses of magnesian limestone of similar appearance to the high calcium limestone become apparent to the northeast. One 6-metre thick band of magnesian limestone contains 17 to 40 percent magnesium carbonate (CANMET Report 811, page 132). Five chip samples taken in April 1946 in succession across the face of the lower main quarry averaged 53.88 per cent CaO, 0.86 per cent MgO, 1.92 per cent insolubles, 0.166 per cent R2O3, 0.359 per cent Fe2O3, 0.019 per cent MnO, 0.023 per cent

CAPSULE GEOLOGY

P2O5, 0.051 per cent sulphur and 42.78 per cent ignition loss (Bulletin 23, page 95, Samples 4, and 6 to 9).

In 1950, diamond drilling in a drift-covered area northwest of the main lens encountered a second limestone body. This body trends northwest, dips steeply, is 300 metres long and at least 30 metres wide. The lens, hosted in greenstone, contains irregular greenstone masses.

The quarries were in operation between 1913 and 1957 while the adjacent cement plant remained in production up to 1980. Between 1913 and 1957, 3.7 million tonnes of limestone were quarried. The limestone was produced from two quarries in the main lens, the upper main and lower main quarries and from a single quarry in the second lens to the northwest.

A.R.M. Industries quarried 21,000 tonnes of limestone for riprap in 1988.

BIBLIOGRAPHY

EMPR AR 1907-23,157; 1908-25,166; 1909-25; 1910-25; 1911-28,207,209; 1912-24,28,198; 1913-27,292; 1914-29,387; 1915-33,291; 1916-31, 367; 1917-32,295; 1918-30,308; 1919-29; 1920-28; 1924-255; 1925-267,304; *1926-334-337; 1929-436; 1930-422; 1931-237; 1932-284; 1933-344; 1934-G39; 1935-G31; 1936-F65; 1937-F38; 1938-F70; 1939-112; 1940-99; 1941-93; 1942-91; 1943-86,87; 1944-83; 1945-132; 1946-205,296; 1947-204,216,217,278; 1948-183; 1949-248; *1950-224, 225; 1951-221; 1952-259,260; 1953-193; 1954-183; 1955-96,97; 1956-154; 1957-88-90
EMPR BULL *23 pp. 92-96; 40, pp. 84-88
EMPR MAP 65 (1989)
EMPR OF 1992-1; 1992-9; 1992-18, pp. 37,38-39
EMPR PF (Photographs)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 197; 96, pp. 105,107,395-397
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
CANMET IR 811, p. 132
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 65
Lockie, D.A. (1957): A Petrographic Analysis of Some Limestones of Southwestern British Columbia, Unpub. B.A. Thesis, University of British Columbia
Victoria Daily Colonist May 4, 1952
Victoria Times Sept. 8, 1957

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: Y

MINFILE NUMBER: **092B 006** NATIONAL MINERAL INVENTORY:

NAME(S): **TOD INLET**, BRENTWOOD, BUTCHART GARDENS, QUARRY LAKE

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B11W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 33 57 N NORTHING: 5379302
LONGITUDE: 123 28 24 W EASTING: 465079
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of flooded quarry at Butchart Gardens (NTS Map 92B/11).

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 150 x 76 Metres STRIKE/DIP: 150/60W TREND/PLUNGE:
COMMENTS: Limestone strikes 150 degrees and dips 30 to 90 degrees west; the bodies are up to 150 metres long and 76 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Greenstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: Greenschist
COMMENTS: Hosted within ocean rift volcanics north of the Colquitz-Wark complex.

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1944
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	54.0700	Per cent

COMMENTS: Taken across 15 metres. Grade for CaO.
REFERENCE: CANMET Report 811, page 142.

CAPSULE GEOLOGY

The Tod Inlet deposits are located south of Brentwood Bay on the east shore of Saanich Inlet, 18 kilometres northwest of Victoria. Limestone was produced from three quarries in this area between 1905 and 1921.

The region is underlain by the Paleozoic Wark Gneiss and Lower Jurassic Bonanza Group volcanics which are intruded by granodiorite and quartz diorite of the Early to Middle Jurassic Island Plutonic Suite (formerly the Island Intrusions). The Wark Gneiss was formed, probably from mainly Sicker Group rocks, as a result of metamorphic events coeval with the emplacement of the Island Plutonic Suite. A discontinuous carbonate horizon extends from Cordova Bay northwestward across Saanich Inlet to the east shore of Shawnigan Lake, just south of Strathcona. Its generally fine-grained, massive character and its association with greenstones and magnetite-sulphide skarns suggests that this horizon is correlative with the Upper Triassic Quatsino Formation, Vancouver Group.

The Tod Inlet deposit comprises a series of limestone bodies, part of the carbonate horizon, that are up to 76 metres in width and 150 metres in length. The limestone bodies are arranged in an "en

CAPSULE GEOLOGY

echelon" manner, hosted in greenstone and are intruded by mafic dykes. These bodies probably formed a single northwest trending limestone bed that was later repeatedly offset by a series of strike-slip faults. The limestone strikes 150 degrees and dips between 30 and 90 degrees southwest.

These bodies generally consist of fine-grained, dark bluish grey to white high calcium limestone. Small masses of magnesian limestone are reported from the number 2 and 3 quarries. A well developed joint pattern strikes northwest parallel to the formation and dips 70 degrees southwest. Limestone in the number three quarry is extensively fractured and veined with white calcite. An average analysis of the purer limestones from the numbers 1 and 2 quarries contained 97.5 per cent $CaCO_3$, 1.1 per cent SiO_2, 0.8 per cent Fe_2O_3 and a trace of MgO (Geological Survey of Canada Memoir 13, page 62). A 15-metre chip sample across the north end of the number 3 quarry contained 54.07 per cent CaO, 0.58 per cent MgO, 1.42 per cent SiO_2, 0.21 per cent Al_2O_3, 0.31 per cent Fe_2O_3, and 0.02 per cent sulphur (CANMET Report 811, page 142, Sample 5).

Approximately 836,971 tonnes of limestone were produced from the 3 quarries between 1905 and 1921. The numbers 1 and 2 quarries, located next to the plant on Tod Inlet, were largely exhausted. The Butchart Gardens presently encompass this site. The number 3 quarry was situated 1.1 kilometres east of the plant.

On the west shore of Tod Inlet a 6 to 30 metre thick high calcium limestone bed striking 150 degrees for at least 46 metres and dipping 30 to 35 degrees west remains undeveloped.

BIBLIOGRAPHY

EMPR AR *1904-256-260; 1905-24; 1906-24; 1907-23,157; 1908-25,166; 1909-25; 1910-25,26; 1911-28,207; 1912-28,198; 1913-27,291,292; 1914-29,387; 1915-33,291; 1916-31,367; 1917-32,295; 1918-30,308; 1919-29; 1920-28; 1921-29; 1922-29; 1924-255; 1925-267,304; 1926-334
EMPR BULL *23, pp. 20,92-96; *40, pp. 85-88
EMPR OF 1992-18, pp.37,40-41
EMPR PF (Matthews, W.H. (1945): Report)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, pp. 62,197; 36, pp. 40-42,133,134; 96, pp. 21,107
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
CANMET REPORT 452, Vol.5, pp.156,157,186; *811, Part 5, pp. 135,142
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 59

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: Y

MINFILE NUMBER: **092B 007**

NATIONAL MINERAL INVENTORY:

NAME(S): **MERRYTH**, IRON MOUNTAIN, RALPH, IRON MINE HILL

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 20 26 N
LONGITUDE: 123 42 35 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the coast, about 1.5 kilometres southeast of Sooke Inlet (Minister of Mines Annual Report 1948, page 164).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5354396
EASTING: 447407

COMMODITIES: Copper Gold Iron

MINERALS
SIGNIFICANT: Magnetite Chalcopyrite Pyrrhotite Pyrite
ASSOCIATED: Hornblende
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Disseminated Massive Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Sooke Gabbro

LITHOLOGY: Hornblendite
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1951
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.4600	Per cent

COMMENTS: From a 42.7 metre drill interval.
REFERENCE: Diamond-drill Logs and Assays, by P.A. Chubbe, July 1951 (Prop. File).

CAPSULE GEOLOGY

The area is underlain by the Eocene Sooke Gabbro, which forms the basement of the Metchosin Volcanics and is composed of coarse-grained gabbro with about equal parts of bytownite and diopside and about 5 per cent olivine. Dykes of leucogabbro contain up to 80 per cent bytownite. Local agmatization, amphibolitization and mineralization of the gabbro apparently occurred later along shear zones.

The Merryth deposit is on the southwest shore of the Sooke Peninsula, due south of Iron Mine Hill. The main altered zone, made up of hornblende and masses of unaltered gabbro, trends up the hill from the shore at about 025 degrees for 460 metres. The deposit is divided into two zones based on a horizontal offset of 15 to 30 metre which is a result of crossfaulting. South of the crossfault the deposit has been called the Merryth zone and to the north it has been called the Iron Mountain zone. The deposit is generally known as the Merryth.

The main mineralization of the Merryth zone is confined within two parallel shears about 30 metres apart. Erratic sulphide mineralization occurs in the footwall and to minor extent in the hangingwall. The hangingwall contains large amounts of magnetite as replacement grains and as fracture-filling stringers. A small quantity of magnetite occurs in the mineral zone proper. The mineral zone contains minor massive replacement by pyrrhotite but the predominant form of mineralization is the filling of small veinlets and cracks by pyrrhotite, pyrite and late chalcopyrite. The relative

CAPSULE GEOLOGY

proportions of chalcopyrite to pyrrhotite are greater in the wallrock than in the main portion of the zone, with dissemination being the most typical form of sulphide mineralization. The Iron Mountain zone, north of the crossfault, has been examined along its margins and at these points it consists mainly of magnetite and pyrrhotite.

One of several diamond-drill holes put down on the Merryth zone in 1951 graded 0.46 per cent copper over 42.7 metres (Chubb, 1951). A grab sample assayed 3.43 grams per tonne gold and 0.2 per cent copper (Supplementary Sampling by Huestis, Kenneco and Cooke, undated).

BIBLIOGRAPHY

EMPR AR 1902-220; 1916-281; 1948-162; 1951-199
EMPR ASS RPT *61, 2267, 3409, 3594, 3584
EMPR GEM 1969-225; 1971-224
EMPR PF ((Huestis, H.H. (1948): Report on Sooke Copper Nickel Group; Letter regarding Merryth and Griffith zones (unsigned), 1948; Gray, W.A. (1950): Supplementary Report on the East Sooke Copper Showings; Page, T.W. (1950): A Report on the Willow Grouse and the Margaret Copper Properties; Report on Electromagnetic Survey Performed on some Copper Prospects in East Sooke, B.C., by Geolectric Exploration Company Inc., 1951; Chubb, P.A. (1951): Diamond-drill Logs and Assays; Letter regarding Willow Grouse, by P.A. Chubb, 1951; Report on East Sooke Drill Program, by P.A. Chubb, 1951; Report on Supplementary Sampling, by Huestis, Kenneco and Cooke (undated); A Report on the Willow Grouse and the Margeret Group of Mining Claims) - see Margaret, 092B 009 for these above reports; Mascan Explorations Ltd. Prospectus, May 13, 1966; Geology map, plan map, drill cross-sections of Merryth and Iron Mine Hill zones, Mascan Explorations Limited, 1971)
EMR MIN BR RPT 47, p. 9
GSC ANN RPT 1889, p. 100
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463; 701
GSC P 1972-44; 1975-1A, p. 23; 1979-30
GCNL #133, 1966
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 66

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 008**

NATIONAL MINERAL INVENTORY:

NAME(S): **OLD COPPER MINE**, GRIFFITH, COPPER MINE, NAGLE, T-7

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 20 12 N
LONGITUDE: 123 41 10 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit location, on the coast 3 kilometres southeast of Sooke Inlet (Minister of Mines Annual Report 1948, page 164). No production was ever reported.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5353948
EASTING: 449153

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Chalcopyrite Copper Pyrrhotite Pyrite
ASSOCIATED: Calcite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Sooke Gabbro

LITHOLOGY: Hornblendite
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1971
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.8600	Per cent

COMMENTS: From a 33.5 metre drill section.
REFERENCE: Drill Plan of Nagle Zone, Mascan Explorations Ltd., 1971.

CAPSULE GEOLOGY

The Old Copper Mine area is underlain by the Tertiary Sooke Gabbro, which forms the basement of the Metchosin Volcanics and is composed of coarse-grained gabbro with about equal parts of bytownite and diopside and about 5 per cent olivine. Dykes of leucogabbro contain up to 80 per cent bytownite. Local agmatization, amphibolitization and mineralization of the gabbro apparently occurred later along shear zones.

The Old Copper Mine, or Griffith zone, is a poorly exposed showing on the south shore of Sooke Peninsula. A shaft, now full of water but reported to be 31 metres deep, has been sunk about 5 metres north of the high tide line. On the beach on either side of the shaft is a waste dump containing chalcopyrite and highly oxidized material, probably hornblendite. Rocks on the shore contain hornblende and closely disseminated chalcopyrite and are cut by joints or faults striking about 020 degrees (Minister of Mines Annual Report 1948, page 170). Pyrite, pyrrhotite and minor amounts of native copper also occur and calcite, quartz and sheared hornblende are reported to be gangue minerals (Huestis, 1948). Malachite and azurite have also been observed (Assessment Report 3584, page 2).

The zone was drilled circa 1971 by Mascan Explorations Limited (Property File). One hole drilled in the adit area contained a 33.5 metre section grading 0.86 per cent copper; another hole 106 metres to the north intersected 3 metres grading about 1 per cent copper. A grab sample assayed 11.50 per cent copper and 2.74 grams per tonne

CAPSULE GEOLOGY

gold (Supplementary Assay Report, in Reports on Copper - Nickel Mineral Occurrences in East Sooke Peninsula).

BIBLIOGRAPHY

EMPR AR 1893-1079; *1948-170; 1951-199
EMPR ASS RPT 61, 2267, 3409, 3594, *3584
EMPR GEM 1969-225; 1971-224
EMPR PF (*Letter by J. Nagle, Sooke Copper Mine, July 22, 1864; *Report by H.H. Huestis, January 7, 1948; Reports on Copper-Nickel Mineral Occurrences in East Sooke Peninsula (see 092B 009 - Copper King); *Huestis, H.H. (1948): Report on Sooke Copper-Nickel Group; Letter regarding Merryth and Griffith zones (unsigned), 1948; Gray, W.A. (1950): Supplementary Report on the East Sooke Copper Showings; *Page, T.W. (1950): A Report on the Willow Grouse and the Margaret Copper Properties; Report on Electro-magnetic Survey Performed on some Copper Prospects in East Sooke, B.C., by Geolectric Exploration Company Inc., 1951; Chubb, P.A. (1951): Diamond-drill Logs and Assays; Letter regarding Willow Grouse, by P.A. Chubb, 1951; Report on East Sooke Drill Program, by P.A. Chubb, 1951; Report on Supplementary Sampling, by Huestis, Kenneco and Cooke (undated); A Report on the Willow Grouse and the Margeret Group of Mining Claims; Mascan Explorations Ltd. Pros-pectus, May 13, 1966; Drill plan and cross-sections, Mascan Explor-ations Ltd., 1971; (For these and related reports see also: *092B 007 - Merryth; 092B 009 - Margaret, and; 092B 010 - Willow Grouse))
GSC MAP 42A; 1386A; 1553A
GSC MEM 134; 36; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 009** NATIONAL MINERAL INVENTORY: 092B5 Cu2

NAME(S): **MARGARET (L.138)**, COPPER KING (L.139), HUESTIS, EUREKA (L.140)

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 20 47 N NORTHING: 5355026
LONGITUDE: 123 40 54 W EASTING: 449492
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 2.5 kilometres due east of Company Point at the entrance to Sooke Inlet. The main workings are on the Copper King Crown grant (Lot 139), (Minister of Mines Annual Report 1948, page 167).

COMMODITIES: Copper Gold Silver Cobalt Nickel

MINERALS
SIGNIFICANT: Chalcopyrite Copper Magnetite Pyrrhotite Pyrite
ASSOCIATED: Hornblende Quartz
ALTERATION: Hornblende
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Disseminated Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu
DIMENSION: STRIKE/DIP: 043/ TREND/PLUNGE:
COMMENTS: Strike of major shear zones.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Sooke Gabbro

LITHOLOGY: Gabbro
Hornblendite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Crescent

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1950
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.9700	Per cent

COMMENTS: Chip sample taken over 23 metres.
REFERENCE: Page, T.W. (1950): Rpt on Willow Grouse & Margaret Copper Properties.

CAPSULE GEOLOGY

The Margaret area is underlain by the Eocene Sooke Gabbro, which forms the basement of the Metchosin Volcanics and is composed of coarse-grained gabbro with about equal parts of bytownite and diopside and about 5 per cent olivine. Dykes of leucogabbro contain up to 80 per cent bytownite. Local amigmitization, amphibolitization and mineralization of the gabbro occurred later along shear zones.

A mineralized, sheared and fractured honblendite "vein", striking 043 degrees and dipping 85 degrees southeast, attains a width of about 60 metres and has been traced for about 1370 metres. The ore zone along this feature has an indicated length of 380 metres and width of up to 50 metres. Fracturing is most extensive near the intersection of the main shear with a smaller one 30 metres wide which strikes 010 degrees. As a consequence, the majority of the higher grade copper ore has been localized in this vicinity over a known length of 75 metres.

Mineralization consists chiefly of disseminated chalcopyrite with minor amounts of pyrite, pyrrhotite and magnetite. Chalcopyrite also occurs in small lenses and stringers and in numerous quartz veins. A few small scales of native copper were seen. Three chip samples over 23 metres gave an average grade of 0.97 per cent copper

CAPSULE GEOLOGY

(Page, 1950). Values in nickel up to 0.6 per cent and cobalt up to 0.5 per cent have been obtained but are erratic. Gold and silver values are present but seldom over 0.34 grams per tonne and 17.14 grams per tonne respectively. Traces of palladium have also been obtained.

The main group of workings, consisting of two short adits and two opencuts, is about 150 metres south of the northwest corner of the Copper King Crown granted claim (Lot 139). About 30 metres southwest of these workings is a 30 metre long trench with a 7.5-metre shaft at its south end. A crosscut has been driven about 18 metres from the shaft. About 300 metres farther southwest along the major shear zone is a second group of workings consisting of several opencuts and a shaft. The zone has also been tested between these two groups of workings by several opencuts and a shaft.

The deposit was actively mined in 1917 and 1918, producing 507 tonnes of ore from which 19,162 kilograms of copper, 186 grams of gold and 2,862 grams of silver were recovered (Mineral Policy data).

BIBLIOGRAPHY

EMPR AR 1908-163; 1916-310; 1917-262; 1918-303; 1919-371; 1928-362; 1929-368; 1931-161; *1948-165
EMPR ASS RPT 61, 2267, 3409, 3594, 3584
EMPR GEM 1969-225; 1971-224
EMPR PF (Huestis, H.H. (1948): Report on Sooke Copper Nickel Group; Letter regarding Merryth and Griffith zones (unsigned), 1948; Gray, W.A. (1950): Supplementary Report on the East Sooke Copper Showings; *Page, T.W. (1950): A Report on the Willow Grouse and the Margaret Copper Properties; Report on Electromagnetic Survey Performed on some Copper Prospects in East Sooke, B.C., by Geolectric Exploration Company Inc., 1951; Chubb, P.A. (1951): Diamond-drill Logs and Assays; Letter regarding Willow Grouse, by P.A. Chubb, 1951; Report on East Sooke Drill Program, by P.A. Chubb, 1951; Report on Supplementary Sampling, by Huestis, Kenneco and Cooke (undated); A Report on the Willow Grouse and the Margeret Group of Mining Claims; Mascan Explorations Ltd. Prospectus, May 13, 1966; Sketch plans of workings showing assays)
EMR MIN BR RPT 47, p. 9
EMR MP CORPFILE (Norlex Mines Limited)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 180; 96, p. 328
GSC OF 463; 701
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 010** NATIONAL MINERAL INVENTORY: 092B5 Cu1

NAME(S): **WILLOW GROUSE (L.135)**, COOKE, BLUE BIRD (L.136)

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 21 46 N NORTHING: 5356852
LONGITUDE: 123 41 19 W EASTING: 448994
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the north-northwest slopes of Mount Maguire, just over 1 kilometre east of Sooke Inlet. The main workings are on the Willow Grouse Crown grant (Lot 135), (Minister of Mines Annual Report 1948, page 164).

COMMODITIES: Copper, Nickel, Cobalt, Palladium, Molybdenum, Silver, Gold, Zinc

MINERALS
SIGNIFICANT: Chalcopyrite, Copper, Pyrite, Pyrrhotite, Magnetite, Molybdenite
ASSOCIATED: Hornblende
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear, Disseminated, Massive
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu
DIMENSION: STRIKE/DIP: 040/70W TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Sooke Gabbro

LITHOLOGY: Gabbro, Hornblendite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Crescent

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1948
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Cobalt	0.3000	Per cent
Copper	11.0000	Per cent
Molybdenum	0.2000	Per cent
Nickel	0.3000	Per cent
Zinc	0.2000	Per cent

REFERENCE: Huestis, H.H. (1948): Rpt. on Sooke Copper-Nickel Gp. (in Prop. File).

CAPSULE GEOLOGY

The Willow Grouse occurrence is underlain by the Eocene Sooke Gabbro, which forms the basement of the Metchosin Volcanics and is composed of coarse-grained gabbro with about equal parts of bytownite and diopside and about 5 per cent olivine. Dykes of leucogabbro contain up to 80 per cent bytownite. Local agmatization, amphibolitization and mineralization of the gabbro occurred later along shear zones.

Chalcopyrite with minor amounts of pyrite, pyrrhotite, magnetite and molybdenite are disseminated in a major shear zone that strikes from 040 to 050 degrees and is about 18 metres wide. It can be traced for more than 600 metres and shows on the surface as subparallel cliffs or scarps. Veins of coarse hornblende are abundant in the main workings, and hornblendite occurs at other places along the shear zone.

In the main zone there are several fissures and subsidiary shear zones, within which occur zones of enrichment varying from 1.5 to 6 metres in width. Copper values average about 8 per cent with a maximum as high as 18 per cent. The most important of these zones

CAPSULE GEOLOGY

occurs on the Willow Grouse Crown grant where the mine workings are located. The length of this zone is about 45 metres and the width of the high-grade orebodies, of which there are three, are 1.8 metres, 4.6 metres and 6 metres, respectively. The general strike of these fissures is 040 degrees and the dip is about 70 degrees; but there is one fissure which strikes 177 degrees and dips 80 degrees that forms a junction with the others near the southern end of the mine workings and carries the richer portion of the orebodies.

A sample of massive chalcopyrite in altered mafic rock assayed 11 per cent copper, 0.30 per cent nickel, 0.30 per cent cobalt, 0.20 molybdenum and 0.2 per cent zinc (Huestis, 1948). Palladium ranges from trace up to 1.37 grams per tonne and gold and silver values run up to 0.34 and 8.57 grams per tonne respectively (Page, 1950). The zone has been explored over a length of about 300 metres by an adit, a shaft and several opencuts and trenches. From 1915 to 1918, 1,282 tonnes of ore were mined, from which was produced 61,402 kilograms of copper, 8,740 grams of silver and 280 grams of gold (Mineral Policy data). The high-grade lenses have apparently been completely mined out.

BIBLIOGRAPHY

EM GEOFILE 2000-2, 2000-5
EMPR AR 1904-254; 1907-154; 1908-252; 1915-447; 1916-309; *1917-261; *1918-303; 1925-450; 1928-362; 1929-368; 1931-161; *1948-165; 1951-200
EMPR ASS RPT *61, 2267, 3409, 3594, 3584
EMPR GEM 1969-225; 1971-224
EMPR PF (Huestis, H.H. (1948): Report on Sooke Copper Nickel Group; Letter regarding Merryth and Griffith zones (unsigned), 1948; Gray, W.A. (1950): Supplementary Report on the East Sooke Copper Showings; Page, T.W. (1950): A Report on the Willow Grouse and the Margaret Copper Properties; Report on Electromagnetic Survey Performed on some Copper Prospects in East Sooke, B.C., by Geolectric Exploration Company Inc., 1951; Chubb, P.A. (1951): Diamond-drill Logs and Assays; Letter regarding Willow Grouse, by P.A. Chubb, 1951; Report on East Sooke Drill Program, by P.A. Chubb, 1951; Report on Supplementary Sampling, by Huestis, Kenneco and Cooke (undated); A Report on the Willow Grouse and the Margeret Group of Mining Claims; Mascan Explorations Ltd. Prospectus, May 13, 1966)
EMR MIN BR RPT 47, p. 9
EMR MP CORPFILE (Norlex Mines Limited)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 179; *96, p. 327
GSC OF 463; 701
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/11 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 011**

NATIONAL MINERAL INVENTORY:

NAME(S): **KING GEORGE (L.159)**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 22 05 N
LONGITUDE: 123 41 43 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1 kilometre east of Sooke Harbour (Minister of Mines Annual Report 1948, page 164).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5357443
EASTING: 448506

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Hornblende
ALTERATION: Hornblende
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Massive
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu
DIMENSION: STRIKE/DIP: 090/ TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Sooke Gabbro

LITHOLOGY: Gabbro
Hornblendite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1948
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	10.2800	Grams per tonne
Gold	2.0600	Grams per tonne
Copper	7.9500	Per cent

COMMENTS: Chip sample taken over a 1.5 metre length.
REFERENCE: Minister of Mines Annual Report 1948, page 170.

CAPSULE GEOLOGY

The King George prospect occurs in a shear zone, about 30 metres wide and striking approximately east, that cuts olivine gabbro of the Eocene Sooke Gabbro. Parts of the shear zone are hornblendized and mineralized with chalcopyrite, the best section occurring along the southern wall for a width of about 9 metres.

Two large opencuts and numerous pits have been developed on the deposit. About 13 tonnes of ore were shipped in late 1916, with smelter returns showing a copper content of 13.1 per cent (Geological Survey of Canada Memoir 96, page 329). A sample taken in 1948 across 1.5 metres assayed 7.95 per cent copper, 2.06 grams per tonne gold, 10.28 grams per tonne silver and not more than 0.05 per cent nickel, cobalt or molybdenum (Minister of Mines Annual Report 1948, page 170). See the Willow Grouse deposit (092B 010) for further details of this type of deposit.

BIBLIOGRAPHY

EMPR AR *1916-311; 1917-453; *1948-170
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; *96, p. 328
GSC OF 463; 701

BIBLIOGRAPHY

GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/11 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 012**

NATIONAL MINERAL INVENTORY:

NAME(S): **EAGLE**

STATUS: Past Producer — Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 29 26 N
LONGITUDE: 123 41 59 W
ELEVATION: 267 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On Wolf Creek, west of the confluence with the Sooke River (Open File 1989-19, Figure 24, page 54).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5371057
EASTING: 448298

COMMODITIES: Talc

MINERALS
SIGNIFICANT: Talc
ASSOCIATED: Magnetite Dolomite Calcite
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Podiform Massive Vein
CLASSIFICATION: Metamorphic Epigenetic Industrial Min.
TYPE: E08 Carbonate-hosted talc
COMMENTS: Talc follows foliation.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Black Carbonaceous Slate
Schist
Talc Slate
Slaty Argillite
Talc

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Eagle deposit is about 30 kilometres northwest of Victoria, on Old Wolf Creek, west of the confluence with the Sooke River. In 1923, 250 tons of talc was mined and shipped to a plant in Sydney, British Columbia. Two small tunnels were driven into the west bank of Wolf Creek. A shaft was sunk 10.5 metres from the bank above, and a drift runs in 19.5 metres. A mill was built in 1921 about 22 metres above the workings and later moved about a kilometre away.

The host rocks are Jurassic to Cretaceous Leech River Complex slates and schists which strike nearly west and dip steeply northeast. The Leech River Complex is bounded by the Survey Mountain fault which follows Deception Gulch on the north and by the Leech River fault which follows Leech River and Old Wolf Creek. The Eagle, as well as three other talc showings lie on the Leech River fault and the Invereck property (092B 031) lies on the Survey Mountain fault.

Potassium-argon dates of 32 to 42 million years for the Leech River slates and schists marks the latest uplift of the group and hence the time of latest movement on the bounding faults. This would also suggest a lower boundary to the age of the talc (N.W.D. Massey, personal communication, 1987).

Near the workings, the slates are black, carbonaceous and severely crushed and folded. Talc occurs in three narrow, lens-shaped bodies paralleling the schistosity in the slates. A 2.1 metre thick body outcrops in the top bank and expands to 4.5 metres thickness 12 metres below. Fifteen metres stratigraphically below the first showing, a 3 to 3.6 metre talc lens is enclosed in talcose slates and black, soft, slaty argillite. A third 2.1 metre thick talc body is found exposed in the creek with another talc outcrop appearing on strike, 1.5 metres west.

The lenses are homogeneous and mottled grey with faint black specks (magnetite?). The talc is light greenish grey, granular, very friable and crushes to an off-white powder. The crude ore is 50 per cent talc and 38 per cent dolomite and calcite. Chemical analyses of

CAPSULE GEOLOGY

two samples of this ore were made by the Mines Branch of Energy Mines and Resources (CANMET Report #803), yielding the following percentages:

CONSTITUENTS	SAMPLE 1	SAMPLE 2
Silica	33.68	34.38
Ferrous oxide	4.97	4.59
Ferric oxide	nil	0.45
Alumina	1.65	0.83
Lime	15.32	8.68
Magnesia	22.88	26.94
Carbon dioxide	18.23	19.30
Water above 105 C	3.20	3.10
Total	99.93	98.27

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR AR 1919-240,241; 1920-222; 1922-256,257; 1923-270,271; 1924-256
EMPR ASS RPT 6907, 7536, 14552
EMPR FIELDWORK 1981, pp. 70-74; 1982, pp. 37-45
EMPR OF 1988-8; *1988-19, pp. 53-59
EMR MIN BR OTTAWA RPT 803, pp. 53-55
GSC EC GEOL Series 2, 1926, pp. 33-37
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
Fairchild, L. (1979): The Leech River Unit & Leech River Fault, Southern Vancouver Island, British Columbia, unpublished M.Sc. Thesis, University of Washington, 170 pages
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 80

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/01/21 REVISED BY: MM FIELD CHECK: N

MINFILE NUMBER: **092B 013**

NATIONAL MINERAL INVENTORY:

NAME(S): **PERMIT 85**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 28 09 N
LONGITUDE: 123 43 26 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Scattered mineralization occurs within a few hundred metres of Sooke River, on both sides. One area is at the above coordinates, another is 900 metres to the southwest and another about 1200 metres west of the first (White, 1973).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5368701
EASTING: 446493

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics
Eocene			Sooke Gabbro

LITHOLOGY: Basalt
Diabase
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Permit 85 showings consist of epidote and minor chalcopyrite filled amygdules within the Eocene Metchosin basalts and diabase. Gabbroic and diabase intrusions related to the coeval Eocene Sooke Gabbro occur nearby.

BIBLIOGRAPHY

EMPR FIELDWORK 1981, pp. 70-74; 1982, pp. 37-45
EMPR PF (*White, G.E. (1973): Geological, Geochemical and Geophysical Report on Mineral Permit #85)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D, Oct. 1991 (with respect to age and name of gabbroic intrusions)

DATE CODED: 1990/10/18
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092B 014**

NATIONAL MINERAL INVENTORY:

NAME(S): **RALPH (L.77)**, PHAIR (L.78), MT SKIRT (L.79)

STATUS: Past Producer Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 27 53 N
LONGITUDE: 123 32 29 W
ELEVATION: 167 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the west flank of Mount Skirt, immediatly east of the Trans-Canada Highway at Goldstream (NTS map 92B/5).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5368096
EASTING: 459979

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite Chalcocite
ASSOCIATED: Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex
Paleozoic-Mesozoic			Wark Gneiss

LITHOLOGY: Dacite Tuff
Chert
Schist
Diorite Gneiss

HOSTROCK COMMENTS: Leech River Complex (Formation) rocks are mineralized near contact of Wark Gneiss.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Ralph occurrence, on the west side of Mount Skirt, is underlain by rock of the Jurassic to Cretaceous Leech River Complex (Formation). The Leech River rocks are in contact on the east side of the mountain with diorite gneiss of the Mesozoic and/or Paleozoic Wark Gneiss. The deposits were mined around the turn of the century with about 450 metres of underground development taking place.

The deposits are reported to occur in 5 shear zones in silicified dacite tuffs and interbedded cherts; the host rocks are sometimes described as being schistose metavolcanics. The shear zones strike about 050 degrees, parallel to foliation of the country, and are traversed by numerous but irregular quartz and calcite veins. There are at least 2 ore lenses, and possibly three, lying en echelon to each other. One ore chute drifted on for about 30 metres was reported to consist of solid chalcopyrite averaging from 0.15 to 1.2 metres in width. Other reports indicate that quartz, along with pyrrhotite, pyrite and chalcocite, is associated with the ore.

It is recorded that in 1900, 56 tonnes of ore were mined, from which 11,477 grams of silver and 6,331 kilograms of copper were recovered. In 1938, a further 3 tonnes was mined producing 467 grams of silver and 324 kilograms of copper (Mineral Policy data).

BIBLIOGRAPHY

EMPR AR 1897-568; *1899-607,810; 1900-928; 1903-250; 1916-275;
*1924-253; 1925-304,361
EMPR FIELDWORK 1987, pp. 81-91
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p.171; *96, p. 382
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/28 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 015** NATIONAL MINERAL INVENTORY: 092B12 Cu1

NAME(S): **KING SOLOMON (L.17G)**, LEE'S WORKINGS, KOKSILAH

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 40 42 N NORTHING: 5391935
LONGITUDE: 123 42 01 W EASTING: 448451
ELEVATION: 230 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Crown grant Lot 17G, about 5 kilometers to the northwest of Shawnigan Lake (Assessment Report 13997).

COMMODITIES: Copper Silver Zinc

MINERALS
SIGNIFICANT: Pyrrhotite Chalcopyrite Pyrite Sphalerite Galena Tetrahedrite
COMMENTS: Later, more comprehensive reports make questionable the presence of galena, tetrahedrite, magnetite, diopside and garnet.
ALTERATION: Epidote Garnet Diopside
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Massive Podiform
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn K02 Pb-Zn skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

LITHOLOGY: Chert
Marble
Basaltic Cherty Tuff
Limestone
Porphyritic Dacite
Rhyolite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

CAPSULE GEOLOGY

The area is underlain predominantly by bedded chert and cherty basaltic tuffs of the Mississippian to Pennsylvanian Fourth Lake Formation (formerly the Sediment-Sill Unit of Muller), Buttle Lake Group. These are overlain by limestone, bedded chert and cherty tuff of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (formerly the Buttle Lake Formation). Between the Mount Mark and Fourth Lake formations, and above the Mount Mark Formation, are packages of mainly basaltic rock, of unknown affinity. These Paleozoic rocks are intruded by numerous dykes of feldspar-porphyritic dacite and rhyolite and part of the granodioritic "Koksilah" stock of the Early to Middle Jurassic Island Plutonic Suite (formerly called Island Intrusions).

The Upper King Solomon mine workings (Lee's upper workings) consist of an inclined shaft (55 degrees northeast) which connects to a 24 metre long adit driven from the south. Mineralization is reported to consist of pyrite and chalcopyrite occurring in fractures in chert and marble, and disseminated in the marble, forming 15 per cent of the rock within the mineralized zone. The interbedded chert and marble occur within the Mount Mark Formation. It is complexly folded and faulted, but may dip from 40 to 60 degrees to the northeast overall. A trench leading to the portal of the adit exposes intrusive rock in complex contact with chert to the northeast. The intrusive consists of grey, feldspar-mafic porphyritic dacite. The cut exposes complexly interlayered, shattered, faulted and weathered epidote skarn. The epidote occurs in layers up to 1.5 metres thick.

The Middle King Solomon mine workings (Lee's lower workings),

CAPSULE GEOLOGY

located 150 metres northwest of the upper workings, consist of an adit driven easterly 34 metres and several cuts into a gossanous outcrop. The mineralization is found as a massive sulphide replacement occupying a shear zone; the adit is driven through the 6.1 metre thick sulphide body that strikes 030 degrees and dips 35 degrees to the southeast. The north wall of a trench leading to the portal cuts through intrusive rock consisting of altered rhyolite. The mineralization occurs at or near the base of the Mount Mark Formation in a succession of very strongly fractured, faulted and folded, bedded cherty basaltic tuffs, chert, interbedded limestone and interlayered skarn. The tuff is strongly epidote altered. Pyrrhotite is the most abundant sulphide and occupies the centre of the zone with an increase in pyrite toward the upper and lower boundaries. Chalcopyrite is found only in small amounts, apparently in greatest abundance near the footwall. Pyrite occurs as replacements in the country rock away from the ore zone. The gangue in the ore zone generally consists of dark, silicified gouge.

Some reports also record the presence of magnetite, minor sphalerite, galena and some tetrahedrite, associated with garnet-epidote-diopside skarn.

Production, reported for the years 1904, 1905 and 1907, totalled 254 tonnes of ore, from which 6,345 ounces of silver and 17,974 kilograms of copper were recovered (Mineral Policy data).

BIBLIOGRAPHY

EMPR AR 1904-253; 1905-216; 1907-155; 1908-164; 1909-278; 1916-312; 1923-272; 1928-363; 1959-140; 1960-116
EMPR ASS RPT *13997
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
EMPR PF (Detailed Data on the Copper Property Known as the King Solomon Mines, author unknown, circa 1920 to 1930; *Report on the King Solomon Mines by H.G. Humes, Jan.2, 1932; Preliminary Report on the Kinsol Group by McDougall, B.W.W., 1956; Diamond Drill Hole Records, 1956; Various geological, geophysical, plan and survey maps of the King Solomon property, late 1950's; Cellardor Mines Ltd. report by D.C. Malcolm, undated; Prospectus by Cellardor Mines Ltd., February 1960)
EMR MP METAL CONTROLLER FILE 167-C3-2-26
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; *96, p. 372
GSC P 72-44; 75-1A, p. 23; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
*Kirkham, R.V. (1960): The Geology of the King Solomon and Bluebell Claims of the Cellardor Mines Ltd., Unpublished B.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/11/01 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 016**

NATIONAL MINERAL INVENTORY:

NAME(S): **MELORE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 48 24 N
LONGITUDE: 123 55 51 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 500 metres north of Highway 18, about 15 kilometres west of Duncan (Assessment Report 18908).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5406382
EASTING: 431654

COMMODITIES: Rhodonite, Manganese, Gemstones

MINERALS
SIGNIFICANT: Rhodonite, Pyrolusite
ALTERATION: Pyrolusite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Metamorphic, Sedimentary, Epigenetic, Industrial Min.
TYPE: J03 Mn veins and replacements; Q02 Rhodonite
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 3 Metres
STRIKE/DIP: 043/62N
TREND/PLUNGE:
COMMENTS: Rhodonite veins are 2 to 3 metres wide, strike 040 to 045 degrees and dip 60 to 65 degrees north.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Carboniferous	Buttle Lake	Fourth Lake	

LITHOLOGY: Andesitic Tuff
Cherty Tuff
Andesite
Dacite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Melore showing occurs near the west-northwest trending geological contact of the Devonian Nitinat Formation (Sicker Group) and the Mississippian to Pensylvanian Fourth Lake Formation (Buttle Lake Group), (Open File 1988-8). Several hundred metres to the north, Fourth Lake Formation rocks form a west-northwest trending contact with granodiorite of the Early to Middle Jurassic Island Plutonic Suite (formerly called Island Intrusions).

Two rhodonite/pyrolusite "veins", striking 040 to 045 degrees and dipping 60 to 65 degrees west, occur within bedded andesite tuffs (cherty tuff?) (Nitinat Formation?) some 20 metres apart. The veins are 2 and 3 metres wide and extend approximately 5 metres each between two 120- degree striking, 30-degree north dipping shear zones. Approximately 25 per cent of each vein is rhodonite and the remainder is pyrolusite.

Another rhodonite occurrence is located about 1 kilometre to the north-northwest of the above showing in an area of dacitic rock. It occurs mostly as jagged boulders between 0.5 and 1 metre in diameter. This area has been disturbed by the construction of a forest access road.

BIBLIOGRAPHY

EMPR ASS RPT *18908
EMPR BULL 37
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8
EMPR PF (Commodity File) - (Sargent, H. (1956): Manganese Occurrences in British Columbia; Leaming, S.F. (1966): Rhodonite in British

BIBLIOGRAPHY

Columbia, The Canadian Rockhound; Danner, W.R. (1975): Gem Materials of British Columbia, Montana Bureau of Mines and Geology, Special Publication 74)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 72-53; 75-1A, p. 23; 79-30
Cowley, P. (1979): Correlation of Rhodenite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia

DATE CODED: 1990/06/19 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/08/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 017** NATIONAL MINERAL INVENTORY:

NAME(S): **BONNER'S QUARRY**, COBBLE HILL (L.12)

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 41 15 N NORTHING: 5392896
LONGITUDE: 123 36 32 W EASTING: 455186
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of quarry (Bulletin 40, page 44).

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 120 x 30 Metres STRIKE/DIP: 140/80W TREND/PLUNGE:
COMMENTS: Bedding strikes 140 degrees and dips steeply southwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone
Black Chert

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: Located at the southeast end of the Cowichan uplift.

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1956
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	40.9000	Per cent

COMMENTS: Across 12.2 metre quarry face. Grade for CaO.
REFERENCE: Bulletin 40, page 45, sample 3.

CAPSULE GEOLOGY

Bonner's Quarry is located 400 metres west of the Cobble Hill Station of the E & N Railway on Lot 12, 35 kilometres northwest of Victoria.

The quarry is developed in a limestone bed of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (previously Buttle Lake Formation, Sicker Group). The bed, 30 metres thick, has been traced along strike for at least 120 metres. The limestone is underlain by black chert, which strikes 140 degrees and dips steeply southwest on the east side of the quarry. Conodonts from this quarry indicate a Pennsylvanian to early Permian age (Geological Survey of Canada Map 1553A).

The deposit varies from a fine-grained, greenish grey, dolomitic limestone to a coarse-grained, high calcium, bioclastic limestone containing abundant organic fragments and pebbles in a fine-grained matrix. Nodules and irregular masses of chert are sometimes present. Several thin sections displayed numerous crinoid discs and echinoid spines(?), some bryozoan structures and shell fragments in a fine-grained, argillaceous calcite cement that has been partially replaced by dolomite.

A chip sample taken in 1956 across the 12.2-metre long quarry face contained 40.9 per cent CaO, 8.46 per cent MgO, 5.0 per cent insolubles, 0.76 per cent R2O3, 0.42 per cent Fe2O3, 0.09 per cent

CAPSULE GEOLOGY

MnO, 0.04 per cent P2O5, 0.09 per cent sulphur, 40.8 per cent ignition loss and 0.12 per cent water (Bulletin 40, page 45, Sample 3).

Limestone was produced periodically from a single quarry between 1953 and 1982.

BIBLIOGRAPHY

EMPR AR 1947-218; 1953-193;; 1954-183; 1955-197
EMPR BULL *23, pp. 54,55; *40, pp. 44-45
EMPR OF 1992-18, pp. 19-20
EMPR PF (Maps, Letters, Assays, 1982)
GSC MAP 42A; 1386A; 1553A
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30, p. 8
Lockie, D.A. (1957): A Petrographic Analysis of Some Limestones of Southwestern British Columbia, U.B.C. Unpublished B.A. Thesis

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 018**

NATIONAL MINERAL INVENTORY:

NAME(S): **COBBLE HILL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 41 00 N
LONGITUDE: 123 36 48 W
ELEVATION: 260 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of limestone outcrop (Bulletin 40, page 44).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5392436
EASTING: 454856

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone
DIMENSION: 30 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Bedding dips gently north, limestone is at least 30 metres thick.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone
Chert
Argillite
Tuff

HOSTROCK COMMENTS: The Mount Mark Formation is Upper Pennsylvannian to Lower Permian in age.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located at the southeast end of the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Cobble Hill showing is located on Lot 11, 800 metres west-southwest of Cobble Hill Station on the E & N Railway, 35 kilometres northwest of Victoria.

Limestone, at least 30 metres thick, of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (previously Buttle Lake Formation, Sicker Group) is exposed over a small area. The limestone, and associated chert, argillite and tuff, dip gently north. The limestone is similar to that of Bonner's Quarry (092B 018), about 400 metres to the east, containing numerous crinoid and shell fragments.

BIBLIOGRAPHY

EMPR BULL *23, pp. 54,55; *40, pp. 44-45
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30, p. 8

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 019** NATIONAL MINERAL INVENTORY:

NAME(S): **RAYMOND**, COBBLE HILL

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 40 34 N NORTHING: 5391650
LONGITUDE: 123 38 31 W EASTING: 452743
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quarry (NTS Map 92B/12).

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Silica
COMMENTS: Occurs as chert beds in limestone.
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Regular
MODIFIER: Faulted
DIMENSION: 670 x 150 Metres STRIKE/DIP: 070/45W TREND/PLUNGE:
COMMENTS: Attitude of chert beds in limestone; dimension of lens.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone
Cherty Argillite
Tuffaceous Sediment/Sedimentary
Volcanic Flow

HOSTROCK COMMENTS: The Mount Mark Formation is Upper Pennsylvannian to Lower Permian in age.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: Located at the southern end of the Cowichan uplift.

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1945
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	53.5000	Per cent

COMMENTS: Average of 3 samples taken across 36.6 metres of the quarry face. Grade is for CaO.
REFERENCE: Bulletin 37, page 55.

CAPSULE GEOLOGY

The Raymond deposit is located 3 kilometres west-southwest of Cobble Hill Station on the E & N Railway, 35 kilometres northwest of Victoria.

The deposit consists of a 670 metre long, northeast trending limestone lens of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (previously the Buttle Lake Formation, Sicker Group). The limestone is unconformably overlain to the northwest by Upper Triassic Karmutsen Formation (Vancouver Group) mafic flows and underlain to the southeast by cherty argillite and tuffaceous sediments of the Mississippian to Permian Buttle Lake Group. The lens is up to 150 metres thick near its south end, where it is truncated by a northwest trending fault that brings Karmutsen volcanics in contact with the limestone. The deposit gradually thins

CAPSULE GEOLOGY

to the northeast, eventually pinching out between the volcanics and sediments. Chert beds within the highly jointed limestone strike 070 degrees and dip 45 degrees northwest and the underlying sediments strike 060 degrees and dip 35 degrees northwest.

The deposit is composed of fine to coarse-grained, light grey, calcium to high calcium limestone that is commonly veined with white calcite. In thin section the rock is composed mainly of crinoid fragments, bryozoa remains and possibly radiolaria in a partially recrystallized, dense, calcite cement. A series of discontinuous, light coloured chert beds 2.5 to 10 centimetres thick and 0.15 to 0.91 metres apart occur in the upper portion. Similar but less abundant chert beds are present near the lower contact. The limestone commonly contains less than 1 per cent magnesia (MgO). Three chip samples, each 12.2 metres long, taken in succession along a quarry face in 1945 averaged 53.5 per cent CaO, 0.35 per cent MgO, 3.3 per cent insolubles, 0.21 per cent R2O3. 0.19 per cent Fe2O3, 0.04 per cent P2O5 and 42.37 per cent ignition loss (Bulletin 23, page 55).

Between 1886 and 1896 limestone was produced from two small pits on the northeast end of the deposit. Between 1953 and 1979 11,794,107 tonnes of limestone was produced from the southeast end of the deposit. The remaining 950-metre long quarry is now flooded.

BIBLIOGRAPHY

EMPR AR 1911-207; 1953-193; 1954-183; 1955-96,97; 1956-154; 1957-90; 1958-88,90; 1959-154,176; 1960-137,147,148; 1961-142,150; 1962-149,156; 1963-140,146; 1964-182,183,187; 1965-261,268; 1966-262, 269; 1967-301,310; 1968-298,320
EMPR BULL *23, pp. 55,56; 40, pp. 45,46
EMPR GEM 1969-386,396; 1970-495,499; 1971-458,464; 1972-582,599; 1973-542,547,548; 1974-382
EMPR MINING 1975-1980 p. 45; 1981-1985 p. 63; 1986-1987 p. 89; 1988 p. 89
EMPR OF 1992-18, pp. 19, 21
GSC MAP 42A; 1386A; 1553A
GSC MEM 96, pp. 106,107,395,396
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30, p. 8
CANMET REPORT 811, p. 132
Lockie, D.A. (1957): A Petrographic Analysis of Some Limestones of Southwestern British Columbia, U.B.C. Unpublished B.A. Thesis

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092B 020** NATIONAL MINERAL INVENTORY:

NAME(S): **PARSONS BRIDGE**, ESQUIMALT HARBOUR

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B06W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 27 12 N NORTHING: 5366790
LONGITUDE: 123 27 31 W EASTING: 466091
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Limestone outcrop (Geological Survey of Canada Map 1553A) at the head of Esquimalt Harbour.

COMMODITIES: Limestone Iron Copper

MINERALS
SIGNIFICANT: Calcite Magnetite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone
DIMENSION: 60 x 30 Metres STRIKE/DIP: 015/ TREND/PLUNGE:
COMMENTS: Limestone lens strikes 360 to 030 degrees and dips steeply.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Wark Gneiss

ISOTOPIC AGE: 163 to 182 Ma
DATING METHOD: Potassium/Argon

LITHOLOGY: Limestone
Gneiss
Granitic Intrusive

HOSTROCK COMMENTS: Isotopic age from GAC Fieldtrip Guidebook, Trip 7 - Muller, J.E. (1977): Geology of Vancouver Island (indicates latest metamorphism).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: PARSONS BRIDGE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1946
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	53.4500	Per cent

COMMENTS: Across 36.6 metres. Grade for CaO.
REFERENCE: Bulletin 23, page 99.

CAPSULE GEOLOGY

The Parsons Bridge deposit is located 300 metres southwest of Parsons Bridge on the east side of Highway 1A at the head of Esquimalt Harbour.

A steeply dipping limestone lens, 30 metres wide, strikes 360 to 030 degrees for 60 metres in the Mesozoic and/or Paleozoic Wark Gneiss. The Wark Gneiss is thought to be the metamorphic equivalent of a mafic unit of either the Paleozoic Sicker Group or the Upper Triassic Karmutsen Formation (Vancouver Group), the latest metamorphism having taken place in the Jurassic. The lens is bounded to the east and southeast by a granitic intrusive and is intruded by greenstone dykes.

The limestone is fine grained, bluish grey and high calcium in composition. Two 18.3 metre long chip samples taken in succession across the quarry face and the adjacent slope averaged 53.45 per cent CaO, 1.07 per cent MgO, 2.25 per cent insolubles, 0.415 per cent R2O3, 0.325 per cent Fe2O3, 0.015 per cent MnO, 0.012 per cent P2O5, 0.0695 per cent sulphur and 42.4 per cent ignition loss (Bulletin 40, page 91).

Limestone was initially quarried here in 1912 and continued from 1917 to 1922 and 1938 to 1941. Between 1917 and 1941, 7,694 tonnes

CAPSULE GEOLOGY

of limestone were quarried.
In 1907 and 1908, the Silica Brick and Lime Co. produced over 4 million lime-silica bricks from this area.

BIBLIOGRAPHY

EMPR AR *1907-23,155; 1908-25,166
EMPR BULL *23, pp. 98,99; *40, p. 91
EMPR OF 1992-18, pp. 48,49-50
EMPR P 1993-23
EMPR PF (Production Record 1917-1941)
GSC MAP 1553A
GSC MEM 13, p. 197; 36, pp. 43,133,134
GSC OF 463
CANMET REPORT 811, Part 5, pp. 132,142
GAC FIELD TRIP GUIDEBOOK, Trip 7 - Muller, J.E. (1977): Geology of Vancouver Island
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 63

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 021**

NATIONAL MINERAL INVENTORY:

NAME(S): **WRIGGLESWORTH LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 31 13 N
LONGITUDE: 123 34 32 W
ELEVATION: 380 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Limestone outcrop (Geological Survey of Canada Map 42A).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5374289
EASTING: 457500

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 400 x 107 Metres STRIKE/DIP: TREND/PLUNGE: 325/
COMMENTS: Limestone bed trends northwest for 400 metres and is up to 107 metres thick at the northwest end.

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Colquitz Gneiss
ISOTOPIC AGE: 163 to 182 ma			
DATING METHOD: Potassium/Argon			
Paleozoic-Mesozoic			Wark Gneiss
ISOTOPIC AGE: 163 to 182 Ma			
DATING METHOD: Potassium/Argon			

LITHOLOGY: Limestone
Gneissic Greenstone
Gneiss

HOSTROCK COMMENTS: The isotopic age date indicates the time of the latest metamorphism (GAC Field Trip Guidebook - Trip 7, Muller, 1977).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP:
COMMENTS: Hosted within the Colquitz-Wark Gneiss Complex.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1956
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	54.5000	Per cent

COMMENTS: Taken across 107 metres near northwest end of band. Grade is for CaO.
REFERENCE: Bulletin 40, page 90.

CAPSULE GEOLOGY

The Wrigglesworth Lake showing is located just west of the lake on the southwest corner of Lot 8, 20 kilometres northwest of Victoria.

A band of limestone extends northwest from the southwest corner of Wrigglesworth Lake for 400 metres. The band varies in width from 76 metres at its southeast end to 107 metres at its northwest end. The Malahat fault truncates the southeast end of the band, bringing interbedded ribbon cherts, slates and tuffs of the Jurassic to Cretaceous Leech River Comoplex (Formation) into contact with the limestone. The band is bounded to the southwest by gneissic greenstone of the Colquitz Gneiss and to the northeast by outcrops of the Wark Gneiss. The Wark and Colquitz gneisses are thought to be metamorphic equivalents of mafic and silicic units of the Paleozoic

CAPSULE GEOLOGY

Sicker Group, respectively; the latest metamorphism took place in the Jurassic. A few mafic dykes intrude the limestone.

The limestone is comprised of fine to medium-grained, dark grey to white limestone. Scattered small lenses of chert are present. A chip sample taken across 107 metres of limestone near the northwest end of the band contained 54.5 per cent CaO, 0.44 per cent MgO, 1.50 per cent insolubles, 0.16 per cent R2O3, 0.07 per cent Fe2O3, 0.006 per cent MnO, 0.009 per cent P2O5, 0.01 per cent sulphur, 43.3 per cent ignition loss and 0.11 per cent water (Bulletin 40, page 90).

BIBLIOGRAPHY

EMPR AR 1911-207,209
EMPR BULL *40, pp. 89,90
EMPR OF 1992-18, pp. 48, 49
GSC MAP 1553A
GSC MEM 96, pp. 106,107,396
GSC OF 463
GAC FIELD TRIP GUIDEBOOK Trip 7 - Muller, J.E. (1977): Geology of Vancouver Island

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 022** NATIONAL MINERAL INVENTORY:

NAME(S): **MALAHAT**, JEFFORD

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 32 41 N NORTHING: 5377026
LONGITUDE: 123 36 36 W EASTING: 454978
ELEVATION: 380 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Outcrop (Bulletin 40, page 88).

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone
DIMENSION: 300 x 76 Metres STRIKE/DIP: 100/62S TREND/PLUNGE:
COMMENTS: Dip is 45 to 80 degrees south. The limestone lens extends for 300 metres and is up to 76 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic			Colquitz Gneiss
ISOTOPIC AGE: 163 to 182 Ma			
DATING METHOD: Potassium/Argon			
Paleozoic-Mesozoic			Wark Gneiss
ISOTOPIC AGE: 163 to 182 ma			
DATING METHOD: Potassium/Argon			

LITHOLOGY: Limestone
Gneiss

HOSTROCK COMMENTS: The isotopic age indicates the time of the latest metamorphism (GAC Field Trip Guidebook - Trip 7, Muller, 1977).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Hosted within the Colquitz-Wark Gneiss Complex.

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1956
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	54.1000	Per cent

COMMENTS: Taken across 51.8 metre long quarry face. Grade is for CaO.
REFERENCE: Bulletin 40, page 89.

CAPSULE GEOLOGY

The Malahat deposit is located 1 kilometre northwest of Devereux Lake, near the northwestern edge of Lot 201, 24 kilometres northwest of Victoria.

A limestone lens extends northwest from the north end of a small lake for 300 metres. The lens strikes 100 degrees and dips 45 to 80 degrees south. Exposed widths vary from 18 metres on the southeast end to 76 metres on the northwest end. The lens terminates to the northwest in a series of 6 metre high bluffs. The limestone appears to continue underneath the lake, to the southeast. The lens is bounded to the southeast by the Colquitz Gneiss; the Wark Gneiss lies to the northeast. The Wark and Colquitz gneisses are thought to be metamorphic equivalents of mafic and silicic units of the Paleozoic Sicker Group, respectively; the latest metamorphism took place in the Jurassic. The limestone is intruded by a few mafic dykes up to a metre wide that tend to parallel the strike of the lens.

The lens consists of fine to medium-grained, dark bluish grey to

CAPSULE GEOLOGY

white limestone containing the occasional film of white siliceous material. A chip sample taken across a 51.8 metre long quarry face in 1956 contained 54.1 per cent CaO, 0.24 per cent MgO, 2.3 per cent insolubles, 0.10 per cent R2O3, 0.10 per cent Fe2O3, 0.002 per cent MnO, 0.019 per cent P2O5, 0.03 per cent sulphur, 42.8 per cent ignition loss and 0.12 per cent water (Bulletin 40, page 89, Sample 4). A total of 1,424 tonnes of limestone were produced from a single quarry between 1944 and 1950.

BIBLIOGRAPHY

EMPR BULL 23, p. 97; *40, pp. 88,89
EMPR OF 1992-18, pp. 48, 49
EMPR PF (Memorandum by J.W. McCammon to W.H. Mathews)
GSC MAP 1553A
GSC OF 463
CANMET REPORT 811, pp. 129,134-136,142
GAC FIELD TRIP GUIDEBOOK Trip 7 - Muller, J.E. (1977): Geology of Vancouver Island

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 023**

NATIONAL MINERAL INVENTORY:

NAME(S): **DEVEREUX LAKE**, MALAHAT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 32 12 N
LONGITUDE: 123 36 29 W
ELEVATION: 430 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Outcrop (Bulletin 40, page 88).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5376130
EASTING: 455114

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone
DIMENSION: 366 x 46 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone bed trends northwest for 360 metres and averages 46 metres in width.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic			Colquitz Gneiss

ISOTOPIC AGE: 163 to 182 Ma
DATING METHOD: Potassium/Argon

LITHOLOGY: Limestone
Gneiss

HOSTROCK COMMENTS: Isotopic age from GAC Fieldtrip Guidebook, Trip 7 - Muller, J.E. (1977): Geology of Vancouver Island.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE:
COMMENTS: Hosted within the Colquitz-Wark Gneiss Complex.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Devereux Lake showing is located just west of the lake, 23 kilometres northwest of Victoria.

A band of fine to medium-grained, dark grey to white limestone extends for 366 metres northwest from a point 60 metres west of the west end of Devereux Lake. The limestone, hosted in the Colquitz Gneiss is exposed over an average width of 46 metres. The band, to the northwest, doubles back around the nose of an anticline that plunges steeply northwest.

The Colquitz Gneiss is thought to be the metamorphic equivalent of a silicic unit of the Paleozoic Sicker Group, the latest metamorphism having taken place in the Jurassic.

BIBLIOGRAPHY

EMPR BULL 40, page 88
GSC MAP 1553A
GSC OF 463
GAC FIELD TRIP GUIDEBOOK Trip 7 - Muller, J.E. (1977): Geology of Vancouver Island

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 024** NATIONAL MINERAL INVENTORY:

NAME(S): **ROSEBANK**, DUNNS NOOK

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B06W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 26 36 N NORTHING: 5365679
LONGITUDE: 123 27 34 W EASTING: 466022
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quarry (Geological Survey of Canada Map 70A) on the west side of Esquimalt Harbour.

COMMODITIES: Limestone Marble Building Stone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite Chlorite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone R04 Dimension stone - marble
DIMENSION: 2000 x 400 Metres STRIKE/DIP: 110/90N TREND/PLUNGE:
COMMENTS: Dips 70 degrees southwest to 70 degrees northeast, extends for 2 kilometres and is 400 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic			Wark Gneiss

ISOTOPIC AGE: 163 to 182 Ma
DATING METHOD: Potassium/Argon

LITHOLOGY: Limestone
Greenstone
Gneiss

HOSTROCK COMMENTS: Isotopic age from GAC Fieldtrip Guidebook, Trip 7 - Muller, J.E. (1977): Geology of Vancouver Island.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located near the southern margin of the Colquitz-Wark Gneiss Complex.

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1944
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	54.7000	Per cent

COMMENTS: Sample from western quarry. Grade is for Cao.
REFERENCE: CANMET Report 811, page 142.

CAPSULE GEOLOGY

The Rosebank deposit is located on the west side of Esquimalt Harbour, 9 kilometres west of Victoria.

A band of limestone, 400 metres wide, extends westward from the shore of Esquimalt Harbour for at least 2 kilometres hosted within greenstone of the Wark Gneiss. The Wark Gneiss is possibly the metamorphic equivalent of a mafic unit of the Paleozoic Sicker Group, the latest metamorphism having taken place in the Jurassic. The limestone strikes 110 degrees and dips 70 degrees southwest to 70 degrees northeast. The limestone is extensively fractured and one distinct fracture cleavage strikes northwest and dips approximately 70 degrees northeast. Randomly orientated, greenish, mafic dykes a few centimetres to 15 metres wide are locally quite numerous.

The deposit is comprised of very fine-grained, dark bluish grey to nearly white limestone that commonly displays banding parallel to the fracture cleavage. Most of the limestone is high calcium in composition. Occasional patches and small masses of magnesian

CAPSULE GEOLOGY

limestone occur along the margins of the band and along contacts with dykes. A sample from a quarry 900 metres from Esquimalt Harbour contained 54.70 per cent CaO, 0.60 per cent MgO, 1.08 per cent SiO2, 0.44 per cent Al2O3, 0.12 per cent Fe2O3 and 0.06 per cent sulphur (CANMET Report 811, page 142, Sample 1).

Between 1912 and 1933, 218,282 tonnes of limestone were quarried. In 1933, the plant was dismantled and the property was eventually acquired by the Department of National Defense.

BIBLIOGRAPHY

EMPR AR 1906-24; 1907-23,157; 1908-25,166; 1909-25; 1910-25; *1911-28,208,209; 1912-28,199; 1913-27,292; 1914-28,387; 1915-33,291; 1916-31, 367; 1917-31,295; 1918-30,308; 1919-28; 1920-28; 1921-29; 1922-29; 1923-29; 1924-30; 1925-55; 1926-32; 1929-436; 1930-422; 1931-237; 1932-284
EMPR BULL *23, p. 99; *40, pp. 91,92
EMPR OF 1992-18, pp. 47,48
EMPR P 1993-23
GSC MAP 70A; 1553A
GSC MEM 13, pp. 63,197; 36, pp. 41-43,133,134; 96, p. 107
CANMET REPORT 452, Vol. 5, pp. 156,158,159; *811, Part 5, pp. 130-132,142
GAC FIELD TRIP GUIDEBOOK Trip 7 - Muller, J.E. (1977): Geology of Vancouver Island
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 64
Lockie, D.A. (1957): A Petrographic Analysis of Some Limestones of Southwestern British Columbia, University of British Columbia, Unpublished B.A. Thesis

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 025** NATIONAL MINERAL INVENTORY:

NAME(S): **MILLSTREAM**, HIGHLAND

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 28 54 N NORTHING: 5369963
LONGITUDE: 123 30 30 W EASTING: 462435
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Northern quarry, Lots 5 and 6.

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Wollastonite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 300 x 100 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dip varies from 40 degrees northwest to 20 degrees southeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Wark Gneiss

ISOTOPIC AGE: 163 to 182 Ma
DATING METHOD: Potassium/Argon

LITHOLOGY: Limestone
Greenstone
Gneiss

HOSTROCK COMMENTS: Isotopic age from GAC Fieldtrip Guidebook - Muller, J.E. (1977): Geology of Vancouver Island (indication of latest metamorphism).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located near the southern margin of the Colquitz-Wark Gneiss Complex.

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1946
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	52.1000	Per cent

COMMENTS: Taken at 1.5 metre intervals across 15 metres in the northern quarry. Grade is for CaO.
REFERENCE: Bulletin 40, page 90.

CAPSULE GEOLOGY

The Millstream deposit is located 2 kilometres west of Mount Finlayson on the west side of Millstream Road, 13 kilometres west-northwest of Victoria.

A lens of fine-grained, banded, partly recrystallized limestone, 100 metres long and 300 metre wide, is hosted within greenstone of the Wark Gneiss. The Wark Gneiss is possibly the metamorphic equivalent of a mafic unit of the Paleozoic Sicker Group, the latest metamorphism having taken place in the Jurassic. The banding dips from 40 degrees northwest to 20 degrees southeast. Irregular lenses and masses of white weathering wollastonite are reported to occur in the limestone.

A chip sample taken at 1.5-metre intervals across 15 metres in the northern quarry, contained 52.1 per cent CaO, 3.08 per cent MgO, 0.5 per cent insolubles, 0.04 per cent R2O3, 0.200 per cent Fe2O3, 0.004 per cent MnO, 0.013 per cent P2O5, 0.025 per cent sulphur, 43.8 per cent ignition loss and 0.14 per cent water (Bulletin 40, page 90).

Limestone was produced from two quarries 320 metres apart, prior to 1908 but no figures are available.

BIBLIOGRAPHY

EMPR AR 1908-166
EMPR BULL *23, pp. 97,98; *40, p. 90
EMPR IND MIN FILE (Cummings, J.M. (1937): Possibilities for Manufacture of Mineral Wool, p. 11)
EMPR OF 1992-18, p. 48
GSC MAP 1553A
GSC MEM 13, p. 197; 96, pp. 105,106,108,395,396
GSC OF 463
GAC FIELD TRIP GUIDEBOOK Trip 7 - Muller, J.E. (1977): Geology of Vancouver Island

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 026** NATIONAL MINERAL INVENTORY:

NAME(S): **ATKINS ROAD**, ATKINS SIDING, LANGFORD, COLWOOD LIME KILN

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B06W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 26 57 N NORTHING: 5366334
LONGITUDE: 123 28 29 W EASTING: 464896
ELEVATION: 75 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Outcrop (Geological Survey of Canada Map 1553A).

COMMODITIES: Limestone Aggregate Building Stone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite Muscovite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone
COMMENTS: Banding in the limestone dips west.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Wark Gneiss

ISOTOPIC AGE: 163 to 182 Ma
DATING METHOD: Potassium/Argon

LITHOLOGY: Limestone
Gneiss

HOSTROCK COMMENTS: Isotopic age from GAC Fieldtrip Guidebook, Trip 7 - Muller, J.E. (1977): Geology of Vancouver Island (indicates age of metamorphism).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located near the southern margin of the Colquitz-Wark Gneiss Complex.

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1946
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	55.2000	Per cent

COMMENTS: Taken across 18 metres at 1.8 metre intervals from the north exposure. Grade is for CaO.
REFERENCE: Bulletin 40, page 91.

CAPSULE GEOLOGY

The Atkins Road deposit is located along Atkins Avenue, adjacent to the E & N Railway, 1.4 kilometres east of Langford Station and 9 kilometres west of Victoria.

The deposit consists of a mass of limestone hosted in the Wark Gneiss. The Wark Gneiss is possibly the metamorphic equivalent of a mafic unit of either the Paleozoic Sicker Group or the Upper Triassic Karmutsen Formation (Vancouver Group); the latest metamorphism took place in the Jurassic. The limestone, up to 60 metres wide, outcrops for 200 to 300 metres along both sides of the road and railway. The limestone is cut by a few contorted diabase dykes and banding dips west. A thick deposit of glaciofluvial sand and gravel partially covers the limestone.

The limestone is fine grained, light bluish grey and lightly banded and is generally high in calcium. A few small masses of dolomite are exposed in the west face of a quarry south of the road and railway. A chip sample taken at 1.8-metre intervals across 18 metres in a small pit north of Atkins Avenue contained 55.2 per cent CaO, 0.11 per cent MgO, 0.6 per cent insolubles, 0.08 per cent R2O3,

CAPSULE GEOLOGY

0.087 per cent Fe2O3, 0.010 per cent MnO, 0.014 per cent P2O5, 0.017 per cent sulphur, 43.6 per cent ignition loss and 0.14 per cent water (Bulletin 40, page 91).

Limestone was produced from three small quarries on the north side of the road and railway and one larger quarry on the south side. Production figures from this occurrence are not available.

BIBLIOGRAPHY

EMPR AR 1907-155-157,160; 1908-25,166; 1912-199
EMPR BULL *23, p. 98; *40, pp. 90,91
EMPR OF 1992-18, pp. 48-49
EMPR P 1993-23
GSC MAP 1553A
GSC MEM 13, p. 197; 36, pp. 42,43,134
CANMET REPORT *811, Part 5, pp.132,142
GAC FIELD TRIP GUIDEBOOK Trip 7 - Muller, J.E. (1977): Geology of Vancouver Island
Lockie, D.A. (1957): A Petrographic Analysis of Some Limestones of Southwestern British Columbia, University of British Colulmbia, Unpublished B.A. Thesis

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 027**

NATIONAL MINERAL INVENTORY: 092B13 Mn1

NAME(S): **HILL 60**, STRIKER, HILL 60 NO.1 (L.12G), HILL 60 NO.2 (L.13G)

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 49 31 N
LONGITUDE: 123 58 40 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Common boundary of Crown grant Lots 12G and 13G.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5408494
EASTING: 428234

COMMODITIES: Rhodonite Gemstones Manganese Copper

MINERALS

SIGNIFICANT: Rhodonite Jasper Pyrolusite Chalcopyrite Bornite
ASSOCIATED: Quartz Calcite Rhodochrosite Spessartine Garnet
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Podiform Stratiform
CLASSIFICATION: Metamorphic Sedimentary Epigenetic Industrial Min.
TYPE: Q02 Rhodonite F01 Sedimentary Mn
DIMENSION: 33 x 6 Metres STRIKE/DIP: 080/70S TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

LITHOLOGY: Tuffaceous Chert
Jasper
Chert

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1918
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Manganese	37.5000	Per cent

COMMENTS: An average ore sample.
REFERENCE: Minister of Mines Annual Report 1918, page 297.

CAPSULE GEOLOGY

The Hill 60 manganese deposit, mined by open pit in 1919 and 1920, is underlain by tuffaceous cherts of the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group (formerly the upper part of Muller's Myra Formation (Sediment-Sill Unit)). Several hundred metres to the north of the deposit, the Fourth Lake rocks form a west-northwest trending contact with granodiorite of the Early to Middle Jurassic Island Plutonic Suite (formerly called the Island Intrusions). Several hundred metres to the south, they form a west-northwest trending geological contact with volcanics of the Devonian Nitinat Formation, Sicker Group (Open File 1988-8). The tuffaceous cherts are intruded by large masses of gabbro (informally called the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation, Vancouver Group.

The rocks associated with the manganese occurrence are thinly banded, green, cream and red tuffaceous cherts locally containing lens of massive red jasper. These rocks are cut by a few mafic dykes near the Hill 60 workings.

The manganese ore outcropped for a distance of 33 metres at a strike of 080 degrees and a dip of about 70 degrees to the southeast, along the crest of the hill. Both strike and dip of the ore conform with the bedding of the country rock. The ore consisted mainly of a mixture of hard, compact oxides of manganese (pyrolusite), grading from highly siliceous material along the walls (rhodonite) to a relatively pure oxide at the centre of the orebody. The central

CAPSULE GEOLOGY

portion of highly oxidized ore was about 6.5 metres across and 4.6 metres in depth. An average sample of the deposit was reported to contain 37.5 per cent manganese (Minister of Mines Annual Report 1918, page 297).

The rhodonite varies in colour from pink to watermelon red. It is predominantly massive with minor irregular-shaped masses of quartz and the yellow manganese garnet, spessartite. Toward the periphery of the deposit, these three minerals occur in parallel bands, with quartz predominant. Rare fragments of green chert occur in the rhodonite. Chalcopyrite and bornite occur as disseminations in the rhodonite and jasper. Numerous veins of quartz and fracture-fillings of paler pink rhodonite cut the rhodonite lens. Fault gouge occurs along the contact between the rhodonite and the country rock. Thin section and x-ray diffraction analysis confirm the presence of calcite, rhodochrosite, quartz and rhodonite in the gouge.

Thin lenses of rhodonite are present in the tuffaceous cherts approximately along strike from this deposit but not continuous with it.

The deposit was discovered in 1918, and in 1919 and 1920, 1059 tonnes of ore yielded about 529,000 kilograms of manganese. The ore mined in 1919 was reported to average 50 per cent manganese and 19 per cent silica (Minister of Mines Annual Report 1919, page 237). Around 1985, an unknown quantity was mined by Earl Jacques for jewellery and carvings (Z.D. Hora, personal communication, 1991).

BIBLIOGRAPHY

EMPR AR 1918-296; 1919-237; 1924-368
EMPR ASS RPT 18871
EMPR BC METAL MM00236
EMPR BULL *37, pp. 67,68
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR INDEX 3-200
EMPR MAP 65 (1989)
EMPR Mineral Potential Map 1992-3
EMPR OF 1988-8; 1992-1; 1992-9
EMPR PF (Report by Turner, 1918; Sargent, 1939; Various plans and maps; Commodity File - (Sargent, H. (1956): Manganese Occurrences in British Columbia; Leaming, S.F. (1966): Rhodonite in British Columbia, The Canadian Rockhound; Danner, W.R. (1975): Gem Materials of British Columbia, Montana Bureau of Mines and Geology, Special Publication 74))
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 64-37, p. 19; 72-44; 72-53; 75-1A, p. 23; 79-30
CAN ROCKHOUND Internet Magazine, Summer 1997, Vol. 1, No. 3; Rockhounding on Vancouver Island
WWW http://canadianrockhound.com/summer97/cr9701308_vancouver_island.html
Cowley, P. (1979): *Correlation of Rhodonite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 94-95
Munition Resources Commission of Canada, *1920, pp. 90-92

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROSE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 53 01 N
LONGITUDE: 123 48 52 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located within 500 metres to the east of Holyoak Creek, about 2.25 kilometres upstream from the creek's mouth in Chemainus River (Location map in Property File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5414837
EASTING: 440291

COMMODITIES: Mica Sericite

MINERALS
SIGNIFICANT: Mica Sericite
ASSOCIATED: Graphite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Metamorphic

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Carboniferous	Buttle Lake	Fourth Lake	

LITHOLOGY: Sericite Schist
Graphitic Schist

HOSTROCK COMMENTS: Probably McLaughlin Ridge Formation rocks.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

CAPSULE GEOLOGY

The Rose occurrence is located in an area underlain mainly by volcanic rocks of the Late Devonian McLaughlin Ridge Formation (Sicker Group) and by sediments of the Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group). The local stratigraphy is disrupted by folding, faulting, (pre-Triassic as well as Late Tertiary) and the intrusions of gabbro and diabase sills and dykes (informally called the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation.

Most of the original rock textures and structures have been obliterated by extensive faulting, shearing and polyphase deformation, resulting in the formation of cataclastic schists. About 70 metres of sericite and graphitic schists, as well as non-schistose argillite have been exposed along the north side of a road. In the rocks a strongly developed schistosity strikes 065 degrees and dips 79 degrees north (Minister of Mines Annual Report 1965, page 268).

BIBLIOGRAPHY

EMPR AR *1965-268
EMPR FIELDWORK 1979, pp. 49-51
EMPR IND MIN FILE (Mica Occurrences in BC (in Ministry Library))
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/03 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 029**

NATIONAL MINERAL INVENTORY: 092B13 Fe1

NAME(S): **LADY A (A ZONE)**

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 55 26 N
LONGITUDE: 123 57 10 W
ELEVATION: 540 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located to the immediate west of Chipman (Boulder) Creek, 3 kilometres due west from the top of Coronation Mountain (Property File, Map A).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5419432
EASTING: 430206

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite
ASSOCIATED: Jasper Chalcedony Specularite
ALTERATION: Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Stratabound Layered
CLASSIFICATION: Exhalative Volcanogenic Syngenetic Industrial Min.
TYPE: G01 Algoma-type iron-formation

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Chert
Jasper

HOSTROCK COMMENTS: Stratabound taconite deposit.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: LADY A REPORT ON: Y

CATEGORY: Indicated YEAR: 1956
QUANTITY: 366000 Tonnes

COMMODITY	GRADE	
Iron	25.0000	Per cent

REFERENCE: Minister of Mines Annual Report 1956, page 135.

CAPSULE GEOLOGY

The Lady A deposits are underlain by cherty sediments of the Upper Devonian McLaughlin Ridge Formation, Sicker Group. Locally, the sediments strike northwest and dip to the northeast at 50 to 60 degrees.

The Lady A (A zone) deposit is a stratabound taconite deposit composed of grey chert and red jasper hosting bands of very fine grained magnetite with minor specularite. The deposit consists of two lenses which outcrop along strike for a distance of 105 metres, attaining widths of up to 18 metres. An average thickness, determined from drilling, is less than 9 metres. The estimated reserves are 366,000 tonnes with an average grade of 25 per cent iron (Minister of Mines Annual Report 1956, page 135).

BIBLIOGRAPHY

EMPR AR *1956-135
EMPR ASS RPT *12525, *15136, *15881
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8; *1988-28, p. 129
EMPR PF (*Report on Exploration for Iron Ore, Ladysmith Devolopment Ltd., A.F. Buckham, December 1953; Location map and plans of the deposits, 1953)
EMR MP RESFILE
GSC MAP 42A; 1386A; 1553A

BIBLIOGRAPHY

GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 112

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 030**

NATIONAL MINERAL INVENTORY:

NAME(S): **MESABI**, E.B.V., GOGEBIC

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 46 24 N
LONGITUDE: 123 32 20 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the west slope of Mount Sullivan on Saltspring Island (Assessment Report 13375, Figure 4).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5402399
EASTING: 460406

COMMODITIES: Iron, Magnetite, Gemstones

MINERALS
SIGNIFICANT: Magnetite, Hematite, Jasper
ASSOCIATED: Quartz
ALTERATION: Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Layered
CLASSIFICATION: Volcanogenic
TYPE: G01 Algoma-type iron-formation, Q05 Jasper

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

LITHOLOGY: Schist
Chert

HOSTROCK COMMENTS: Fourth Lake Formation was previously known as the Sediment-Sill Unit.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Georgia Depression
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1918
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Iron	30.0000	Per cent

REFERENCE: Minister of Mines Annual Report 1918, page 300.

CAPSULE GEOLOGY

The Mesabi taconite deposit occurs on the west slope of Mount Sullivan. The area is underlain by schistose metasediments of the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group. Bedding and schistosity in the rocks are essentially parallel; the strike is northwest and the dip 70 to 80 degrees southwest.

The mineralized zone strikes intermittently along a hillside for about 150 metres. It consists of lenticular bands of jasper, interlayered with schist containing streaks, bands and lenses of magnetite and smaller amounts hematite. Some of the ore masses are up to 45 metres long and 3 to 6 metres wide. The deposit is cut by irregular veins and stringers of white quartz. A sample of the ore assayed 30.0 per cent iron, 53.3 per cent silica and 0.2 per cent phosphorus (Minister of Mines Annual Report 1918, page 299).

BIBLIOGRAPHY

EMPR AR *1918-299; *1956-135
EMPR ASS RPT 13375
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; *96, p. 391
GSC OF 463

BIBLIOGRAPHY

GSC P 1972-44; 1975-1A, p. 23; 1979-30
CAN ROCKHOUND Internet Magazine, Winter 1997, Vol. 1, Issue 1; Mesabi, A Tale of Red Jasper by Rick Hudson; Summer 1997, Vol.1, No. 3; Rockhounding on Vancouver Island
WWW http://www.canadianrockhound.com/winter97/win97_mesabi.html; www.canadianrockhound.com/summer97/cr9701308_vancouver_island.html
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 89

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 031**

NATIONAL MINERAL INVENTORY:

NAME(S): **INVERECK**, GOLD BAR

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 30 59 N
LONGITUDE: 123 43 05 W
ELEVATION: 180 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1.3 kilometres west of the outlet of Sooke Lake (Open File 1988-19, pages 54,56).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5373946
EASTING: 446973

COMMODITIES: Talc

MINERALS

SIGNIFICANT: Talc
ASSOCIATED: Staurolite Andalusite Garnet Biotite Quartz
ALTERATION: Talc Sericite Graphite
ALTERATION TYPE: Talc Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Massive
CLASSIFICATION: Metamorphic Epigenetic Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Slate
Schist
Sandstone
Chert
Argillite
Graphitic Schist
Staurolite Schist

HOSTROCK COMMENTS: Includes staurolite-andalusite-garnet-biotite schist.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Invereck showing is found in the steep-sided Deception Gulch, 1.3 kilometres west of the outlet of Sooke Lake. The property is just west of the western boundary of Greater Victoria's watershed which includes Sooke Lake. Gravel roads access the area from Victoria, about 50 kilometres southeast.

The talc occurs in shear zones in the Jurassic to Cretaceous Leech River Complex (Formation), which includes sandstone, chert, argillite and some volcanics, metamorphosed in places, to graphitic-quartz-sericite and staurolite-andalusite-garnet-biotite schists (Fairchild, 1979). In the vicinity of the showing the rocks are mainly pelitic schists.

The talc appears to be structurally related since it occurs at the intersection of two major faults - the Survey Mountain fault that follows Deception Gulch, and the Shawnigan Lake fault that trends north through Sooke Lake. The Survey Mountain fault and the Leech River fault mark the north and south boundaries of the Leech River Complex, respectively. Potassium-argon dates of 38 to 42 million years, give the date of latest movement on the bounding faults and possibly the age of talc formation (N.W.D. Massey, personal communication, 1987).

In Deception Gulch, a 5.4 metre talc bank is excavated and a sample was analysed by the Ministry of Energy, Mines and Petroleum Resources in 1922 (in per cent):

Al203	5.8
Fe	2.8
MgO	30.4
Lime	nil
Magnesite	16.0
Gold	trace

CAPSULE GEOLOGY

Heat loss at 110 nil
Heat loss at "red heat" 17.0

The Invereck deposit is reported to be very similar in appearance to the Eagle property (092B 012), (Minister of Mines Annual Report 1922, page 257).

BIBLIOGRAPHY

EMPR AR 1922-257; 1924-256,257
EMPR ASS RPT 6907, 7536, 14552
EMPR OF 1988-8; *1988-19, pp. 53-59
EMR MIN BR OTTAWA RPT 803
GSC EC GEOL Series 2, 1926, pp. 33-37
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
Fairchild, L. (1979): The Leech River Unit & Leech River Fault, Southern Vancouver Island, British Columbia, unpublished M.Sc. Thesis, University of Washington, 170 pages

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/01/21 REVISED BY: MM FIELD CHECK: N

MINFILE NUMBER: **092B 032**

NATIONAL MINERAL INVENTORY:

NAME(S): **LONG HARBOUR**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B14W
BC MAP:
LATITUDE: 48 51 42 N
LONGITUDE: 123 27 54 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: A shale pit and roasting plant were operated at Long Harbour on the northeast coast of Saltspring Island (Minister of Mines Annual Report 1965, page 269).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5412182
EASTING: 465895

COMMODITIES: Pozzolan Shale

MINERALS
SIGNIFICANT: Shale
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive Stratiform
CLASSIFICATION: Sedimentary Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Unnamed/Unknown Formation	

LITHOLOGY: Shale

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

A mining and roasting operation commenced in 1963 on Saltspring Island in order to process rocks from a shale member of the Upper Cretaceous Nanaimo Group to produce pozzolan.

In 1965, 9,977 tonnes of shale were mined and 8,163 tonnes were milled, resulting in the production of 6,800 tonnes of pozzolan (Minister of Mines Annual Report 1965, page 269).

BIBLIOGRAPHY

EMPR AR 1953-188; *1965-269; 1966-264
EMPR BULL 30
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 24; 47; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 033**

NATIONAL MINERAL INVENTORY: 092B13 Fe1

NAME(S): **LADY A (C ZONE)**, LADY C

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 55 15 N
LONGITUDE: 123 56 48 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located within a few hundred metres to the east of Chipman (Boulder) Creek, 3 kilometres west from the top of Coronation Mountain (Property File, Map A). Mistakenly named the Lady C deposit; this deposit is actually the Lady A property, C orebody (Buckham, 1953).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5419087
EASTING: 430649

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite Hematite
ASSOCIATED: Jasper Chalcedony
ALTERATION: Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Stratabound Layered
CLASSIFICATION: Exhalative Volcanogenic Syngenetic Industrial Min.
TYPE: G01 Algoma-type iron-formation

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Chert
Jasper

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: C REPORT ON: Y

CATEGORY: Inferred YEAR: 1953
QUANTITY: 2150000 Tonnes

COMMODITY	GRADE	
Iron	18.0000	Per cent

REFERENCE: Property File - see 092B 029, Buckham, A.F., 1953.

CAPSULE GEOLOGY

The Lady A (C zone) deposit is underlain by cherty sediments of the Upper Devonian McLaughlin Ridge Formation, Sicker Group. Locally the sediments strike northwest and dip to the northeast at 50 to 60 degrees. Intruding the strata are dykes and sills of gabbro and diabase (informally called the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation, Vancouver Group.

The deposit is a stratabound taconite lens composed of grey chert and red jasper hosting bands of very fine-grained magnetite with minor hematite. The deposit outcrops along strike for a distance of 42 metres, having an apparent thickness of 12 metres. Drilling has revealed a downdip extent of at least 48 metres. A "conservative" estimate of reserves based on four drill holes put down in 1953 was reported to be 2.15 million tonnes grading 18 per cent iron (Buckham, 1953).

BIBLIOGRAPHY

EMPR AR *1956-135
EMPR ASS RPT *12525, *15136, *15881
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8; *1988-28, p. 129
EMPR PF (*Report on Exploration for Iron Ore (with drill logs), Ladysmith Devolopment Ltd., A.F. Buckham, December 1953 (in Lady A file - 092B 029); Location map and plans of the deposits, 1953

BIBLIOGRAPHY

(in Lady A File))
EMR MP RESFILE
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 034**

NATIONAL MINERAL INVENTORY:

NAME(S): **FINLAY**, PACIFIC STAR

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 40 38 N
LONGITUDE: 123 41 17 W
ELEVATION: 180 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 750 metres north of the Koksilah river, on Land Lot 18 (NTS Map 92B/12).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5391804
EASTING: 449350

COMMODITIES: Copper, Iron, Silver, Magnetite, Zinc

MINERALS

SIGNIFICANT: Magnetite, Pyrrhotite, Chalcopyrite, Pyrite, Sphalerite
ALTERATION: Diopside, Epidote, Chlorite, Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Massive, Shear
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Carboniferous	Buttle Lake	Fourth Lake	

LITHOLOGY: Limestone
Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SKARN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1985

COMMODITY	GRADE	
Silver	7.2000	Grams per tonne
Copper	0.9000	Per cent

COMMENTS: From a 1.8 metre chip sample.
REFERENCE: Assessment report 13997.

CAPSULE GEOLOGY

The Finlay showing occurs in an area where a northwest trending band of limestone has been mapped and is thought to be correlative with the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (formerly the Buttle Lake Formation), (Assessment Report 13997, Map 1). The area east and west of the band is underlain mainly by volcanics of the Mississippian to Pennsylvanian Fourth Lake Formation of the Buttle Lake Group (formerly the Sediment-Sill Unit of Muller). A small body of pyritic, feldspar porphyritic rhyolite has intruded the limestone in the area of the workings.

The showings were originally described as being mainly copper and iron minerals, with pyrite and pyrrhotite hosted in shear zones in volcanic country rock (Minister of Mines Annual Report 1919, page 240). However, the original workings were relocated in 1985 and the deposit was reported to be a skarn consisting of magnetite, pyrrhotite, chalcopyrite and sphalerite in a gangue of mainly diopside, epidote, chlorite and garnet. A 1.8-metre chip sample assayed 0.90 per cent copper and 7.0 grams per tonne silver (Assessment Report 13997).

BIBLIOGRAPHY

EMPR AR *1919-240; 1928-363
EMPR ASS RPT *13997
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8

BIBLIOGRAPHY

GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 035** NATIONAL MINERAL INVENTORY:

NAME(S): **VIVA**, EVA, ELSIE,
COMET, PACIFIC STAR

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 40 54 N NORTHING: 5392303
LONGITUDE: 123 41 49 W EASTING: 448700
ELEVATION: 320 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located adjacent the west side of the old Wallace claim (Lot 16G), (Assessment Report 13997).

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite
ASSOCIATED: Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Carboniferous	Buttle Lake	Fourth Lake	
Middle Jurassic			Island Plutonic Suite

LITHOLOGY: Chert
Skarn
Feldspar Porphyritic Dacite
Granodiorite Porphyritic Rhyolite

HOSTROCK COMMENTS: Chert host is either Mount Mark or Fourth Lake formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.3400	Per cent

COMMENTS: From a 2.3-metre chip sample.
REFERENCE: Assessment Report 13997, page 78.

CAPSULE GEOLOGY

The area is underlain predominantly by bedded chert and cherty basaltic tuffs of the Mississippian to Pennsylvanian Fourth Lake Formation (formerly the Sediment-Sill Unit of Muller), Buttle Lake Group. These are overlain by limestone, bedded chert and cherty tuff of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (formerly the Buttle Lake Formation). These Paleozoic rocks are intruded by numerous dykes of feldspar porphyritic dacite and rhyolite and part of the granodioritic "Koksilah" stock of the Early to Middle Jurassic Island Plutonic Suite (formerly called the Island Intrusions).

The Viva is a skarn deposit consisting of pods of pyrrhotite, pyrite, magnetite and chalcopyrite occurring along fractures within chert. The chert is also cut by epidote-filled fractures. A 2.3-metre chip sample assayed 0.28 per cent copper, 0.01 per cent zinc and 2.74 grams per tonne silver (Assessment Report 13997).

By 1916, a shaft 10.7 metres deep and a drift 14.6 metres long had been developed on the deposit and 217 tonnes of ore had been shipped. From this shipment, 995 grams of silver and 5,575 kilograms

CAPSULE GEOLOGY

of copper were recovered (Mineral Policy data).

BIBLIOGRAPHY

EMPR AR 1916-312; 1919-240; 1925-303; 1928-363
EMPR ASS RPT 11446, *13997
EMPR BC METAL MM00060
EMPR BULL 101, p. 143, Appendix 6
EMPR FIELDWORK 1987, pp. 81-91
EMPR INDEX 3-217
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC P 72-44; 75-1A, p. 23; 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 90-91

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/07 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 036**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROBERTSON (L.48G)**, STERLING

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 38 54 N
LONGITUDE: 123 49 41 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the centre of the Robertson Crown grant (Lot 48G), along the Koksilah River (NTS map 92B/12).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5388695
EASTING: 439009

COMMODITIES: Silver, Gold, Lead, Zinc, Copper, Molybdenum

MINERALS

SIGNIFICANT: Galena, Pyrite, Sphalerite, Chalcopyrite, Molybdenite
ASSOCIATED: Quartz, Calcite
ALTERATION: Garnet
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear, Breccia, Vein
CLASSIFICATION: Skarn, Hydrothermal, Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Karmutsen	
Paleozoic-Mesozoic			Wark Gneiss

LITHOLOGY: Volcanic Rock
Basalt
Dioritic Gneiss

HOSTROCK COMMENTS: Volcanic host may be Bonanaza Group or Karmutsen Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DUMP

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1917

COMMODITY	GRADE	
Silver	206.7100	Grams per tonne
Gold	0.6900	Grams per tonne

REFERENCE: Minister of Mines Annual Report 1917, page 270.

CAPSULE GEOLOGY

The area is underlain by argillite, greywacke, chert and diabase dykes of the Mississippian to Pennsylvanian Fourth Lake Formation of the Buttle Lake Group. Overlying this are basaltic volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group) which in turn are overlain mainly by rhyolitic to basaltic volcanics of the Lower Jurassic Bonanza Group. Contact between metamorphosed volcanics and dioritic gneiss of the Mesozoic to Paleozoic Wark Gneiss occurs close to the showing.

The Robertson showing occurs as lenses of skarn material in fissures in a shear zone within volcanic rock. The ore consists of galena, pyrite, sphalerite and minor amounts of molybdenite and chalcopyrite all in a quartz gangue mixed with breccia, garnetite and calcite.

One exposure occurs about 60 metres above the Koksilah River where a mineralized quartz vein, about 45 centimetres in width, strikes northeast and dips vertically. Another outcropping of ore occurs in the river bank, where a vein-like occurrence has been drifted on for about 9 metres. This exposure shows a quartz vein about 1 metre wide at the portal, also striking to the northeast but dipping 55 degrees to the southeast. A sample taken from the dump at the portal assayed 0.69 grams per tonne gold, 206.71 grams per tonne

CAPSULE GEOLOGY

silver and a trace of copper (Minister of Mines Annual Report 1917, page 270).

BIBLIOGRAPHY

EMPR AR *1880-431; 1915-451; *1917-269; 1928-363
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 037**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANITA**, CHEMAINUS, CHIP

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 54 26 N
LONGITUDE: 123 57 24 W
ELEVATION: 450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location is for the original Anita occurrence which is located on Boulder Creek 18.5 kilometres southwest of Ladysmith (Open File 1988-8).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5417583
EASTING: 429898

COMMODITIES: Copper, Lead, Zinc, Silver, Gold

MINERALS

SIGNIFICANT: Pyrite, Sphalerite, Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Massive, Stratiform
CLASSIFICATION: Volcanogenic, Exhalative, Syngenetic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Ash Felsic Tuff
Lapilli Tuff
Gabbro

HOSTROCK COMMENTS: The unnamed gabbro is coeval with the Karmutsen Formation (Vancouver Group) and is informally called the Mount Hall Gabbro.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1988

COMMODITY	GRADE	
Silver	73.9000	Grams per tonne
Gold	1.9000	Grams per tonne
Copper	2.3000	Per cent
Lead	0.4900	Per cent
Zinc	3.6600	Per cent

COMMENTS: From a 4.9 metre drill section.
REFERENCE: Stewart, 1990.

CAPSULE GEOLOGY

The Anita occurrence lies within the Cowichan uplift, in which the Paleozoic Sicker and Buttle Lake groups are exposed. The occurrence is underlain by felsic and mafic volcanics of the Upper Devonian McLaughlin Ridge Formation, of the Sicker Group, that trend northwest and dip steeply. The volcanic rocks are flanked on the north side by the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group (formerly the Sediment-Sill Unit of Muller). These rocks are intruded by gabbro bodies (informally known as the Mount Hall Gabbro), varying from 1 to 300 metres thick, that are coeval with the Upper Triassic Karmutsen Formation (Vancouver Group). To the south, the Sicker Group rocks are unconformably overlain by the Upper Cretaceous Nanaimo Group sediments.

The "Anita Active Tuff" is a pyritic and quartz phyric felsic ash and lapilli tuff that occurs along the southern edge of a sericitic felsic tuff package that has an outcropping exposure width of 400 to 1300 metres. A major thrust fault that is probably a splay

CAPSULE GEOLOGY

of the Fulford fault occurs immediately north of the Anita Active Tuff. Drilling in 1987 to 1990 revealed polymetallic sulphide mineralization within 10 metres of a felsic-mafic contact within the Anita Active Tuff. The southern contact of the Anita Active Tuff with mafic tuffs is called the "Anita Horizon". The Anita Horizon has been traced discontinuously by drilling over a length of 3.5 kilometres. From its western end, where it is terminated by a fault, the horizon trends southeast for 1.4 kilometres after which the remaining 2.1 kilometres is occupied by the "Anita Gabbro". This gabbro is a sill to dyke-like body that is also present to the west where it is adjacent to the 1.4 kilometre length of the horizon.

Mineralization consists of pyrite, sphalerite and chalcopyrite occurring as sparse veinlets, stringers and as polymetallic bands. The best drill intersections to date tested a strike length of 300 metres. Assay results of true widths are as follows (Stewart, 1990):

Hole	Length (metres)	Copper (%)	Lead (%)	Zinc (%)	Silver (g/t)	Gold (g/t)
87-37	2.5	2.37	0.73	2.73	46.0	0.72
88-49	4.9	2.30	0.49	3.66	73.9	1.90
88-76	4.8	0.93	0.10	3.81	20.5	0.37

The original Anita showing, which occurs along the Anita Horizon, consists of quartz lenses in schist traceable for at least 60 metres in an easterly direction. The "vein" is up to 4.5 metres wide and carries chalcopyrite and pyrite. A sample assayed 10.28 grams per tonne silver and 3.3 per cent copper (Minister of Mines Annual Report 1917, page 270).

The western end of the Coronation zone of the Lara deposit (092B 129) occurs about 1.5 kilometres southeasterly (120 degrees) from the eastern end of the Anita Horizon. The two deposits are almost along strike from each other but significant differences in their settings suggest that the horizons are not identical.

In 1999, Doublestar Resources Ltd. plans to acquire the property from Falconbridge Limited.

BIBLIOGRAPHY

EM EXPL 1999-25-32
EMPR AR 1917-270
EMPR ASS RPT 11345, 15504, *16710, 16825, 18293
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8; 1999-2
EMPR PF (*Unpublished report by Robert Stewart, Falconbridge Limited, 2 pages; Doublestar Resources Ltd., Annual Report, December 1999)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Stewart, R., Falconbridge Limited, Oct. 1990
WWW http://www.infomine.com/
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/13 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 038** NATIONAL MINERAL INVENTORY:

NAME(S): **CORNUCOPIA**, OLD GENTLEMAN, SIRIUS, PF

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 50 34 N NORTHING: 5410189
LONGITUDE: 123 39 40 W EASTING: 451493
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located "a considerable distance west of the old workings" of the Yreka group (092B 039), (Minister of Mines Annual Report 1917, page 269).

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Unknown
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Devonian			Saltspring Intrusive Suite

LITHOLOGY: Schist
Volcanic Rock
Quartz Feldspar Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell

INVENTORY

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1917
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	27.4300	Grams per tonne
Copper	2.1000	Per cent

REFERENCE: Minister of Mines Annual Report 1917, page 269.

CAPSULE GEOLOGY

The area of the Cornucopia occurrence is underlain by a belt of schists, originally volcanics, of the Upper Devonian McLaughlin Ridge Formation, Sicker Group. Intruding the country rocks is quartz feldspar porphyry of the Late Devonian Saltspring Intrusive Suite (formerly the Saltspring Intrusions).

The belt is very much sheared and fissured with some of the fissures filled with quartz carrying copper minerals. Around 1917, a prospect hole was sunk 3.6 metres deep, 3 metres long and 2.4 metres wide. A sample taken from the dump assayed 2.1 per cent copper, 27.43 grams per tonne silver and a trace of gold (Minister of Mines Annual Report 1917, page 269). About 60 metres west of the prospect hole there is a short adit driven in schist and quartz. About 120 metres west of the adit is an extensive outcropping of quartz carrying "low values".

Twenty-three tonnes of ore were produced from the Cornucopia deposit in 1960. From this production, 1,058 grams of gold and 93 grams of silver were recovered.

BIBLIOGRAPHY

EMPR AR *1917-269
EMPR ASS RPT 2397, 7233, 16029, 16319
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91

BIBLIOGRAPHY

EMPR GEM 1969-224; 1970-292; 1971-224
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/14 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 039**

NATIONAL MINERAL INVENTORY:

NAME(S): **YREKA**, SIRIUS, PF

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 50 34 N
LONGITUDE: 123 39 27 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the southeastern slope of Mount Richards, about 1 kilometre south from the eastern end of Crofton Lake (Assessment Report 2397, Map 2).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5410187
EASTING: 451758

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Devonian			Saltspring Intrusive Suite

LITHOLOGY: Volcanic Rock
Schist
Quartz Feldspar Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Yreka showing consists of copper mineralization, probably in a shear zone. Two shafts, one 64 metres deep and the other 43 metres, were sunk on the property in the early 1900's. The area is underlain by volcanics of the Upper Devonian McLaughlin Ridge Formation, Sicker Group, reported to be altered to schists in the area. Intruding the country rocks is quartz feldspar porphyry of the Late Devonian Saltspring Intrusive Suite (formerly the Saltspring Intrusions). Gold and silver values are also reported.

BIBLIOGRAPHY

EMPR AR *1901-1118; *1917-269
EMPR ASS RPT *2397, 16029, 16319
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR GEM 1969-224; 1970-292; 1971-224
EMPR MAP 40
EMPR OF 1988-8
EMPR PF ((Electromagnetic Profile, Canadian Pacific Minerals Ltd., 1971; Apparent Chargeability Contour Plan, Canadian Pacific Minerals Limited, 1971; *Mount Richards Geochemical Survey (shows adit), Canadian Pacific Oil and Gas, 1969; Induced Polarization and Electromagnetic Survey, Canadian Pacific Minerals, 1971) - see Ironclad file - 092B 049; *Notes by J.Y. Wright, 1969)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/14 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 040**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHARON COPPER**, PAUPER (L.31G), BRENT, OAK, MONS, SHARRON

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 38 N
LONGITUDE: 123 49 26 W
ELEVATION: 750 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of shaft on the Sharon deposit (Assessment Report 12379, Map 1).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5414134
EASTING: 439591

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated Stratabound
CLASSIFICATION: Volcanogenic Syngenetic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Cataclastic Schist
Lapilli Tuff
Rhyolite Porphyry
Feldspar Porphyry
Tuff Breccia
Meta Diorite
Gabbro

HOSTROCK COMMENTS: The cataclastically formed schists were previously coarse lapilli tuffs.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: Greenschist
COMMENTS: The schistose tuffs are a result of cataclastic shear.

INVENTORY

ORE ZONE: UNDERGROUND WORKINGS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1963
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	1.4500	Per cent

COMMENTS: The sample interval was 11 metres.
REFERENCE: Plans of workings and drill holes, Sharon Copper Mines, 1963.

CAPSULE GEOLOGY

Several past-producers are located on Mount Sicker in the Cowichan uplift, one of three geanticlinal uplifts that expose Paleozoic Sicker and Buttle Lake Group rocks on Vancouver Island. Cretaceous sediments of the Nanaimo Group unconformably overlie the Paleozoic rocks; the contact is marked by a basal conglomerate containing volcanic fragments derived from the Sicker Group. The local stratigraphy is disrupted by folding, faulting (pre-Triassic as well as Tertiary) and the intrusions of diabase and gabbro sills (informally called the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation (Vancouver Group). The target of exploration activity has been the volcanogenic, polymetallic massive sulphides that are hosted within felsic volcanic tuffs of the McLaughlin Ridge Formation (Sicker Group) and restricted to a belt running from Chipman Creek to Mount Richards, in the hangingwall of the Fulford fault.

There are four main units underlying the Sharon area: andesitic feldspar porphyry, tuff breccia and rhyolite porphyry of the McLaugh-

CAPSULE GEOLOGY

lin Ridge Formation intruded by a dyke or sill of metadiorite. The stratigraphic sequence is poorly exposed. Textures and assemblages indicate that the area has undergone regional greenschist metamorphism.

Most of the original rock textures and structures have been obliterated by late shearing and extensive faulting. Structural styles are different between the lower volcanics and the upper sediments of the Paleozoic rock. The volcanics exhibit polyphase deformation, resulting in cataclastic schists. Adjacent sediments, interbedded cherts, siltstones and cherty tuffs, appear undeformed with only tilting or broad open folding. A major portion of the volcanic rocks exhibit strong, steeply dipping axial plane cleavage. Severe alteration has removed most indications of bedding, but isoclinal folding can be inferred from fold structures and extension joints perpendicular to lineations. An additional phase of folding, or a continuation of the first phase, is shown by small, tight isoclinal folding of axial plane cleavage. A possible third phase is indicated by box folds displayed by well foliated units in Copper Canyon.

Sulphides are hosted by extremely sheared chlorite-sericite schist. Slabbed and polished rock surfaces have revealed that the schists were coarse lapilli tuffs. The sulphides are concentrated in two 10-metre wide horizons, forming the core of an antiform. Adjacent to the chlorite schists is the intrusive quartz-albite porphyry, which appears to be conformable. Sulphides, pyrite with very minor chalcopyrite, are generally semi-massive to coarsely disseminated. The sulphides are recrystallized after deformation but appear to have undergone some later shearing. Similar sulphides are also encountered in fractures and quartz stringers in chlorite schist and in white quartz veins in gabbro.

The Sharon prospect is believed to have originally been covered by the Pauper Crown grant (Lot 31G), a Crown grant that was issued in 1903. Underground development over the years has included three parallel adits 46 metres, 1.5 metres and 11 metres in length, respectively. The longer adit also has two crosscuts, totalling about 23 metres. The crosscuts averaged 1.45 per cent copper over 11 metres, 0.71 per cent over 7 metres and 0.92 per cent over 5.5 metres (Property File - Sharon Copper Mines, Plan of workings and drill holes, 1963). In 1985, Kidd Creek Mines Limited drilled the property, intersecting 9.2 metres (4.6 metres true width) of 0.55 per cent copper, with up to 1.44 per cent copper over 2 metres (Assessment Report 14411).

BIBLIOGRAPHY

EMPR AR 1903-250; 1923-274; 1924-368; 1927-339
EMPR ASS RPT 936, 6548, 7323, 11116, 12379, 13744, *14411, 17649
EMPR EXPL 1977-E105; 1978-E121
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8; 1999-2
EMPR PF (Drill logs, and plans of Sharon workings, Sharon Copper Mines, 1963; See various related documents in the Lara file (092B 129))
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Falconbridge File
*Holbek, P. (1980): Geology and Geochronometry of the Sharron Volcanogenic Prospect, Mt. Brenton Area, Southwestern B.C., B.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/02 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 041**

NATIONAL MINERAL INVENTORY:

NAME(S): **WATER POWER-BRENTON**, MILDRED (L.96)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 51 N
LONGITUDE: 123 49 06 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Mildred Crown grant, Lot 96G (Assessment Report 6216). The Water Power and Brenton claims were apparently located between the Mildred claim and the mouth of Holyoak Creek.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5414532
EASTING: 440003

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Podiform Disseminated
CLASSIFICATION: Volcanogenic Syngenetic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Schist
Rhyolite
Andesite
Diorite
Gabbro

HOSTROCK COMMENTS: The intrusive rocks in the area are coeval with the Karmutsen Formation (Vancouver Group) and known informally as the Mount Hall Gabbro.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1923
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	103.0000	Grams per tonne
Copper	20.5000	Per cent

COMMENTS: Selected sample.
REFERENCE: Minister of Mines Annual Report 1923, page 275.

CAPSULE GEOLOGY

The Water Power-Brenton occurrence, within the Cowichan uplift, is located in an area underlain mainly by andesitic to rhyolitic volcanics of the McLaughlin Ridge Formation, Sicker Group. The local stratigraphy is disrupted by folding, faulting (pre-Triassic as well as Tertiary) and the intrusions of gabbro and diabase sills and dykes (informally called the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation (Vancouver Group). The showing is in the vicinity of the Lenora-Tyee (092B 001) and Lara (092B 110) volcanogenic massive sulphide deposits and may be considered to be of related origin.

The Sicker rocks on the Mildred Crown grant (Lot 96) have been locally metamorphosed to sericitic and chloritic schists which have a general northwest trending strike and foliation. Pyrite, with minor chalcopyrite, occurs as stringers, elongate masses or as disseminations within the schistose units. Sulphide content varies within the units but is generally between 2 and 5 per cent. Lenses of massive sulphides up to 2 metres thick occur throughout some of the schistose units.

On the old Water Power-Brenton claims on Holyoak Creek, down-

CAPSULE GEOLOGY

stream from the Mildred claim, a selected sample assayed 20.5 per cent copper, 103 grams per tonne silver and a trace of gold (Minister of Mines Annual Report 1923, page 274).

BIBLIOGRAPHY

EMPR AR 1903-250; *1923-275
EMPR ASS RPT *6216, 6518, 6699, 7273, 7434, 11329, 19765
EMPR EXPL 1977-E105; 1978-E122; 1979-122
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8; 1999-2
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1990/07/18	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092B 042**
NATIONAL MINERAL INVENTORY: 092B5 Bxt1

NAME(S): **FLORENCE (L.77)**, SOOKE OCHRE, RADIO (L.78), BAUXITE (L.79)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05W
BC MAP:
LATITUDE: 48 23 49 N
LONGITUDE: 123 45 58 W
ELEVATION: 70 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The deposit occurs along De Mamiel and Stony creeks, south of Young Lake, about 3 kilometres northwest of Sooke (Geological Survey of Canada Memoir 13, page 198).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5360704
EASTING: 443292

COMMODITIES: Aluminum Ochre

MINERALS
SIGNIFICANT: Bauxite Ochre Clay Limonite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Residual
TYPE: B04 Bauxite Al
DIMENSION: 200 x 12 x 1 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Approximate dimensions of deposit on De Mamiel Creek.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Postglacial Sediments

LITHOLOGY: Clay
Gabbro

HOSTROCK COMMENTS: The sediments are Pleistocene to Recent in age and apparently derived from the Sooke Gabbro.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Late Pleistocene to Recent weathering of Tertiary Sooke Gabbro produced a yellow ocherous clay, or impure bog-iron ore (laterite), which has been preserved locally. It is traceable for about 200 metres along De Mamiel Creek, having an average width of about 12 metres and an exposed thickness of 1.2 metres. The deposit consists of a very fine-grained clay, with which is mixed fairly uniformly, bog-iron ore or limonite.

The deposit was of initial interest for its potential as a base in the manufacturing of coloured paints (Geological Survey of Canada Memoir 13, page 198). Later, the deposit created excitement when analysis showed that the material resembled bauxite. A typical analysis of the material is: 13.4 per cent loss on ignition, 30.7 per cent isolubles 30.0 per cent Al_2O_3, 23.0 per cent Fe_2O_3, 0.4 per cent CaO, trace titanium and nil MgO (Minister of Mines Annual Report 1923, page 269).

BIBLIOGRAPHY

EMPR AR 1921-232; 1923-269; 1929-513
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 198; 96, p. 397
GSC OF 463, 701
GSC P 72-44; 75-1A, p. 23; 77-1A, pp. 287-294; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/15 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 043**
NATIONAL MINERAL INVENTORY: 092B14 Stn1

NAME(S): **SATURNA**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B14E
BC MAP:
LATITUDE: 48 48 24 N
LONGITUDE: 123 11 56 W
ELEVATION: 15 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located between Winter Cove and Lyall Harbour on the north side of Saturna Island. The quarry is 30 metres south of the road 400 metres east of the head of Winter Cove.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5405983
EASTING: 485397

COMMODITIES: Expanding Shale Aggregate Building Stone

MINERALS
SIGNIFICANT: Shale
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive Stratiform
CLASSIFICATION: Sedimentary Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Decourcy	

LITHOLOGY: Shale

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage Wrangell

CAPSULE GEOLOGY

A quarry was developed in shale of the Upper Cretaceous Decourcy Formation, Nanaimo Group. The exposed bedrock at the quarry is a blue-grey colour when fresh but weathers buff to brownish. The rock is well laminated in beds 2 to 10 centimetres thick that strike 125 degrees and dip 40 degrees northeast.

A plant with kiln was set up in order to heat the shale up to a point where it bloats or expands to form porous cinder-like particles that acquire a thin glassy skin and rounded shape. The product is used as light-weight aggregate in the making of cement. The quarry and plant operated from 1959 to 1974 but no production figures are available.

BIBLIOGRAPHY

EMPR AR 1953-188,189; 1960-138; 1961-143; 1962-150; *1966-264;
1967-302; 1968-298
EMPR BULL 30
EMPR GEM 1969-388; 1970-395; 1971-459; 1973-544; 1974-377
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 24; 47; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 044**

NATIONAL MINERAL INVENTORY:

NAME(S): **DOUGLAS STREET**, VICTORIA BROWN, VICTORIA BLUE

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B06W
BC MAP:
LATITUDE: 48 26 47 N
LONGITUDE: 123 21 59 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Site of the present Mayfair Shopping Centre in Victoria.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5365981
EASTING: 472906

COMMODITIES: Clay

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Recent

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Residual Sedimentary
TYPE: B06 Fireclay E07 Sedimentary kaolin

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Postglacial Sediments

LITHOLOGY: Clay

HOSTROCK COMMENTS: These Capilano Sediments were previously known as the Puyallup Interglacial deposits (Geological Survey of Canada Map 1553A).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Douglas Street clay occurrence consists of tough, gritty, greyish white, slightly calcareous surface clay. It was used to manufacture brick, tile and flower pots in the first half of the century. The clay is part of the Recent Capilano Sediments which also includes sand, gravel and silt (formerly known as Puyallup Interglacial deposits), (Geological Survey of Canada Map 1553A).

Twenty-eight per cent water is required to work the clay up, giving the resulting mass an air shrinkage of 7.9 per cent. The clay burns to a red colour, which changes to brown at cone 03. The firing tests developed: cone 010, 0.45 per cent fire shrinkage, and 15.61 per cent absorption; cone 03, 8 per cent shrinkage, and 0 per cent absorption; cone 1, fused (Geological Survey of Canada Memoir 24-E, page 149).

BIBLIOGRAPHY

EMPR AR 1908-183-185; 1954-178; 1956-152; 1958-89; 1959-159; 1961-143; 1962-150
EMPR BULL *30, pp. 7,11-14,47
EMPR P 1993-23
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36, pp. 109-110,135-136; *24-E, p. 149; 47
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CANMET TECHNICAL BULLETIN *54

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 045**

NATIONAL MINERAL INVENTORY:

NAME(S): **WILLORON 6**, STAR FR (L.18G)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 36 38 N
LONGITUDE: 123 34 41 W
ELEVATION: 480 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Malahat Ridge, 4 kilometres east of Shawnigan Lake and 0.5 kilometres due north of Oliphant Lake. Showing #13 on Willoron 6 claim (Geology maps by Aho, 1961). Formerly the Star Fraction gazetted claim (Lot 18G).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5384326
EASTING: 457391

COMMODITIES: Iron Magnetite

MINERALS

SIGNIFICANT: Magnetite Pyrite Pyrrhotite
ALTERATION: Epidote Garnet Diopside
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Paleozoic-Mesozoic			Wark Gneiss

LITHOLOGY: Limestone
Greenstone
Diorite
Alaskite
Skarn

HOSTROCK COMMENTS: Skarn occurs mainly in association with limestone, but also may occur in other rock types.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
METAMORPHIC TYPE: Contact Regional RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1961
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Iron	66.5000	Per cent

COMMENTS: A 1.5 metre channel sample.
REFERENCE: Aho, A.E. (1961): Willoron Iron Property (in Property File).

CAPSULE GEOLOGY

The area is underlain by metamorphic rock of the Mesozoic and/or Paleozoic Wark Gneiss and greenstone of the Lower Jurassic Bonanza Group. A discontinuous limestone horizon extends along a northwest trend and is thought to be correlative with the Upper Triassic Quatsino Formation, Vancouver Group. The Wark Gneiss comprises mainly massive and gneissic metadiorite, metagabbro and amphibolite (see Willoron 1-3,9,10 - 092B 056). The Wark Gneiss is possibly the metamorphic equivalent of a mafic unit of the Paleozoic Sicker Group, the latest metamorphism having taken place in the Jurassic.

Numerous magnetite showings occur in the area as lenses and fracture-fillings in all rock types, but mainly in association with limestone lenses. Associated skarn minerals are reported to be garnet, epidote and diopside.

On the Willoron 6 showing (Showing 13), massive magnetite occurs overlying skarn having a steep southward dip. About 30 metres to the south, magnetite is exposed and is overlain by skarn. It is thought

CAPSULE GEOLOGY

that the intervening distance between the showings is underlain by magnetite. Minor pyrite and pyrrhotite are associated with the magnetite. A 1.5-metre channel sample across one of the exposures graded 66.5 per cent iron, 0.43 per cent sulphur and a trace of phosphorous (Aho, 1961, page 13).

The magnetite outcrop is reported to lie at the base of a slope with greenstone outcrops to the northeast and diorite outcrops on the other side to the west. About 50 metres to the west of the magnetite outcrop are exposures of alaskite, greenstone, limestone and minor skarn with a few inches of magnetite.

BIBLIOGRAPHY

EMPR AR 1902-221,222; *1961-112
EMPR PF (*Aho, A.E.(1961): Report on Willoron Iron Property (in 092B 056 file); Map of part of Willoron Group showing deposits, Scale 1: 6000, A.E. Aho, 1961 (in 092B 056 file); Dip Needle Survey Plan map (geology map) of part of Willoron Group, Scale 1: 3000, A.E. Aho, 1961 (in 092B 056 file)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 159; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/29 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 046**

NATIONAL MINERAL INVENTORY:

NAME(S): **NIAGARA CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 28 57 N
LONGITUDE: 123 33 10 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Beside the Trans-Canada Highway at Niagara Creek (Minister of Mines Annual Report 1953, page 188).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5370078
EASTING: 459151

COMMODITIES: Expanding Shale, Aggregate, Building Stone

MINERALS
SIGNIFICANT: Shale
MINERALIZATION AGE: Mesozoic

DEPOSIT
CHARACTER: Massive, Stratiform
CLASSIFICATION: Sedimentary
TYPE: R02 Expanding shale

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

A sample of argillite was found to bloat well upon heating and may, therefore, be of use as a light-weight aggregate in the making of concrete (Minister of Mines Annual Report 1953, page 188). At the time the sample was taken the underlying rocks were reported to be part of the Malahat volcanic group. However, the area is now mapped as the Chert-Argillite-Volcanic Unit of the Jurassic to Cretaceous Leech River Complex (Formation), (Geological Survey of Canada Map 1553A).

BIBLIOGRAPHY

EMPR AR *1953-188
EMPR BULL 30
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 24; 47; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30

DATE CODED: 1990/08/14 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 047**

NATIONAL MINERAL INVENTORY:

NAME(S): **CROFTON SLAG**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 51 41 N
LONGITUDE: 123 38 05 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near Crofton, British Columbia.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5412241
EASTING: 453446

COMMODITIES: Aggregate, Building Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Slag dump.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Unknown

HOSTROCK COMMENTS: The mineable deposit is slag from the Crofton Smelter.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The slag dump from the old Crofton smelter has been mined for use as an aggregate.

BIBLIOGRAPHY

EMPR AR 1947-223; 1955-102; 1956-159

DATE CODED: 1985/07/24 — CODED BY: GSB — FIELD CHECK: N
DATE REVISED: 1991/01/19 — REVISED BY: GJP — FIELD CHECK: N

MINFILE NUMBER: **092B 048**

NATIONAL MINERAL INVENTORY:

NAME(S): **WALLACE (L.16G)**, IRON HILL (L.41G)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 40 47 N
LONGITUDE: 123 41 29 W
ELEVATION: 240 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near common boundary of Crown grant Lots 16G and 41G (NTS map 92B/12).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5392084
EASTING: 449107

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Jurassic			Island Plutonic Suite

LITHOLOGY: Chert
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by the Sediment-Sill Unit, formerly of the Paleozoic Sicker Group. The unit is generally correlative with the Mississippian to Pennsylvanian Fourth Lake Formation of the new Buttle Lake Group. This is overlain locally by limestone, bedded chert and cherty tuff of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (formerly the Buttle Lake Formation). A granodioritic stock of the Early to Middle Jurassic Island Plutonic Suite (formerly known as Island Intrusions) disrupts the regional stratigraphy.

The Wallace and Copper Hill claims, situated north of the Koksilah River, are reported to have on them copper, found at the contacts of chert and granodiorite.

BIBLIOGRAPHY

EMPR AR *1903-210; 1908-252
EMPR ASS RPT 13997
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
EMPR PF (Early claim map showing Wallace (Lot 16G) and Copper Hill (Lot 41G, located in King Solomon file - 092B 015)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96, p. 372
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1990/09/06 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 049**

NATIONAL MINERAL INVENTORY:

NAME(S): **IRONCLAD**, SIRIUS, CROFT 2

STATUS: Showing Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 51 45 N
LONGITUDE: 123 40 47 W
ELEVATION: 150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mount Richards area, about 2.0 kilometres southwest of Crofton (Assessment Report 2397, Map 2).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5412393
EASTING: 450147

COMMODITIES: Copper Talc

MINERALS

SIGNIFICANT: Chalcopyrite Talc Pyrite Chalcocite Tetrahedrite Bornite
ASSOCIATED: Quartz Calcite
ALTERATION TYPE: Talc
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive
CLASSIFICATION: Hydrothermal
TYPE: I06 Cu±Ag quartz veins E08 Carbonate-hosted talc

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Triassic			Unnamed/Unknown Informal
Upper Devonian			Saltspring Intrusive Suite

LITHOLOGY: Gabbro
Quartz Schist
Quartz Porphyry
Rhyolite
Andesite

HOSTROCK COMMENTS: Gabbroic intrusions are coeval with the Karmutsen Formation (Vancouver Group) and are informally called the Mount Hall Gabbro.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Ironclad property is located in the vicinity of Mount Richards, about 2.0 kilometres southwest of Crofton. Access is easily attained by roads from Crofton, or from the Westholme road to the west.

The area is underlain by metavolcanics of the McLaughlin Ridge Formation (Sicker Group). These are intruded by quartz-feldspar porphyries of the Late Devonian Saltspring Intrusive Suite (formerly the Saltspring Intrusions) and gabbro (informally called the Mount Hall Gabbro) that is coeval with the volcanics of the Karmutsen Formation (Vancouver Group). The Sicker rocks are in unconformable contact with the Cretaceous Nanaimo Group to the north, and cut off to the south by the northwest trending Fulford thrust fault. A younger, left-lateral strike-slip fault, trending north-northeast, offsets the generally east trending rocks on the west side off Mount Richards (Massey, N.W.D., 1988).

The Ironclad workings consist of two shafts and an incline. The main working is a 30-degree incline 36 metres long. The material on the dump shows heavy pyrite mineralization in a strongly sheared and silicified gabbroic country rock, with minor patches of chalcopyrite.

Talc is found in shear zones, with the sulphide mineralization in the schists where they are cut by quartz-feldspar porphyries. The talc is up to one metre thick and contains calcite and quartz as impurities. One of the Ironclad shafts is claimed to have intersected a one-metre thick band of talc at the 10-metre level (Geological Survey of Canada Summary Report 1909, page 101).

A quartz vein, up to 30 centimetres in width, occurs in gabbro a few hundred metres to the west of the Ironclad workings. The vein is reported to contain malachite, chalcocite, tetrahedrite and minor

CAPSULE GEOLOGY

bornite (Assessment Report 7233, page 4, Figure 2).
The old Tidal (Tital?) Wave (092B 142) showing is located on the summit of the ridge above Westholme, apparently on Land Lot 93. This lot is located to the immediate east of the Ironclad workings. A pit up to 6 metres in depth exposes a 1-metre wide quartz vein trending west through gabbro. The vein is virtually barren except for an occasional speck of malachite (Notes by Wright, 1969).

BIBLIOGRAPHY

EMPR AR 1903-250; 1904-253
EMPR ASS RPT 2397, *7233
EMPR FIELDWORK 1979, pp. 49-51; 1987, pp. 81-91
EMPR MAP 40
EMPR OF 1988-8; 1988-19
EMPR PF (*Letter by Brewer, March 17 1905; *Notes by J.Y. Wright, March 18 1969; Electromagnetic Profile, Canadian Pacific Minerals Ltd., 1971; Apparent Chargeability Contour Plan, Canadian Pacific Minerals Limited, 1971; Mount Richards Geochemical Survey (shows workings), Canadian Pacific Oil and Gas, 1969; Induced Polarization and Electromagnetic Survey, Canadian Pacific Minerals, 1971)
GSC BULL (in preparation- Sutherland-Brown & Yorath: Lithoprobe Phase 1, Southern Vancouver Island - geology & geophysics)
GSC EC GEOL Series 2, p. 37
GSC P 86-1A, pp. 683-696
GSC SUM RPT *1909, p. 101

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 050**

NATIONAL MINERAL INVENTORY:

NAME(S): **WOLFE CREEK**, OLD WOLF CREEK, KENNEDY

STATUS: Past Producer — Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 29 17 N
LONGITUDE: 123 41 10 W
ELEVATION: 220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On Old Wolf Creek, about 2 kilometres upstream from Leechtown (Minister of Mines Annual Report 1933, page 248).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5370775
EASTING: 449304

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Gravel
Schist
Slate

HOSTROCK COMMENTS: The placer deposits are believed to have been derived from metasediments of the Leech River Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

CAPSULE GEOLOGY

Old Wolf Creek flows west along the Leech River fault which separates Jurassic to Cretaceous Leech River Complex (Formation) slates and schists on the north, from Tertiary Metchosin Volcanics on the south. The metasediments strike nearly west and dip steeply northeast. The topography shows the stream to have cut down through the bedrock leaving a series of gravel covered benches. Placer gold, found in the gravel, is believed to have been derived from small, but numerous, gold-bearing quartz stringers hosted by the Leech River rocks.

The creek was worked in the early 1930's at a location about 2 kilometres above Leechtown where, about 9 metres above the creek, an old creek channel was found (Minister of Mines Annual Report 1933, page 248). A total of 93 grams of gold are reported to have been recovered from the stream between 1936 and 1940 (Bulletin 28, page 16). It is believed that some gold was taken from the lower end of the creek in the latter half of the 1800's.

BIBLIOGRAPHY

EMPR AR *1933-248
EMPR ASS RPT 6907, 7536, 14552
EMPR BULL *28, p. 16
EMPR FIELDWORK 1981, pp. 70-73; 1982, pp. 37-45
EMPR PF (*Report on the Kennedy Placer Property by J.D. Galloway, Provincial Mineralogist, November, 1933)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96, pp. 366-368
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 81

DATE CODED: 1985/07/24 — CODED BY: GSB — FIELD CHECK: N
DATE REVISED: 1990/08/23 — REVISED BY: GJP — FIELD CHECK: N

MINFILE NUMBER: **092B 051**

NATIONAL MINERAL INVENTORY:

NAME(S): **EASTERN STAR**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 29 44 N
LONGITUDE: 123 42 41 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: At the junction of McDonald Creek and Sooke River (Open File 1988-19).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5371626
EASTING: 447444

COMMODITIES: Talc Gold

MINERALS
SIGNIFICANT: Talc Gold
ALTERATION: Talc
ALTERATION TYPE: Talc
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Podiform Massive
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: E08 Carbonate-hosted talc

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Slate
Schist
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

A number of talc showings occur on or adjacent to the Leech River fault which separates Jurassic to Cretaceous Leech River metasediments from Eocene Metchosin Volcanics. The talc occurs in shear zones within slates and schists of the Leech River Complex (Formation). Its abundance in this area is probably related to the latest movement on the Leech River fault (Massey, Personal Communication; see 092B 031 - Invereck). The showings are also of interest because of the native gold which is sometimes found in the gouge material lying between the talc and the slate country rock.

On the Eastern Star showing, a body of talc 2.3 metres long was exposed in an opencut. The footwall had not yet been exposed (Minister of Mines Annual Report 1924, page 256).

BIBLIOGRAPHY

EMPR AR *1924-256
EMPR ASS RPT 6144, 6907, 7536, 14552
EMPR FIELDWORK 1981, pp. 70-74; 1982, pp. 37-45
EMPR OF 1988-8; *1988-19, pp. 56-59
GSC MAP 42A; 1386A; 1553A
GSC MEM 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1987
Fairchild, L.H. (1979): The Leech River Unit & Leech River Fault, Southern Vancouver Island, British Columbia, unpublished M.Sc. Thesis, University of Washington, 170 pages
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 82

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/22 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 052**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUNBEAM 1**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 29 41 N
LONGITUDE: 123 42 23 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Two hundred and fifty metres east of the confluence of Sooke River, on Old Wolf Creek (Open File 1988-19, pages 54,57).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5371530
EASTING: 447812

COMMODITIES: Talc Gold

MINERALS
SIGNIFICANT: Talc Gold
ALTERATION: Talc
ALTERATION TYPE: Talc
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Podiform Massive
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Slate
Schist
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Sunbeam 1 occurrence is one of a number of talc showings that occur on or adjacent to the Leech River fault. The fault separates Jurassic to Cretaceous Leech River Formation metasediments on the north, from Eocene Metchosin Volcanics on the south. The talc occurs in shear zones within slates and schists of the Leech River Formation. Its abundance in this area is probably related to the latest movement on the Leech River fault (Massey, Personal Communication; see 092B 031 - Invereck).

The showings in the area were also reported to contain native gold, sometimes found in the gouge material lying between the talc and the slate country rock (Minister of Mines Annual Report 1924, page 256).

BIBLIOGRAPHY

EMPR AR *1924-256
EMPR ASS RPT 6907, 7536, 14552
EMPR FIELDWORK 1981, pp. 70-74; 1982, pp. 37-45
EMPR OF 1988-8; *1988-19, pp. 53-59
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1987
Fairchild, L.H. (1979): The Leech River Unit & Leech River Fault, Southern Vancouver Island, British Columbia, unpublished M.Sc. Thesis, University of Washington, 170 pages

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/22 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 053**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUN**, SUNBEAM

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 29 44 N
LONGITUDE: 123 43 35 W
ELEVATION: 170 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On Leech River, 800 metres west of the confluence with Sooke River.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5371636
EASTING: 446336

COMMODITIES: Talc

MINERALS
SIGNIFICANT: Talc
ALTERATION: Talc
ALTERATION TYPE: Talc
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Podiform
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Slate
Schist
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Sun occurrence is one of a number of talc showings that occur on or adjacent to the Leech River fault. The fault separates Jurassic to Cretaceous Leech River Formation metasediments, on the north, from Eocene Metchosin volcanics, on the south. The talc occurs in shear zones within slates and schists of the Leech River Formation. Its abundance in this area is probably related to the latest movement on the Leech River fault (Massey, Personal Communication). The setting of the Sun deposit, at the junction of the Leech River and Shawnigan Lake faults, is similar to the Invereck deposit (092B 031) which occurs about 2 kilometres to the north.

The showings in the area were also reported to contain native gold, sometimes found in the gouge material lying between the talc and the slate country rock (Minister of Mines Annual Report 1924, page 256).

BIBLIOGRAPHY

EMPR AR *1924-256
EMPR ASS RPT 6907, 7536, 14552
EMPR FIELDWORK 1981, pp. 70-74; 1982, pp. 37-45
EMPR OF 1988-8; *1988-19, pp. 53-59
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM: Massey, N.W.D., 1987
Fairchild, L.H. (1979): The Leech River Unit & Leech River Fault, Southern Vancouver Island, British Columbia, unpublished M.Sc. Thesis, University of Washington, 170 pages

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/22 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 054**

NATIONAL MINERAL INVENTORY:

NAME(S): **ALBERT HEAD**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B06W
BC MAP:
LATITUDE: 48 23 18 N
LONGITUDE: 123 28 44 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The quarry is located on Albert Head just southwest of Victoria (CANMET Report 452, page 184).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5359574
EASTING: 464546

COMMODITIES: Aggregate Building Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Basalt.
MINERALIZATION AGE: Eocene

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Volcanogenic
TYPE: R15 Crushed rock
DIMENSION: 274 x 61 x 29 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent
PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Albert Head quarry, operated in the 1910's, mined basalt of the Eocene (and Older?) Metchosin Volcanics. The basalt was crushed and used mainly as riprap, and to a lesser extent as roadbed material and as aggregate in the making of concrete.

The quarry is 275 metres long and about 60 metres wide with an average face of 30 metres at 165 degrees. The formation is so severely shattered that regular systems of jointing cannot be determined; the only joints showing any evidence of regularity strike 140 degrees and dip almost vertically.

The basalt is a hard, tough, fine-grained, greenish black rock with numerous fine veinlets of quartz. Disseminated grains of pyrite are common.

BIBLIOGRAPHY

EMPR AR 1910-26; 1912-199; 1914-387; 1915-291; 1916-367
EMPR INF CIRC 1988-6
EMPR P 1993-23
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23
CANMET RPT *452, Vol. V, pp. 184,185

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/31 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 055**

NATIONAL MINERAL INVENTORY:

NAME(S): **SATURNA ISLAND**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B14E
BC MAP:
LATITUDE: 48 45 49 N
LONGITUDE: 123 08 05 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: South shore of Saturna Island.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5401187
EASTING: 490100

COMMODITIES: Sandstone Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Sandstone.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R06 Dimension stone - sandstone
SHAPE: Regular

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Cedar District	

LITHOLOGY: Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage Wrangell

CAPSULE GEOLOGY

A sandstone quarry was developed on Saturna Island within the Upper Cretaceous Cedar District Formation of the Nanaimo Group. The sandstone is buff coloured, medium-grained (0.06 to 2 millimetres), and displays a uniform texture. The quarry is 175 metres long and was developed in a series of benches between 2 and 8 metres high. Bedding strikes northwest dipping moderately northeast. One prominent set of joints strike northwest dipping steeply southwest while a second set (vertical) strikes north-northeast. A joint and fracture density survey indicates 66 per cent of vertical joints are spaced greater than 1 metre apart and 15 per cent greater than 3 metres apart.

Saturna Island sandstone was used (in part) to construct the Carnegie Library in Victoria and other heritage buildings in the coast region. Potential reserves of sandstone extend north of the worked faces. No production figures are available.

BIBLIOGRAPHY

EMPR AR *1904-249
EMPR FIELDWORK *1987, pp. 385-392
EMPR INF CIRC 1994-15
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CANMET RPT 452, Vol. V
Victoria Times Colonist, June 22, 1997, p. C8

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/11/10 REVISED BY: GVW FIELD CHECK: Y

MINFILE NUMBER: **092B 056**

NATIONAL MINERAL INVENTORY:

NAME(S): **WILLORON 1-3,9,10**, JUMBO (L.13G), EAGLE (L.14G), MALAHAT (L.15G), OGEMAW (L.11G), DOT 1,3

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 36 53 N
LONGITUDE: 123 35 32 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of the showing area, located on Malahat Ridge, 2.5 kilometres east of Shawnigan Lake and 1.5 kilometres northwest of Oliphant Lake. Includes Willoron claim 1 to 3, 9 and 10, covering showings 1 to 11 (Property File - Geology maps by Aho, 1961).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5384797
EASTING: 456350

COMMODITIES: Iron, Magnetite, Copper, Gold, Silver

MINERALS

SIGNIFICANT: Magnetite, Pyrrhotite, Pyrite, Chalcopyrite
ALTERATION: Garnet, Diopside, Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Podiform
CLASSIFICATION: Skarn, Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Paleozoic-Mesozoic			Wark Gneiss

LITHOLOGY: Limestone
Greenstone
Diorite

HOSTROCK COMMENTS: Deposits occur mainly in limestone near greenstone or dioritized greenstone.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1961

COMMODITY	GRADE	
Silver	24.0000	Grams per tonne
Gold	2.7400	Grams per tonne
Copper	2.3800	Per cent
Iron	57.3300	Per cent

REFERENCE: Property File - Aho, A.E. (1961): Willoron Iron Property.

CAPSULE GEOLOGY

The region is underlain by the Paleozoic and/or Mesozoic Wark Gneiss and basaltic to rhyolitic volcanics of the Lower Jurassic Bonanza Group. A stock of the Late Devonian Saltspring Intrusive Suite (formerly called the Saltspring Intrusions) consisting of metagranodiorite, metaquartz porphyry and quartz sericite schist occurs nearby to the southeast.

A discontinuous carbonate horizon extends from Cordova Bay northwestward across Saanich Inlet to the east shore of Shawnigan Lake. Its general fine-grained, massive character and its association with greenstones and magnetite-sulphide skarns suggests that this horizon is correlative with the Upper Triassic Quatsino Formation, Vancouver Group.

The Wark Gneiss has given a few potassium-argon ages ranging from 131 to 182 Ma indicating the latest metamorphism to be of Jurassic age. Discordant zircon dates have yielded indefinite

CAPSULE GEOLOGY

Paleozoic ages. The protolith of the Wark Gneiss may have been composed of rocks of the Sicker Group and Karmutsen and Quatsino formations (Vancouver Group). The Wark Gneiss comprises mainly massive and gneissic metadiorite, metagabbro and amphibolite.

At least 10 principal skarn showings occur along an 800-metre section of the discontinuous limestone band just north and west of Oliphant Lake. The band here is about 300 metres wide. The deposits occur as lenses and fracture fillings in limestone or limy bands near greenstone or diorite and consist of two intermingled or complimentary types: (a) massive pyrrhotite and pyrite with minor chalcopyrite in skarn, and (b) magnetite in skarn. The showings all seem to be about a metre or so in width and up to several metres in length. The skarn minerals present are garnet, diopside and epidote.

Some of the showings have been worked since the turn of the century. At least 3 adits, 3 shafts and several opencuts have been excavated. A sample taken at showing Number 9 assayed 2.74 grams per tonne gold, 24.00 grams per tonne silver, 2.38 per cent copper and 57.33 per cent iron. Most samples taken, however, assayed nil or trace gold and silver and less than 0.5 per cent copper (Property File - Aho, 1961, page 14).

BIBLIOGRAPHY

EMPR AR *1902-221,222; *1961-112
EMPR PF (Aho, A.E.(1961): *Report on Willoron Iron Property, map of part of Willoron Group showing deposits and Dip Needle Survey Plan map (geology map) of part of Willoron Group)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 159; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/28 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 057**

NATIONAL MINERAL INVENTORY:

NAME(S): **STRIP**, WESTERN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 41 43 N
LONGITUDE: 123 42 41 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the Western claim (Assessment Report 13997).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5393826
EASTING: 447651

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Pyrite Magnetite Pyrrhotite Chalcopyrite
ALTERATION: Garnet Epidote Chlorite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

LITHOLOGY: Chert
Rhyolite
Limestone
Basalt
Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	6.2000	Grams per tonne
Copper	2.3400	Per cent

COMMENTS: From a 1.1 metre chip sample.
REFERENCE: Assessment Report 13997, page 71.

CAPSULE GEOLOGY

The area is underlain predominantly by bedded chert and cherty basaltic tuffs of the Mississippian to Pennsylvanian Fourth Lake Formation (formerly the Sediment-Sill Unit of Muller), Buttle Lake Group. These are overlain by limestone, bedded chert and cherty tuff of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (formerly the Buttle Lake Formation). Between the Mount Mark and Fourth Lake formations, and above the Mount Mark Formation, are packages of mainly basaltic rock, of unknown affinity. These Paleozoic rocks are intruded by numerous dykes of feldspar-porphyritic dacite and rhyolite and part of the granodioritic "Koksilah" stock of the Early to Middle Jurassic Island Plutonic Suite (formerly called the Island Intrusions).

On the Strip showing, an 11-metre wide zone of mineralization occurs, apparently at the top of the Mount Mark Formation. The showing consists of semimassive to massive pyrite-magnetite-pyrrhotite-chalcopyrite occurring within a rhyolite intrusion and garnet-epidote-chlorite skarn at the contact zone between Mount Mark chert and the overlying basaltic flows. Limestone is reported at this locality also.

A 1.1-metre sample assayed 2.34 per cent copper and 6.2 grams per tonne silver (Assessment Report 13997).

BIBLIOGRAPHY

EMPR AR 1903-210; 1907-221
EMPR ASS RPT 11446, *13997
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1990/09/07 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 058**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHEMAINUS**, MAINE (L.13G)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 37 06 N
LONGITUDE: 123 36 09 W
ELEVATION: 330 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Malahat Ridge, about 2.25 kilometres east of Shawnigan Lake and 2 kilometres northwest of Oliphant Lake (Geology maps by Aho, 1961). The Chemainus claim is reported to adjoin the Jumbo claim (Lot 13G), downslope toward Shawnigan Lake (Minister of Mines Annual Report 1902).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5385204
EASTING: 455596

COMMODITIES: Magnetite Copper

MINERALS
SIGNIFICANT: Magnetite Pyrrhotite Pyrite Chalcopyrite
ALTERATION: Garnet Epidote Diopside
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Podiform
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Limestone
Greenstone
Diorite
Skarn

HOSTROCK COMMENTS: Magnetite deposits are typically in limestone near Bonanza Group greenstone or dioritized greenstone.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional Contact RELATIONSHIP:

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

CAPSULE GEOLOGY

The region is underlain by the Mesozoic and/or Paleozoic Wark Gneiss and greenstone of the Lower Jurassic Bonanza Group. A discontinuous carbonate horizon extends along a northwest trend and is thought to be correlative with the Upper Triassic Quatsino Formation, Vancouver Group. The Wark Gneiss comprises mainly massive and gneissic metadiorite, metagabbro and amphibolite and is possibly the metamorphic equivalent of a mafic unit of either the Paleozoic Sicker Group or the Upper Triassic Karmutsen Formation (Vancouver Group); the latest metamorphism took place in the Jurassic.

A shaft has been sunk for about 6 metres on an outcrop of magnetite containing minor chalcopyrite. On the adjacent Willoron showings (092B 056) magnetite ore occurs mainly in the limestone band at or near contacts of greenstone or dioritized greenstone. Skarn minerals in the area are reported to be garnet, epidote and diopside.

BIBLIOGRAPHY

EMPR AR *1902-221; 1961-112
EMPR PF (*Aho, A.E.(1961): Report on Willoron Iron Property (in 092B 056 file); Map of part of Willoron Group showing deposits, Scale 1: 6000, A.E. Aho, 1961 (in 092B 056 file); Dip Needle Survey Plan map (geology map) of part of Willoron Group, Scale 1: 3000, A.E. Aho, 1961 (in 092B 056 file)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 159; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

BIBLIOGRAPHY

Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 059**

NATIONAL MINERAL INVENTORY:

NAME(S): **SIL 4**, NORTHSTAR

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 40 38 N
LONGITUDE: 123 40 04 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centred on a line of showings along a 500 metre stretch of the Koksilah River (Assessment Report 15218, Drawing No. 5).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5391790
EASTING: 450842

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Magnetite
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

LITHOLOGY: Limestone
Marble
Pelite
Tuff
Feldspar Hornblende Porphyry
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1986

COMMODITY	GRADE	
Silver	30.9000	Grams per tonne
Copper	4.0000	Per cent

REFERENCE: Assessment Report 15218, page 51.

CAPSULE GEOLOGY

The Sil 4 showing occurs in a section of Mount Mark Formation (Buttle Lake Group) carbonate and interbedded pelitic and tuffaceous rocks intruded by a feldspar hornblende porphyry. Local sulphide-rich shear zones and skarn mineralization is probably related to the intrusion of the "Koksilah" stock of the Early to Middle Jurassic Island Plutonic Suite (formerly called the Island Intrusions).

Along the Koksilah River pods of massive sulphide occur, up to 3 metres in width, consisting of semimassive to massive pyrite and garnetite plus or minus pyrrhotite, chalcopyrite and magnetite. A grab sample assayed 4 per cent copper, 30.9 grams per tonne silver and 0.07 grams per tonne gold (Assessment Report 15218).

BIBLIOGRAPHY

EMPR ASS RPT 11446, 13997, *15218
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96

BIBLIOGRAPHY

GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1990/09/07 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 060**

NATIONAL MINERAL INVENTORY:

NAME(S): **STAR (L.19G)**, WILLORON 15

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 36 27 N
LONGITUDE: 123 34 16 W
ELEVATION: 510 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Malahat Ridge, 4.5 kilometres east of Shawnigan Lake and about 400 to 500 metres northeast of the north end of Oliphant Lake. Showing 12 on the Willoron 15 claim (Geology maps by Aho, 1961). Originally located on the Star claim (Lot 19G), (Minister of Mines Annual Report 1902, page 222).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5383982
EASTING: 457900

COMMODITIES: Iron, Magnetite, Gold, Silver, Copper

MINERALS

SIGNIFICANT: Magnetite, Pyrrhotite, Pyrite, Chalcopyrite
ALTERATION: Garnet, Epidote, Diopside
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Podiform
CLASSIFICATION: Skarn
DIMENSION: 30 Metres
STRIKE/DIP: 360/75W
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Paleozoic-Mesozoic			Wark Gneiss

LITHOLOGY: Limestone
Greenstone
Diorite
Diabase
Skarn

HOSTROCK COMMENTS: Skarn deposit associated with Quatsino limestone adjacent Bonanza Group volcanics.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional, Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1961
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	12.0000	Grams per tonne
Gold	4.8000	Grams per tonne
Copper	0.2000	Per cent

COMMENTS: From a 1.2 metre chip sample.
REFERENCE: Aho, A.E. (1961): Willoron Iron Property (Property File).

CAPSULE GEOLOGY

The area is underlain by metamorphic rock of the Mesozoic and/or Paleozoic Wark Gneiss and greenstone of the Lower Jurassic Bonanza Group. A discontinuous limestone horizon extends along a northwest trend and is thought to be correlative with the Upper Triassic Quatsino Formation, Vancouver Group. The Wark Gneiss comprises mainly massive and gneissic metadiorite, metagabbro and amphibolite (see Willoron 1-3,9,10 - 092B 056). The Wark Gneiss is possibly the metamorphic equivalent of a mafic unit of either the Paleozoic Sicker Group or the Upper Triassic Karmutsen Formation (Vancouver Group); the latest metamorphism took place in the Jurassic.

Numerous magnetite showings occur in the area as lenses and fracture-fillings in all rock types, but mainly in association with

CAPSULE GEOLOGY

limestone lenses. Associated skarn minerals are reported to be garnet, epidote and diopside.

The Star deposit consists of two "veins" of magnetite and pyrrhotite (about 50 per cent of each) with pyrite and minor chalcopyrite. The veins are about 12 metres apart striking north to northwest and dipping 75 to 80 degrees westward. The west vein is about 3 metres wide, the east one about 6 metres and they extend for up to 30 metres along strike. The veins are thought to be inter-connected. About 15 metres to the north of the east vein, magnetite is exposed for a distance of about 6 metres, but the dip and strike are not apparent. In Aho's 1961 report the wallrocks are reported to be skarn and greenstone, but his map of the property indicates the showing to be hosted by limestone. A 1.2 metre chip sample assayed 4.80 grams per tonne gold, 12.00 grams per tonne silver and 0.20 per cent copper; a grab sample assayed 56.72 per cent iron and 0.15 per cent copper (Aho, 1961).

By 1902, 65 metres of tunnelling was done beneath the showing. The rock cut in these workings was chiefly diorite and diabase, with occasional streaks of limestone. No ore was intersected (Minister of Mines Annual Report 1902, page 222).

Thirty metres to the southeast of Showing 12, five showings of pure magnetite outcrop or float occur over an area of 15 metres in diameter.

BIBLIOGRAPHY

EMPR AR *1902-221,222; *1961-112
EMPR PF (*Aho, A.E.(1961): Report on Willoron Iron Property (in 092B 056 file); Map of part of Willoron Group showing deposits, Scale 1: 6000, A.E. Aho, 1961 (in 092B 056 file); Dip Needle Survey Plan map (geology map) of part of Willoron Group, Scale 1: 3000, A.E. Aho, 1961 (in 092B 056 file)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 159; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/29 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 061** NATIONAL MINERAL INVENTORY:

NAME(S): **VICTORY (WEST)**, RUBY, WESTBANK, SAN JUAN, TODD'S CREVICE

STATUS: Prospect Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 36 15 N NORTHING: 5383933
LONGITUDE: 123 59 44 W EASTING: 426608
ELEVATION: 580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 2 kilometres west of the San Juan River (Assessment Report 1656).

COMMODITIES: Tungsten Gold Antimony Molybdenum

MINERALS
SIGNIFICANT: Scheelite Stibnite Pyrite Molybdenite
ASSOCIATED: Quartz Carbonate Ankerite
ALTERATION: Ankerite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic Epithermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Greenstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1944
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	20.5700	Grams per tonne
Antimony	5.4000	Per cent

COMMENTS: From a 35 centimetre chip sample.
REFERENCE: Stevenson, J.S. (1944): Victory Group (Property File).

CAPSULE GEOLOGY

The Victory (West) prospect is underlain by Lower Jurassic Bonanza Group volcanics consisting mainly of massive, east-striking andesitic lava. Purple, shaly tuff and amygdaloidal lava also occur in the vicinity of the workings and coarse tuff occurs a little to the north. Two separate groups of showings have been examined, one group exposes small amounts of scheelite in silicified ribs, the other exposes several quartz lenses, some of which contain bunches of stibnite. Both showing types are confined to the more massive andesite lava rather than to the tuffs.

The scheelite-bearing, silicified ribs consist of quartz veinlets accompanied by wallrock that has largely been replaced by fine-grained quartz. The wallrock is greenstone.

The quartz lenses are found in a carbonate zone, from 0.6 to 30 metres in width, that strikes northeasterly and dips nearly vertically for a distance of 335 metres. The carbonate zone consists of greenstone that has been sheared in places and largely replaced by iron-calcium-magnesium carbonate (ankerite). The veins range in width from a few centimetres up to 45 centimetres and in length from less than a metre to a maximum exposed length of 23 metres. A sample taken in a shaft across a 35-centimetre vein assayed 20.57 grams per tonne gold and 5.4 per cent antimony (Stevenson, 1944). Molybdenite was also noted at one place in this zone.

CAPSULE GEOLOGY

The shaft was sunk to a depth of 9 metres during World War I but most of the work has been done since 1940. A second and third phase of work was started in 1939 and in the late 1960's respectively. Stripping, trenching and several drill holes examined the zone during these periods. The holes testing the showings in the 1940's intersected the carbonate zone throughout but failed to intersect the quartz lenses at depth; a few specks of scheelite were seen in two of the holes.

BIBLIOGRAPHY

EMPR AR 1952-215
EMPR ASS RPT *1656, 14414, 14702
EMPR OF 1991-17
EMPR PF (Sketches of workings and drillhole cross-sections, J.S. Stevenson, 1943; *Stevenson, J.S. (1944): Victory Group; Report on a Geochemical Survey on the San Juan Group, Concorde Explorations Limited, 1968; Contract for Mining Lease No. 15, between Canadian Pacific Oil and Gas and Concorde Explorations Ltd., 1968; *Summary Report on the Work conducted during 1969 on the San Juan Property of Concorde Explorations Ltd., by Argillis Exploration Services Limited)
GSC EC GEOL 17, p. 120
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 77-1A, pp. 287-294; 79-30
GCNL #151, 1968
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 062** NATIONAL MINERAL INVENTORY:

NAME(S): **HILLBANK**

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 43 09 N NORTHING: 5396447
LONGITUDE: 123 39 29 W EASTING: 451598
ELEVATION: 25 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the east side of the Koksilah River, about 1.5 kilometres south of Cowichan Station (Geology, Exporation and Mining in British Columbia 1969, page 388).

COMMODITIES: Expanding Shale Aggregate Shale Building Stone

MINERALS
SIGNIFICANT: Shale
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive Stratiform
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: STRIKE/DIP: 110/ TREND/PLUNGE:
COMMENTS: Beds dip steeply north. Shale outcrop extends for several hundred metres.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Haslam	

LITHOLOGY: Shale

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage Wrangell

CAPSULE GEOLOGY

Upper Cretaceous Haslam Formation shale of the Nanaimo Group is exposed in a quarry and along the Koksilah River for several hundred metres. The shale consists of dark grey to black crumbly rock in 6 to 13 centimetre beds. The beds strike 110 degrees and dip steeply north. Fossils are abundant in some horizons.

In June 1969, the quarry was 120 metres long, 40 metres wide and 7.5 metres deep. The shale is trucked to a plant in Bamberton for use as a light-weight aggregate in the making of concrete. The same shale was used in 1947 for the manufacturing of dry-press brick. No production figures are available.

BIBLIOGRAPHY

EMPR AR 1947-206
EMPR BULL 30
EMPR GEM *1969-388; 1970-495; 1971-459
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 24E; 47
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23
CANMET RPT Memorandum Series 128

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 063**

NATIONAL MINERAL INVENTORY:

NAME(S): **IRON MASK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B06W
BC MAP:
LATITUDE: 48 27 17 N
LONGITUDE: 123 28 46 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the south slope of Mill Hill, east of Langford (Geological Survey of Canada Memoir 36, page 132).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5366954
EASTING: 464551

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Magnetite Pyrrhotite Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Garnet Diopside Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein
CLASSIFICATION: Skarn Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Wark Gneiss

LITHOLOGY: Amphibolite
Meta Volcanic
Diorite Gneiss
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

Amphibolites derived from Paleozoic to Mesozoic metavolcanics (Wark Complex) are intruded by apophyses of Wark quartz diorite gneiss. A shear zone, about 60 to 90 centimetres wide, hosts a small garnet-diopside-epidote skarn occurrence. The occurrence is about 45 centimetres wide and contains magnetite, pyrrhotite, pyrite and chalcopyrite. The amphibolites are intensely silicified and cut by quartz veinlets. Bodies of Permian and/or Triassic limestone are mapped in the showing area.

BIBLIOGRAPHY

EMPR P 1993-23
GSC MAP 42A; 1386A; 1553A
GSC MEM *13, p. 165; *36, p. 132; 96
GSC OF 463: 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/02 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 064**

NATIONAL MINERAL INVENTORY:

NAME(S): **PENTON**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B11W
BC MAP:
LATITUDE: 48 33 29 N
LONGITUDE: 123 26 35 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.5 kilometres east of Tod Inlet, on the Saanich Peninsula (Geological Survey of Canada Memoir 36, page 132).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5378424
EASTING: 467308

COMMODITIES: Copper, Magnetite, Iron

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite, Pyrite
ALTERATION: Garnet, Epidote, Diopside
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear, Massive
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Meta Volcanic
Granodiorite
Limestone
Skarn

HOSTROCK COMMENTS: Skarn deposit in metavolcanic rock and at its contact with granodiorite. Limestone is in the vicinity of the deposit.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The area of the Penton occurrence is underlain by unnamed volcanics and limestone of Permian and/or Triassic age and metavolcanics of the Lower Jurassic Bonanza Group. The strata are intruded by granodiorite to quartz diorite of the Early to Middle Jurassic Island Plutonic Suite (formerly known as the Island Intrusions).

Bonanza volcanics are irregularly mineralized with pyrite and chalcopyrite, chiefly along shear zones, near the contact with granodiorite. A mass of magnetite, 3.7 metres wide, with minor chalcopyrite occurs with garnet-epidote-diopside skarn along the contact.

BIBLIOGRAPHY

EMPR AR 1901-1119
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 164; *36, p. 132
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 065**

NATIONAL MINERAL INVENTORY:

NAME(S): **HILL**, HILL-DONALDSON

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 21 14 N
LONGITUDE: 123 42 34 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the north-northwest slope of Iron Mine Hill, about 400 metres east of Simpson Point in Sooke Inlet (Assessment Report 61).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5355878
EASTING: 447442

COMMODITIES: Copper Magnetite

MINERALS
SIGNIFICANT: Chalcopyrite Copper Magnetite Pyrrhotite Pyrite
ASSOCIATED: Hornblende
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein Disseminated Massive
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Sooke Gabbro

LITHOLOGY: Olivine Gabbro
Hornblendite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1951
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.4000	Per cent

COMMENTS: From a 32 metre diamond-drill interval.
REFERENCE: Chubb, P.A. (1951): Diamond Drill Logs and Assays (Property File).

CAPSULE GEOLOGY

The Hill showing occurs along a north trending shear in fracture-filled and replacement hornblendite. The shear is up to 365 metres long and cuts olivine gabbro of the Eocene Sooke Gabbro. The chief sulphide is pyrrhotite which is cut by veinlets of chalcopyrite and pyrite. Fine flakes of native copper are present and magnetite is locally abundant.

The mineralization was initially explored by a short adit and an open pit. One of three holes drilled in 1951 intersected 32 metres of 0.40 per cent copper (Chubb, 1951).

BIBLIOGRAPHY

EMPR AR *1951-200
EMPR ASS RPT *61, 2267, 3409, 3594, 3584
EMPR PF (Huestis, H.H. (1948): Report on Sooke Copper Nickel Group; Letter regarding Merryth and Griffith zones (unsigned), 1948; Gray, W.A. (1950): Supplementary Report on the East Sooke Copper Showings; Page, T.W. (1950): A Report on the Willow Grouse and the Margaret Copper Properties; *Report on Electromagnetic Survey Performed on some Copper Prospects in East Sooke, B.C., by Geolectric Exploration Company Inc., 1951; *Chubb, P.A. (1951): Diamond-drill Logs and Assays; Letter regarding Willow Grouse, by P.A. Chubb, 1951; Report on East Sooke Drill Program, by P.A. Chubb, 1951; Report on Supplementary Sampling, by Huestis, Kenneco and Cooke (undated); A Report on the Willow Grouse and the Margeret Group of Mining Claims; Mascan Explorations Ltd. Prospectus, May 13, 1966; Cross-sections of 1951 drill holes, by

BIBLIOGRAPHY

Mascan Exploration Limited)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 180; 96, p. 328
GSC OF 463; 701
GSC P 1972-44; 1975-1A, p. 23; 1979-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 066**

NATIONAL MINERAL INVENTORY:

NAME(S): **BECHER BAY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 20 18 N
LONGITUDE: 123 37 39 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located at the head of Becher Inlet (Geological Survey of Canada Memoir 13, page 180).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5354096
EASTING: 453498

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics

LITHOLOGY: Basalt
Augite Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

A strong northwest trending shear cuts augite gabbro of the Eocene Sooke Gabbro, in the valley between Becher Bay and Anderson Cove. The valley marks the contact of the Sooke Gabbro on the west with basalt of the Eocene Metchosin Volcanics on the east. A 30-metre shaft at the head of Becher Bay in Metchosin basalt reveals patches and veinlets of chalcopyrite, associated veinlets of quartz and vein-like masses of epidote.

BIBLIOGRAPHY

EMPR ASS RPT *61
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 180; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 067**

NATIONAL MINERAL INVENTORY:

NAME(S): **BENTLEY**, GOLDSTREAM BRIDGE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 28 41 N
LONGITUDE: 123 33 05 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: In Goldstream Park, on the north side of the Trans-Canada Highway. Visited and described by G.P.E. Eastwood, former geologist with the B.C. Geological Survey Branch (Property File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5369583
EASTING: 459250

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Slate

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

Numerous barren-looking quartz veins cut slates of the Jurassic to Cretaceous Leech River Complex (Formation). An adit appears to follow one of the less conspicuous veins. A sample taken from a vein above and to one side of the adit contains trace amounts of gold. The shaft appears to have passed through a thicker, white vein.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91
EMPR PF (*Article in Daily Colonist entitled "Mystery Mine Found", Oct.21, 1966)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
GSC PROGRESS RPT *1876

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/25 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 068**

NATIONAL MINERAL INVENTORY:

NAME(S): **BRADLEY DYNE**, SATURNA ISLAND

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B14E
BC MAP:
LATITUDE: 48 46 53 N
LONGITUDE: 123 12 05 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The quarry is located on the western shore of Saturna Island. Inland the stone rises to great height.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5403174
EASTING: 485206

COMMODITIES: Sandstone Building Stone Dimension Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Sandstone.
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive Stratiform
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R06 Dimension stone - sandstone
DIMENSION: Metres
STRIKE/DIP: 015/40W
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Unnamed/Unknown Formation	

LITHOLOGY: Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage Wrangell

CAPSULE GEOLOGY

The Bradley Dyne sandstone quarry was opened up in a member of the Upper Cretaceous Nanaimo Group. The beds of sandstone strike 015 degrees and dip 40 degrees to the northwest, and are immediately accessible in a ridge of about 15 metres in height. The jointing is very irregular, with the most pronounced series at right angles to the dip, and facing the sea.

The unaltered stone is blue but the exposed weathered surface is a buff colour. The stone is fine grained but in many places it is filled with small round pellets of pyrite.

The only important building known to have been built from this stone is the Weiler Block at the corner of Government and Broughton streets in Victoria. No production figures are available.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 385-392
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CANMET RPT 452, Vol. V, pp. 57,58

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 069** NATIONAL MINERAL INVENTORY:

NAME(S): **PENDER ISLAND**

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B14W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 45 53 N NORTHING: 5401333
LONGITUDE: 123 15 24 W EASTING: 481138
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On South Pender Island, at the east end of the narrows between North and South Pender islands (CANMET Report 452, Volume V, page 57).

COMMODITIES: Sandstone Building Stone Dimension Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Sandstone.
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive Stratiform
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R06 Dimension stone - sandstone
DIMENSION: Metres STRIKE/DIP: 027/90W TREND/PLUNGE: /

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Unnamed/Unknown Formation	

LITHOLOGY: Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage Wrangell

CAPSULE GEOLOGY

A hard, fine-grained sandstone member of the Upper Cretaceous Nanaimo Group containing disseminated biotite was quarried for building stone. Fresh rock is blue but weathers to a buff colour. Curving horizontal joints and other irregular partings divide the rock into irregular masses. The stone retains its original colour very well.

The product of this quarry was used chiefly for the tower of the Episcopal Church in New Westminster, and for a building at the corner of Carroll and Cordova streets in Vancouver. No production figures are available.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 385-392
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CANMET RPT *452, Vol. V, p. 57

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 070**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOPE BAY**, NORTH PENDER ISLAND

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B14W
BC MAP:
LATITUDE: 48 48 14 N
LONGITUDE: 123 16 38 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the northwest side of North Pender Island, at Hope Bay (CANMET Report 452, Volume V, page 52).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5405692
EASTING: 479644

COMMODITIES: Sandstone Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive Stratiform
CLASSIFICATION: Sedimentary
TYPE: R06 Dimension stone - sandstone

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Unnamed/Unknown Formation	

LITHOLOGY: Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

A hard, coarse-grained sandstone member of the Upper Cretaceous Nanaimo Group was quarried at Hope Bay on North Pender Island in 1896. The formation strikes 150 degrees and dips 20 degrees to the southwest.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 385-392
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CANMET RPT *452, Volume V, p. 57

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/25 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 071**
NATIONAL MINERAL INVENTORY: 092B14 Stn 1

NAME(S): **CAMPBELL BAY**, MAYNE ISLAND

STATUS: Past Producer Open Pit
MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B14W
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 51 34 N
NORTHING: 5411866
LONGITUDE: 123 16 05 W
EASTING: 480339
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: At tidewater on the north shore of Campbell Bay on Mayne Island, about half the distance to Edith Point.

COMMODITIES: Sandstone Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Sandstone.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R06 Dimension stone - sandstone
SHAPE: Regular
DIMENSION: Metres
STRIKE/DIP: 090/10N
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Gabriola	

LITHOLOGY: Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage Wrangell

CAPSULE GEOLOGY

A quarry was developed on the coast of Mayne Island in sandstone of the Upper Cretaceous Nanaimo Group, Gabriola Formation. The sandstone is light to medium brown in colour, has a fresh uniform texture and is medium-grained (0.06 to 2 millimetres). Beds strike east and dip north at 10 degrees. The quarry is 34 metres long by 3 to 4 metres high and was developed along joints striking northwest and dipping steeply southwest. Vertical cross joints strike northeast and are spaced between 1 and 5 metres apart.

Mayne Island sandstone was used (in part) to construct Postal Station C in Vancouver, at the corner of Main and 15th streets. Potential reserves of sandstone are exposed for at least 100 metres along the coast east and west of the quarry. No production figures are available.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 385-392
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
CANMET RPT *452, Vol. V, p. 55

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/11/10 REVISED BY: GVW FIELD CHECK: Y

MINFILE NUMBER: **092B 072**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOOTH BAY**, SALTSPRING ISLAND

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 52 09 N
LONGITUDE: 123 32 45 W
ELEVATION: 25 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: North shore of Booth Bay on Saltspring Island.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5413055
EASTING: 459972

COMMODITIES: Sandstone Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Sandstone.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R06 Dimension stone - sandstone
SHAPE: Regular

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Cedar District	

LITHOLOGY: Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

A quarry on Saltspring Island was developed in sandstone of the Upper Cretaceous Nanaimo Group, Cedar District Formation. The stone is medium-grained (0.06 to 2 millimetres), has a uniform texture and a moderate light to dark brown colour. Exposed surfaces of stone are prone to disintegration. The worked face extends intermittently for 150 metres along a vertical bedding plane and is cut by steeply dipping north-northeast striking joints. Vertical joints are widely spaced (up to 16 metres) while flat-lying bedding planes are regularly spaced between 2 to 4 metres.

Saltspring sandstone was used to construct a portion of the main Victoria Post Office but no production figures are available. Potential reserves of sandstone extend 20 metres north and east of the worked face. A developed residential lot immediately east of the quarry will restrict expansion.

BIBLIOGRAPHY

EMPR FIELDWORK *1987, pp. 385-392
EMPR INF CIRC 1994-15
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CANMET RPT *452, Vol. V, p. 52
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/11/10 REVISED BY: GVW FIELD CHECK: Y

MINFILE NUMBER: **092B 073**

NATIONAL MINERAL INVENTORY:

NAME(S): **PATRICIA**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B11W
BC MAP:
LATITUDE: 48 44 43 N
LONGITUDE: 123 28 09 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On southern Saltspring Island (Cowley, 1979).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5399246
EASTING: 465509

COMMODITIES: Rhodonite Gemstones

MINERALS
SIGNIFICANT: Rhodonite
ASSOCIATED: Calcite Pyrite Anthophyllite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive Stratabound Vein
CLASSIFICATION: Metamorphic Sedimentary Epigenetic Industrial Min.
TYPE: Q02 Rhodonite

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Cherty Tuff
Crystal Tuff
Argillite
Chert
Diabase
Gabbro

HOSTROCK COMMENTS: The unnamed gabbro and diabase intrusions are informally known as the Mount Hall Gabbro (N. Massey, personal communication, 1991).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The area is underlain by cherty tuff, crystal tuff, chert and argillite of the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group (formerly the Sediment-Sill Unit of the Sicker Group). The area is intruded by sills and dykes of diabase and gabbro (informally called the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation, Vancouver Group.

The Patricia deposit consists of a rhodonite lens, 1 metre thick, made up of massive, pink to brown, fine to predominantly very coarse-grained rhodonite. Calcite and pyrite veins as well as fracture-filled black oxides cut the lens. Anthophyllite, confirmed by x-ray diffraction analysis, is found on some weathered surfaces. The deposit adjoins the Hollings deposit (092B 074) to the southeast and is reported to be of similar nature. As of 1973, the deposit had not been extensively opened up, with limited production occurring.

BIBLIOGRAPHY

EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8
EMPR PF (In Commodity File - Sargent, H. (1956): Manganese Occurrences in British Columbia; Leaming, S.F. (1966): Rhodonite in British Columbia, The Canadian Rockhound, pp. 7,8; Danner, W.R. (1975): Gem Materials of British Columbia, Montana Bureau of Mines and Geology, Special Publication 74, p. 160)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 64-37, p. 19; 72-44; *72-53, pp. 34,55,95; 75-1A, p. 23; 79-30
Cowley, P. (1979): *Correlation of Rhodonite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia

BIBLIOGRAPHY

Graves, W. Unpublished B.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 074**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOLLINGS**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B11W
BC MAP:
LATITUDE: 48 44 52 N
LONGITUDE: 123 28 15 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On southern Saltspring Island (Cowley, 1979).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5399525
EASTING: 465389

COMMODITIES: Rhodonite Gemstones

MINERALS

SIGNIFICANT: Rhodonite
ASSOCIATED: Quartz Jasper Spessartine Rhodochrosite
ALTERATION: Garnet Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Massive Podiform Vein
CLASSIFICATION: Metamorphic Sedimentary Epigenetic Industrial Min.
TYPE: Q02 Rhodonite
DIMENSION: 30 x 5 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Maximum thickness, 5 metres; minimum length, 30 metres.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Chert
Cherty Crystal Tuff
Argillaceous Meta Chert
Schist
Diabase
Gabbro

HOSTROCK COMMENTS: Unnamed gabbro/diabase intrusions are informally known as the Mount Hall Gabbro (N.W. D. Massey, personal communication, 1991).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The area is underlain by cherty tuff, crystal tuff and thin-bedded sediments of the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group (formerly the Sediment-Sill Unit of the Sicker Group). The area is intruded by sills and dykes of diabase and gabbro (informally known as the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation, Vancouver Group.

The Hollings rhodonite deposit consists of a lens, convex at top and bottom, reaching a maximum thickness of 5 metres and a minimum length of 30 metres. The banded variety contains abundant quartz, jasper and minor amounts of spessartite. Rare fragments of green chert host rock are present in the rhodonite. Rhodochrosite surrounds calcite veins and bands. There are numerous quartz, minor rhodonite and minor neotocite veins cutting the rhodonite.

The lower 25 centimetres of the rhodonite lens consists of interbeds of rhodonite and calcareous magnetite-garnet schist, followed by a 9.5-metre sequence of argillaceous metachert, cherty crystal tuff with idiomorphic garnet and minor recrystallized limestone. Directly up section from the rhodonite lens is a 0.5-metre band of argillaceous garnet-magnetite metachert. Still further upsection an igneous intrusion (unspecified type) has obliterated the section. Glacial drift and alluvium cover the sequence further down section.

The rhodonite is considered to be of excellent gem quality and the deposit has been quarried commercially on a small scale. The material is sold in chunks of various sizes, by the pound or in sawed blocks and slabs. Most of the production has been sold in rock shops for amateur use and no figures are available.

CAPSULE GEOLOGY

Fred Hollings mined the deposit in the 50's and 60's.

BIBLIOGRAPHY

EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8
EMPR PF (In Commodity File - Sargent, H. (1956): Manganese Occurrences in British Columbia; Leaming, S.F. (1966): Rhodonite in British Columbia, The Canadian Rockhound, pp. 7,8; *Danner, W.R. (1975): Gem Materials of British Columbia, Montana Bureau of Mines and Geology, Special Publication 74, p. 160)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 64-37, p. 19; 72-44; 72-53, pp. 34,55,95; 75-1A, p. 23; 79-30
CAN ROCKHOUND Internet Magazine, Summer 1997, Vol. 1, No. 3; Rockhounding on Vancouver Island
WWW http://www.canadianrockhound.com/summer97/cr9701308__vancouver_island.html
Cowley, P. (1979): *Correlation of Rhodonite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia
Graves, W., Unpublished B.Sc. Thesis, University of British Columbia
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 87-88

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 075**

NATIONAL MINERAL INVENTORY:

NAME(S): **BPEX**, ZONE C, VAL

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 31 25 N
LONGITUDE: 123 56 19 W
ELEVATION: 460 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Within a few hundred metres to the west of the Jordan River (Assessment 19362).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5374925
EASTING: 430696

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Gold Pyrite Pyrrhotite Chalcopyrite Arsenopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Amphibolite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite
Greenschist

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1989

COMMODITY	GRADE	
Gold	7.2000	Grams per tonne

COMMENTS: From a 3 metre drill section.
REFERENCE: Assessment Report 19362.

CAPSULE GEOLOGY

The Bpex occurrence is underlain by amphibolite of the Jurassic to Cretaceous Leech River Complex (Formation). Two drill holes were put down on the property in 1989 in order to follow-up a 1988 drill hole which intersected 3 metres of native gold-bearing rock grading 7.2 grams per tonne gold (Assessment Report 19362). The area is 4 kilometres west-northwest of the Discovery zone of the Valentine Mountain property (see 092B 108) and is apparently on strike with that zone.

The amphibolites in the drill core contain local biotite-rich layers and 5 to 7 per cent quartz stringers and sweats, with less than 1 per cent quartz veining throughout the unit. Mineralization consists of 1 to 2 per cent localized disseminated pyrite, pyrrhotite, chalcopyrite and trace arsenopyrite. Although the geology of the two 1989 drill holes was reported to be the same as the gold-bearing 1988 hole, no anomalous gold values were obtained from assays.

BIBLIOGRAPHY

EM EXPL 2000-25-32; 2002-29-40
EMPR ASS RPT 10110, 12642, 17259, *19362
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 39; 96, p. 70
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM B. Beaupre, Oct. 1990

BIBLIOGRAPHY

Wingert, G.A. (1982): Structure and Metamorphism of the Valentine Mountain Area, Unpublished B.Sc. Thesis, University of British Columbia

DATE CODED: 1990/11/19 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 076**

NATIONAL MINERAL INVENTORY:

NAME(S): **LADY D**, JRM 7

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 54 42 N
LONGITUDE: 123 47 59 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the northeast flank of Mount Brenton (Map A, Ladysmith Development Ltd. - Property File; Assessment Report 15749).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5417944
EASTING: 441403

COMMODITIES: Iron, Magnetite, Gold, Silver, Copper

MINERALS
SIGNIFICANT: Magnetite, Pyrite, Chalcopyrite, Jasper
ASSOCIATED: Jasper, Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Carboniferous

DEPOSIT
CHARACTER: Massive, Stratabound
CLASSIFICATION: Volcanogenic, Syngenetic, Exhalative
TYPE: G01 Algoma-type iron-formation, Q05 Jasper
DIMENSION: 540 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	

LITHOLOGY: Jasper
Andesite
Cherty Tuff
Breccia

HOSTROCK COMMENTS: The iron formation is probably exhalative within the Nitinat Formation (Massey, N.W.D., Personal Communication, 1991).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	42.8600	Grams per tonne
Gold	3.2200	Grams per tonne
Copper	8.6000	Per cent

REFERENCE: Assessment Report 15749, page 11.

CAPSULE GEOLOGY

The Lady D area is underlain by volcanics of the Devonian Nitinat Formation, Sicker Group. An exhalative iron formation is associated with a jasper unit. The unit is mapped at the contact of cherty tuffs above, and intermediate volcanics below. It appears to pinch and swell, with observed thicknesses up to 10 metres.

In 1986, massive magnetite up to 8 metres thick was intersected in a drill hole by Utah Mines Limited. Up to 2.5 per cent pyrite was present along fractures. An old adit and dump in the same area showed samples of massive magnetite breccia containing up to 20 per cent pyrite with traces of chalcopyrite. Assay values were up to 0.05 per cent copper and 0.74 grams per tonne gold (Assessment Report 15749, page 14). Another nearby drill hole intersected similar mineralization. Moderate quartz veining with pyrite is present in the footwall andesite.

Work done on the showing in 1953 by Ladysmith Development Ltd. indicated that the iron zone extended along strike for 540 metres (Buckham, 1953, Map A).

Zones of crackle brecciation occurring in the andesite contain

CAPSULE GEOLOGY

magnetite, pyrite, chalcopyrite and malachite. One of these masses (probably to the northwest of the iron zone?) assayed 8.6 per cent copper, 42.86 grams per tonne silver and 3.22 grams per tonne gold (Assessment Report 15749, page 11).

BIBLIOGRAPHY

EMPR ASS RPT 12048, 12315, 12788, 14008, 14669, *15749
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8; 1988-28
EMPR PF (*Report on Exploration for Iron Ore, Ladysmith Devolopment Ltd., A.F. Buckham, December 1953 (in Lady A file - 092B 029))
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96, p. 391
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 111

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 077**

NATIONAL MINERAL INVENTORY:

NAME(S): **BINGO**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 36 03 N
LONGITUDE: 123 51 46 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1.5 kilometres north of Weeks Lake (Assessment Report 18848).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5383443
EASTING: 436392

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Unknown
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex
Paleozoic-Mesozoic			Wark Gneiss

LITHOLOGY: Graphitic Schist
Volcanic Rock
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim
COMMENTS: The metamorphic rock is a result of cataclastic metamorphism.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1988

COMMODITY	GRADE	
Silver	10.2800	Grams per tonne
Gold	9.6000	Grams per tonne

COMMENTS: Chip sample taken over 2 metres.
REFERENCE: Assessment Report 18848.

CAPSULE GEOLOGY

The area is underlain by the Survey Mountain fault, which forms the boundary of the Mesozoic and/or Paleozoic Wark Gneiss on the north, and the Jurassic to Cretaceous Leech River Complex (Formation) on the south. Rocks of the Wark Gneiss are reported to consist of chloritized diorite and gneissic dioritic. The Leech River rocks consist of well-foliated chlorite-sericite schist, sheared argillite, chert and volcanic breccia.

The Survey Mountain fault forms a zone, almost 300 metres wide, striking 130 degrees and dipping nearly vertically. The zone consists of several large graphitic shears and faults, three main ones, all hosted by the volcanic units of the Leech River Complex. A sample taken from one of these shears consisted of irregular stringers of quartz in brecciated graphitic schist. The sample was taken over a 2 metre interval and assayed 9.60 grams per tonne gold, 10.28 grams per tonne silver, and 0.01 per cent copper (Assessment Report 18848).

BIBLIOGRAPHY

EMPR ASS RPT *18848
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701

BIBLIOGRAPHY

GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1990/10/24 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 078**

NATIONAL MINERAL INVENTORY:

NAME(S): **LEECH RIVER PLACER**, MARTIN'S GULCH, KENNEDY FLAT

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W 092B12E 092B05E
BC MAP:
LATITUDE: 48 30 01 N
LONGITUDE: 123 44 45 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Leech River placers occur along Leech River (and tributaries) between its confluence with the Sooke River and a point upstream about 6.5 kilometres (Holland, 1944).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5372175
EASTING: 444904

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Gravel
Schist

HOSTROCK COMMENTS: Leech River Complex slaty schists underlie gold-bearing gravels.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Placer gold occurs almost exclusively in the gravels of the streams that drain the area underlain by the slaty schists of the Jurassic to Cretaceous Leech River Complex (Formation). Fairly coarse gold may be found in the gravels of virtually all these streams. The gold in the Recent gravel deposits has likely been derived from the numerous quartz veins that occur in the slaty schists. These veins are seldom more than small stringers and lenses a few centimetres wide and a metre or so in length. The only metallic minerals in the veins are a little pyrite or chalcopyrite and free gold. The veins are generally too small and too barren to be profitably mined.

The placer deposits were discovered in the 1860's and at that time were extensively worked. It is believed that over 3,000 men were engaged in placer mining at one time along Leech River. By 1876, it was estimated that 100,000 dollars worth of gold had been recovered. Later estimates place the actual value between 100,000 and 200,000 dollars (Holland, 1944). Signs of old workings are seen along the river upstream from the Sooke River, a distance of about 6.5 kilometres, to a point 1.5 kilometres beyond the first fork. According to G.M. Dawson the run of gold turned up the North Fork but rapidly diminished and ran out above the falls in the Devil's Grip. Between 1924 and 1945 a recorded 192 ounces of gold were recovered (Bulletin 28, page 16). Of the tributaries to Leech River, Martin's Gulch is notable for the gold that was found for a distance of 2 kilometres up from Leech River.

It appears that most of the gold was derived from bars or in crevices in the bedrock of the river bed, or from benches along the side of the river. The gold recovered from the benches was mined either at: a) a depth of 3 to 5 metres and 3 metres above river level on a clay "false bedrock" of a low bench on the north side of the Leech River that extends 400 metres upstream from its junction with the Sooke River or; b) on the bedrock beneath the shallow overburden on a rock bench about 3 metres above river level that extends more or less continuously on one side of the river or the other, at least as far as the first fork in the river about 5 kilometres upstream from Sooke River. Nuggets varying in size from

CAPSULE GEOLOGY

15.6 to 31.1 grams have been recovered.

BIBLIOGRAPHY

EMPR AR 1893-1079; 1895-649; 1899-794; 1901-1119; 1908-165; 1913-290; 1916-367; 1920-221; 1925-303; 1928-361; 1931-161; 1932-202; 1933-248; 1934-F1
EMPR BULL *28, p. 16
EMPR FIELDWORK 1981, pp. 70-74; 1982, 37-45
EMPR PF (Nordlund, K. (1937): Report of Placer Possibilities on the Leech River; Sketches of placer leases and workings near on Leech River near Martin's Gultch, 1937-1938; Fraser, H.M. (1938): Report on Van Isle Placers; Memo re Vanisle Mines, by D. Lay, 1941; *Holland, S.S. (1944): Report on Leech River)
EMPR PREL RPT 1964 by Robert Brown
GSC MAP 42A; 1386A; 1553A
GSC MEM *13, pp. 153-156; 36; *96, pp. 366-368
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
GSC PROGRESS RPT *1876-1877, pp. 95-102
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 81

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 079**

NATIONAL MINERAL INVENTORY:

NAME(S): **PROBITY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05W
BC MAP:
LATITUDE: 48 27 03 N
LONGITUDE: 123 53 28 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located within a few hundred metres east of Muir Creek (Assessment Report 12617).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5366794
EASTING: 434109

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 300 x 1 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1984
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	1.0000	Per cent

REFERENCE: Assessment Report 12617.

CAPSULE GEOLOGY

The Probity area is underlain mainly by basaltic pillow lavas of the Eocene Metchosin Volcanics. An east trending mineralized zone occurs adjacent to a small intrusive body (Tertiary) and shear zone. The zone is reported to be 300 metres long and 1 metre wide. A sample of the material assayed 1 per cent copper (Assessment Report 12617, page 4).

BIBLIOGRAPHY

EMPR ASS RPT *12617
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1990/10/17
DATE REVISED: 1990/10/17
CODED BY: GJP
REVISED BY: GJP
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092B 080**

NATIONAL MINERAL INVENTORY: 092B12 Cu1

NAME(S): **BLUEBELL (L.15G)**, BLUE BELL

STATUS: Past Producer Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 40 55 N
LONGITUDE: 123 41 59 W
ELEVATION: 295 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adjoins the King Solomon Crown grant (Lot 17G) to the north (092B 015), (Kirkham, 1960).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5392336
EASTING: 448496

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Magnetite Specularite
ALTERATION: Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated Shear
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Jurassic			Island Plutonic Suite

LITHOLOGY: Chert
Garnetite
Limestone
Cherty Tuff
Granodiorite
Rhyolite

HOSTROCK COMMENTS: Skarn deposit in Mount Mark Formation sediments near Island Plutonic Suite granodiorite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: PIT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	25.3700	Grams per tonne
Copper	3.6600	Per cent

COMMENTS: From a 2 metre chip sample.
REFERENCE: Assessment Report 13997, page 75.

CAPSULE GEOLOGY

The area is underlain predominantly by bedded chert and cherty basaltic tuffs of the Mississippian to Pennsylvanian Fourth Lake Formation (formerly the Sediment-Sill Unit of Muller), Buttle Lake Group. These are overlain by limestone, bedded chert and cherty tuff of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (formerly the Buttle Lake Formation). Between the Mount Mark and Fourth Lake formations, and above the Mount Mark Formation, are packages of mainly basaltic rock, of unknown affinity. These Paleozoic rocks are intruded by numerous dykes of feldspar porphyritic dacite and rhyolite and part of a granodioritic stock of the Early to Middle Jurassic Island Plutonic Suite (formerly known as the Island Intrusions).

The Bluebell deposits were explored by driving two declines and an adit between 1905 and 1907. Mineralization is exposed at three localities, the Bluebell Lower and Upper workings and the stripped area to the east, the latter of which can be included with the Upper workings since it occurs along strike of the controlling shear. The host rocks of the Bluebell deposit are Mount Mark cherts and cherty

CAPSULE GEOLOGY

tuffs and argillites with calcareous intervals. A garnetite facies, which was originally limestone, occurs at the Lower workings. This garnetite forms a lenticular body in chert, and is either in contact with or a short distance away from granodiorite of the Island Plutonic Suite stock. An intrusive rhyolite rock has also been reported to occur near the deposit.

The Upper Bluebell deposit, about 150 metres southeast of the Lower Bluebell deposit, consists of a small percentage of disseminated chalcopyrite in the footwall of a shear which has a strike of 037 degrees and a dip of 55 degrees southeast. There is also minor pyrite and magnetite in the vicinity. This deposit is considered to be of low grade and of minor importance.

The mineralization at the Lower Bluebell deposit contains areas of massive sulphides and oxides which run as high as 15 to 20 per cent copper over short distances. The mineralization may be subdivided into three groups: (1) massive; (2) disseminated in garnetite; and (3) pyrite-rich wallrock alteration. The massive sulphides occur adjacent to the main shear zone and may represent replacement of the brecciated garnetite. The gangue, in order of paragenesis, consists of specularite, magnetite and pyrite. The chalcopyrite replaces the other minerals and makes up 50 per cent of the rock. The disseminated ore consists of 5 to 10 per cent garnetite skarn and is mainly chalcopyrite with minor pyrite and magnetite. The pyrite-rich alteration phase is common but does not contain any economic mineralization. In places the pyrite almost replaces the pre-existing rock which is commonly chert.

A 2-metre chip sample of massive mineralization exposed in the Bluebell pit yielded 3.66 per cent copper, 0.028 per cent zinc and 25.37 grams per tonne silver (Assessment Report 13997). In 1907, 175 tonnes of ore were mined and 3,608 grams of silver and 9,482 kilograms of copper were recovered (Mineral Policy data).

BIBLIOGRAPHY

EMPR AR 1903-210; 1904-253; 1905-216; 1906-207; 1907-155; 1908-164; 1909-278; 1913-290; 1916-312; 1923-272; 1928-363; 1959-140; 1960-116
EMPR ASS RPT *13997
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
EMPR PF (Detailed Data on the Copper Property Known as the King Solomon Mines, author unknown, circa 1920 to 1930; *Report on the King Solomon Mines by H.G. Humes, Jan.2, 1932; Preliminary Report on the Kinsol Group by McDougall, B.W.W., 1956; Diamond Drill Hole Records, 1956; Various geological, geophysical, plan and survey maps of the King Solomon property, late 1950's; Cellardor Mines Ltd. report by D.C. Malcolm, undated; Prospectus by Cellardor Mines Ltd., February 1960)
EMR MP METAL CONTROLLER FILE 167-C3-2-26
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; *96, p. 372
GSC P 72-44; 75-1A, p. 23; 79-30
GCNL #4,#6,#14,#45,#160, 1986
N MINER Jan.27, 1986
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
*Kirkham, R.V. (1960): The Geology of the King Solomon and Bluebell Claims of the Cellardor Mines Ltd., Unpublished B.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/11/02 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 081**

NATIONAL MINERAL INVENTORY:

NAME(S): **ARSENIC**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 39 45 N
LONGITUDE: 123 42 27 W
ELEVATION: 133 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located approximately 1.6 kilometres south of the King Solomon (092B 015) Crown grant (Lot 19G), Geological Survey of Canada Memoir 96, page 372).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5390180
EASTING: 447903

COMMODITIES: Arsenic

MINERALS
SIGNIFICANT: Arsenopyrite Arsenic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

LITHOLOGY: Sediment/Sedimentary

HOSTROCK COMMENTS: Host rock is not reported but area is underlain by a sedimentary unit.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Arsenopyrite and native arsenic are reported to occur about 1.6 kilometres to the south of the King Solomon mine (92B 015). The area is underlain by the Upper Pennsylvanian to Lower Permian Fourth Lake Formation, Buttle Lake Group.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; *96, p. 372
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 082**

NATIONAL MINERAL INVENTORY:

NAME(S): **W.A.E. (L.38G)**, FALLSIDE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 40 08 N
LONGITUDE: 123 41 34 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The W.A.E. showing (claim Lot 38G, cancelled) is located on the bank of the Koksilah River (Old claim map in King Solomon file - 092B 015).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5390880
EASTING: 448994

COMMODITIES: Copper Zinc Gold

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite
COMMENTS: Minerals are presumed to be chalcopyrite and sphalerite.
ASSOCIATED: Quartz
ALTERATION: Garnet Actinolite Epidote Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Massive
CLASSIFICATION: Skarn Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Carboniferous	Buttle Lake	Fourth Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Chert
Marble
Greenstone
Granodiorite
Feldspar Hornblende Porphyry Dike
Volcanic Dike
Skarn

HOSTROCK COMMENTS: Skarn mineralization is related to Mount Mark limestone/marble, which occurs locally overlying Fourth Lake greenstone.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: LENS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1903
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	1.6700	Grams per tonne
Copper	26.0000	Per cent

REFERENCE: Minister of Mines Annual Report 1903, page 210.

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1952
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Zinc	1.9000	Per cent

REFERENCE: Minister of Mines Annual Report 1952, page 214.

CAPSULE GEOLOGY

The area is underlain by the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group. This unit is overlain locally by limestone, bedded chert and cherty tuff of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (formerly the Buttle Lake Formation). A granodioritic stock of

CAPSULE GEOLOGY

the Early to Middle Jurassic Island Plutonic Suite (formerly known as the Island Intrusions) disrupts the regional stratigraphy.

The W.A.E showing, worked around 1903, is located on the bank of the Koksilah River. A quartz vein occurs at the contact of chert and limestone and is reported to carry "zinc and copper". About 180 metres distant, along the trend of the vein, a dyke of volcanic rock is exposed, lying parallel and close to the vein. Only a little quartz occurs in this exposure, the copper being found in garnetite with actinolite and epidote.

The Wallace and Copper Hill claims were situated to the west of the W.A.E. occurrence, away from the river but on parallel lines. Copper is found at chert and granodiorite contacts.

The Fallside showing was worked in the early 1950's and also occurs near the Koksilah River, near an old adit. It is possible that these showings are the same. Greenstone is reported to be the most abundant rock in the area; marble is the most abundant rock near the showings. Intrusive into the marble and greenstone is a granitic mass and several minor bodies, the latter either dykes or sills consisting of feldspar-hornblende porphyry. Skarn minerals consisting of garnet, epidote, and diopside are found in the marble, greenstone and granodiorite. Associated with the skarn are small amounts of magnetite, pyrite and pyrrhotite, and minor amounts of sphalerite and chalcopyrite. Quartz has been introduced along the zones and manganese stain is common near them. One zone is 2 metres wide but the others are less. One of several samples taken contained 1.9 per cent zinc; all samples assayed nil in gold and silver (Minister of Mines Annual Report 1952, page 214).

BIBLIOGRAPHY

EMPR AR *1903-209; 1906-256; *1952-214
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96, p. 372
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 083**

NATIONAL MINERAL INVENTORY:

NAME(S): **DORA-MABEL**, DORA (L.35G), MABEL (L.36G), FOUR ADITS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 41 18 N
LONGITUDE: 123 42 26 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The old Mabel (Lot 36G) and Dora (Lot 35G) claims were located northwest of and adjoining the Blue Bell claim (Lot 15G) - 092B 080 (Minister of Mines Annual Report 1903, page 210). The Four Adits showing examined in 1985 is apparently the same (Assessment Report 13997).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5393052
EASTING: 447950

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrolusite Specularite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Skarn Replacement

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite
Porphyritic Dacite
Rhyolite
Limestone
Marble
Chert

HOSTROCK COMMENTS: Inclusions of skarn, marble and chert are hosted within intrusive rock.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain predominantly by bedded chert and cherty basaltic tuffs of the Mississippian to Pennsylvanian Fourth Lake Formation (formerly the Sediment-Sill Unit of Muller), Buttle Lake Group. These are overlain by limestone, bedded chert and cherty tuff of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (formerly the Buttle Lake Formation). Between the Mount Mark and Fourth Lake formations, and above the Mount Mark Formation, are packages of mainly basaltic rock, of unknown affinity. These Paleozoic rocks are intruded by numerous dykes of feldspar porphyritic dacite and rhyolite and part of a granodioritic stock of the Early to Middle Jurassic Island Plutonic Suite (formerly known as the Island Intrusions).

The Dora-Mabel skarn showing has been explored by 4 adits and is well exposed on the surface by roadcuts. Very strongly fractured ossanous intrusive rocks are exposed, including rhyolite, porphyritic dacite and granodiorite. The intrusives contain shear-bounded inclusions, 2 to 7 metres wide, of chert, skarn and marble and are in contact to the south with chert and interlayered skarn of the Mount Mark Formation. The skarns and the intrusives contain abundant fracture pyrite; the rhyolite commonly contains 3 to 5 per cent disseminated pyrite and locally, narrow zones of strong epidote alteration with 5 to 15 per cent pyrite. The only massive mineralization exposed consists of a lens(?), up to 50 centimetres in width, consisting of magnetite and 1 to 2 per cent chalcopyrite. A chip sample across the lens graded 0.97 per cent copper and 4 grams per tonne silver (Assessment Report 13997).

BIBLIOGRAPHY

EMPR AR *1903-210; 1907-221
EMPR ASS RPT 11446, *13997
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/06 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 084**

NATIONAL MINERAL INVENTORY:

NAME(S): **JANE**, WEST, CROFT 2

STATUS: Prospect Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 51 33 N
LONGITUDE: 123 41 19 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1.25 kilometres south-southwest of Westholme (Assessment Report 17007, Figure 3).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5412029
EASTING: 449492

COMMODITIES: Zinc Copper

MINERALS
SIGNIFICANT: Pyrrhotite Sphalerite Chalcopyrite Pyrite
ASSOCIATED: Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive
CLASSIFICATION: Volcanogenic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Devonian			Saltspring Intrusive Suite
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Schist
Quartz Feldspar Porphyry
Gabbro

HOSTROCK COMMENTS: The area is mapped as McLaughlin Ridge Formation (Open File 1988-8). The unnamed gabbroic intrusives are coeval with the Karmutsen Fm.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: LENS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1949
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.0500	Per cent
Zinc	16.1000	Per cent

COMMENTS: From a 91-centimetre chip sample.
REFERENCE: Minister of Mines Annual Report 1949, page 225.

CAPSULE GEOLOGY

The Jane prospect is underlain by metavolcanics of the McLaughlin Ridge Formation, Sicker Group. The strata are intruded by gabbro, (informally known as the Mount Hall Gabbro), coeval with the Upper Triassic Karmutsen Formation (Vancouver Group), and by quartz-feldspar porphyries of the Late Devonian Saltspring Intrusive Suite (formerly known as the Saltspring Intrusions), (Massey, N.W.D., Personal Communications, 1991). The Sicker rocks are in unconformable contact with the Cretaceous Nanaimo Group to the north, and cut off to the south by the northwest trending Fulford thrust fault. A younger, left-lateral strike-slip fault, trending north-northeast, offsets the generally east trending rocks on the west side off Mount Richards (Massey, N.W.D., 1988).

The workings consist of two short adits and several opencuts. Lenses of sulphides in schistose quartz-feldspar porphyry are exposed. The porphyry forms a dyke-like body about 140 metres wide trending 110 degrees parallel to the strike of the schistosity. It is bounded on both sides by massive-grained diorite that appears to intrude the porphyry.

Mineralization in the adit consists of lenses of fine-grained, dense, massive sulphides lying parallel to the schistosity of the

CAPSULE GEOLOGY

porphyry. Pyrrhotite, sphalerite, chalcopyrite and pyrite are the principal sulphides, and small amounts of quartz and calcite form the only gangue material. The largest lens is about 45 centimetres wide and up to 1.5 metres long. A sample taken across 91 centimetres assayed 16.1 per cent zinc and 0.05 per cent copper (Minister of Mines Annual Report 1949, page 225)

BIBLIOGRAPHY

EMPR AR *1949-224,225
EMPR ASS RPT 2397, 7233, 11433, 13532, 13853, *17007
EMPR FIELDWORK 1979, pp. 49-51; 1987, pp.81-91
EMPR MAP 40
EMPR OF 1988-8; 1988-19; 1999-2
EMPR P 1991-4, p. 102
EMPR PF ((Electromagnetic Profile, Canadian Pacific Minerals Ltd., 1971; Apparent Chargeability Contour Plan, Canadian Pacific Minerals Limited, 1971; Mount Richards Geochemical Survey (showing workings), Canadian Pacific Oil and Gas, 1969; Induced Polarization and Electromagnetic Survey, Canadian Pacific Minerals, 1971) - see Ironclad file - 092B 049; Geological Plans Showing Main Workings (Jane), Sept.10, 1949)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991
Falconbridge File
Money, D.P. (1987): Geology of the Jane Volcanogenic Massive Sulphide Showing and its Host Rocks, B.A.Sc. Thesis, University of Toronto

DATE CODED: 1990/09/17 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/09/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 085**

NATIONAL MINERAL INVENTORY:

NAME(S): **REGAL**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 50 39 N
LONGITUDE: 123 54 40 W
ELEVATION: 340 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the north side of the Chemainus River, about 14 kilometres northwest of Duncan. Small quarry located on the Regal claims, about 300 metres north of the Chemainus River, 750 metres east of Chipman Creek (Assessment Report 17231).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5410533
EASTING: 433152

COMMODITIES: Expanding Shale, Aggregate, Building Stone, Shale

MINERALS
SIGNIFICANT: Shale
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive, Stratiform
CLASSIFICATION: Sedimentary, Industrial Min.
TYPE: R02 Expanding shale

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Cedar District	

LITHOLOGY: Shale
Siltstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Overlap Assemblage, Wrangell

CAPSULE GEOLOGY

The Regal expanding shale deposit is composed of rock of the Upper Cretaceous Cedar District Formation, Nanaimo Group.

Z.D Hora of the provincial Geological Survey reported in 1979 that a large quantity of shale is exposed along the northern bank of the Chemainus River, east of Chipman Creek (Letter by Z.D. Hora, 1979 - Property File). The shale is dark grey and exposed in steep cliffs up to about 70 metres high for about 1 kilometre along the river. The shale beds strike generally east-west, with a dip of between 30 to 40 degrees to the north. At the western end of the exposure, otherwise monotonous, massive looking shale extending over the entire height of the cliff is interrupted in the uppper and lower third by two 5-metre thick layers of banded quartzite. The upper quartzite layer branches and pinches out about halfway to the east end of the exposure. The overall average thickness of the overburden is not likely to exceed a few metres in this area.

Several samples of the shale were taken by Hora in order to test the bloating properties. All samples were fired in an electric kiln to 1090 to 1100 degrees Celsius. This produced uniform looking round-shaped porous particles of a coated nature, with volume expansion estimated at more than 100 per cent. The bloated particles float nicely in water, without soaking and sinking after some time. Hora reports "there are all indications that good quality lightweight aggregate can be produced from this shale" and "a very consevative estimate" of the volume available and accessible for quarrying is "between 2.5 and 5 million cubic metres" (Letter by Z.D. Hora, 1979 - Property File).

Tests done by Shalex Resources Limited in 1986 also indicate that this shale is expandable and suitable as lightweight aggregate for use in the making of light-weight cement. A small quarry is located on the Regal claims, about 300 metres north of the Chemainus River and about 750 metres east of Chipman Creek. At this location, the medium to dark brownish grey shale is soft, friable and thinly laminated, containing minor amounts of siltstone. It was found when crushed and heated to 1220 degrees Celsius that the bulk density changed from approximately 750 kg/cubic metre to 300 kg/cubic metre. The expanded material had a high strength-to-weight ratio, a uniform

CAPSULE GEOLOGY

spherical shape and was not absorbent (Assessment Report 17231, page 18).

BIBLIOGRAPHY

EMPR ASS RPT *17231
EMPR BULL 30
EMPR PF (*Letter by Z.D. Hora, 1979; I-XL Research Laboratory Report on Vancouver Island Clays and Shales, 1979 (submitted by T.D. McEwan))EMPR AR 1953-188
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 24E; 47
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED:	1990/08/20	CODED BY:	GJP	FIELD CHECK:	N
DATE REVISED:	1998/11/17	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092B 086**

NATIONAL MINERAL INVENTORY:

NAME(S): **COPPER CANYON (L.22G)**, VICTORIA , ELMORE FRACTION

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 01 N
LONGITUDE: 123 48 41 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Crown grant Lot 22G adjacent the west bank of the Chemainus River, west of Mount Sicker (Assessment Report 4626).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5412982
EASTING: 440495

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Volcanogenic Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Schist
Cherty Tuff
Rhyolite Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Copper Canyon showing is located on the west bank of the Chemainus River, west and along strike of the volcanogenic-type Victoria (092B 004) past-producer, located on the opposite bank of the river.

The area is underlain mainly by felsic volcanic tuffs of the McLaughlin Ridge Formation, Sicker Group. The rocks at the showing include graphitic schists and cherty sediments and tuffs which form a band within the rhyolitic volcanics. This is the same band of sediments which host the massive sulphides at the Lenora-Tyee (092B 001) deposit to the east. The strike of the sediments along the Chemainus River is about 080 degrees and the dip is 70 degrees south.

An adit has been driven on a quartz vein which varies in width from 2.5 to 46 centimetres, averaging about 33 centimetres. The tunnel follows the vein for 41 metres at which point it stops (Minister of Mines Annual Report 1902). The vein is reported to contain mostly pyrite with some chalcopyrite and traces of sphalerite and galena. Gold values are reported to be low. A 91 metre shaft was later put down on the Copper Canyon group (presumably on the claim of the same name) with drifts driven off it. Some attractive copper showings were reported. Assessment Report 4626 (Figure 3) shows a shaft on the claim near the Chemainus River.

BIBLIOGRAPHY

EMPR AR 1897-567; 1898-1148; 1901-1118; *1902-239,252; 1905-216; 1907-254; 1916-312; 1928-365
EMPR ASS RPT 3099, 4626, 6600, 6599, 6972, 7183, 7435, 16871, 17836
EMPR EXPL 1977-E104; 1978-E120; 1979-122; 1988-C71
EMPR FIELDWORK 1987, pp. 81-91
EMPR GEM 1973-224
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral

BIBLIOGRAPHY

Deposits, Ph.D. Thesis, Carleton University
*Holbek, P. (1980): Geology and Geochronometry of the Sharron Volcanogenic Prospect, Mt. Brenton Area, Southwestern B.C., B.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 087**

NATIONAL MINERAL INVENTORY:

NAME(S): **KEY CITY (L.37G)**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 00 N
LONGITUDE: 123 47 44 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Crown grant Lot 37G on Mount Sicker (Assessment Report 18520, Figure 3).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5412939
EASTING: 441656

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Vein
CLASSIFICATION: Volcanogenic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Rhyolite Tuff
Graphitic Schist
Cherty Tuff
Cherty Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Key City occurrence is located within the Cowichan uplift; one of three geanticlnal uplifts that expose Paleozoic Sicker and Buttle Lake Group rocks on Vancouver Island. Cretaceous sediments of the Nanaimo Group unconformably overlie the Paleozoic rocks; the contact is marked by a basal conglomerate containing volcanic fragments derived from the Sicker Group. The local stratigraphy is disrupted by folding, faulting (pre-Triassic as well as Tertiary) and the intrusions of gabbro and diabase sills and dykes (informally known as the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation.

The Sicker Group rocks mainly comprise felsic volcanic tuffs of the McLaughlin Ridge Formation. The rocks in the area include graphitic schists and cherty sediments and tuffs which form a band within the rhyolitic volcanics. This is the same band of rock which hosts the massive sulphides on the Lenora-Tyee mines (092B 001) to the immediate east.

The property was first explored by an adit run from south to north for about 160 metres in order to intersect the projected extension of the Lenora orebody. Overall the adit cuts about 60 metres of diorite and 100 metres of schist. A shaft runs 30 metres from the surface to intersect the adit about 100 metres from the portal. The shaft then continues down to the 60 metre-level where a crosscut is made 60 metres to the south. There are several places in the schists where a small amount of pyrite and chalcopyrite show in small stringers or disseminations but no orebody was intersected.

BIBLIOGRAPHY

EMPR AR 1897-567; 1900-995; *1902-240,251; 1916-312; 1924-252
EMPR ASS RPT 1104, 1714, 3950, 3951, 5164, 12371, 14735, 15719, 18859, 19754
EMPR EXPL 1978-E119; 1980-153
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR GEM 1969-224; 1970-291; 1972-240; 1974-163
EMPR OF 1988-8
EMPR PF (See Lenora - 92B 001 for related material)
GSC MAP 42A; 1386A; 1553A

BIBLIOGRAPHY

GSC MEM 13; 36; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CIM Transactions Vol.XLVIII, 1945, pp. 294-308
CIM Vol.1, pp. 88-93
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/13 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 088**

NATIONAL MINERAL INVENTORY:

NAME(S): **QUEEN BEE (L.100G)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 29 N
LONGITUDE: 123 47 05 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Situated on the north slope of Mount Sicker within the Queen Bee Crown grant Lot 100G (Assessment Report 15719).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5413826
EASTING: 442460

COMMODITIES: Copper Zinc Gold

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Volcanogenic Hydrothermal
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Andesite
Rhyolite
Dacitic Ash
Tuff
Chert

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1986

COMMODITY	GRADE	
Copper	0.9900	Per cent
Zinc	1.1800	Per cent

COMMENTS: From a 1.45 metre drill interval.
REFERENCE: Assessment Report 15719.

CAPSULE GEOLOGY

The Queen Bee occurrence on Mount Sicker is located within the Cowichan uplift and is underlain mainly by andesitic and rhyolitic volcanics of the McLaughlin Ridge Formation, Sicker Group. The local stratigraphy is disrupted by folding, faulting (pre-Triassic as well as Tertiary) and the intrusions of gabbro and diabase sills and dykes (informally known as the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation. The showing lies 1 kilometre to the north of the Lenora-Tyee volcanogenic massive sulphide deposit (092B 001) and is of related origin.

In 1986, Corporation Falconbridge Copper (Minnova) drilled two holes on the old Queen Bee Crown grant, in order to test the "Mine Package". Both holes (MTS-25,26) intersected a mineralized, chloritized and locally barium enriched package consisting of well-bedded dacitic ash, tuff and chert. The package contained up to 20 per cent pyrite and 6 per cent chalcopyrite. One sample assayed 0.99 per cent copper and 1.18 per cent zinc over 1.45 metres (Assessment Report 15719). Pyrite-pyrrhotite-chalcopyrite stringer mineralization was encountered in epidotized andesitic volcaniclastics stratigraphically above the "Mine Package" in both holes.

By 1898, a 20-metre tunnel had been driven into a reef (quartz

CAPSULE GEOLOGY

vein) that contained free milling gold. Two shafts were reported in 1900; one 21 metres deep with 37 metres of drifting and the other almost 11 metres deep with 24 metres of opencut.

BIBLIOGRAPHY

EMPR AR *1898-1148; 1900-929; 1901-1232A; 1903-250
EMPR ASS RPT 3950, 3951, 4904, 5164, 7714, *7875, 8264, 12172, 14735, *15719, 16716, 17834, 19754
EMPR EXPL 1977-E104; 1978-E121; 1979-121
EMPR FIELDWORK 1987, pp. 81-91
EMPR GEM 1972-240; 1974-163; 1977-E104; 1978-E121
EMPR OF 1988-8; 1999-2
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 089**

NATIONAL MINERAL INVENTORY:

NAME(S): **BELLE (L.55G)**, LITTLE NUGGET (L.33G), SEATTLE (L.57G), SCOTCH, L.55G

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 29 N
LONGITUDE: 123 47 03 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drill area near where the Belle, Little Nugget, and Seattle Crown grants meet (Assessment Report 8264).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5413826
EASTING: 442501

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Silica Chlorite Sericite
ALTERATION TYPE: Silicific'n Chloritic Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Volcanogenic Hydrothermal
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Schist
Andesite
Dacite
Rhyolite
Gabbro
Diorite

HOSTROCK COMMENTS: The intrusive rocks are coeval with the Karmutsen Formation of the Vancouver Group.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1979
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.3700	Per cent

COMMENTS: The assay is from a 4.6 metre drill interval.
REFERENCE: Assessment Report 8264.

CAPSULE GEOLOGY

The Belle occurrence on Mount Sicker is located within the Cowichan uplift and is underlain mainly by andesitic to rhyolitic tuffs of the McLaughlin Ridge Formation, Sicker Group. The local stratigraphy is disrupted by folding, faulting (pre-Triassic as well as Late Cretaceous) and the intrusions of gabbro and diabase sills and dykes that are coeval with the Upper Triassic Karmutsen Formation. The showing lies about 1 kilometre to the north of the Lenora-Tyee volcanogenic massive sulphide deposit (092B 001) and is of related origin.

In 1980, Serem Limited drilled four diamond-drill holes in order to test a package of variably siliceous schists that originated as tuffs and flows and which are similar in nature to the package hosting the Lenora-Tyee deposit. The schists, locally chlorite and sericite altered, appear to form a south dipping panel having a hanging wall and footwall of gabbro. North of the drill holes there is a transition to andesitic rock.

CAPSULE GEOLOGY

Pyrite and chalcopyrite occur as disseminations or in association with quartz-calcite veins. It is common to see the sulphides concentrated along the schistosity as fine to coarse grains. In drill hole SRM 18 an average grade of 0.37 per cent copper occurs over 4.6 metres (Assessment Report 8264).

In 1897, it was reported that two very large veins 6 to 12 metres in width occur about 30 metres apart in dioritic rock. No work was done on them at that time.

BIBLIOGRAPHY

EMPR AR 1897-567; 1920-222
EMPR ASS RPT 3950, 3951, 4904, 5164, 7714, *7875, *8264, 12172, 14735, 15719, 16716, 19754
EMPR FIELDWORK 1987, pp. 81-91
EMPR GEM 1972-240; 1974-163
EMPR OF 1988-8; 1999-2
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 090**

NATIONAL MINERAL INVENTORY:

NAME(S): **BREEN LAKE**, WEST 1

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 51 22 N
LONGITUDE: 123 40 42 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Breen Lake is the swampy area just west of Crofton Lake (Map 40). A number of drill holes intersected sulphides south and northeast of the lake (Assessment Report 17007).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5411682
EASTING: 450242

COMMODITIES: Copper Zinc

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Pyrrhotite
ALTERATION: Chlorite Carbonate Silica
ALTERATION TYPE: Chloritic Carbonate Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Stratiform
CLASSIFICATION: Volcanogenic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Devonian			Saltspring Intrusive Suite

LITHOLOGY: Lapilli Felsic Tuff
Mafic Ash Tuff
Quartz Feldspar Porphyry
Andesite
Dacite
Rhyolite
Gabbro

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Georgia Depression
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1987

COMMODITY	GRADE	
Zinc	1.1400	Per cent

COMMENTS: From a 1.2 metre interval.
REFERENCE: Assessment Report 17007.

CAPSULE GEOLOGY

The Breen Lake occurrence area is underlain by east-northeast striking, steeply dipping andesitic and rhyolitic volcanics and volcaniclastics of the Upper Devonian McLaughlin Ridge Formation, Sicker Group. Large irregular gabbroic bodies (informally known as the Mount Hall Gabbro), coeval with the Upper Triassic Karmutsen Formation (Sicker Group), intrude the volcanics. Also intruding the stratigraphy are quartz-feldspar porphyry bodies of the Late Devonian Saltspring Intrusive Suite (formerly the Saltspring Intrusions).

Over 3,000 metres of drilling in 10 holes tested the strata in the area of Breen Lake (Assessment Report 17007). Bands and beds of massive pyrite less than 0.4 metres thick are common. A 0.8-metre long sample of semi-massive pyrite-chalcopyrite in silicified mafic ash tuff assayed 0.97 per cent copper. Sulphides including pyrrhotite also occur in chlorite-carbonate altered felsic lapilli tuff, andesitic tuff and quartz feldspar porphyry.

The best drill assays are: 1.14 per cent zinc over 1.2 metres, 1.29 per cent zinc over 0.5 metres, 1.04 per cent copper over 0.4

CAPSULE GEOLOGY

metres, 2.08 per cent copper over 0.1 metre, 0.82 per cent copper over 1.0 metres and 0.94 per copper over 0.5 metres (Assessment Report 17007).

BIBLIOGRAPHY

EMPR ASS RPT 2397, 7233, 11433, 13532, 13853, *17007
EMPR FIELDWORK 1979, pp. 49-51
EMPR MAP 40
EMPR OF 1988-8; 1988-19; 1999-2
EMPR PF ((Electromagnetic Profile, Canadian Pacific Minerals Ltd., 1971; Apparent Chargeability Contour Plan, Canadian Pacific Minerals Limited, 1971; Mount Richards Geochemical Survey (showing workings), Canadian Pacific Oil and Gas, 1969; Induced Polarization and Electromagnetic Survey, Canadian Pacific Minerals, 1971) - see Ironclad file - 092B 049)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991
Falconbridge File

DATE CODED: 1990/09/17 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 091**

NATIONAL MINERAL INVENTORY:

NAME(S): **LUCKY STRIKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 51 19 N
LONGITUDE: 123 41 11 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: On the northwest slope of Mount Richards, along the old narrow-gauge railway line that carried ore from the Lenora-Tyee deposits (092B 001) to Crofton (Assessment Report 19).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5411595
EASTING: 449651

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Volcanic Rock

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Lucky Strike copper showing occurs in a rock cut of the Mount Sicker narrow gauge railway, along the northwestern slopes of Mount Richards. The area is underlain by volcanic rock of the Upper Devonian McLaughlin Ridge Formation, Sicker Group and by gabbroic to basaltic dykes and sills (informally known as the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation, Vancouver Group. The deposit was reported to occur in Sicker Group rocks.

BIBLIOGRAPHY

EMPR AR 1949-224; 1958-61
EMPR ASS RPT *19
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8
EMPR PF ((Electromagnetic Profile, Canadian Pacific Minerals Ltd., 1971; Apparent Chargeability Contour Plan, Canadian Pacific Minerals Limited, 1971; *Mount Richards Geochemical Survey (shows adit), Canadian Pacific Oil and Gas, 1969; Induced Polarization and Electromagnetic Survey, Canadian Pacific Minerals, 1971) - see Ironclad file - 092B 049)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/13 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 092**

NATIONAL MINERAL INVENTORY:

NAME(S): **SALLY 2**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 51 46 N
LONGITUDE: 123 41 48 W
ELEVATION: 60 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 400 metres northeast of Richards Trail, 400 metres from the highway on the western flank of Mount Richards (Minister of Mines Annual Report 1949, page 225).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5412436
EASTING: 448904

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Diorite
Gabbro

HOSTROCK COMMENTS: The intrusive is informally known as the Mount Hall Gabbro (Massey, N.W.D., Personal Communication, 1981).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: HIGH-GRADE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1949
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	5.6000	Per cent

REFERENCE: Minister of Mines Annual Report 1949, page 225.

CAPSULE GEOLOGY

The area is underlain by gabbro (informally knopwn as the Mount Hall Gabbro), coeval with the Upper Triassic Karmutsen Formation (Vancouver Group), which is intrusive into Upper Devonian Sicker Group volcanics of the McLaughlin Ridge Formation.

A 14 metre long adit follows a fracture in diorite (gabbro?) and contains a few small quartz lenses from 0.5 metres wide to 2 metres in length. Locally, clusters of sulphides, mainly pyrite and chalcopyrite, are present in the quartz, especially where northwest trending fractures intersect the main fracture. A sample of high-grade material assayed 5.6 per cent copper and nil in silver and gold (Minister of Mines Annual Report 1949, page 225).

BIBLIOGRAPHY

EMPR AR *1949-224,225
EMPR FIELDWORK 1979, pp. 49-51
EMPR MAP 40
EMPR OF 1988-8; 1988-19
EMPR PF ((Electromagnetic Profile, Canadian Pacific Minerals Ltd., 1971; Apparent Chargeability Contour Plan, Canadian Pacific Minerals Limited, 1971; *Mount Richards Geochemical Survey (shows adit), Canadian Pacific Oil and Gas, 1969; Induced Polarization and Electromagnetic Survey, Canadian Pacific Minerals, 1971) - see Ironclad file - 092B 049)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96

BIBLIOGRAPHY

GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 093**

NATIONAL MINERAL INVENTORY:

NAME(S): **MYRA**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 50 25 N
LONGITUDE: 123 57 39 W
ELEVATION: 650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1 kilometre south of Chemainus River, from a point along the river 3 kilometres upstream from its confluence with Chipman Creek (Assessment Report 16200).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5410146
EASTING: 429498

COMMODITIES: Rhodonite Manganese Gemstones

MINERALS
SIGNIFICANT: Rhodonite
COMMENTS: Manganese oxide is intimately associated.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Layered Stratabound Stratiform
CLASSIFICATION: Metamorphic Sedimentary Epigenetic Igneous-contact
TYPE: Q02 Rhodonite

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Buttle Lake	Fourth Lake	

LITHOLOGY: Chert
Cherty Siltstone
Cherty Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The Myra occurrence is underlain by the Mississippian to Pennsylvanian Fourth Lake Formation of the Buttle Lake Group (formerly the upper sediment package of Muller's Myra Formation). Rhodonite occurs within a belt of cherts, cherty siltstones and cherty argillites. These beds are folded into a broad synform with the limb striking 175 degrees and dipping 60 degrees southwest at the occurrence. A quartz diorite contact lies about 20 metres southwest of the showing and it's possible that the rhodonite is a contact metamorphic product of a manganese-rich sediment.

A 1.5-metre thick horizon of rhodonite occurs discontinuously in lenses over a 45 metre length. The lenses are typically composed of massive blue-black manganese oxide with irregular patches of pale pink, massive, fine-grained crystalline rhodonite up to a few centimetres in diameter. Manganese oxide also occurs along the many fractures of the host grey cherts. The rhodonite itself is relatively unfractured and probably formed after the deformation which caused the fracturing in the host cherts.

BIBLIOGRAPHY

EMPR ASS RPT 15389, *16200, 16237
EMPR BULL 37
EMPR COMMODITY FILE (Sargent, H. (1956): Manganese Occurrences in British Columbia; Leaming, S.F. (1966): Rhodonite in British Columbia, The Canadian Rockhound; Danner, W.R. (1975): Gem Materials of British Columbia, Montana Bureau of Mines and Geology, Special Publication 74)
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8
EMPR PF (GLS Global Listing Service Ltd., Statement of Material Facts Nov.30, 1989)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96

BIBLIOGRAPHY

GSC OF 463; 701; 821
GSC P 72-44; 72-53; 75-1A, p. 23; 79-30
W MINER May 1983, pp. 22-25
Cowley, P. (1979): Correlation of Rhodenite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia

DATE CODED: 1987/11/27 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/08/15 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 094**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAIN VALLEY**, SOOKE RIVER BREAK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 22 18 N
LONGITUDE: 123 42 22 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Main Valley fault zone runs north from Iron Mine Bay (near Merryth - 092B 007) to this occurrence on the shore of Sooke Harbour, near East Sooke (Assessment Report 61, Map 5).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5357852
EASTING: 447707

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Copper Chalcopyrite Pyrrhotite
ASSOCIATED: Hornblende Calcite
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Sooke Gabbro

LITHOLOGY: Gabbro
Hornblendite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Main Valley zone is underlain by the Eocene Sooke Gabbro, which forms the basement of the Metchosin Volcanics and is composed of coarse-grained gabbro with about equal parts of bytownite and diopside and about 5 per cent olivine. Local agmatization, amphibolitization and mineralization of the gabbro occurred later along shear zones.

The Main Valley showing can be observed along the south shore of Sooke Harbour, where the north trending "Sooke River Break" (fault) is exposed. The visible portion of the fault consists of sheared and brecciated gabbro and hornblendite with numerous calcite stringers and gougy chloritic slips. Native copper occurs in flakes and thin coatings along small fracture planes in the sheeted wallrock of the shear. A few grains of chalcopyrite and pyrrhotite have been noted along the wallrock of the "main valley" (Assessment Report 61).

BIBLIOGRAPHY

EMPR ASS RPT *61, 2267, 3409, 3594, 3584
EMPR GEM 1969-225; 1971-224
EMPR PF (Huestis, H.H. (1948): Report on Sooke Copper Nickel Group; Letter regarding Merryth and Griffith zones (unsigned), 1948; Gray, W.A. (1950): Supplementary Report on the East Sooke Copper Showings; Page, T.W. (1950): A Report on the Willow Grouse and the Margaret Copper Properties; *Report on Electromagnetic Survey Performed on some Copper Prospects in East Sooke, B.C., by Geolectric Exploration Company Inc., 1951; *Chubb, P.A. (1951): Diamond-drill Logs and Assays; Letter regarding Willow Grouse, by P.A. Chubb, 1951; Report on East Sooke Drill Program, by P.A. Chubb, 1951; Report on Supplementary Sampling, by Huestis, Kenneco and Cooke (undated); A Report on the Willow Grouse and the Margeret Group of Mining Claims; Mascan Explorations Ltd. Prospectus, May 13, 1966)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, pp. 174-180; 96, pp. 324-329
GSC OF 463; 701

BIBLIOGRAPHY

GSC P 1972-44; 1975-1A, p. 23; 77-1A, pp. 287-294; 1979-30

DATE CODED: 1990/10/15 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 095**

NATIONAL MINERAL INVENTORY:

NAME(S): **NEVER SWEAT**, MNS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 11 N
LONGITUDE: 123 56 32 W
ELEVATION: 530 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 500 metres west of Chipman Creek, from a point 3 kilometres upstream from the creek's confluence with the Chemainus River (Assessment Report 16200, Drawing 1).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5413402
EASTING: 430904

COMMODITIES: Rhodonite, Manganese, Gemstones

MINERALS
SIGNIFICANT: Rhodonite
COMMENTS: Manganese oxide is intimately associated with rhodonite.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform, Stratabound
CLASSIFICATION: Metamorphic, Sedimentary, Epigenetic, Igneous-contact
TYPE: Q02 Rhodonite

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Buttle Lake	Fourth Lake	

LITHOLOGY: Chert
Cherty Siltstone
Jasper

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Manganese	15.6000	Per cent

REFERENCE: Assessment Report 16200.

CAPSULE GEOLOGY

The deposit is underlain by the Mississippian to Pennsylvanian Fourth Lake Formation of the Buttle Lake Group (formerly the upper sediment package of Muller's Myra Formation). These sediments have been folded into a broad synform with a fold axis trending at approximately 127 degrees. Bedding in the sediments strike between 090 and 140 degrees and dip moderately to steeply to the southwest. A large body of quartz diorite of the Early to Middle Jurassic Island Plutonic Suite (formerly called the Island Intrusions) is exposed to the west of the showing, outcropping within 800 metres.

Rhodonite occurs in massive pale pink bands up to 2 centimetres wide interlayered with thinly laminated dark brown chert, cherty siltstone and jasper. The rhodonite is highly fractured and contains up to 25 per cent manganese oxide. A sample of this material contained 15.62 per cent manganese (Assessment Report 16200). The width and lateral extent of the showing has not been determined.

It is thought that the rhodonite is a contact metamorphic product of a manganese-rich sediment which came in contact with the quartz diorite.

BIBLIOGRAPHY

EMPR ASS RPT 15389, *16200
EMPR BULL 37
EMPR COMMODITY FILE (Sargent, H. (1956): Manganese Occurrences in

BIBLIOGRAPHY

British Columbia; Leaming, S.F. (1966): Rhodonite in British Columbia, The Canadian Rockhound; Danner, W.R. (1975): Gem Materials of British Columbia, Montana Bureau of Mines and Geology, Special Publication 74)
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8
EMPR PF (GLS Global Listing Service Ltd., Statement of Material Facts Nov.30, 1989 (in Myra file - 092B 093)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463; 701; 821
GSC P 72-44; 72-53; 75-1A, p. 23; 79-30
W MINER May 1983, pp. 22-25
Cowley, P. (1979): Correlation of Rhodenite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia

DATE CODED: 1987/11/27 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/08/15 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 096**

NATIONAL MINERAL INVENTORY:

NAME(S): **PALMER STATION**, PARSONS BRIDGE

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B06W
BC MAP:
LATITUDE: 48 27 32 N
LONGITUDE: 123 26 52 W
ELEVATION: 35 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Limestone outcrop (Geological Survey of Canada Map 70A).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5367403
EASTING: 466895

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Wark Gneiss

ISOTOPIC AGE: 163-182 Ma
DATING METHOD: Potassium/Argon

LITHOLOGY: Limestone
Gneiss

HOSTROCK COMMENTS: Isotopic age from GAC Fieldtrip Guidebook, Trip 7 - Muller, J.E. (the age indicates the time of the latest metamorphism only).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE:
COMMENTS: Near the southern margin of the Colquitz-Wark Gneiss complex.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Palmer Station occurrence is located on the south side of Highway 1A, just northeast of the head of Esquimalt Harbour. A small lens of fine-grained, bluish grey, high calcium limestone hosted in the Mesozoic and/or Paleozoic Wark Gneiss was quarried during 1910 and 1911. Production figures for this occurrence are not available.

BIBLIOGRAPHY

EMPR P 1993-23
GSC MAP 70A; 1553A
GSC MEM 36, p. 135
GSC OF 463
CANMET RPT *811, Part 5, p. 132
GAC FIELD TRIP Guidebook, Trip #7 - Muller, J.E. (1977): Geology of Vancouver Island

DATE CODED: 1989/06/29 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1990/03/07 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092B 097**

NATIONAL MINERAL INVENTORY:

NAME(S): **OTTER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 23 33 N
LONGITUDE: 123 44 40 W
ELEVATION: 90 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located about 3 kilometres northwest of Sooke (Geology and Exploration in British Columlbia 1969, page 225).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5360194
EASTING: 444891

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics
Eocene			Sooke Gabbro

LITHOLOGY: Basalt
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area of the Otter showing is underlain by the Eocene Metchosin Volcanics and the Eocene Sooke Gabbro; the latter forming the basement of the former. The Sooke Gabbro is composed of coarse-grained gabbro with about equal parts of bytownite and diopside and about 5 per cent olivine. Dykes of leucogabbro contain up to 80 per cent bytownite. The Metchosin Volcanics are divisible into a lower unit of pillow basalt, tuff and breccia and an upper unit of basaltic flows. Local agmatization, amphibolitization and mineralization of the gabbro occurred later along shear zones.

Chalcopyrite is reported to occur in both volcanics and gabbro (Geology, Exploration and Mining in British Columbia 1969, page 225).

BIBLIOGRAPHY

EMPR GEM *1969-225
GSC MAP 42A; 1386A; *1553A
GSC MEM 13; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 77-1A, pp. 287-294; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 098**

NATIONAL MINERAL INVENTORY:

NAME(S): **KINKAM**, MERYL (L.90)

STATUS: Showing Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 32 10 N
LONGITUDE: 123 32 19 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near the western shore of Saanich Inlet (Finlayson Arm), to the southwest of Jocelyn Hill (Assessment Report 4469). Near the Skyline Trail in Gowlland Park, an old adit exists near the shore.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5376030
EASTING: 460240

COMMODITIES: Copper Molybdenum Titanium

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Ilmenite Chalcopyrite Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Wark Gneiss

LITHOLOGY: Gabbroic Gneiss
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Skyline Trail crosses a rusty knoll some 600 metres south of Jocelyn Hill. To the west, short steep cliffs can be avoided. Drop about 100 metres down towards Finlayson Arm. The adit, on the Meryl (Lot 90) is below tall trees, in the cliff.

The Kinkam occurrence is underlain by gabbroic gneiss of the Mesozoic and/or Paleozoic Wark Gneiss. The Wark Gneiss is possibly the metamorphic equivalent of a mafic unit of the Paleozoic Sicker Group, the latest metamorphism having taken place in the Jurassic. The gneiss is intruded by andesite dykes of probable Jurassic age. A few limestone outcrops also occur in the area.

Two large parallel shear zones occur, extending about 900 metres east from the shore of Finlayson Arm and dipping steeply to the south. The zones contain disseminated pyrite, ilmenite and pyrrhotite, with traces of copper and molybdenum mineralization.

BIBLIOGRAPHY

EMPR ASS RPT *3952, *4469, *3675
EMPR FIELDWORK 1987, pp. 81-91
EMPR GEM 1972-240; 1973-223
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 61

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 099**

NATIONAL MINERAL INVENTORY:

NAME(S): **NORTHEAST COPPER ZONE**, FORTUNA , CF GROUP 7

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 20 N
LONGITUDE: 123 45 32 W
ELEVATION: 570 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the northeast side of Mount Sicker (Assessment Report 7875).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5413529
EASTING: 444351

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Volcanogenic
DIMENSION: 12 x 6 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian Upper Triassic	Sicker	McLaughlin Ridge	Unnamed/Unknown Informal

LITHOLOGY: Andesite
Dacite
Rhyolite
Chert
Gabbro

HOSTROCK COMMENTS: The gabbroic intrusive is informally known as the Mount Hall Gabbro (Massey, Personal Communication, 1991).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1979
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	2.0000	Per cent

REFERENCE: Assessment Report 7875.

CAPSULE GEOLOGY

The Northeast Copper Zone (Fortuna) on Mount Sicker is located within the Cowichan uplift and is underlain mainly by andesitic to rhyolitic volcanics of the McLaughlin Ridge Formation, Sicker Group. The local stratigraphy is disrupted by folding, faulting (pre-Triassic as well as Tertiary) and the intrusions of gabbro and diabase sills and dykes (informally known as the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation, Vancouver Group. The showing lies 2 kilometres east-northeast of the Lenora-Tyee (Twin J) volcanogenic massive sulphide deposit (092B 001).

The zone consists of at least 3 bands of very siliceous rock (chert) lying north of a large body of gabbro and contains 1 to 5 per cent pyrite as disseminations or as small pods. Small amounts of chalcopyrite occur as disseminations, with or without pyrite. The mineralized area measures approximately 12 by 5 metres. Selected specimens assayed as high as 2 per cent copper and 10.28 grams per tonne silver (Assessment Report 7875).

About 50 metres to the northwest of the zone is what is thought to be the old Fortuna adit which was driven into sericite schist. By 1898, a 40-metre adit was reported to have been excavated, cutting up to 2 metres of copper ore.

BIBLIOGRAPHY

EMPR AR 1898-1148
EMPR ASS RPT *3950, 3951, *7875, 8168, 18520, 19754
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
PERS COMM Massey, N.W.D., 1991
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 100**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLOCK 383**, BLOCK 217

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 41 00 N
LONGITUDE: 123 40 50 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located in the northwest corner of Block (land lot) 383. Diamond-drill hole 53 was put down on Block 217 about 350 metres west of Block 383 (Malcolm, 1964).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5392478
EASTING: 449908

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Pyrrhotite
ALTERATION: Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

LITHOLOGY: Cherty Volcanic
Tuff
Limestone
Diorite

HOSTROCK COMMENTS: Both formations of the Buttle Lake Group are mapped in the area and both may be associated with the deposit.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1964

COMMODITY	GRADE	
Copper	0.2900	Per cent

COMMENTS: From a 3 metre drill interval.
REFERENCE: Malcolm, D.C. (1964): Cellardor Mines Ltd..

CAPSULE GEOLOGY

The area is underlain predominantly by bedded chert and cherty basaltic tuffs of the Mississippian to Pennsylvanian Fourth Lake Formation (formerly the Sediment-Sill Unit of Muller), Buttle Lake Group. These are overlain by limestone, bedded chert and cherty tuff of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (formerly the Buttle Lake Formation). These Paleozoic rocks are intruded by numerous dykes of feldspar porphyritic dacite and rhyolite and part of a granodioritic stock of the Early to Middle Jurassic Island Plutonic Suite (formerly called Island Intrusions).

Block 383 was examined by Cellardor Mines in 1964 and a well-mineralized zone containing chalcopyrite and pyrite was discovered. The zone is about 150 metres in length and tens of metres wide. A limestone band outcrops adjacent to gabbro or diorite at this locality. A diamond-drill hole was put down on Lot (Block) 217 about 300 to 400 metres to the west of the Block 383 showings. The hole mainly intersected cherty volcanics locally containing skarn, epidote, pyrite, pyrrhotite and some chalcopyrite. One 3-metre interval assayed 0.29 per cent copper (Malcolm, 1964).

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
EMPR PF (*Malcolom, D.C. (1964): Cellardor Mines Ltd. - Canadian Pacific Oil and Gas Co. Ltd. - Land Agreement No. 10)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1990/11/02 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 101**

NATIONAL MINERAL INVENTORY:

NAME(S): **JILL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05W
BC MAP:
LATITUDE: 48 29 29 N
LONGITUDE: 123 46 08 W
ELEVATION: 620 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The showings are about 400 metres due south of Mount Jack peak (Leech River Mines Ltd., Prospectus, 1974). Similar scattered mineralization has also been discovered about 1.5 to 2 kilometres to the southeast (White, 1973).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5371204
EASTING: 443191

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Pyrite Pyrrhotite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Shear
CLASSIFICATION: Hydrothermal Epigenetic Igneous-contact

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Sooke Gabbro
Eocene			Metchosin Volcanics

LITHOLOGY: Basalt
Feldspar Porphyry
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

A small stock, probably related to the Eocene Sooke Gabbro, exhibiting porphyritic soda feldspars with a gabbro fringe zone, intrudes basalt of the coeval Metchosin Volcanics. Chalcopyrite, some bornite, malachite, minor pyrite and pyrrhotite occur in veinlets and as disseminations in the basalt. The mineralization is associated with shears that formed tangentially to the stock.

BIBLIOGRAPHY

EMPR ASS RPT 4744, 5291, 5457, 6529
EMPR FIELDWORK 1981, pp. 70-74; 1982, 37-45
EMPR GEM 1973-223; 1974-163; 1975-E93; 1977-E103
EMPR PF (*White, G.E. (1973): Geological, Geochemical and Geophysical Report on Mineral Permit #85 (see Permit 85 - 092B 013); *Leech River Mines Ltd., Prospectus, Oct 16, 1974)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., Oct. 1991 (with respect to age and name of gabbroic intrusions)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 102**

NATIONAL MINERAL INVENTORY:

NAME(S): **LEECH RIVER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05W 092B12W 092C08E 092C09E
BC MAP:
LATITUDE: 48 30 06 N
LONGITUDE: 123 53 02 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Large east-west striking zone, coordinates are for the east end. The zone extends west to Point Sombrio on the Juan de Fuca Straits.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5372438
EASTING: 434708

COMMODITIES: Andalusite

MINERALS
SIGNIFICANT: Andalusite
ASSOCIATED: Staurolite Muscovite Garnet Chlorite
MINERALIZATION AGE: Mesozoic

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Metamorphic
TYPE: P02 Kyanite-sillimanite schists
SHAPE: Tabular
MODIFIER: Folded

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Pelitic Schist

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP: Syn-mineralization
GRADE: Amphibolite

CAPSULE GEOLOGY

Aluminosilicate-rich pelitic schists of the Leech River Complex (Formation) are exposed on southern Vancouver Island, outcropping between the Leech River fault and the San Juan fault in the vicinity of Port Renfrew and Langford. The Leech River Complex, of Jurassic to Cretaceous age, is largely comprised of argillites and metagreywackes, with some metavolcanics (Geological Survey of Canada Map 1553A - Muller, 1983).

Metamorphic grade increases from north to south across the complex. The exposed southern one-third to one-half of the complex contains staurolite and andalusite. Within pelitic strata, andalusite is abundant and may be present as porphyroblasts from 12 to 20 centimetres long (Assessment Report 12642; Rusmore, 1982). Locally, retrograde alteration results in the replacement of andalusite by chlorite and muscovite (Canadian Journal of Earth Sciences 19, pages 1817-1835). Garnet may also be present in these schists in moderate abundance and staurolite has also been observed. Areas of particular note are the Sombrio River and Valentine Mountain vicinities. See also Jordan River (092B 109).

BIBLIOGRAPHY

EMPR ASS RPT *12642
EMPR OF *1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 39; 96, p. 70
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
CJES *19, pp. 1817-1835
Rusmore, M.E. (1982): Structure and Petrology of Pre-Tertiary rocks near Port Renfrew, Vancouver Island, British Columbia, unpublished M.Sc. Thesis, University of Washington, p. 124

DATE CODED: 1988/03/30 CODED BY: JF FIELD CHECK: N
DATE REVISED: 1990/06/16 REVISED BY: JP FIELD CHECK: N

MINFILE NUMBER: **092B 103**

NATIONAL MINERAL INVENTORY:

NAME(S): **PATRIARCHE**, TUNNEL HILL

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 30 13 N
LONGITUDE: 123 33 13 W
ELEVATION: 533 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The area on the west shore of Finlayson Arm opposite Sawluctus Island, and upslope to the area of the E&N railway tracks (Patriarche, 1967).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5372425
EASTING: 459107

COMMODITIES: Lead Copper

MINERALS
SIGNIFICANT: Pyrrhotite Chalcopyrite
ASSOCIATED: Quartz Graphite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Slate
Schist
Greywacke
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1967

COMMODITY	GRADE	
Copper	0.0150	Per cent
Lead	0.1600	Per cent

COMMENTS: Bulked grab sample over 2.4 metres.
REFERENCE: C.P.O.G. Mining Agreement No.17, Patriarche, 1967 (Property File).

CAPSULE GEOLOGY

The Patriarche occurrence is underlain by rocks of the Triassic to Cretaceous Leech River Complex (Formation), Chert-Argillite-Volcanic Unit. This package comprises ribbon chert, cherty argillite, metarhyolite, metabasalt and chlorite schist. On the property the rocks are reported to be slates, greywacke and schists interbedded with andesitic volcanics. The rock contains areas of graphitic material and quartz injections that occur along flat-lying fractures. The general trend of the formation is east-west, with schistosity and fractures dipping near vertical. The horizontal fractures appear to be of later origin.

The rocks contain abundant amounts of sulphide, the greatest amounts being in the vicinity of the point of land opposite Sawluctus Island (below the railway tunnel) on the west side of Finlayson Arm. A bulked grab sample taken over 2.4 metres assayed 0.16 per cent lead, 0.015 per cent copper, 0.012 per cent zinc and 0.02 per cent tin (Patriarche, 1967). Considerable amounts of pyrrhotite and carbon or graphite were present in this sample section.

Mineralization noted in the volcanics consists of pyrrhotite, minor magnetite, some manganese staining and very minor chalcopyrite (Assessment Report 17540).

BIBLIOGRAPHY

EMPR ASS RPT *16166, *17540

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1999-2
EMPR PF (*C.P.O.G. Mining Agreement No.17, V.H. Patriarche, 1967)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/25 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 104**

NATIONAL MINERAL INVENTORY:

NAME(S): **CORONATION MOUNTAIN**, THRILLER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 58 35 N
LONGITUDE: 123 58 03 W
ELEVATION: 650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The adit is located near B.C. Hydro Tower Y6A51, about 11 kilometres west of Ladysmith (Assessment Report 14267).

MINING DIVISION: Victoria
Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5425282
EASTING: 429202

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Molybdenite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION:
STRIKE/DIP: 090/
TREND/PLUNGE:
COMMENTS: Strike of vein.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Near the western boundary of the Ladysmith batholith of the Early to Middle Jurassic Island Plutonic Suite (formerly called the Island Intrusions), a large quartz vein occurs cutting the granodiorite. The vein strikes about 090 degrees and in places is 18 metres wide. The vein consists of coarse-grained quartz with pyrite, chalcopyrite and a little pyrrhotite and molybdenite. A 91-metre adit has been driven on the vein and a crosscut developed at the end. The vein was not considered of sufficient grade to be of interest as an ore.

A large mafic dyke carrying some chalcopyrite is reported to occur about 1.2 kilometres to the southeast of the adit, on the east side of a road.

BIBLIOGRAPHY

EMPR ASS RPT *14267
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
EMPR PF (*Geochemical report with sketch by D.C. Douglas, Canadian Pacific Oil and Gas, May 1969)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; *96, p. 387
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 105**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLOCK 174**, BEAR CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05W
BC MAP:
LATITUDE: 48 25 41 N
LONGITUDE: 123 48 45 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Block 174.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5364197
EASTING: 439894

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics

LITHOLOGY: Basalt
Pillow Lava

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: OUTCROP
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1965
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.8300	Per cent

COMMENTS: From a 1.5 metre chip sample.
REFERENCE: Report on Mineral Agreement No.11, by D.C. Malcolm, Mascan Expl. Ltd.

CAPSULE GEOLOGY

The Block 174 area is underlain by extensive outcrops of massive basaltic pillow lavas of the Eocene Metchosin Volcanics, intruded by narrow gabbro dykes. Shearing and faulting is extensive and Tugwell Creek canyon is along a major north striking break.

Pyrite and pyrrhotite is widespread and chalcopyrite has been found at several locations. One isolated basalt outcrop was sampled over 1.5 metres and assayed 0.83 per cent copper (Mascan Explorations Limited, 1965).

BIBLIOGRAPHY

EMPR GEM 1972-239; 1973-223
EMPR PF (*Report On C.P.O.G. Mineral Agreement No.11, by D.C. Malcolm, Mascan Explorations Limited)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24
DATE REVISED: 1990/10/17
CODED BY: GSB
REVISED BY: GJP
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092B 106**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLOCK 609**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05W
BC MAP:
LATITUDE: 48 26 45 N
LONGITUDE: 123 50 48 W
ELEVATION: 450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of Block 609, just west of Tugwell Creek (NTS Map 92B/5).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5366201
EASTING: 437389

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Copper
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by basalt of the Eocene Metchosin Volcanics. Fractured basalt is mineralized locally with pyrite, and shear zones contain native copper.

BIBLIOGRAPHY

EMPR ASS RPT 9818, 9820, 13361
EMPR GEM 1972-239; 1973-223
EMPR PF (*Report On C.P.O.G. Mineral Agreement No.11, by D.C. Malcolm, Mascan Explorations Limited)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 107**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLOCK 811**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05W
BC MAP:
LATITUDE: 48 25 25 N
LONGITUDE: 123 46 43 W
ELEVATION: 350 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of Block 811, between Bluff Mountain and De Mamiel Creek (NTS Map 92B/5).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5363677
EASTING: 442396

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Shear
CLASSIFICATION: Volcanogenic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Block 811 area is underlain by greatly sheared amygdaloidal pillow lavas of the Eocene Metchosin Volcanics, which are cut by two irregular gabbro dykes related to the coeval Sooke Gabbro. There are extensive areas of pyrite and pyrrhotite, and locally chalcopyrite mineralization.

BIBLIOGRAPHY

EMPR PF (*Report On C.P.O.G. Mineral Agreement No.11, by D.C. Malcolm, Mascan Explorations Limited)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 108**

NATIONAL MINERAL INVENTORY:

NAME(S): **VALENTINE MOUNTAIN**, BLAZE, C VEIN, B VEIN

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 31 03 N
LONGITUDE: 123 53 03 W
ELEVATION: 820 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.5 kilometres north of the east end of the Bear Creek Reservoir (Assessment Report 15509).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5374198
EASTING: 434708

COMMODITIES: Gold, Silver, Copper, Arsenic, Lead, Zinc

MINERALS

SIGNIFICANT: Pyrite, Arsenopyrite, Pyrrhotite, Chalcopyrite, Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I01 Au-quartz veins
SHAPE: Tabular
MODIFIER: Folded

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Chlorite Biotite Schist
Chlorite Garnet Schist
Biotite Staurolite Andalusite Schist
Amphibolite
Granitic Sill

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Pacific Rim
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist, Amphibolite

INVENTORY

ORE ZONE: C
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1990
QUANTITY: 30660 Tonnes

COMMODITY	GRADE
Gold	14.7000 Grams per tonne

COMMENTS: Estimated on the basis of 10 core holes of one C zone vein within a 100 metre block with a width of 1.2 metres.
REFERENCE: Assessment Report 22683, page 1.

CAPSULE GEOLOGY

The Valentine Mountain occurrence lies within the Jurassic to Cretaceous Leech River Complex (Formation), a fault-bounded block of metamorphosed pelitic, arenaceous and volcanic rocks. The complex lies north of the Leech River fault, south of which lie the tholeiitic basalts of the Eocene Metchosin Volcanics and coeval intrusive rock of the Sooke Gabbro. To the north, across the San Juan fault, are the various volcanic and sedimentary packages of the Sicker, Vancouver and Bonanza groups, and their related intrusive rocks. To the east, across the Survey Mountain fault, are the Paleozoic and Mesozoic rocks comprising the Colquitz and Wark gneisses.

The rocks of the Leech River Complex have been metamorphosed to low-pressure greenschist and amphibolite assemblages, and display evidence of two regional deformational events. The prospect is underlain by a refolded sequence of metasedimentary rocks with at least two volcanic units, now represented by amphibolite. The

CAPSULE GEOLOGY

dominant structural feature is a gently eastward-plunging anticlinal structure.

The rocks are dominantly metasandstone and metapelites, the latter represented by various types of schist, ranging from biotite-chlorite through garnet-chlorite to andalusite-staurolite-biotite, plus or minus garnet. The volcanic rocks are either represented by chlorite-epidote (or zoisite) -actinolite-albite or hornblende-epidote-quartz-plagioclase amphibolites. The metasediments were intruded by complex granitic sills of intermediate composition, and by related pegmatite dykes and sills (see Peg, 092B 111). Many of these sills have been folded along with their enclosing rock.

Narrow quartz veins cutting both metasedimentary and metavolcanic rocks carry spectacular coarse free gold. These veins, occurring as an en echelon swarm, are from 2 to 50 centimetres in width, strike about 067 degrees and are nearly vertical in dip. The veins seldom exceed 10 centimetres in width and can be traced for ten's of metres, apparently barren for parts of their length. The zone, along which these gold-bearing veins occur, trends east for a distance of almost 3 kilometres and is from 200 to 300 metres in width.

Rare sulphide minerals generally consist of disseminations of pyrite, arsenopyrite, pyrrhotite and occasionally chalcopyrite. Large arsenopyrite crystals have locally been fractured and infilled by fine gold. Gold smears have also been noticed along slickensided fracture surfaces and as small specks in the wallrock, a few centimetres from vein material. Most of the higher grade gold values appear in either fracture or quartz veins within biotite schist.

The property has been extensively trenched, drilled and bulk sampled by Beau Pre Explorations Ltd. In 1984, the company treated 6 tonnes of ore, yielding 160 grams of gold, 2541 grams of silver, 47 kilograms of lead and 19 kilograms of zinc. Indicated reserves (in 1992) are 30,660 tonnes grading 14.7 grams per tonne gold estimated on the basis of 10 core holes of one C zone vein within a 100 metre block with a width of 1.2 metres (Assessment Report 22683, page 1).

During the summer of 1996 a small gravity gold mining plant was erected on the property to test the feasibility of a larger operation. The small mill operated from September 18 to November 22, processing a total of 68 tonnes of ore from the "C" vein. The grade was calculated at 9.9 grams per tonne gold, over a 1-metre width (George Cross News Letter No. 3 (January) 1997).

BIBLIOGRAPHY

EM EXPL 1998-47-55; 1999-25-32; 2000-25-32; 2001-23-31
EMPR ASS RPT 6298, 6844, 9050, 10110, 12642, *15509, *17259, 17381, 18993, 19358, 19359, 19362, 19381, *22683, 24345
EMPR BC METAL MM00047
EMPR EXPL 1976-E108; 1977-E103; 1978-E118; 1979-120; 1994-69,70
EMPR IR 1986-1, p. 112
EMPR MAP 65 (1989)
EMPR OF 1992-1
EMPR PF (Article in Juan de Fuca News, Dec.7, 1982; Article in Goldstream Gazette, Dec.8, 1982)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 39; 96, p. 70
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
CJES *19, pp. 1817-1835
GCNL #212, 1981; #2, 1982; #102, 1983; #36,#125,#136, 1984; #189, #240, 1987; #27, 1988; #42(Mar.1),#208(Oct.30), 1989; #91(May10), #101(May27),#193(Oct.7),#236(Dec.9), 1991; #148(July 31), 1992; #3(Jan.6), #240(Dec.15), 1997
IPDM Jan/Feb, Mar/Apr, Aug/Sept, 1984
N MINER Nov.12, 1982; Jan.4, 1987
PR REL Beau Pre Explorations Ltd., Jan.22,31, Feb.13, 2003
V STOCKWATCH Aug., Sept.30, Dec.17, 1987; Jan.7, 1988
WWW http://www.infomine.com/; http://www.beauprex.com
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 84
Rusmore, M.E. (1982): Structure and Petrology of Pre-Tertiary rocks near Port Renfrew, Vancouver Island, British Columbia, unpublished M.Sc. Thesis, University of Washington, p. 124
Wingert, G.A. (1982): Structure and Metamorphism of the Valentine Mountain Area, Unpublished B.Sc. Thesis, University of British Columbia

MINFILE NUMBER: **092B 109**

NATIONAL MINERAL INVENTORY:

NAME(S): **JORDAN RIVER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 30 29 N
LONGITUDE: 123 56 08 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: In the vicinity of the Jordan River (Geological Survey of Canada Memoir 96, page 70).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5373194
EASTING: 430900

COMMODITIES: Sillimanite Kyanite

MINERALS
SIGNIFICANT: Sillimanite Staurolite Garnet Kyanite Andalusite Tourmaline
ALTERATION: Chlorite Biotite Sericite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Metamorphic
TYPE: P02 Kyanite-sillimanite schists

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Pelitic Schist

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP: Syn-mineralization
GRADE: Amphibolite

CAPSULE GEOLOGY

Aluminosilicate-rich pelitic schists of the Jurassic to Cretaceous Leech River Complex (Formation) are exposed on southern Vancouver Island, outcropping between the Leech River and San Juan faults near Port Renfrew and Langford. The complex is largely comprised of argillites and metagreywackes, with some metavolcanics. Metamorphic grade increases from north to south across the unit.

In a few places, notably in the vicinity of Jordon River, the quartz-biotite and quartz-sericite schists contain large amounts of garnet, staurolite and sillimanite. To the west, kyanite has been observed. The exposed southern one-third to one-half of the Leech River unit contains staurolite and andalusite, with the latter forming porphyroblasts up to 20 centimetres in length (see Leech River, 092B 102).

The sillimanite occurs in short to long slender prisms, of rectangular or hexagonal cross-section, that are rudely oriented parallel to foliation. They have a maximum length of about 5 centimetres and a maximum width of 4 to 5 centimetres. Garnet occurs in small (averaging less than 2 millimetres in diameter) pinkish, dodecahedral crystals. Staurolite, not usually conspicuous in hand specimens, forms small, yellowish grains between the lamellae of biotite and quartz; in a few places distinct single and twin crystals are seen.

Within a relatively narrow zone west of the Jordan River are carbonaceous andalusite-staurolite-biotite rocks. These rocks contain euhedral twinned staurolite crystals up to 3 centimetres long, garnet averaging 1 centimetre across and erratic black tourmaline. Most of the large andalusite crystals have been altered to chlorite, biotite and sericite (Assessment Report 12642).

BIBLIOGRAPHY

EMPR ASS RPT *12642
EMPR OF *1988-26
GSC MAP 42A; 1386A; 1553A
GSC MEM 13, p. 39; *96, p. 70
GSC OF 463; 701

BIBLIOGRAPHY

GSC P 72-44; 75-1A, p. 23; 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 83

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 110**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOPE**, ROAD, ZONE 1,
LARA

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 24 N
LONGITUDE: 123 51 33 W
ELEVATION: 690 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Exposed in a bank on the Silver Creek access road, near the centre of the Silver claim (Assessment Report 11123). This showing was visited in 1987 by N.W.D. Massey of the Geological Survey Branch.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5413731
EASTING: 436999

COMMODITIES: Gold, Silver, Zinc, Copper, Lead

MINERALS
SIGNIFICANT: Pyrite, Sphalerite, Pyrrhotite, Chalcopyrite
ASSOCIATED: Quartz, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Disseminated
CLASSIFICATION: Hydrothermal, Volcanogenic, Exhalative
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Tabular
MODIFIER: Faulted, Sheared

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite Tuff
Rhyolite Tuff
Gabbroic Sill
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP: Post-mineralization
GRADE: Greenschist

CAPSULE GEOLOGY

The Hope occurrence is underlain by volcanic rocks of the Upper Devonian McLaughlin Ridge Formation (Sicker Group) intruded by gabbroic bodies (informally called the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation, Vancouver Group (Massey, Personal Communication, 1991). See Lara (092B 129) for a discussion of the regional geology.

Mineralization consists of pyrite, sphalerite, pyrrhotite(?), and chalcopyrite in a narrow quartz vein. The vein occurs at the sheared contact between andesite-rhyolite tuffs and a gabbro sill. Disseminated pyrite also occurs along the foliation within volcanics.

The tuffs are reported to be cherty and baritic, containing up to 0.2 per cent copper, 0.85 per cent lead, 2.95 grams per tonne gold, 25.03 grams per tonne silver; barium averages about 2 per cent (Assessment Report 11123, page 18).

BIBLIOGRAPHY

EMPR ASS RPT 936, *6698, 10116, *11123, 13655, 14492, 19806
EMPR EXPL 1977-E105; 1978-E122; 1979-122
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8; 1999-2
EMPR PF (Induced Polarization and Resistivity Survey - CPOG Property, Cominco Ltd., Oct.25, 1966 (in Lara file - 092B 129))
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
PERS COMM Massey, N.W.D., 1991
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with

BIBLIOGRAPHY

Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

Holbek, P. (1980): Geology and Geochronometry of the Sharron Volcanogenic Prospect, Mt. Brenton Area, Southwestern B.C., B.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/13 REVISED BY: GJP FIELD CHECK: Y

MINFILE NUMBER: **092B 111**

NATIONAL MINERAL INVENTORY:

NAME(S): **PEG**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 30 37 N
LONGITUDE: 123 59 23 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of mineralized area (Assessment Report 19358).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5373491
EASTING: 426903

COMMODITIES: Copper, Beryl, Feldspar, Gemstones

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Bornite, Beryl, Tourmaline, Feldspar
ASSOCIATED: Feldspar, Rhodochrosite, Apatite, Spinel
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic, Pegmatite

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Amphibolite
Meta Sandstone
Meta Pelite
Pegmatite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Pacific Rim
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.6700	Per cent

COMMENTS: From a 20-centimetre chip sample.
REFERENCE: Assessment Report 19358.

CAPSULE GEOLOGY

The area is underlain by metasandstone, metapelite and amphibolite of the Jurassic to Cretaceous Leech River Complex (Formation). These units have been subsequently intruded by a large quartz diorite sill and small pegmatite dykes and sills, of Tertiary age.

Scattered, sparse sulphide mineralization found in the area consists of pyrite, chalcopyrite and bornite, and is largely confined to the siliceous alteration zones, brecciated zones and rusty seep zones within the amphibolite unit. Continuous rock chip samples produced values of 0.67 per cent copper over 20 centimetres and 0.28 per cent copper over 30 centimetres (Assessment Report 19358). There is reported to be good correlation between the occurrence of rhodochrosite and copper mineralization.

Beryl, tourmaline, apatite, spinel and feldspar are reported to occur in two pegmatite veins in the area.

BIBLIOGRAPHY

EMPR ASS RPT 6598, *19358
EMPR EXPL 1977-E249; 1978-E285; 1979-331; 2002-29-40
EMPR OF 1991-10
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701

BIBLIOGRAPHY

GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Beaupre, B., Oct. 1990
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 85

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/25 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 112**

NATIONAL MINERAL INVENTORY:

NAME(S): **ORN 3**, ORN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 55 29 N
LONGITUDE: 123 53 12 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located within about 1 kilometre to the north-northwest of the summit of Mount Hall (Assessment Report 17351, Drawing No. 5).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5419466
EASTING: 435050

COMMODITIES: Magnetite, Copper, Silver, Gold, Palladium

MINERALS
SIGNIFICANT: Magnetite Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Syngenetic Hydrothermal
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu
COMMENTS: Both syngenetic (magnetite) and epigenetic vein-type mineralization occur.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Gabbro
Siltstone
Cherty Siltstone
Sandstone

HOSTROCK COMMENTS: The gabbro is coeval with the Upper Triassic Karmutsen Fm. and is informally called the Mount Hall Gabbro (Massey, Personal Comm., 1991).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	1.0300	Per cent

REFERENCE: Assessment Report 17351, page 35.

CAPSULE GEOLOGY

The area of the Orn occurrence is underlain by gabbro sills (informally called the Mount Hall Gabbro) that are coeval with the Upper Triassic Karmutsen Formation, Vancouver Group. A west trending horizon of sediments, about 125 metres thick, occurs along the northern flanks of Mount Hall and Coronation Mountain and is encompassed by the gabbro. These sediments, belonging to the Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group), comprise siltstone, cherty siltstone and minor sandstone.

Gabbro to the north of the sediment horizon is divisible into medium-grained and coarse-grained horizons. The coarse-grained variety is about 30 metres thick with hornblende crystals up to 1 centimetre in length. This rock contains up to 15 per cent medium-grained magnetite, 5 per cent disseminated and fracture filled pyrite and traces of chalcopyrite. The medium-grained magnetite is equi-granular, massive and contains up to 5 per cent magnetite. Two samples of the gabbro assayed 0.18 and 0.15 grams per tonne palladium (Assessment Report 17351).

The gabbro is cut by abundant east-northeast to east-south- east trending, vertical to north dipping shears and quartz veins, up to 20 centimetres wide. Many of these structures are mineralized with

CAPSULE GEOLOGY

pyrite and rarely chalcopyrite and contain anomalous levels of gold (up to 0.13 grams per tonne), silver (up to 6 grams per tonne) and copper (up to 1.03 per cent), (Assessment Report 17351, page 27).

BIBLIOGRAPHY

EM GEOFILE 2000-2, 2000-5
EMPR ASS RPT 16289, *17351
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED:	1988/01/04	CODED BY:	GJP	FIELD CHECK:	N
DATE REVISED:	1990/09/24	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092B 113**

NATIONAL MINERAL INVENTORY:

NAME(S): **SALT SPRING ISLAND**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 50 53 N
LONGITUDE: 123 30 29 W
ELEVATION: 533 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS:

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5410689
EASTING: 462727

COMMODITIES: Expanding Shale, Aggregate, Building Stone

MINERALS
SIGNIFICANT: Shale
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Sedimentary
TYPE: R02 Expanding shale

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Haslam	
Upper Cretaceous	Nanaimo	Cedar District	

LITHOLOGY: Shale

HOSTROCK COMMENTS: Shale from both formations are suitable as an expanded shale aggregate.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage, Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

On Saltspring Island, shale of the Haslam and Cedar District (formerly Ganges) formations, both of the Upper Cretaceous Nanaimo Group, are reported to bloat fairly well when heated. The resulting product may be of use as a lightweight aggregate in the building industry.

BIBLIOGRAPHY

EMPR AR *1953-188
EMPR BULL 30
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 24E; 47
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 114**

NATIONAL MINERAL INVENTORY:

NAME(S): **SIDNEY ISLAND**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B11W
BC MAP:
LATITUDE: 48 36 17 N
LONGITUDE: 123 17 35 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located on Sydney Island, about 20 kilometres north of Victoria (Geological Survey of Canada Memoir 24-E, page 143). Location of material mined is unknown.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5383558
EASTING: 478396

COMMODITIES: Clay

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Recent

DEPOSIT
CHARACTER: Massive Stratiform
CLASSIFICATION: Residual Sedimentary Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Postglacial Sediments

LITHOLOGY: Clay

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Sidney Island occurrence is composed of Recent clays of the Capilano Sediments (formerly known as Puyallup Interglacial deposits). Little is known about the Sydney Island clays except that they are similar to the Anvil Island clays (092GNW020) and prior to 1912 they were utilized for the making of stiff-mud common brick (Geological Survey of Canada Memoir 24-E, page 143). It is also reported that a yard was set up in 1907 and produced brick from 1913 to 1918; another company also operated on the island from 1926 to 1929 (Bulletin 30, page 7). No production figures are available.

The clay at the Anvil Island deposits is described as being somewhat sandy and yellowish to bluish-grey in colour and in most places contains fairly abundant pebbles. See Anvil Island for a summary of the firing characteristic of that clay.

James Island, to the immediate west of Sidney Island, also contains similar clay, potentially useful for industrial purposes.

BIBLIOGRAPHY

EMPR BULL *30, pp. 7,11-14,47
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36, pp. 109,110; *24-E, pp. 143,146; 47
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CANMET Technical Bulletin 54

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 115**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEAR CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 43 01 N
LONGITUDE: 123 38 25 W
ELEVATION: 533 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Reported to be located along Bear River valley, an unnamed creek and near Bear Lake, in the locality of Hillbank Railway Station (CANMET Report 691, page 83). However, in the vicinity of Hillbank Station (between Cowichan Station and Cobble Hill on the E & N Railway line) there are no Bear rivers or Bear lakes. The location, as indicated by a location plot of the occurrence (CANMET Report 691, Figure 11, page 54) confirms the Hillbank Station location. Dougan Lake and Petrolas Creek may be the lake and creek in question and the Koksilah River the river.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5396188
EASTING: 452904

COMMODITIES: Diatomite

MINERALS
SIGNIFICANT: Diatomite
MINERALIZATION AGE: Recent

DEPOSIT
CHARACTER: Unconsolidated Massive
CLASSIFICATION: Sedimentary Syngenetic
TYPE: F06 Lacustrine diatomite

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Unnamed/Unknown Formation	
Recent			Postglacial Sediments

LITHOLOGY: Diatomite

HOSTROCK COMMENTS: The diatomite deposit is of Recent age.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

At the Bear Creek occurrence, from 15 to 20 centimetres of impure diatomite is reported to extend for considerable distance along a creek and the "Bear River valley", under about 30 centimetres of peat. Isolated pure white patches occur under a bridge at the outlet of "Bear Lake". The diatomite in this region is of recent age and mainly unconsolidated. The diatomite is underlain by sedimentary rock of the Upper Cretaceous Nanaimo Group.

BIBLIOGRAPHY

EMPR IND MIN FILE (Diatomite Occurrences in BC (in Ministry Library))
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
CAMMET RPT *691 (Diatomite), p. 83
PERS COMM Hora, D., (Geological Survey Branch), Oct. 1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 116**

NATIONAL MINERAL INVENTORY:

NAME(S): **PROSPECT LAKE**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B11W
BC MAP:
LATITUDE: 48 31 18 N
LONGITUDE: 123 26 20 W
ELEVATION: 60 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the north end of Prospect Lake, a few kilometres north of Victoria (CANMET Report 691, page 53).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5374377
EASTING: 467592

COMMODITIES: Diatomite

MINERALS
SIGNIFICANT: Diatomite
MINERALIZATION AGE: Recent

DEPOSIT
CHARACTER: Unconsolidated — Massive
CLASSIFICATION: Sedimentary — Syngenetic — Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Postglacial Sediments

LITHOLOGY: Diatomite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage — Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

Fairly pure buff diatomite, 45 to 60 centimetres in thickness, occurs in a layer just below the surface soil and covers at least 0.4 hectares. The Prospect Lake deposit, of Recent age, is underlain by yellowish clays. The diatoms consist almost entirely of the small transparent cylindrical Melosiro Granulata which are well preserved. A thin layer of diatomite mixed with silt also occurs nearby to the north along Prospect valley.

A partial analysis of the deposit gave: 65.60 per cent SiO_2, 14.43 per cent Al_2O_3, 1.87 per cent Fe_2O_3, 1.27 per cent MgO, 13.10 per cent H_2O, and 1.70 per cent CO_2 (CANMET Report 691, page 94). Another sample graded 75.92 per cent SiO_2 (Geological Survey of Canada Memoir 36, page 138). About 180 tonnes are reported to have been taken out in 1921 (CANMET Report 691, page 53).

BIBLIOGRAPHY

GSC MAP 42A; 1386A; 1553A
GSC MEM 13; *36, pp. 137,138; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
CAMMET RPT *691, pp. 52,53,83,94

DATE CODED: 1985/07/24 — CODED BY: GSB — FIELD CHECK: N
DATE REVISED: 1990/10/02 — REVISED BY: GJP — FIELD CHECK: N

MINFILE NUMBER: **092B 117**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAYNE ISLAND**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B14W 092B14E
BC MAP:
LATITUDE: 48 50 40 N
LONGITUDE: 123 17 15 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located on Mayne Island at an unspecified location.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5410203
EASTING: 478906

COMMODITIES: Diatomite

MINERALS
SIGNIFICANT: Diatomite
MINERALIZATION AGE: Recent

DEPOSIT
CHARACTER: Unconsolidated Massive
CLASSIFICATION: Sedimentary
TYPE: F06 Lacustrine diatomite

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Unnamed/Unknown Formation	
Recent			Postglacial Sediments

LITHOLOGY: Diatomite

HOSTROCK COMMENTS: The diatomite deposit is of Recent age.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

A sample of impure, grey, freshwater diatomite was submitted to the Department of Energy, Mines and Petroleum Resources from Mayne Island. The diatomite in this region is of Recent age and mainly unconsolidated. Mayne Island is underlain by sedimentary rock of the Upper Cretaceous Nanaimo Group.

BIBLIOGRAPHY

GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
CAMMET RPT 691 (Diatomite)
PERS COMM J., McCammon

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 118**

NATIONAL MINERAL INVENTORY:

NAME(S): **EAGLE HEIGHTS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 39 54 N
LONGITUDE: 123 44 09 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Limestone outcrop (Geological Survey of Canada Map 42A).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5390478
EASTING: 445819

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone
DIMENSION: 1370 x 300 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone band trends west for 1370 metres and is 107 to 300 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone

HOSTROCK COMMENTS: The Mount Mark Formation is Upper Pennsylvannian to Lower Permian in age.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located at the southeast end of the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1973
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	47.1000	Per cent

COMMENTS: Across 55 metres. Grade is for CaO.
REFERENCE: McCammon, J.W. (1973): Limestone Occurrence in B.C., page 8.

CAPSULE GEOLOGY

The Eagle Heights showing is located on the southeast side of Eagle Heights Mountain between 550 and 610 metres elevation, 32 kilometres northwest of Victoria.

The showing consists of a 107 to 300 metre wide band of limestone of the Upper Pennsylvannian to Lower Permian Mount Mark Formation, Buttle Lake Group (previously Buttle Lake Formation, Sicker Group). The band, which trends westward for 1370 metres, is overlain to the northwest by metabasalts of the Upper Triassic Karmutsen Formation, Vancouver Group and underlain to the southeast by sediments of the Upper Devonian McLaughlin Ridge Formation, Sicker Group.

The band is comprised of coarse-grained, light grey, fossiliferous limestone with chert and volcanic inclusions. A chip sample taken across 55 metres contained 47.10 per cent CaO, 0.82 per cent MgO and 12.40 per cent insolubles (McCammon, 1973, page 8).

BIBLIOGRAPHY

EMPR BULL 23; 40
EMPR IND MIN FILE (McCammon, J.W. (1973): Limestone Occurrences in British Columbia (in Ministry Library))

BIBLIOGRAPHY

EMPR OF 1992-18, pp. 19, 21
GSC MAP 42A; 1386A; 1553A
GSC MEM 96, p. 105
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
CANMET RPT 811
Lockie, D.A. (1957): A Petrographic Analysis of Some Limestones of Southwestern British Columbia, University of British Columbia, Unpublished B.A. Thesis

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 119**

NATIONAL MINERAL INVENTORY:

NAME(S): **WILD DEER CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 39 45 N
LONGITUDE: 123 47 52 W
ELEVATION: 360 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Limestone outcrop (McCammon, 1973 - Industrial Mineral File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5390246
EASTING: 441256

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone
DIMENSION: 518 x 180 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The lens extends 518 metres southwest and is up to 180 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

DATING METHOD: Fossil
MATERIAL DATED: Conodonts

LITHOLOGY: Limestone

HOSTROCK COMMENTS: The Mount Mark Formation is Upper Pennsylvannian to Lower Permian in age.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located at the southeast end of the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Wild Deer Creek showing outcrops on the west side of the creek, 42 kilometres northwest of Victoria.

The showing consists of a limestone lens of the Upper Pennsylvannian to Lower Permian Mount Mark Formation, Buttle Lake Group (previously Buttle Lake Formation, Sicker Group). The lens is up to 180 metres wide and extends for 518 metres southwest from Wild Deer Lake. The lens is overlain to the northwest by metabasalts of the Upper Triassic Karmutsen Formation, Vancouver Group and underlain to the southeast by sediments of the Upper Devonian McLaughlin Ridge Formation, Sicker Group.

BIBLIOGRAPHY

EMPR IND MIN FILE (McCammon, J.W. (1973): Limestone Occurrences in B.C.(in Ministry Library))
GSC MAP 42A; 1386A; 1553A
GSC P 72-44; 75-1A, p. 23; 79-30, p.18

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 120**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKUTZ FALLS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 45 04 N
LONGITUDE: 123 57 52 W
ELEVATION: 460 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of outcrop (Open File 1988-8).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5400237
EASTING: 429108

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary
TYPE: R09 Limestone

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located at the southeast end of the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Skutz Falls showing is located 4.5 kilometres south of the falls on the Cowichan River, 19 kilometres west-southwest of Duncan. The showing consists of an area containing cavernous, crinoidal limestone pods of the Upper Pennsylvannian to Lower Permian Mount Mark Formation, Buttle Lake Group (previously Buttle Lake Formation, Sicker Group).

BIBLIOGRAPHY

EMPR ASS RPT 12917
EMPR BULL 23; 40
EMPR FIELDWORK 1987, pp. 85,89,90
EMPR IND MIN FILE (McCammon, J.W. (1973): Limestone Occurrences in British Columbia (in Ministry Library))
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30, p. 18
CANMET RPT 811
Lockie, D.A. (1957): A Petrographic Analysis of Some Limestones of Southwestern British Columbia, University of British Columbia, Unpublished B.A. Thesis

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092B 121**

NATIONAL MINERAL INVENTORY:

NAME(S): **CAPE KEPPEL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B11W
BC MAP:
LATITUDE: 48 43 14 N
LONGITUDE: 123 27 20 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.5 kilometres northeast of Cape Keppel on the southern coast of Saltspring Island (Assessment Report 13375). May be on or near the major access road.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5396492
EASTING: 466494

COMMODITIES: Gold, Copper, Silver

MINERALS
SIGNIFICANT: Chalcopyrite, Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Discordant, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic
SHAPE: Tabular
DIMENSION:
STRIKE/DIP:
TREND/PLUNGE: 360/32

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Sicker	Fourth Lake	

LITHOLOGY: Shale
Siltstone
Gabbro

HOSTROCK COMMENTS: The upper sedimentary package of the Sicker Group has been reassigned to the Buttle Lake Group.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Georgia Depression
RELATIONSHIP: Pre-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: ADIT
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1984

COMMODITY	GRADE	
Silver	20.0000	Grams per tonne
Gold	3.4000	Grams per tonne
Copper	0.4298	Per cent

REFERENCE: Assessment Report 13375.

CAPSULE GEOLOGY

Between 1930 and 1940, a 20-metre long adit was driven down plunge on an auriferous quartz vein located approximately 1.3 kilometres east of Cape Keppel on the southernmost part of Saltspring Island. The quartz vein plunges 32 degrees to the north through thin-bedded black shales and siltstones of the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group (formerly the Sediment-Sill Unit of the Sicker Group). The sediments are fine grained, fissile, steeply dipping and isoclinally folded. The vein lies close to an intrusive gabbro contact.

Three samples from the adit entrance, obtained in 1984, gave the following values: 0.1 to 3.4 grams per tonne gold, 0.1 to 0.4 per cent copper and 9.4 to 20.0 grams per tonne silver (Assessment Report 13375).

Quartz veining in the area shows a close association with the margins of the gabbro intrusive. These veins sometimes contain pyrite, chalcopyrite and pyrrhotite. Vein widths range from 30 to 100 centimetres.

BIBLIOGRAPHY

EMPR ASS RPT *13375, 13996, 17186
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1988/10/13 CODED BY: SED FIELD CHECK: N
DATE REVISED: 1990/07/31 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 122**

NATIONAL MINERAL INVENTORY:

NAME(S): **KOKSILAH**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12E
BC MAP:
LATITUDE: 48 44 21 N
LONGITUDE: 123 40 53 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The Koksilah quarry is situated immediately east of the track of the E&N Railway at a point about 1.5 kilometres north of Cowichan Station (CANMET - Report on the Building and Ornamental Stone of Canada, Volume V, Number 452, page. 63).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5398685
EASTING: 449902

COMMODITIES: Sandstone — Dimension Stone — Building Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Sandstone
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive — Stratiform
CLASSIFICATION: Sedimentary — Industrial Min.
TYPE: R06 Dimension stone - sandstone
DIMENSION: Metres
STRIKE/DIP: 010/25N
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Extension	
Upper Cretaceous	Nanaimo	Protection	

LITHOLOGY: Sandstone

HOSTROCK COMMENTS: Probably hosted by the Extension-Protection Formation, since subdivided into the Extension and Protection formations.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The area of the Koksilah quarry is underlain by sandstone, shale and conglomerate, probably of the Extension or Protection formations, Nanaimo Group. Sandstone beds up to 6 metres thick overlie a 6-metre thick sequence of soft sandstone, shales and conglomerates which in turn overlie a sequence of shale. The formation strikes 010 degrees and dips 25 degrees to the north.

Joints cut the formation in a general north and south direction. They are steeply inclined, dipping both ways from the vertical. In places these joints are 3 to 4 metres apart, but usually they are much closer. Cross joints, at right angles to the above joints, are very irregularly developed, with a prevailing dip of 70 degrees to the south. On the whole the rock is reported to be considerably shattered.

The heavy sandstone beds show a fairly uniform blue-grey colour which is interrupted by coarser streaks and fossil-bearing bands. The rock is fine grained and of even texture.

The Koksilah stone may be seen in Craigdarroch Castle and in the Methodist church at the Corner of Pandora and Quadra streets in Victoria. No production figures are available.

BIBLIOGRAPHY

EMPR INF CIRC 1994-15
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30, p. 8
CANMET RPT *452, Vol.V, pp. 63,64
Victoria Times Colonist, June 22, 1997, p. C8

DATE CODED: 1985/07/24 — CODED BY: GSB — FIELD CHECK: N
DATE REVISED: 1990/07/27 — REVISED BY: GJP — FIELD CHECK: N

MINFILE NUMBER: **092B 123**

NATIONAL MINERAL INVENTORY:

NAME(S): **SOOKE BEACH**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05W
BC MAP:
LATITUDE: 48 21 56 N
LONGITUDE: 123 43 54 W
ELEVATION: 1 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Reported to be on the beaches in the Sooke area (Industrial Mineral File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5357190
EASTING: 445808

COMMODITIES: Agate Gemstones

MINERALS
SIGNIFICANT: Jasper Agate Chalcedony
COMMENTS: Sardonyx is the type of chalcedony found.
ASSOCIATED: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary			Postglacial Sediments

LITHOLOGY: Sand
Gravel
Clay

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

Jasper, agate, sardonyx and calcite crystals are reported to have been found on Sooke beaches. The area is underlain mainly by pillow basalt, breccia and tuff of the Tertiary (Eocene and older) Metchosin Volcanics. Intrusions of the coeval Sooke Gabbro cut the country rock. The stratigraphy in the area of the beach is overlain by deposits of sand, gravel, silt and clay of the Quaternary Capilano Sediments.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91
EMPR *IND MIN FILE (Agate in BC)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 69

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/28 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 124**

NATIONAL MINERAL INVENTORY:

NAME(S): **ISLAND VIEW BEACH**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B11W
BC MAP:
LATITUDE: 48 34 27 N
LONGITUDE: 123 22 03 W
ELEVATION: 1 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at Island View beach, on the eastern shore of Saanich Peninsula (Industrial Mineral File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5380185
EASTING: 472892

COMMODITIES: Agate Gemstones

MINERALS
SIGNIFICANT: Jasper Agate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary			Postglacial Sediments

LITHOLOGY: Sand
Gravel
Clay

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

Dallasite, epidote, jasper and agate are reported to occur with the beach sediments at Island View beach. The stratigraphy in the area is overlain by the Quaternary Capilano sediments, consisting of sand, gravel, silt and clay.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91
EMPR *IND MIN FILE (Agate in BC)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 60

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/28 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 125**

NATIONAL MINERAL INVENTORY:

NAME(S): **COLE BAY**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B11W
BC MAP:
LATITUDE: 48 37 23 N
LONGITUDE: 123 27 05 W
ELEVATION: 533 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Quarries, apparently on the northwest slope of Mount Newton, on the Saanich Peninsula.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5385652
EASTING: 466736

COMMODITIES: Granite — Dimension Stone — Building Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Granitic rock.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Magmatic
TYPE: R03 Dimension stone - granite

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite
Diorite
Granite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

At the Cole Bay occurrence, a medium-grained, grey granitic rock has been quarried at two localities on the northwest slopes of Mount Newton. The area is underlain by rock of the Early to Middle Jurassic Island Plutonic Suite (formerly called Island Intrusions), typically granodiorite and diorite.

BIBLIOGRAPHY

EMPR FIELDWORK 1986, p. 309
CANMET RPT 452, Vol. V
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1985/07/24 — CODED BY: GSB — FIELD CHECK: N
DATE REVISED: 1990/09/28 — REVISED BY: GJP — FIELD CHECK: N

MINFILE NUMBER: **092B 126**

NATIONAL MINERAL INVENTORY:

NAME(S): **DUNCAN CLAY**, SOMENOS, DUNCAN

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 48 56 N
LONGITUDE: 123 43 24 W
ELEVATION: 35 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located in the area of Somenos, a few kilometres north of Duncan (Geological Survey of Canada Memoir 96, page 398).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5407205
EASTING: 446899

COMMODITIES: Clay

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Recent

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Residual Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Postglacial Sediments

LITHOLOGY: Clay

HOSTROCK COMMENTS: The clays are part of the Capilano Sediments, formerly known as the Puyallup Interglacial deposits (GSC Map 1553A).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Duncan Clay occurrence is composed of Recent clays of the Capilano Sediments (formerly known as Puyallup Interglacial deposits). The clays of this type are described as being somewhat sandy and yellowish to bluish grey in colour and in most places contain fairly abundant pebbles. The clay is fairly plastic, dries with moderate shrinkage and burns hard and red at low temperature. A sample of this surficial clay contained 67.6 per cent silica, 13.6 per cent alumina, 8.8 per cent iron oxide, 3.6 per cent lime, 0.2 per cent magnesia and 5.6 per cent water and loss upon ignition (Geological Survey of Canada Bulletin 96, page 308).

These clays are suitable for the manufacture of common brick and drain-tile, and for the manufacture of portland cement. Prior to 1917, bricks were made from this material at Somenos. No production figures are available.

BIBLIOGRAPHY

EMPR AR 1908-185
EMPR BULL *30, p. 47
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 24-E, pp. 144-150; 47; *96, pp. 341,397
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CANMET Technical Bulletin 54

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/27 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 127**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAANICHTON**, BAZAN BAY, NORTH SAANICH

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B11W
BC MAP:
LATITUDE: 48 36 04 N
LONGITUDE: 123 25 19 W
ELEVATION: 70 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Clay deposit located near Saanichton, 20 kilometres north of Victoria (Bulletin 30, page 47).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5383201
EASTING: 468892

COMMODITIES: Clay

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Recent

DEPOSIT
CHARACTER: Massive Stratiform
CLASSIFICATION: Residual Sedimentary Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Postglacial Sediments

LITHOLOGY: Clay

HOSTROCK COMMENTS: Sediments are mapped as the Capilano Sediments (Geological Survey of Canada Map 1553A).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Saanichton clay consists of light buff, non-calcareous surface clays used to manufacture brick and tile in the 1940's and 1950's but no production figures are available.

The clay is part of the Recent Capilano Sediments which also include sand, gravel and silt (Geological Survey of Canada Map 1553A).

This common clay consists mainly of a heterogeneous mixture of non-refractory clay minerals, quartz and feldspar. The clay minerals in them are mainly hydrous micas, montmorillonoids, chlorites or mixed-layer minerals. The refractory clay minerals of the kaolinite group are either absent or present only in trace amounts. The combination of these non-refractory clay minerals with quartz, feldspar and minor amounts of other minerals produces a low melting mixture with a short firing range. As a result, the clays have pyrometric cone equivalents of cones 2 (approximately 1142 degrees Celsius) to 4.5 (approximately 1172 degrees Celsius). Clays of this type are typically salmon to red-firing.

BIBLIOGRAPHY

EMPR AR 1947-205; 1950-220; 1952-251; 1953-190; 1956-151; 1957-83; 1958-889; 1959-155; 1960-138
EMPR BULL *30, p. 47
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 24-E, pp. 144-150; 47; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CANMET Technical Bulletin *54

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/26 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 128**

NATIONAL MINERAL INVENTORY:

NAME(S): **RANDY NORTH**, RANDY , LARA , T.L.

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 53 58 N
LONGITUDE: 123 54 54 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 2.5 kilometres due south of Coronation Mountain summit on the T.L. claim, part of the Lara (092B 129) group (Assessment Report 17857, Plate 3).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5416681
EASTING: 432940

COMMODITIES: Zinc, Copper, Lead, Silver, Gold

MINERALS
SIGNIFICANT: Sphalerite, Pyrite, Chalcopyrite, Tetrahedrite
MINERALIZATION AGE: Upper Devonian

DEPOSIT
CHARACTER: Massive, Stratiform, Stratabound
CLASSIFICATION: Volcanogenic, Syngenetic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Rhyolite Tuff
Rhyolite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP: Post-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1987

COMMODITY	GRADE	
Silver	2.0000	Grams per tonne
Gold	0.0500	Grams per tonne
Copper	0.0520	Per cent
Lead	0.0760	Per cent
Zinc	0.9500	Per cent

COMMENTS: From a 0.74-metre drill interval.
REFERENCE: Assessment Report 17857.

CAPSULE GEOLOGY

The Randy North zone is an anomalous package of felsic rocks of the Upper Devonian McLaughlin Ridge Formation, Sicker Group. The zone consists of 3 to 6 zinc-rich weakly polymetallic horizons over a stratigraphic thickness of about 150 metres. These horizons consist of laminated light brown sphalerite and pyrite with subordinate chalcopyrite and trace tetrahedrite hosted by a strongly schistose quartz-eye rhyolite tuff (sericite-quartz schist).

Ten diamond-drill holes have intersected the zone trend over a distance of 2 kilometres and downdip from surface to a depth of 180 metres. A 0.74-metre drill section assayed 0.052 per cent copper, 0.08 cent lead, 0.95 per cent zinc, 2 grams per tonne silver and 0.05 grams per tonne gold (Assessment Report 17857).

BIBLIOGRAPHY

EMPR ASS RPT 7384, *15737, *17857
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8; 1999-2
EMPR PF (Induced Polarization and Resistivity Survey - CPOG Property, Cominco Ltd., Oct.25, 1966 (in Lara file - 092B 129))
GSC MAP 42A; 1386A; 1553A

BIBLIOGRAPHY

GSC MEM 13; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Holbek, P. (1980): Geology and Geochronometry of the Sharron Volcanogenic Prospect, Mt. Brenton Area, Southwestern B.C., B.Sc. Thesis, University of British Columbia

DATE CODED: 1990/08/14 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/08/14 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 129**

NATIONAL MINERAL INVENTORY: 092B13 Zn1

NAME(S): **LARA**, CORONATION, 262, CORONATION EXTENSION

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 57 N
LONGITUDE: 123 54 18 W
ELEVATION: 620 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Solly Creek area, near centre of 2 kilometre Coronation zone (Assessment Report 17857, Plate 6).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5414789
EASTING: 433651

COMMODITIES: Gold, Silver, Zinc, Lead, Copper

MINERALS

SIGNIFICANT: Pyrite, Sphalerite, Galena, Chalcopyrite, Tetrahedrite, Tennantite, Rutile, Bornite, Electrum, Pearceite, Arsenopyrite
ASSOCIATED: Quartz, Calcite, Muscovite, Feldspar, Barite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Upper Devonian

DEPOSIT

CHARACTER: Stratiform, Massive
CLASSIFICATION: Volcanogenic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Tabular
MODIFIER: Folded, Faulted
DIMENSION: 2000 x 280 x 4 Metres
STRIKE/DIP: 135/60N
TREND/PLUNGE:
COMMENTS: Coronation and Extension zones.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Rhyolite Tuff
Rhyolite
Argillite
Volcanic Mudstone
Quartz Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: LARA
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1992
QUANTITY: 528839 Tonnes

COMMODITY	GRADE	
Silver	100.0900	Grams per tonne
Gold	4.7300	Grams per tonne
Copper	1.0100	Per cent
Lead	1.2200	Per cent
Zinc	5.8700	Per cent

COMMENTS: Drill indicated resource.
REFERENCE: George Cross News Letter No.188 (September 29), 1992.

CAPSULE GEOLOGY

The Lara is a volcanogenic polymetallic massive sulphide deposit located in the Cowichan uplift, one of three geanticlinal uplifts that expose Paleozoic volcanic and sedimentary rocks on Vancouver Island. The Paleozoic rocks are intruded by mafic sills (informally called the Mount Hall Gabbro) that are coeval with overlying basaltic volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. All of these sequences have been subsequently intruded by granodioritic stocks of the Early to Middle Jurassic Plutonic Suite (formerly the Island Intrusions). Upper Cretaceous sediments of the

CAPSULE GEOLOGY

Nanaimo Group lie unconformably on the older sequences. The geology of the Paleozoic rocks has recently undergone reinterpretation and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and to the new Buttle Lake Group (formerly the upper part of the Sicker Group).

The new Buttle Lake Group consists of: (1) the Lower Permian(?) St. Mary's Lake Formation composed of volcanic sandstone, conglomerate, argillites and turbidites; (2) the Upper Pennsylvanian to Lower Permian Mount Mark Formation (formerly Buttle Lake Formation) consisting of massive crinoidal limestone, bedded limestone, marble, chert and argillite; and (3) the Mississippian to Pennsylvanian Fourth Lake Formation (formerly Cameron River Formation, and equivalent to the upper parts of the Myra Formation of Muller) made up of mostly thinly-bedded, often cherty sediments which include ribbon chert, argillite, crinoidal limestone, intercalated sandstone, siltstone and argillite, epiclastic sandstone and conglomerate, thickly bedded tuffite, lithic tuffite, laminated cherty tuff, heterolithic lapilli tuff and breccia.

The Sicker Group, from youngest formation to oldest, consists of: (1) the Upper Devonian McLaughlin Ridge Formation (the equivalent of lower parts of the Myra Formation of Muller) consisting of thickly bedded tuffite and lithic tuffite, feldspar-crystal tuff, heterolithic lapilli tuff and breccia, rhyolite, dacite, laminated tuff and chert; (2) the Devonian Nitinat Formation comprising pyroxene-feldspar phyric agglomerate, breccia and lapilli tuff, massive and pillowed flows, massive tuffite and lithic tuffite, laminated tuff and chert; and (3) the Devonian Duck Lake Formation (ascribed to the Karmutsen Formation by Muller) made up of pillowed and massive basaltic flows and, monolithic basalt breccias and pillow breccias, chert, jasper and cherty tuff, felsic tuffs and lapilli tuff, massive dacite and rhyolite.

The geology of the Duncan area differs, however, in that the McLaughlin Ridge Formation is dominated by volcanics with only minor tuffaceous sediments. The volcanics are predominantly intermediate to felsic pyroclastics, commonly feldspar-crystal lapilli tuffs and heterolithic lapilli tuffs and breccias. A thick package of quartz-crystal, quartz-feldspar-crystal and fine dust tuffs is developed in the Chipman Creek-Mount Sicker area and are host to the massive sulphides. This package thins to the west where it interfingers with andesitic lapilli tuffs and breccias. It appears to be stratigraphically high within the formation. A distinctive maroon schistose heterolithic breccia and lapilli tuff forms the uppermost unit within the McLaughlin Ridge Formation and is seen in the Chipman Creek-Rheinhart Creek area. Most contacts with overlying sediments are faulted.

Southern Vancouver Island has undergone a complex tectonic history involving at least 6 major deformational events, often rejuvenating previous structures (Fieldwork 1987, page 87). The area is dominated by the effects of Tertiary west-northwest trending thrusting which have cut the Cowichan uplift into several slices. Where exposed these are high-angle reverse faults which dip between 45 and 90 degrees to the north-northeast paralleling earlier formed axial foliation in the Sicker Group rocks. Slip planes are relatively sharp and narrow, though wide schistose zones have formed in receptive lithologies. The thrusts generally place older rocks over younger and become listric at mid-crustal depth. Displacements along the faults are unknown but are probably small, on the order of 1 to 10 kilometres. Direction of motion is also unknown.

The metamorphic grade is generally quite low, but increases with age and structural position of the rocks. Nanaimo Group sediments are essentially unmetamorphosed. Basalts of the Karmutsen Formation show characteristics and alteration assemblages typical of the prehnite-pumpellyite facies. Intrusive rocks are unaltered. Sediments of the Fourth Lake Formation are essentially unmetamorphosed except where involved in intense shearing. Volcanic rocks of the McLaughlin Ridge and Nitinat formations in the Chipman Creek to Maple Mountain belt, however, show the effects of greenschist facies metamorphism. The felsic volcanic rocks develop sericite, talc and chlorite along foliation planes and are interbedded with minor chlorite schists. Intermediate to mafic rocks have chloritic schistose matrixes with epidote alteration of feldspars. Lithic lapilli may show almost complete replacement by epidote.

The Lara property is underlain by the McLaughlin Ridge Formation which has been thrust over younger rocks of the Fourth Lake Formation and the Nanaimo Group by the Fulford fault, a regional west-northwest trending fault that dips at about 47 degrees and crosscuts bedding in the volcanic rocks at a shallow angle. The McLaughlin Ridge Formation consists of northerly dipping, west-northwest striking

CAPSULE GEOLOGY

rhyolitic to andesitic rocks. Bedding in the rocks generally dips steeply at 60 to 75 degrees north, although dips of between 30 and 45 degrees are common between Humbird and Silver creeks.

The Fourth Lake Formation south of the Fulford fault consists of basal pebble conglomerate and volcaniclastic units grading upward into a sandstone-argillite series and then to an upper argillite series with siltstone and chert interbeds. The Nanaimo Group, which unconformably overlies the Fourth Lake Formation includes basal conglomerates, sandstone, and fossil-bearing mudstone.

The strata on the property is cut by a number of mafic intrusions which are probably feeders to the Karmutsen Formation. The intrusions are composed of medium to coarse-grained diabase, gabbro and leucogabbro with minor diorite. They are commonly porphyritic with feldspar phenocrysts often forming glomero-porphyritic clusters up to 3 centimetres in diameter. Mafic phenocrysts are generally absent. Equigranular gabbros are also common. The intrusive bodies also vary in form. Sill-like bodies are generally subconcordant with bedding, but also may follow foliation where this is strongly developed. As a result of this they can show a variety of attitudes from shallow dipping to vertical. They may range in thickness from a few metres to 200 metres. Discordant dykes are also common, varying from 10 to 20 centimetres in width.

Also occurring are a number of quartz-feldspar porphyry dykes. These dykes, related to the Upper Devonian Saltspring Intrusive Suite (formerly Saltspring Intrusions and Tyee Intrusions), are coeval with the felsic volcanics of the McLaughlin Ridge Formation. The porphyries are usually well-foliated and sometimes difficult to distinguish from crystal tuffs.

The package of rocks which hosts the Lara deposits has been tested by over 150 drill holes. It consists of an andesitic sequence referred to as the "Green Volcaniclastic Sequence", overlying rhyolite which are host to the massive sulphides. The rhyolite has been subdivided into two units which are referred to as the "Rhyolite Sequence" and the "Footwall Sequence", the latter underlying the lowermost sulphide sequence.

The Green Volcaniclastic Sequence is greater than 250 metres thick and dominated by fragmental rocks of intermediate composition. The sequence grades from coarse-grained locally silicified andesite at the base, to relatively fine-grained dacite tuff at the top. Thin argillite beds and laminae occur throughout the unit. An important argillite marker, locally greater than 1 metre thick, occurs in the transition zone from andesite to dacite. The contact between the Green Volcaniclastic and Rhyolite sequences is generally abrupt and is characterized by pronounced changes in colour, lithology and grain size. The contact is commonly accentuated by a well-developed gouge which may indicate a splay off the Fulford fault.

The Rhyolite Sequence hosts the polymetallic zones along the Coronation trend and is up to 75 metres thick. The sequence is lithologically uniform and consists predominantly of light grey, fine to coarse-grained rhyolite crystal and ash tuff. Quartz eyes are commonly present but are generally small (less than 2 millimetres) and comprise less than 10 per cent of the rock. These rocks are usually siliceous and cherty. Black argillite and buff-coloured volcanic mudstone beds are a common constituent of the sequence, typically ranging from less than 1 millimetre up to several millimetres in thickness. Argillite beds up to about a metre thick occur locally in the immediate footwall of the Coronation zone.

The Footwall Sequence, like the Rhyolite Sequence, is dominated by light grey rhyolites, but is characterized by the presence of coarse-grained massive quartz porphyry units up to 40 metres thick. These rocks are texturally variable but are distinguishable by the presence of abundant large quartz eyes. Feldspar porphyry dykes, rhyolite dykes, rhyolite breccia and mudstone and argillite beds are also present.

The Lara deposits include 3 polymetallic zones known as the Coronation zone, the Coronation Extension zone and the Hanging Wall zone. The deposits are classified as Kuroko-type massive sulphides and are volcanic-hosted, stratiform accumulations of copper, lead, zinc, silver and gold. Although classified as massive sulphides, the predominant facies actually consists of bands, laminae and stringers of sulphide minerals in a strongly silicified rhyolite host. The massive sulphide facies makes up about 20 per cent of the reserve.

The thickest, most extensive of these deposits is the Coronation zone which occurs primarily to the west of Solly Creek. The Coronation Extension zone which occurs to the east of Solly Creek is generally narrower and less continuous, but typically consists of high-grade massive sulphides. The Hanging Wall zone has only been recognized to the west of Solly Creek and is clearly at a different

CAPSULE GEOLOGY

stratigraphic level than the other two. Although the zone locally attains ore-grade it is somewhat sporadic.

The Coronation deposits occur in the Rhyolite Sequence immediately north of the Fulford fault. The deposits strike west-northwest, dip to the north at 60 degrees and exhibit considerable variation in both thickness and grade. Intercepts are up to 16 metres thick and average about 6 metres. One massive sulphide lens exposed by trenching in the Coronation zone graded 24.58 grams per tonne gold, 513.60 grams per tonne silver, 3.04 per cent copper, 43.01 per cent zinc and 8.30 per cent lead over 3.51 metres (Bailes et al., 1987).

The Coronation deposits can be divided into a massive sulphide facies, a banded and laminated facies and a stringer facies. The sulphide mineralogy of these facies is similar and consists primarily of sphalerite, chalcopyrite, galena and pyrite. Minor amounts of tetrahedrite and tennantite have also been noted. Minerals present in trace amounts include rutile, bornite, electrum, pearceite, arsenopyrite and barite. Gangue consists mainly of quartz and calcite with smaller amounts of muscovite, feldspar and barium-bearing feldspar. Sphalerite in the massive sulphide facies is typically medium to dark brown, as opposed to the very pale brown sphalerite characteristic of the other facies.

The massive sulphide facies is a relatively coarse-grained massive intergrowth of sulphide minerals and gangue (predominantly calcite). Interbeds of rhyolite or sedimentary rock are rare, although small siliceous pods may be included in the sulphide mass. This facies occasionally exhibits a banded texture which is best represented by chalcopyrite-rich bands of 1 to 2 centimetres. Local accumulations of massive pyrite occur. These are commonly barren but may contain significant gold or zinc values. The massive sulphide facies is consistently high grade except for the massive pyrite sections.

The predominant facies of the Coronation deposits is the banded and laminated facies which consist of sulphide laminae and bands up to a few centimetres thick in a siliceous host. The host rock varies from a silicified rhyolite to very fine-grained siliceous mass with various amounts of felsic tuffaceous debris. The mineralization is broadly conformable, however crosscutting features are common within the conformable zones. Crosscutting mineralization varies from occasional sulphide stringers to well-developed breccia zones with sulphides in the matrix. Sulphides also occur disseminated in the rhyolite host. Primary textures are masked by pronounced cataclastic overprint. Although these features to some extent mask the primary depositional style, the overall stratiform character of the facies is demonstrated by the presence of sedimentary units which enclose and occur within the deposit, and which can be correlated over considerable distances.

The banded and laminated facies varies up to about 16 metres true thickness. Although not as high grade as the massive sulphide facies, laminated and banded sulphides can achieve significant grade. Diamond-drill hole 85-36 for example, intersected 4.18 metres grading 9.91 grams per tonne gold, 82.63 grams per tonne silver, 0.86 per cent copper, 3.47 per cent zinc and 0.50 per cent lead. These intersections typically contain up to about 20 per cent sulphide bands and laminae, and relative to the massive sulphide facies contain a higher ratio of pyrite to total sulphides. Intersections usually contain from 3 to 5 per cent pyrite but concentrations of 10 to 15 per cent are not uncommon.

The stringer facies, which is restricted, is best developed in the Hanging Wall zone. The facies consists of narrow sulphides, generally less than 1 or 2 millimetres, in a silicified rhyolite host. It is generally low grade but may be thick and is commonly rich in precious metals relative to base metals. A 10.52-metre diamond-drill hole interval graded 0.96 grams per tonne gold, 43.89 grams per tonne silver, 0.06 per cent copper, 0.90 per zinc and 0.29 per cent lead (Bailes et al., 1987).

These zones have been traced over a strike length of about 2 kilometres and to a depth of 440 metres downdip from surface.

The Lara property contains a drill indicated resource of 528,839 tonnes averaging 1.01 per cent copper, 1.22 per cent lead, 5,87 per cent zinc, 100.09 grams per tonne silver and 4.73 grams per tonne gold (George Cross News Letter No.188 (September 29, 1992)).

Nucanolan Resources plan to drill 8 holes on the 262 zone, its down-plunge eastern extensions across Silver Creek, and the area between the 262 zone and the Coronation extension (Northern Miner, November 30, 1998). The Coronation Zone is likely overturned and disrupted by numerous faults that apparently move the zone northward.

BIBLIOGRAPHY

EM EXPL 1998-47-55

BIBLIOGRAPHY

EMPR ASS RPT 936, 7384, 10116, 11123, 13655, *14492, *15737, *17857, 19806, 19807, 20980, 20981
EMPR EXPL 1977-E105; 1978-E122; 1979-122; 1985-120; 1986-C135
EMPR FAME FILE (1986 E-21, E-75; 1987 E-14, E-15)
EMPR FIELDWORK 1982, p. 46; *1987, pp. 81-91
EMPR MAP 65 (1989)
EMPR Mineral Potential Map 1992-3
EMPR OF 1988-8; 1992-1; 1999-2
EMPR PF (Induced Polarization and Resistivity Survey - CPOG Property, Cominco Ltd., Oct.25, 1966; Blackadar, D.W. (1984): Report on Physical Work on Lara Property; Watson, I.M. (1986): Report on the Lara Project for Laramide Resources; A Prospectus for the Abermin Corporation, Lara Property, Feb. 1987; Statement of Material Facts, Laramide Resources Ltd., May 29, 1987; Interim Report, Laramide Resources Ltd., June 2,30, Aug.14 1987, June 30, 1988; *Bailes, R.J., Blackadar, D.W. and Kapusta, J.D. (1987): The Lara Polymetallic Massive Sulphide Deposit Abermin Corporation (for Northwest Mining Association Convention Spokane, Wash.); Notice of Work, Abermin Corporation, 1987 (see Paul Wilton's file); Progress Reports, Laramide Resources Ltd., 1986-90; Laramide Resources Annual Reports, 1985-1989; News Release, Laramide Resources Ltd., Sept.16, 30, 1988; Laramide Resources Ltd. Information folder; Geology notes from CIM 1987, R. Bales; M.E.G. Talk notes, Mar.26, 1986)
EMR MIN BULL MR 223 B.C. 87
EMR MP CORPFILE (Laramide Resources Ltd.; Abermin Corporation)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
CMH 1989-1990, pp. 264,265,320
GCNL #17,#148,#152, 1985; #10,#100,#148,#154,#193,#239,#244, 1986; #10(Jan.15),#19,#66,#95,#125,#199,#204,#244,Oct.23, 1987; #27,#78, #142,#180,#190,#191,#210; 1988; #19(Feb.23), 1990; #13(Jan.18), 1991; #135(July 14), 1992
N MINER March 7, Aug.8, Dec.7, 1985; Jan.20, June 2,16, Aug.18, Dec.8, 1986; Feb.2, Oct.26, 1987; Sept.28, Oct.24, 1988; Apr.10, June 19, 1989; Nov. 30, 1998
PERS COMM Massey, N.W.D., 1991
V STOCKWATCH Jan.28, Oct.19, 1987; Mar.23, Aug.9, 1989
WWW http://www.infomine.com/
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Holbek, P. (1980): Geology and Geochronometry of the Sharron Volcanogenic Prospect, Mt. Brenton Area, Southwestern B.C., B.Sc. Thesis, University of British Columbia
EMPR OF 1998-10

DATE CODED: 1988/09/19 CODED BY: SP FIELD CHECK: Y
DATE REVISED: 1990/08/10 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 130**

NATIONAL MINERAL INVENTORY:

NAME(S): **QUAMICHAN LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 48 25 N
LONGITUDE: 123 38 29 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the west and northeast ends of Quamichan Lake, a few kilometres northeast of Duncan (CANMET Report 691, page 83).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5406193
EASTING: 452906

COMMODITIES: Diatomite

MINERALS
SIGNIFICANT: Diatomite
MINERALIZATION AGE: Recent

DEPOSIT
CHARACTER: Unconsolidated Massive
CLASSIFICATION: Sedimentary Syngenetic
TYPE: F06 Lacustrine diatomite

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Unnamed/Unknown Formation	
Recent			Postglacial Sediments

LITHOLOGY: Diatomite

HOSTROCK COMMENTS: The diatomite deposits are of Recent age.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

Thirty to sixty centimetres of impure, gritty diatomite, high in alumina, occurs over an area of 2.4 hectares adjacent Quamichan Lake. The diatomite in this region is of Recent age and mainly unconsolidated. The area is underlain by sedimentary rock of the Upper Cretaceous Nanaimo Group.

BIBLIOGRAPHY

EMPR IND MIN FILE (Diatomite Occurrences in BC (in Ministry Library))
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
CAMMET RPT *691 (Diatomite), p. 83
PERS COMM Hora, D. (Geological Survey Branch), Oct.1, 1989

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 131**

NATIONAL MINERAL INVENTORY:

NAME(S): **BJ**, HOLLAND LAKE QUARRY

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 57 11 N
LONGITUDE: 123 51 45 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: North of Holland Lake, on a limited exposure low on the southwest slope of a ridge (Fieldwork 1980, page 24).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5422596
EASTING: 436856

COMMODITIES: Granite, Building Stone, Copper

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite
ASSOCIATED: Pyroxene
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Igneous-contact, Hydrothermal
TYPE: R03 Dimension stone - granite; M02 Tholeiitic intrusion-hosted Ni-Cu

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Jurassic			Island Plutonic Suite
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Amphibolite
Migmatite
Felsic Tuff
Breccia
Gabbro
Granodiorite

HOSTROCK COMMENTS: The gabbro intrusive is coeval with the Upper Triassic Karmutsen Fm. and is informally known as the Mount Hall Gabbro (Massey, 1991).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Georgia Depression
GRADE: Amphibolite

CAPSULE GEOLOGY

At the BJ occurrence mineralization occurs in the northeast contact zone of an Early to Middle Jurassic Island Plutonic Suite (formerly the Island Intrusions) body, and rocks of the Devonian Nitinat Formation, Sicker Group. The rock immediately adjacent the stock is black amphibolite cut by many small granitic dykes and pegmatitic vein-dykes. It passes northeastward through migmatite to somewhat schistose and recrystallized pyroxene basalt (Nitinat Formation). To the southeast the basalt is in contact with gabbro (informally known as the Mount Hall Gabbro) which, like the amphibolite, is cut by many small granitic dykes.

The amphibolite and migmatite contain wispy zones, 30 to 60 centimetres wide, of disseminated and seam pyrite accompanied by less chalcopyrite. These zones are exposed only in one place, and only scattered occurrences of sparsely disseminated pyrite were found in the basalt and gabbro.

A quarry was reported to have been opened up in the contact zone in order to provide rock-facing for dams at each end of Holland Lake.

BIBLIOGRAPHY

EMPR FIELDWORK *1980, p. 24; 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
PERS COMM Massey, N.W.D., 1991
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with

BIBLIOGRAPHY

Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 111

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 132**

NATIONAL MINERAL INVENTORY:

NAME(S): **SM**, SUSIE M

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B05E
BC MAP:
LATITUDE: 48 26 30 N
LONGITUDE: 123 38 32 W
ELEVATION: 533 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the northwest slope of Ragged Mountain, within the bounds of Lot 61 (Assessment Report 12446).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5365591
EASTING: 452504

COMMODITIES: Copper, Gold, Silver

MINERALS
SIGNIFICANT: Chalcopyrite, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Breccia, Disseminated
CLASSIFICATION: Igneous-contact, Hydrothermal, Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Sooke Gabbro
Eocene			Metchosin Volcanics

LITHOLOGY: Gabbro, Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1984
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	3.0900	Grams per tonne
Gold	0.4100	Grams per tonne

COMMENTS: From 40 centimetres of core.
REFERENCE: Assessment Report 12446, page 16.

CAPSULE GEOLOGY

The SM area is underlain by the contact of the coeval Eocene Metchosin Volcanics and Sooke Gabbro intrusives. The volcanics consist of basalt and the intrusives consist of olivine and augite gabbro. Brecciated rocks at the contact contain pyrite and chalcopyrite in calcite gangue. One 40-centimetre section of drill core assayed 0.41 grams per tonne gold and 3.09 grams per tonne silver (Assessment Report 12446, page 16).

BIBLIOGRAPHY

EMPR ASS RPT 5059, 7475, 8282, 10571, 12446
EMPR EXPL 1974-163; 1979-120; 1980-150; 1984-134
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM N.W.D. Massey (with respect to age and name of gabbroic intrusions)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/10/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 133**

NATIONAL MINERAL INVENTORY:

NAME(S): **VV**, ANT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 57 31 N
LONGITUDE: 123 56 19 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drill hole site - Chem 6 (Assessment Report 7323). Located 1.5 kilometres southwest of Coronation Lake.

MINING DIVISION: Victoria
Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5423279
EASTING: 431291

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Molybdenite
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Breccia
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	

LITHOLOGY: Siliceous Tuff
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1979

COMMODITY	GRADE	
Copper	0.1170	Per cent

COMMENTS: From a 1.7-metre drill section.
REFERENCE: Assessment Report 7323.

CAPSULE GEOLOGY

The VV showing occurs in an area underlain by a contact of the Early to Middle Jurassic Island Plutonic Suite (formerly called the Island Intrusions) and rock of the Devonian Nitinat Formation, Sicker Group. In 1979, a single drill hole was completed in order test a magnetic anomaly. The hole encountered a minor amount of graphitic argillite at bedrock and then passed into a sequence of very siliceous tuffs which have been variably altered to garnet skarn. A zone of heavily altered skarn breccia was penetrated containing up to 15 per cent pyrite, pyrrhotite, minor chalcopyrite and traces of molybdenite.

A 1.7-metre drill section contained 0.117 per cent copper and 0.007 per cent molybdenite. Another section assayed 0.028 per cent copper and 0.015 per cent molybenite over 1.1 metres (Assessment Report 7323).

BIBLIOGRAPHY

EMPR ASS RPT 6548, *7323
EMPR EXPL 1977-105; 1978-124; 1979-123
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 1972-44; 1975-1A, p. 23; 1979-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral

BIBLIOGRAPHY

Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/07/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 134**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOLT EAST**, HOLT 6-9, HOLT 15

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 42 49 N
LONGITUDE: 123 51 50 W
ELEVATION: 560 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the power line on Koksilah Ridge, just west of Holt Creek, approximately 10 kilometres southwest of Duncan (Assessment Report 16059).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5395980
EASTING: 436452

COMMODITIES: Silver, Gold, Copper, Zinc

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite
ASSOCIATED: Quartz, Jasper
ALTERATION: Malachite, Azurite, Epidote, Hematite
ALTERATION TYPE: Epidote, Oxidation, Carbonate, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Vein
CLASSIFICATION: Epigenetic, Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Carboniferous	Buttle Lake	Fourth Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Argillaceous Chert
Quartz Diorite

HOSTROCK COMMENTS: Basalt, chert and diorite host mineralization.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock

YEAR: 1987

COMMODITY	GRADE	
Silver	3.4000	Grams per tonne
Gold	1.1400	Grams per tonne

REFERENCE: Assessment Report 16059.

CAPSULE GEOLOGY

The claims are underlain by Paleozoic Sicker and Buttle Lake groups volcanics and sediments exposed in a northwesterly trending syncline. The basal Devonian Nitinat Formation (Sicker Group) forms a sequence of volcanics, volcaniclastics and minor sediments which have undergone pervasive epidotization. Overlying these are pillowed, amygdaloidal and massive basalts which are correlated with the Nitinat to Fourth Lake formations transition (possibly Duck Lake Formation (Sicker Group)). Epidotization and hematization are common with minor malachite along fractures. The basalt is overlain by bedded jasper, chert and argillite with minor limestone. The jasper is commonly crosscut by quartz veinlets hosting pyrite, chalcopyrite, and magnetite. The matrix commonly hosts specularite. The Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group) overlies the Nitinat rocks and is comprised of well-bedded chert and tuff.

These Paleozoic rocks are intruded by diorite of the Early to Middle Jurassic Island Plutonic Suite (formerly Island Intrusions) and a series of diabase dykes related to the Upper Triassic Karmutsen Formation, Vancouver Group. Epidote veining, as well as quartz veining hosting chalcopyrite and pyrite with some malachite,

CAPSULE GEOLOGY

accompany the epidotization. Skarnification of layered tuffs adjacent to the intrusive is common.

Mineralization in the west half of the Holt claims in Trench #1, consists of fine-grained pyrite occurring as disseminations or in bands up to 3 centimetres wide, in intensely silicified mafic volcanic rocks. Samples assayed between 0.02 to 0.22 grams per tonne gold. One sample returned 1.14 grams per tonne gold and 3.4 grams per tonne silver. A black, argillaceous chert hosting disseminated pyrite assayed 0.26 grams per tonne gold, 1.0 gram per tonne silver, 0.013 per cent copper, 0.004 per cent lead and 0.0125 per cent arsenic (Assessment Report 16059).

Lenses of jasper in the pillowed basalt host pyrite and rarely chalcopyrite. A chalcopyrite-bearing jasper lens in a roadcut assayed 1.36 per cent copper and 0.17 grams per tonne gold (Assessment Report 16059). The lens occurs in epidotized mafic volcanic rocks where malachite is common along fractures.

Disseminated to blebby chalcopyrite occurs in patches for 3.0 metres along a 30 centimetre wide shear zone trending northwest and dipping steeply west. The shear occurs in massive mafic volcanics of the Sicker Group exposed along a streamcut. In 1987, a sample assayed 3.16 per cent copper, 0.49 grams per tonne gold, 10.4 grams per tonne silver and 0.022 per cent zinc (Assessment Report 16059).

A sample from a quartz vein on Holt 8 returned up to 1.2 grams per tonne silver and 0.0426 per cent copper (Assessment Report 16059).

Localized gossans occur in several localities on Holt 6 and Holt 9. They are related to zones of carbonate alteration in mafic rocks of the Nitinat Formation.

BIBLIOGRAPHY

EMPR ASS RPT *16059
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8; 1999-2
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1990/08/20 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1990/08/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 135**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOLT WEST**, HOLT 10-14

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 44 29 N
LONGITUDE: 123 44 35 W
ELEVATION: 570 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the Holt 11 claim, south of the Cowichan River, west of Holt Creek, approximately 12 kilometres west of Duncan (Assessment Report 16059).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5398974
EASTING: 445370

COMMODITIES: Copper, Gold, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite, Azurite, Epidote
ALTERATION TYPE: Epidote, Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Devonian	Sicker	Nitinat	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Diabase Sill

HOSTROCK COMMENTS: Diabase sills are coeval with the Upper Triassic Karmutsen Fm. (Vancouver Gp.) and informally called the Mount Hall Gabbro (Massey, 1991).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1987

COMMODITY	GRADE	
Silver	8.6000	Grams per tonne
Gold	0.1100	Grams per tonne
Copper	2.3600	Per cent

REFERENCE: Assessment Report 16059.

CAPSULE GEOLOGY

The Holt West occurrence is underlain by Paleozoic Sicker and Buttle Lake groups volcanics and sediments exposed in a northwest trending syncline. The Nitinat Formation (Sicker Group) forms a sequence of volcanics, volcaniclastics and minor sediments which have undergone pervasive epidotization. These are overlain by pillowed, amygdaloidal and massive basalts which are correlated with the Nitinat to Fourth Lake formations transition (possibly the Duck Lake Formation (Sicker Group)). Epidotization and hemitization are common with minor malachite along fractures. The basalt is overlain by bedded jasper, chert and argillite with minor limestone. The jasper is commonly crosscut by quartz veinlets hosting pyrite, chalcopyrite and magnetite. The matrix commonly hosts specularite. The Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group) overlies the Nitinat Formation and is comprised of well-bedded chert and tuff. Diabase sills (informally known as the Mount Hall Gabbro), coeval with the Upper Triassic Karmutsen Formation of the Vancouver Group, are interlayered with the sedimentary and volcanic rocks. The sills are less than a few tens of metres thick and occupy the core of the major syncline that crosses the property.

Mineralized zones occur near the diabase sills within the Sicker

CAPSULE GEOLOGY

Group rocks. A significant zone, located on Holt 11, occurs in a localized area of epidotized diabase which hosts disseminated to massive pyrite and chalcopyrite with traces of azurite. In 1987, a sample assayed 2.36 per cent copper, 0.11 grams per tonne gold and 8.6 grams per tonne silver (Assessment Report 16059).

On Holt 11, five occurrences of mineralized quartz veins in silicified zones near the diabase sills were found (Assessment Report 16059). A sample from a quartz vein assayed 0.497 per cent copper and 0.09 grams per tonne gold. A sample from a silicified mafic tuff with quartz veins assayed 0.9 grams per tonne gold. Another sample from a silicified zone with pyrite, malachite and azurite assayed 0.313 per copper and 0.6 grams per tonne silver.

BIBLIOGRAPHY

EMPR ASS RPT *16059
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991

DATE CODED: 1987/09/04 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1990/08/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 136**

NATIONAL MINERAL INVENTORY:

NAME(S): **LOIS LAKE**, HOLT 1-5

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 41 29 N
LONGITUDE: 123 49 05 W
ELEVATION: 450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Lois Lake Group, part of Holt claims, located on east side of Holt Creek, 2 kilometres north of Wild Deer Lake, approximately 12 kilometres southwest of Duncan (Assessment Report 16059).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5393473
EASTING: 439797

COMMODITIES: Silver, Copper, Gold, Zinc, Antimony

MINERALS

SIGNIFICANT: Freibergite, Pyrrhotite, Pyrite
ASSOCIATED: Quartz, Ankerite
ALTERATION: Malachite, Azurite, Ankerite
ALTERATION TYPE: Oxidation, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Pillow Basalt
Lapilli Tuff
Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1987

COMMODITY	GRADE	
Silver	3600.0000	Grams per tonne
Copper	1.0000	Per cent
Antimony	0.9530	Per cent
Zinc	0.2990	Per cent

COMMENTS: Value for copper is reported to be greater than 1 per cent.
REFERENCE: Assessment Report 16059.

CAPSULE GEOLOGY

The Lois Lake showings are underlain by Vancouver Group rocks of the Upper Triassic Karmutsen Formation, comprised of massive and pillowed basalt with minor basaltic lapilli tuff. The rocks are characteristically green-black and pillows are irregular with quartz and chlorite selvages and infillings. The volcanics are crosscut by a series of ankerite, quartz and hematite veins.

The volcanics are intruded by a feldspar porphyry which is surrounded by carbonate altered rock. In 1987, a sample from this zone assayed 9.2 grams per tonne silver, 0.02 grams per tonne gold and 0.0196 per cent copper (Assessment Report 16059).

The most significant mineralization occurs in quartz-ankerite veins in the mafic volcanics. Four vuggy quartz-anderite veins, 10 to 30 centimetres wide, are surrounded by carbonate alteration envelopes up to 0.5 metres wide, striking northwest and dipping moderately to steeply southeast. In one vein a 1.0-metre wide clay zone hosts disseminated to blebby freibergite with malachite and azurite. In 1987, a sample assayed 0.15 grams per tonne gold, 3600 grams per tonne silver, 0.953 per cent antimony, 0.299 per cent zinc,

CAPSULE GEOLOGY

0.795 per cent arsenic and greater than 1 per copper (Assessment Report 16059).

Several quartz veins hosting pyrite and pyrrhotite occur in the Holt 5 claim. A sample returned 0.25 per cent copper (Assessment

BIBLIOGRAPHY

EMPR ASS RPT *16059
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED:	1987/09/04	CODED BY:	LLD	FIELD CHECK:	N
DATE REVISED:	1990/08/20	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092B 137**

NATIONAL MINERAL INVENTORY:

NAME(S): **POLY 2**, POLY

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 51 12 N
LONGITUDE: 123 53 53 W
ELEVATION: 610 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 2.25 kilometres east of Chipman Creek and 1.75 kilometres north of the Chemainus River (Assessment Report 16906, Drawing 5).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5411541
EASTING: 434122

COMMODITIES: Manganese, Rhodonite, Gemstones, Silver

MINERALS

SIGNIFICANT: Pyrolusite, Psilomelane, Rhodonite
ASSOCIATED: Quartz
ALTERATION: Pyrolusite, Psilomelane
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Massive, Stratiform
CLASSIFICATION: Metamorphic, Sedimentary, Epigenetic, Industrial Min.
TYPE: J03 Mn veins and replacements, Q02 Rhodonite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

LITHOLOGY: Chert
Siltstone
Diabase

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1988

COMMODITY	GRADE	
Manganese	1.8200	Per cent

COMMENTS: From a 0.7 metre chip sample.
REFERENCE: Assessment Report 16906.

CAPSULE GEOLOGY

The Poly 2 occurrence is hosted by sediments of the Mississippian to Pennsylvanian Fourth Lake Formation (previously the upper part of Muller's Myra Formation), Buttle Lake Group. The sediments consist of interbedded laminated chert, argillite and siltstone with beds of fine to coarse-grained tuff. Bedding strikes northwest with a moderate to steep northeast dip. The unit, particularly the cherty intervals, is locally cut by quartz veins and veinlets.

A feldspar porphyritic diabasic to basaltic sill (informally called the Mount Hall Gabbro), likely coeval with the Upper Triassic Karmutsen Formation, is exposed over several hundred metres in the area. The contact of the sediments and the sill strikes 335 degrees and dips 30 degrees northwest.

Mineralization is reported to comprise manganese oxides in quartz veins and manganese-rich chert or greenish grey to pink rhodonite in close proximity to the vein. The quartz vein is up to 0.7 metres in width and is clear to whitish with a greasy luster. Up to 10 per cent manganese oxide minerals, including pyrolusite and psilomelane, and associated limonite staining occurs. The vein assayed 1.82 per cent manganese across 0.7 metres and adjacent manganiferous wallrock with quartz veinlets sampled on either side of the vein, assayed 9.24 and 7.16 per cent manganese (Assessment Report 16906). Silver assays up to 1.3 grams per tonne were also obtained

CAPSULE GEOLOGY

from these samples.

BIBLIOGRAPHY

EMPR ASS RPT 14919, 15823, *16906
EMPR BULL 37
EMPR COMM FILE (Sargent, H. (1956): Manganese Occurrences in British Columbia; Leaming, S.F. (1966): Rhodonite in British Columbia, The Canadian Rockhound; Danner, W.R. (1975): Gem Materials of British Columbia, Montana Bureau of Mines and Geology, Special Publication 74)
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463; 701; 821
GSC P 72-44; 72-53; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991
Cowley, P. (1979): Correlation of Rhodenite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia

DATE CODED: 1990/08/15 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/08/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 138**

NATIONAL MINERAL INVENTORY:

NAME(S): **POLY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 03 N
LONGITUDE: 123 55 01 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1 kilometre east of Chipman Creek, from a point 3 kilometres upstream from its confluence with the Chemainus River (Assessment Report 16906, Drawing 5).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5413132
EASTING: 432755

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrrhotite Chalcopyrite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

LITHOLOGY: Argillite
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Poly occurrence is hosted by sediments of the Mississippian to Pennsylvanian Fourth Lake Formation (previously the upper part of Muller's Myra Formation), Buttle Lake Group. The sediments consist of interbedded laminated chert, argillite and siltstone with beds of fine to coarse-grained tuff. The unit, particularly the cherty intervals, is locally cut by quartz veins and veinlets. A feldspar porphyritic diabasic to basaltic sill, likely coeval with the Upper Triassic Karmutsen Formation, invades the strata.

Argillite interbedded with a foliated tuff strikes west-northwest with a moderate northerly dip. Foliation has the same strike but has a steep northerly dip. The argillite contains finely disseminated pyrite and minor chalcopyrite. Limonite staining occurs locally. Samples from this zone assayed up to 1.0 gram per tonne silver and 0.056 per cent zinc (Assessment Report 16906).

BIBLIOGRAPHY

EMPR ASS RPT 14919, 15823, *16906
EMPR BULL 37
EMPR COMM FILE (Sargent, H. (1956): Manganese Occurrences in British Columbia; Leaming, S.F. (1966): Rhodonite in British Columbia, The Canadian Rockhound; Danner, W.R. (1975): Gem Materials of British Columbia, Montana Bureau of Mines and Geology, Special Publication 74)
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 96
GSC OF 463; 701; 821
GSC P 72-44; 72-53; 75-1A, p. 23; 79-30
Cowley, P. (1979): Correlation of Rhodenite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia

DATE CODED: 1990/08/16
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092B 139**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAPLE MOUNTAIN**, PF III

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 50 35 N
LONGITUDE: 123 37 17 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the northwest flank of Maple Mountain (Assessment Report 16029, page 14).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5410195
EASTING: 454408

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Upper Devonian			Saltspring Intrusive Suite
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Basaltic Andesite
Quartz Feldspar Porphyry
Gabbro

HOSTROCK COMMENTS: Typical rock types for the area. Actual host rocks were not reported. The unnamed gabbro is informally known as the Mount Hall Gabbro.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SHOWING REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.3500	Per cent

REFERENCE: Assessment Report 16029.

CAPSULE GEOLOGY

The Maple Mountain occurrence area is underlain by basaltic andesites of the Devonian Nitinat Formation, Sicker Group. These are intruded by gabbroic rock (informally called the Mount Hall Gabbro), coeval with the Upper Triassic Karmutsen Formation (Vancouver Group), and by quartz-feldspar porphyry of the Late Devonian Saltspring Intrusive Suite (formerly the Saltspring Intrusions), (Massey, N.W.D., Personal Communication, 1991).

A massive, milky white quartz vein occurring on the northwest flank of Maple Mountain contains 1 per cent disseminated chalcopyrite. A grab sample assayed 0.35 per cent copper (Assessment Report 16029, page 14).

BIBLIOGRAPHY

EMPR ASS RPT *16029, 16319
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR GEM 1969-224; 1970-292; 1971-224
EMPR MAP 40
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991

BIBLIOGRAPHY

Falconbridge File

DATE CODED: 1990/09/17 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 140**

NATIONAL MINERAL INVENTORY:

NAME(S): **QUARRY**, WEST 2, CROFT 2, PHOENIX

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 51 39 N
LONGITUDE: 123 40 17 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 400 metres north of the northwest end of Crofton Lake, on Mount Richards (Assessment Report 11433, Compilation Map).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5412203
EASTING: 450756

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Bornite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Meta Sediment/Sedimentary
Schist
Gabbro

HOSTROCK COMMENTS: Mineralization is in metasediments near a gabbro intrusive that is coeval with Karmutsen Formation (Vancouver Group).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Quarry area is underlain by pyritic silicified metasediments of the Upper Devonian McLaughlin Ridge Formation (Sicker Group) and a gabbro intrusive (informally called the Mount Hall Gabbro) that is coeval with the Upper Triassic Karmutsen Formation, Vancouver Group, (Massey, N.W.D., Personal Communication, 1991).

Two small quarries are reported to exist about 400 metres north of Crofton Lake. Some of the more heavily pyritized rocks in the area contain chalcopyrite along with malachite and bornite. In the lower quarry, where gabbro is in contact with the metasediments, extensive pyritization occurs in silicified sediments 20 metres north of the contact, along with minor amounts of copper minerals. The pyrite occurs as disseminations and as masses in fractures. At the contact is an altered chloritic schist with quartz veining confined mainly to bedding. Chalcopyrite and minor amounts of pyrite are found in the quartz.

The Phoenix showings are located in the vicinity of the quarries on the eastern slope of the ridge northwest of Crofton Lake, and overlooking Crofton. A pit, 6 metres wide and 1.5 metres deep, exposes a 1-metre wide quartz vein trending west through sheared gabbro. The vein is virtually barren except for an occasional speck of malachite (Notes by Wright, 1969).

BIBLIOGRAPHY

EMPR ASS RPT 7233, *11433
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR MAP 40
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96

BIBLIOGRAPHY

GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991
Falconbridge File

DATE CODED: 1990/09/18 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/09/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 141**

NATIONAL MINERAL INVENTORY:

NAME(S): **WEST 2**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 51 06 N
LONGITUDE: 123 39 45 W
ELEVATION: 180 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Several copper showings occur near the southeast end of Crofton Lake, one near the shore and several others from 400 to 500 metres to the south and southeast (Assessment Report 11433, Compilation Map).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5411178
EASTING: 451399

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Vein
CLASSIFICATION: Igneous-contact Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Trachyte
Argillite
Schist

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The West 2 occurrence area is underlain by trachyte, and minor areas of argillite and quartz mica schist of the Upper Devonian McLaughlin Ridge Formation (Sicker Group). The strata is intruded by gabbroic rock (informally known as the Mount Hall Gabbro), coeval with the Upper Triassic Karmutsen Formation (Vancouver Group), and by quartz-feldspar porphyry of the Late Devonian Saltspring Intrusive Suite (formerly called the Saltspring Intrusions), (Massey, N.W.D., Personal Communication, 1991).

Chalcopyrite was noted as disseminations near the contacts of the sediments and trachyte, and in quartz veins up to 50 centimetres in width cutting the trachyte and sediments.

BIBLIOGRAPHY

EMPR ASS RPT 7233, *11433, 13532, 17007
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR MAP 40
EMPR OF 1988-8
EMPR PF (March 18 1969; Electromagnetic Profile, Canadian Pacific Minerals Ltd., 1971; Apparent Chargeability Contour Plan, Canadian Pacific Minerals Limited, 1971; Mount Richards Geochemical Survey (shows workings), Canadian Pacific Oil and Gas, 1969; Induced Polarization and Electromagnetic Survey, Canadian Pacific Minerals, 1971) - see Ironclad file (092B 049)
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991
Falconbridge File

DATE CODED: 1990/09/18 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 142**

NATIONAL MINERAL INVENTORY:

NAME(S): **TIDAL WAVE**, TITAL WAVE (L.22)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13E
BC MAP:
LATITUDE: 48 51 50 N
LONGITUDE: 123 40 35 W
ELEVATION: 220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the ridge above Westholme, apparently on Land Lot 93 (Notes by Wright, 1969).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5412546
EASTING: 450393

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epithermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Gabbro

HOSTROCK COMMENTS: Gabbroic intusives are coeval with the Upper Triassic Karmutsen Fm. (Vancouver Gp.) and known informally as the Mount Hall Gabbro.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The area is underlain by rocks of the Upper Devonian McLaughlin Ridge Formation (Sicker Group). The strata is intruded by gabbroic rock (informally known as the Mount Hall Gabbro) that is coeval with the Upper Triassic Karmutsen Formation (Vancouver Group)

The old Tidal (Tital?) Wave showing is located on the summit of the ridge above Westholme, apparently on Land Lot 93. This lot is located to the immediate east of the Ironclad workings (092B 049). A pit up to 6 metres in depth exposes a 1 metre wide quartz vein trending west through gabbro. The vein is virtually barren except for an occasional speck of malachite (Notes by Wright, 1969).

BIBLIOGRAPHY

EMPR ASS RPT 2397, 7233
EMPR FIELDWORK 1982, p. 46; 1987, pp. 81-91
EMPR OF 1988-8
EMPR MAP 40
EMPR PF ((*Notes by J.Y. Wright, March 18 1969; Electromagnetic Profile, Canadian Pacific Minerals Ltd., 1971; Apparent Chargeability Contour Plan, Canadian Pacific Minerals Limited, 1971; Mount Richards Geochemical Survey (shows workings), Canadian Pacific Oil and Gas, 1969; Induced Polarization and Electromagnetic Survey, Canadian Pacific Minerals, 1971) - in Ironclad file (092B 049))
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991

DATE CODED: 1990/09/19 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 143**

NATIONAL MINERAL INVENTORY:

NAME(S): **COW 10**, CHEM

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 52 36 N
LONGITUDE: 123 58 11 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located along the northeast slope of a northwest trending ridge, northwest of the confluence of the Chemainus River and Chipman Creek (Assessment Report 16053, Drawing No.1)

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5414199
EASTING: 428898

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Hematite Pyrite Magnetite
ASSOCIATED: Jasper
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Stratabound Layered
CLASSIFICATION: Volcanogenic Syngenetic Exhalative
TYPE: G01 Algoma-type iron-formation I04 Iron formation-hosted Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

LITHOLOGY: Chert
Jasper

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Cow 10 deposit is underlain by the Mississippian to Pennsylvanian Fourth Lake Formation of the Buttle Lake Group (formerly the upper sediment package of Muller's Myra Formation). These sediments form a northwest trending succession of interbedded argillite, cherty sediment, siltstone and sandstone, with minor conglomerate, crystal tuff and marble. A northwest trending, 30-metre wide gabbroic dyke (informally known as the Mount Hall Gabbro), coeval with the Upper Triassic Karmutsen Formation (Vancouver Group), intrudes the strata northwest of the showing. A stock of quartz diorite and diorite of the Early to Middle Jurassic Island Plutonic Suite (formerly the Island Intrusions) is present to the southwest of the showing.

An approximately 10-metre thick ferruginous chert (iron formation) horizon has been traced for 700 metres. This bed is generally composed of blue-grey cryptocrystalline quartz (sporadically jasperoidal) with up to 5 per cent each of pyrite and specular hematite and a few per cent magnetite. A sample of this material assayed 0.3 grams per tonne gold (Assessment Report 16053, pages 23,47,53).

A siliceous, magnetite and pyrite-rich boulder was found a few hundred metres to the northeast of the ferruginous chert. Sulphides and magnetite occur in bands up to 5 centimetres thick. A sample of this material contained up to 4.80 grams per tonne gold. Another siliceous boulder from the same area contained up to 40 per cent sulphide-rich bands, consisting of pyrite, chalcopyrite and sphalerite. A sample of brecciated, hematitic, cherty sediment float found a few hundred metres to the northwest of the iron-rich chert exposure assayed 1.44 grams per tonne gold (Assessment Report 16053).

BIBLIOGRAPHY

EMPR ASS RPT *16053, 16200
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8; 1988-28
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96

BIBLIOGRAPHY

GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991

DATE CODED: 1990/09/21 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 144**

NATIONAL MINERAL INVENTORY:

NAME(S): **ORN 1**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 54 41 N
LONGITUDE: 123 54 03 W
ELEVATION: 1020 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: In Solly Creek, just about 1 kilometre from the top of Coronation Mountain (Assessment Report 17351, Drawing No.5).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5417996
EASTING: 433994

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite Specularite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Gabbro

HOSTROCK COMMENTS: The unnamed gabbro is coeval with the Karmutsen Fm. (Vancouver Group) and informally called the Mount Hall Gabbro (Massey, 1991).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

COMMODITY	GRADE	
Silver	16.4000	Grams per tonne
Copper	0.4200	Per cent

REFERENCE: Assessmet Report 17351, page 36.

CAPSULE GEOLOGY

The Orn 1 showing occurs in a gabbro sill (part of the informally called Mount Hall Gabbro) that is coeval with the Upper Triassic Karmutsen Formation, Vancouver Group. A 5-cent- imetre wide quartz vein is hosted in a 10-centimetre wide shear zone that strikes 009 degrees and dips 80 degrees to the southeast. The quartz is limonitic, fractured and contains irregular lenses, up to 5 millimetres wide by 2 centimetres long, of chalcopyrite, specular hematite and malachite. A sample of this material contained 0.07 grams per tonne gold, 16.4 grams per tonne silver and 0.42 per cent copper (Assessment Report 17351, page 36).

BIBLIOGRAPHY

EMPR ASS RPT 16289, *17351
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991

DATE CODED: 1990/09/24
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092B 145**

NATIONAL MINERAL INVENTORY:

NAME(S): **LADY C**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 55 58 N
LONGITUDE: 123 50 57 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 3.5 kilometres due north of the summit of Mount Brenton (Map A, Ladysmith Development Ltd. (Property File)).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5420331
EASTING: 437807

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Magnetite
COMMENTS: Assumed to be magnetite.
MINERALIZATION AGE: Carboniferous

DEPOSIT
CHARACTER: Massive Stratabound
CLASSIFICATION: Volcanogenic Syngenetic Exhalative
TYPE: G01 Algoma-type iron-formation

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Jurassic			Island Plutonic Suite

LITHOLOGY: Jasper
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Lady C occurrence area is mapped as being underlain by diorite and granodiorite of the Early to Middle Jurassic Island Plutonic Suite (formerly called the Island Intrusions).

An iron ore deposit (the Lady C) was located in the area in the early 1950's and is probably similar to the jasper-hosted Lady D deposit (092B 076) which occurs on strike several kilometres to the southeast. The Lady D is an exhalative-type iron ore deposit, consisting primarily of magnetite, occurring in the Devonian Nitinat Formation, Sicker Group

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8; 1988-28
EMPR PF (*Report on Exploration for Iron Ore, Ladysmith Devolopment Ltd., A.F. Buckham, December 1953 (in Lady A file - 092B 029))
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991

DATE CODED: 1990/09/23 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092B 146**

NATIONAL MINERAL INVENTORY:

NAME(S): **LADY B**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B13W
BC MAP:
LATITUDE: 48 56 25 N
LONGITUDE: 123 58 35 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 13 kilometres west-southwest of Ladysmith (Map A, Ladysmith Development Ltd. (Property File)).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5421276
EASTING: 428500

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Sediment/Sedimentary
Gabbro

HOSTROCK COMMENTS: The unnamed gabbro is informally called the Mount Hall Gabbro (Massey, N.W.D., Personal Communication, 1991).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Lady B iron ore deposite is underlain by rock of the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group. These are intruded by Late Triassic gabbro (informally knowm as the Mount Hall Gabbro (Massey, N.W.D., Personal Communication, 1991). Except for a map indicating the location no other details are available (Buckham, 1953).

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8; 1988-28
EMPR PF (*Report on Exploration for Iron Ore, Ladysmith Devolopment Ltd., A.F. Buckham, December 1953 (in Lady A file - 092B 029))
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463
GSC P 72-44; 75-1A, p. 23; 79-30
PERS COMM Massey, N.W.D., 1991

DATE CODED: 1990/09/23
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092B 147**

NATIONAL MINERAL INVENTORY:

NAME(S): **SURVEY MOUNTAIN**, SOOKE, WOLF

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 33 40 N
LONGITUDE: 123 47 51 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near the summit of Survey Mountain (Assessment Report 10278).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5378975
EASTING: 441158

COMMODITIES: Copper Zinc

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Sphalerite
ASSOCIATED: Quartz Calcite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: G04 Besshi massive sulphide Cu-Zn
DIMENSION: 1000 x 4 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Basalt
Pillow Flow
Graphitic Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Survey Mountain showing is underlain by the Chert-Argillite-Volcanic Unit of the Jurassic to Cretaceous Leech River Complex (Formation), (Geological Survey of Canada Map 1553A). An extensive gossan zone occurs along the crest of the Survey Mountain ridge. The zone is generally less than 4 metres wide and may extend for up to 1 kilometre in length. The gossan zone is hosted in mafic pillowed flows and breccias, and locally it is associated with and conformable to a thin graphitic argillite unit.

The sulphide mineralogy includes pyrite, pyrrhotite and trace amounts of chalcopyrite and possibly sphalerite. The sulphides are disseminated and comprise 5 to 15 per cent of the rock. Massive sulphides were observed in large irregular blocks near the peak of Survey Mountain, near the southern outcrop of the gossan zone. Massive sulphide samples contain up to 60 per cent pyrite and pyrrhotite which occurs in irregular veins and veinlets. Gangue minerals include quartz and possibly calcite and chlorite. Several samples from the gossan zone were analyzed for gold but values did not exceed 0.02 gram per tonne.

In 1980, a gold-rich sulphide float sample was collected along the west slope of the Survey Mountain ridge and assayed 8.23 grams per tonne gold (Assessment Report 10278, page 11). The source of the float was not found.

BIBLIOGRAPHY

EMPR ASS RPT *10278, *19381
EMPR OF 1999-2
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of

BIBLIOGRAPHY

British Columbia, Vol. 1: Vancouver Island, p. 86

DATE CODED: 1990/10/18 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/10/18 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092B 148** NATIONAL MINERAL INVENTORY:

NAME(S): **VICTORY (EAST)**, PANSY, WESTBANK, SAN JUAN

STATUS: Prospect Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 36 19 N NORTHING: 5384044
LONGITUDE: 123 58 58 W EASTING: 427551
ELEVATION: 360 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near the west bank of the San Juan River (Assessment Report 1656).

COMMODITIES: Tungsten Antimony

MINERALS
SIGNIFICANT: Scheelite Pyrite Stibnite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epithermal Epigenetic
DIMENSION: 200 x 1 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Greenstone
Limestone
Marble
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: UNDERGROUND WORKINGS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1952
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Tungsten	0.3000	Per cent

COMMENTS: The chip sample is 90 cm. long. The assay is for tungstic oxide.
REFERENCE: Minister of Mines Annual Report 1952, page 216.

CAPSULE GEOLOGY

The Victory (East) prospect is underlain by Lower Jurassic Bonanza Group volcanics consisting of west-northwest striking, coarse flow rock (greenstone) which is considerably altered and rudely schistose. The showings are mainly in a massive dark grey impure limestone and marble, some of which is carbonaceous or graphitic, thought to be lenses or interbeds within the greenstone. The limestone appears to trend west and to be steeply dipping.

The showings consist of white quartz and carbonate veinlets that occur in an east striking shear zone, up to 1 metre in width. The veinlets are generally less than 3 millimetres in width, but some are as much as 8 centimetres wide. They are irregular in attitude but many strike eastward. Grains or masses of scheelite, as much as 2.5 cent- imetres across, are irregularly distributed in the veinlets. The veinlets also contain minor amounts of pyrite and locally, abundant stibnite.

The shear was explored in the late 1940's or early 1950's by a series of trenches and opencuts and by two adits aligned along a length of 200 metres. An upper adit has been driven west along the zone for 32 metres with at least 2 crosscuts driven off of it. One sample taken in a crosscut across 90 centimetres assayed 0.30 per cent tungstic oxide (Minister of Mines Annual Report 1952, page 216). Of several samples taken in the adit, most assayed trace or nil gold and silver. The lower adit is about 11 metres in length. Two diamond-drill holes were put down on the zone in 1969 (Philp, 1969).

BIBLIOGRAPHY

EMPR AR *1952-215
EMPR ASS RPT 1656, 14414, 14702
EMPR OF 1991-17
EMPR PF (Report on a Geochemical Survey on the San Juan Group, Concorde Explorations Limited, 1968; Contract for Mining Lease No. 15, between Canadian Pacific Oil and Gas and Concorde Explorations Ltd., 1968; Philp, R.H.D. (1969): Summary Report on the Work conducted during 1969 on the San Juan Property of Concorde Explorations Ltd., Argillis Exploration Services Limited; Allen, D.G. (1987): Memorandum Report on the Pansy claim)
GSC EC GEOL 17, p. 120
GSC MEM 13; 36; 96
GSC MAP 42A; 1386A; 1553A
GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 77-1A, pp. 287-294; 79-30
GCNL #151, 1968
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1990/10/22 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1996/06/20 REVISED BY: LJ FIELD CHECK: N

MINFILE NUMBER: **092B 149**

NATIONAL MINERAL INVENTORY:

NAME(S): **PESO**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092B12W
BC MAP:
LATITUDE: 48 38 37 N
LONGITUDE: 123 50 23 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: South of the Koksilah River (Assessment Report 18848).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5388179
EASTING: 438144

COMMODITIES: Gold, Silver, Copper, Zinc

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Sphalerite
ALTERATION: Clay, Silica
ALTERATION TYPE: Argillic, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Diorite Dike

HOSTROCK COMMENTS: Mineralization occurs in shears at the contact between Bonanza Group and Karmutsen Formation volcanics.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1988

COMMODITY	GRADE	
Silver	9.6000	Grams per tonne
Gold	2.5400	Grams per tonne

REFERENCE: Assessment Report 18848.

CAPSULE GEOLOGY

The Peso occurrence area is underlain by volcanics of the Lower Jurassic Bonanza Group, which are in fault contact to the north with the volcanics of the Upper Triassic Karmutsen Formation. The Bonanza volcanics consist of basaltic and rhyolitic tuffs, breccia and flows of silicified vesicular basalt. These rocks have been intruded along regional bedding planes by a shallow southeast dipping dioritic sill, about 25 metres thick. The main fault along the contact of the Karmutsen and Bonanza rocks is composed of several distinct shears, exposed in roadcuts over a width of about 50 metres.

Mineralization associated with these structures consists of finely disseminated pyrite in clay-altered, silicified gouge and fine to medium grained disseminations of euhedral pyrite, chalcopyrite and sphalerite in the well-fractured, oxidized basalts and basaltic breccias. A sample of light grey silicified basalt adjacent to a sheared contact between diorite and basalt assayed 25.37 grams per tonne gold and 9.60 grams per tonne silver (Assessment Report 18848).

BIBLIOGRAPHY

EMPR ASS RPT *18848
EMPR FIELDWORK 1987, pp. 81-91
EMPR OF 1988-8
GSC MAP 42A; 1386A; 1553A
GSC MEM 13; 36; 96

BIBLIOGRAPHY

GSC OF 463; 701
GSC P 72-44; 75-1A, p. 23; 79-30

DATE CODED: 1990/10/24 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 001**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAN MATEO (L.623)**, LINDA, KOROS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 57 46 N
LONGITUDE: 124 54 14 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of San Mateo and Linda claims (Assessment Report 8507).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5425065
EASTING: 360645

COMMODITIES: Copper, Zinc, Silver, Lead

MINERALS
SIGNIFICANT: Chalcopyrite, Galena, Sphalerite, Pyrite, Magnetite
ALTERATION: Epidote, Garnet, Diopside
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform, Disseminated
CLASSIFICATION: Skarn
COMMENTS: Mineralization is less than 0.60 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Quatsino	Unnamed/Unknown Informal

LITHOLOGY: Limestone
Diorite
Calcareous Argillite

HOSTROCK COMMENTS: The diorite has been mapped as Lower Jurassic Bonanaza Group (Assessment Report 9761).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1981

COMMODITY	GRADE	
Silver	25.3700	Grams per tonne
Copper	1.5300	Per cent
Zinc	5.9800	Per cent

COMMENTS: Sample A81T-4.
REFERENCE: Assessment Report 9671.

CAPSULE GEOLOGY

The San Mateo showing is located on the south side of Alberni Inlet near the headwaters of Spencer Creek on the Linda and San Mateo claims.

The area is underlain by limestone with minor interbedded calcareous argillite of the Upper Triassic Quatsino Formation, Vancouver Group overlain by Lower Jurassic Bonanza Group volcanic rocks. The sediments, intruded by Jurassic diorite of unknown affinity (mapped as Bonanza Group), occur in blocks which are sometimes fault-bounded.

Mineralization consists of small skarn lenses in limestone near the contact with diorite. The skarn lenses comprise two distinct types: 1) Epidote-garnet skarn with magnetite and variable chalcopyrite and sphalerite and 2) Banded epidote-diopside skarn with erratic pods of sphalerite and galena. The mineralization is less than 0.60 metres wide. A geochemical survey and 100 metres of trenching was done in 1965. A soil survey was conducted in 1980 (Assessment Report 8507), mapping and sampling in 1981 (Assessment Report 9671) and geophysical surveys in 1982 (Assessment Report 10840). A sample (A81T-4) taken in 1981, assayed 1.53 per cent

CAPSULE GEOLOGY

copper, 5.98 per cent zinc and 25.37 grams per tonne silver (Assessment Report 9671).

BIBLIOGRAPHY

EMPR AR *1965-238
EMPR ASS RPT *8507, *9761, 10840
EMPR BULL 68
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24
EMPR OF RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/20 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 002**

NATIONAL MINERAL INVENTORY:

NAME(S): **CROWN PRINCE (L.456)**, SECH 2

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 58 18 N
LONGITUDE: 125 13 19 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Lot 456 (NTS Map 092C/14).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5426685
EASTING: 337395

COMMODITIES: Iron Magnetite

MINERALS

SIGNIFICANT: Magnetite Pyrite Arsenopyrite
ALTERATION: Epidote Garnet Silica
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn Industrial Min.
TYPE: K03 Fe skarn
DIMENSION: 11 Metres STRIKE/DIP: 135/45N TREND/PLUNGE:
COMMENTS: Magnetite body, 10.7 metres wide, has a southeast strike and dips 45 degrees north.

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Andesitic Tuff
Skarn
Granite
Quartz Monzonite
Diorite

HOSTROCK COMMENTS: Recrystallized limestone and minor skarn are present in the vicinity.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: CROWN PRINCE REPORT ON: Y

CATEGORY: Inferred YEAR: 1916
QUANTITY: 67500 Tonnes

COMMODITY	GRADE	
Iron	50.0000	Per cent

COMMENTS: Quoted as proven, grade not stated. Not well defined reserves. Another 180,000 tonnes is possible.
REFERENCE: Minister of Mines Annual Report 1916, page 291.

CAPSULE GEOLOGY

The Crown Prince occurrence is located on the east slope of Broughton Range overlooking Effingham Inlet, 24 kilometres east of Ucluelet in Barclay Sound.

The area is underlain by diorite, foliated to gneissic diorite, amphibolite and minor metavolcanic and metasedimentary rocks of the Paleozoic to Mesozoic Westcoast Complex. Recrystallized limestone and minor skarn occur in the vicinity.

The magnetite mineralization is hosted in fine to medium grained, banded and silicified andesitic tuff cut by narrow dykes of fine-grained granite or quartz monzonite. The tuff beds strike east and have a variable north dip.

The showing, on the Sech 2 claim, consists of a body of magnetite striking southeast and dipping north 45 degrees. The magnetite, exposed by stripping and quarrying, has a width of about 10 metres at the surface. North of this, trenching and stripping has exposed a magnetite outcrop which follows the same trend and is possibly an extension of the magnetite body.

A tunnel was driven 15.2 metres through sheared and altered

CAPSULE GEOLOGY

igneous rock. The right side of the tunnel contains a little ore mixed with pyrite and arsenopyrite until solid ore is encountered at 22.9 metres. From this point up to and including the face, the tunnel is in solid ore.

A drift runs diagonally to the left off the tunnel for 19.8 metres, 15 metres from the portal of the tunnel. The first 6.1 metres of the drift is in ore somewhat mixed with rock, not as clean as in the main tunnel, and is probably a continuation of it. The next 6.1 metres contains magnetite highly mixed with rock and pyrite. The remaining 7.6 metres is in barren rock.

The magnetite occurs as irregular and spotty replacement of the tuff beds associated with considerable garnet and metamorphosed tuff. The gangue consists of silica, garnet and epidote. It is believed that the magnetite originated by replacement of bedded tuffs under the influence of an intrusive magma.

Inferred reserves (quoted as proven, grade not stated) are 67,500 tonnes grading 50 per cent iron. (Annual Report 1916, page 291). Not well-defined reserves. Another 180,000 tonnes is possible.

A geochemical survey done in 1984 revealed no arsenic, gold or mercury anomalies (Assessment Report 12196).

BIBLIOGRAPHY

EMPR AR *1902-211; *1916-291
EMPR ASS RPT 12196
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C 003: Burton, A. & Veerman, H. (1961): Report on the Sechart Penninsula Magnetite; Mag Survey by Noranda, 1961; In 092 General File: Sutherland-Brown, A. (1965): Tectonic History of Vancouver, Queen Charlotte and Texada islands)
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1, p. 206-210
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
CANMET RPT No.47, p.15
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/19 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 003**

NATIONAL MINERAL INVENTORY:

NAME(S): **IRON CHIEF (L.374)**, WESTERN STEEL, SECH 2

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 58 36 N
LONGITUDE: 125 14 58 W
ELEVATION: 360 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Lot 374 (NTS Map 092C/14).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5427300
EASTING: 335399

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite Pyrite Pyrrhotite
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn Industrial Min.
TYPE: K03 Fe skarn
COMMENTS: Similar to the Crown Prince showing (092C 002).

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Garnet Meta Rock
Limestone
Skarn
Meta Volcanic Rock
Meta Sediment/Sedimentary Rock

HOSTROCK COMMENTS: Magnetite is hosted in garnet-rich metamorphic rocks.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: IRON CHIEF REPORT ON: Y

CATEGORY: Inferred YEAR: 1961
QUANTITY: 181400 Tonnes

COMMODITY	GRADE	
Magnetite	1.0000	Per cent

COMMENTS: Rough estimate of amount present; no grade given.
REFERENCE: Property File - Burton and Veerman, 1961.

CAPSULE GEOLOGY

The Iron Chief showing is located on the Iron Chief Crown grant (granted in 1903). The claim is located on the southern slope of the Broughton Range, about 24 kilometres east of Ucluelet.

The area is underlain by diorite, foliated to gneissic diorite, amphibolite and minor metavolcanic and metasedimentary rocks of the Paleozoic to Mesozoic Westcoast Complex. Recrystallized limestone and minor skarn occur in the vicinity.

Magnetite occurs in outcrops spread out over 76 metres in a northeast direction, primarily in garnet rich metamorphic rock. A narrow vein of magnetite, with pyrite and pyrrhotite, is exposed in the creek at the northwest corner of the claim. The vein occurs near the contact of metamorphosed intrusives and limestone.

The workings on the claim consist of an old shallow shaft and some pits. An estimate of the inferred magnetite tonnage was 181,400 tonnes (Property File - Burton & Veerman, 1961). The results of a geochemical survey done in 1984 were disappointing (Assessment Report 12196).

BIBLIOGRAPHY

EMPR AR 1903-249; 1916-291
EMPR ASS RPT 12196

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (Burton, A. & Veerman, H. (1961): Report on the Sechart Peninsula Magnetite; Mag Survey by Noranda, 1961; In 092 General File: Sutherland-Brown, A. (1965): Tectonic History of Vancouver, Queen Charlotte and Texada islands)
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1, p. 214-216
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
CANMET RPT No. 47, p. 14
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/19 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 004**

NATIONAL MINERAL INVENTORY:

NAME(S): **BALD EAGLE (L.459)**, SECH 2

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 58 25 N
LONGITUDE: 125 14 41 W
ELEVATION: 320 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Crown grant Lot 459 (NTS Map 092C/14).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5426950
EASTING: 335734

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite Pyrite
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn
DIMENSION: 23 x 15 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimensions of magnetite deposit.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Quartz Diorite
Aplite Dike
Hornblende Diorite
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1916
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Iron	60.7000	Per cent

REFERENCE: Minister of Mines Annual Report 1916, page 293.

CAPSULE GEOLOGY

The geology of the Bald Eagle occurrence area is dominated by coarse-grained quartz diorite of the Paleozoic and/or Mesozoic Westcoast Complex, containing slices of metamorphic rock. Muller (Geological Survey of Canada Open File 821) has mapped a northwest trending body of limestone of similar age, in the vicinity.

Magnetite occurs, mixed with highly metamorphosed, fine-grained rock and iron pyrite, in a prominent bluff facing south. Fine grained dyke-like stringers and irregular masses of aplite occur in places within the magnetite. The deposit is confined by bedrock walls along its eastern margin where it is in contact with a garnetized phase of granite, and along part of its northwest edge where it lies against a small exposure of hornblende diorite. An igneous contact with limestone was noted farther up the hill.

The deposit outcrop measures 23 by 15 metres. An adit is driven 22 metres into the bluff, about 12 metres below the deposit. At the end of the tunnel a drift was run for about 14 metres. No ore was struck either in the tunnel or the drift. A sample of the ore assayed 60.7 per cent iron, 13.6 per cent silica and a trace of both sulphur and silica (Minister of Mines Annual Report 1916, page 293).

BIBLIOGRAPHY

EMPR AR *1902-212; 1903-249; *1916-293
EMPR ASS RPT *12196
EMPR FIELDWORK 1989, pp. 503-510

BIBLIOGRAPHY

EMPR OF RGS 24
GSC EC GEOL *3 (1926), p. 210
GSC MAP 196A; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
CANMET RPT *47, p. 15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/14 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 005**

NATIONAL MINERAL INVENTORY:

NAME(S): **LORD OF THE ISLES (L.695)**, SECH 2

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 58 26 N
LONGITUDE: 125 13 57 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Crown grant Lot 695 (NTS Map 092C/14).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5426955
EASTING: 336630

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite Pyrite
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Limestone

HOSTROCK COMMENTS: Mineralization occurs in a limestone pendant within an area dominated by dioritic rock.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1916
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Iron	50.4000	Per cent

REFERENCE: Minister of Mines Annual Report 1916, page 292.

CAPSULE GEOLOGY

The geology of the Lord of the Isles area is dominated by coarse-grained quartz diorite of the Paleozoic and/or Mesozoic Westcoast Complex, containing slices of metamorphic rock. Muller (Geological Survey of Canada Open File 821) has mapped a northwest trending body of limestone of similar age, in the vicinity.

This magnetite deposit occurs near the top of a south-facing bluff that is composed of limestone. The magnetite is mixed with pyrite, garnetite and limestone. By 1899, an adit had been driven north through green hornblende-rich igneous rock for about 6 metres. Limestone was encountered and the course of the tunnel was turned to the east. This course is followed for about 11 metres, driven in magnetite along a limestone wall on the north. At the face there is a winze of at least 5 metres depth.

A grab sample of the ore graded 50.4 per cent iron, 2.5 per cent sulphur, a trace of phosphorous and 10.6 per cent insoluble matter (Minister of Mines Annual Report 1916, page 292).

BIBLIOGRAPHY

EMPR AR 1896-4; 1899-606,783; 1902-211; *1916-292
EMPR ASS RPT *12196
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
GSC EC GEOL *3 (1926), p. 217
GSC MAP 196A; 1386A
GSC MEM 13
GSC OF 463; 821; 1272

BIBLIOGRAPHY

GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24
DATE REVISED: 1991/01/14

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092C 006**

NATIONAL MINERAL INVENTORY:

NAME(S): **DOER**, RC 4, POETT HEIGHTS, SARITA RIVER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W 092C14E
BC MAP:
LATITUDE: 48 53 09 N
LONGITUDE: 124 59 55 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of sample 8286 on the northwest corner of the Doer #3 claim (Assessment Report 5472).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5416690
EASTING: 353487

COMMODITIES: Iron, Copper, Zinc, Gold, Silver

MINERALS

SIGNIFICANT: Magnetite, Pyrrhotite, Pyrite, Arsenopyrite, Chalcopyrite, Sphalerite
ALTERATION: Malachite, Azurite, Epidote, Calcite, Chlorite, Magnetite
ALTERATION TYPE: Oxidation, Propylitic, Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn, Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone, Marble, Tuff, Basalt, Andesite, Rhyolite, Quartz Diorite, Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1975

COMMODITY	GRADE	
Silver	18.0000	Grams per tonne
Gold	0.4300	Grams per tonne
Copper	1.3500	Per cent
Zinc	0.0550	Per cent

COMMENTS: Sample 8286, highest assay.
REFERENCE: Assessment Report 5472.

CAPSULE GEOLOGY

The Doer showing is located 1.6 kilometres south of the mouth of the Sarita River on the northwest facing slope of Poett Heights. The Sarita River showings (092C 032) are just to the east. In the Sarita River area, exploration for iron is recorded in 1895 and activity apparently continued until 1922 during which time an adit was developed on the Numukamis Reserve No. 1.

The area is underlain by carbonate rocks of the Upper Triassic Quatsino Formation, Vancouver Group and volcanic rocks of the Lower Jurassic Bonanaza Group. These have been intruded by Early to Middle Jurassic Island Plutonic Suite granitic rocks. The structural trend is northwest with easterly dips.

CAPSULE GEOLOGY

Mineralization comprises massive magnetite, pyrrhotite, pyrite, arsenopyrite, chalcopyrite, sphalerite, malachite, azurite and possibly tetrahedrite with associated propylitic alteration consisting of epidote, chlorite and calcite. Mineralization occurs in skarns within Quatsino limestone and Bonanza tuffs related to the intrusive event and near the contact.

The highest assay result was from a sample (#8286) taken from the northwest corner of the Doer 3 claim which assayed 0.430 grams per tonne gold, 18 grams per tonne silver, 0.05 percent zinc, 0.002 percent lead and 1.35 per cent copper (Assessment Report 5472).

BIBLIOGRAPHY

EMPR ASS RPT *5472, 7943, 9509, 18662
EMPR EXPL 1979-124
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1975-E94
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1, p. 191-198
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
CANMET RPT No. 47
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/19 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 007** NATIONAL MINERAL INVENTORY:

NAME(S): **MONITOR**, LEONARD (L.533), UNCLE SAM,
NAHWITKA, HEDLEY (L.530), MAYNARD (L.528)

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 59 09 N NORTHING: 5427699
LONGITUDE: 124 56 32 W EASTING: 357904
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Leonard orebody assumed to be on Crown grant Lot 533.

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Magnetite Pyrite
ALTERATION: Garnet Epidote Calcite Quartz Actinolite Chlorite Hematite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn
SHAPE: Irregular
MODIFIER: Sheared Faulted
DIMENSION: STRIKE/DIP: 115/20S TREND/PLUNGE:
COMMENTS: The Leonard orebody is reported to be conformable with bedding.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Basalt
Granodiorite
Granodiorite Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: ADIT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1919
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	17.1400	Grams per tonne
Copper	6.1000	Per cent

COMMENTS: 0.6 metre sample.
REFERENCE: Minister of Mines Annual Report 1919, page 253.

CAPSULE GEOLOGY

The Monitor mine is located on the north shore of the Alberni canal, just at the entrance. The mineralized zones extend back from the shore several hundreds of metres. The property was discovered in 1898 and during 1900 and 1901 steadily produced ore. The mine was reconditioned in 1916 and produced ore again from then until 1918.

The orebodies are found at three points and known as the Maynard, Hedley and Leonard showings. The Maynard is about 600 metres from the canal and is where development occurred from 1900 to 1902. The Hedley is about 300 metres from the canal and was partly developed after it was discouvered in 1910, with development occurring in 1916. The Leonard orebody, located about 500 metres southeast of the Hedley showing and at a lower elevation, was developed after its discovery in 1916.

This skarn deposit occurs in a bed of limestone, probably related to the Upper Triassic Quatsino Formation (Vancouver Group), interbedded with mafic basalts of the Upper Triassic Karmutsen

CAPSULE GEOLOGY

Formation (Vancouver Group). The bedding strikes 115 degrees and dips 20 degrees to the southwest. These rocks are bounded on the east by a large body of granodiorite of the Early to Middle Jurassic Island Plutonic Suite (formerly the Island Intrusions). The rocks are intruded by a body of granodiorite porphyry, probably a dyke, lying west of the deposits and striking in a northerly direction.

The ore consists of pyrrhotite and chalcopyrite with small amounts of magnetite and pyrite. It occurs chiefly in the altered limestone, which consists of calcite, quartz, garnet, epidote and actinolite. Some ore is found in the metamorphosed volcanic rocks which are altered to epidote, chlorite and hematite.

The strike of the Leonard orebody is reported to conform with the country rock outside the portal of the adit. An average sample taken from a crosscut in the adit across 0.6 metres assayed 6.1 per cent copper, 17.14 grams per tonne silver and a trace of gold (Minister of Mines Annual Report 1919, page 253). For the six years that the Monitor mine was in production, a total of 1,288 tonnes was mined, producing 37,137 grams of silver, 62 grams of gold and 116,946 kilograms of copper.

BIBLIOGRAPHY

EMPR AR *1900-917,919; *1901-1096; 1903-27,191; 1904-243; 1913-277; 1916-321; *1917-244; *1918-252-255,304; 1919-252; 1920-193; 1926-295
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown; In 092 General File: Mellin, R.G. (1930): Vancouver Island Copper Situation)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
GSC SUM RPT *1918B, p. 38; *1919B, p. 17
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/19 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 008**

NATIONAL MINERAL INVENTORY:

NAME(S): **HAPPY JOHN**, HAPPY JOHN (L.606-608,44), LIQUID SUNSHINE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 59 24 N
LONGITUDE: 124 57 10 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of Happy John showings and Lot 606 (Assessment Report 15199).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5428181
EASTING: 357144

COMMODITIES: Copper, Silver, Gold

MINERALS
SIGNIFICANT: Chalcopyrite, Magnetite, Pyrite, Pyrrhotite, Marcasite
ASSOCIATED: Garnet
ALTERATION: Garnet, Silica
ALTERATION TYPE: Skarn, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated, Shear
CLASSIFICATION: Skarn, Hydrothermal
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Andesite
Argillite
Hornblende Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SKARN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Bulk Sample

YEAR: 1989

COMMODITY	GRADE	
Silver	6.5000	Grams per tonne
Gold	0.1200	Grams per tonne
Copper	0.0900	Per cent

COMMENTS: From above the Happy John #4 portal. A 7.8-kilogram sample of banded pyrhhotite-marcasite-garnet skarn.
REFERENCE: Assessment Report 19484.

CAPSULE GEOLOGY

The Happy John showings are located on the west side of the Alberni canal, 45 kilometres from Port Alberni. The Monitor mine (092C 007) adjoins the property. Old workings comprising a shaft, a 10 metre adit, opencuts and trenches occur on the Happy John #1, #2 and #4 claims.

The area is underlain by rocks of the Upper Triassic Vancouver Group, comprising Karmutsen Formation volcanics and Quatsino Formation sediments, and Lower Jurassic Bonanza Group volcanics. At the showings, these sheared and fractured rocks comprise limestone, argillite, andesite and a hornblende granodiorite plug.

There are several mineral occurrences in the area; these occur in skarns, in areas of shearing and in areas of silicification. The geology and mineralization is very similar to that of the Monitor mine and may actually be the extension of the Monitor zones. One zone on this property, if extended along strike, would intersect near the Hedley orebody and if projected to the shore of the canal would

CAPSULE GEOLOGY

terminate near the portal of the main adit on the Leonard orebody.

On the Happy John #2 claim, about 450 metres west of the noted location, a gossan or iron capping can be traced in a southeast direction for 122 metres. Mineralization at the workings, a 12-metre adit and a 8 metre shaft, consists of chalcopyrite, magnetite, pyrrhotite and pyrite in garnetite gangue. The mineralization occurs at the limestone-volcanic contact. A sample from the vicinity of the shaft assayed 1.6 per cent copper and 4.1 grams per tonne silver (Assessment Report 15199).

The Happy John #4 workings are about 1500 metres to the northeast of the noted location. A 7.8-kilogram bulk sample (#201), taken in 1989 from above the portal, containing partially banded pyrrhotite-marcasite-garnet skarn, assayed 0.12 grams per tonne gold, 6.5 grams per tonne silver and 0.09 per cent copper (Assessment Report 19484). Three other bulk samples were also collected from the vicinity with lower assay results.

There are 3 adits on the Happy John #1 claim, 300 metres to the southeast of the noted location. A sample from the workings assayed 12 per cent copper, 2.06 grams per tonne gold and 36.67 grams per tonne silver (Minister of Mines Annual Report 1906, page 193).

BIBLIOGRAPHY

EMPR AR 1900-920; 1902-213,230; 1903-191; 1904-243; 1905-211; *1906-193; 1916-322; 1917-245; *1918-255
EMPR ASS RPT *15199, *19484
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/19 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 009** NATIONAL MINERAL INVENTORY:

NAME(S): **DEFIANCE (L.498)**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 59 57 N
LONGITUDE: 124 57 04 W
ELEVATION: 350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the headwaters of a tribuatary of Handy Creek, behind the Happy John (092C 008) and Monitor (092C 007) occurrences (Minister of Mines Annual Reports 1902 and 1916).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5429197
EASTING: 357292

COMMODITIES: Iron, Magnetite, Copper, Silver

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite
ALTERATION: Garnet, Siderite, Calcite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Podiform, Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Basalt
Hornblende Diorite

HOSTROCK COMMENTS: The deposits occur at the contact of limestone and either Karmutsen volcanics or diorite intrusives.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1916
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	41.1400	Grams per tonne
Copper	3.3000	Per cent
Iron	52.6000	Per cent

REFERENCE: Minister of Mines Annual Report 1916, page 288.

CAPSULE GEOLOGY

The area of the Defiance occurrence is underlain by Upper Triassic Vancouver Group rocks consisting of basalts of the Karmutsen Formation, which are in intrusive contact, or interbedded with limestone of the Quatsino Formation. A large body of granodiorite of the Early to Middle Jurassic Island Plutonic Suite (formerly the Island Intrusions) has intruded the strata within a few kilometres to the east.

Lenses of magnetite, intimately mixed with garnet, siderite and calcite, occur in a number of isolated pockets and lenses, strung out in northeast direction on a relatively flat bench. Two of the occurrences are cut by a small creek, while the third covers a flat about 5 metres square. The deposits are variably reported to occur at the contact of limestone and either Vancouver Group igneous rock (Karmutsen?) or hornblende diorite (Island Plutonic Suite?). The deposits were developed in the early 1900's by considerable stripping, and by opencutting and by two tunnels 30 metres and 11 metres in length, respectively.

At the first lens the adit was caved but the dump material showed magnetite mixed with chalcopyrite. A sample of this material

CAPSULE GEOLOGY

assayed 52.6 per cent iron, 3.3 per cent copper, 41.14 grams per tonne silver, 4.2 per cent sulphur, 12.1 per cent silica and a trace of gold (Minister of Mines Annual Report 1917, page 288).

The second lens is reported to show a width of about 3.7 metres and a length of 18 metres. The magnetite shows very little impurities; the only gangue material is garnetite in small quantities. The deposit strikes northwest and dips vertically. A sample of this material graded 66.0 per cent iron, 3.3 per cent silica and a trace of sulphur (Minister of Mines Annual Report 1917, page 289).

The other lens, located about 45 metres to the northwest of the second, is about 1.2 metres wide and has been prospected by an opencut.

BIBLIOGRAPHY

EMPR AR 1902-213,230; 1908-142; 1909-146; 1911-292; *1916-288
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
GSC EC GEOL *3 (1926), p. 221
GSC MAP 196A; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
CANMET RPT *47, p. 21

DATE CODED: 1985/07/25 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 010**

NATIONAL MINERAL INVENTORY:

NAME(S): **NITINAT LAKE - SE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C10W
BC MAP:
LATITUDE: 48 41 23 N
LONGITUDE: 124 48 02 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of northeastern outcrop (Geological Survey of Canada Open File 821).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5394529
EASTING: 367489

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Silica Dolomite
COMMENTS: Occurs as siliceous and dolomitic beds.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 500 Metres STRIKE/DIP: 135/30E TREND/PLUNGE:
COMMENTS: General northwest strike with dips 30 to 90 degrees northeast. The northeast showing is up to 500 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Limestone
Granodiorite
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Amphibolite
COMMENTS: Hosted within a belt of plutonic and mafic metamorphic rocks.

CAPSULE GEOLOGY

The Nitinat Lake - SE showing is situated on the southeast shore of Nitinat Lake near its outlet to the Pacific Ocean, 33 kilometres northwest of Port Renfrew.

The showing is comprised of two masses of limestone. The larger one extends northwest along the shore of Nitinat Lake for 3 kilometres, directly opposite the Nitinat Lake - NW showing (92C 011). The limestone, up to 500 metres wide, is part of the Paleozoic to Mesozoic Westcoast Complex and contacts Westcoast Complex diorite and granodiorite to the southeast.

To the southwest, 700 metres, a smaller mass of limestone outcrops along the shore over a 900 by 1100 metre area. The mass is bounded to the southwest and southeast by the same granitic rocks. Bedding in both deposits generally strikes northwest and dips between 30 and 90 degrees northeast.

The two deposits are comprised of dark, impure limestone containing some siliceous and dolomitic beds.

BIBLIOGRAPHY

EMPR BULL 40, p. 97
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24, 1990; 1992-18, p. 50
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC MAP 17A, 1386A
GSC MEM 13, pp. 44-46
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
CANMET REPORT 452, Vol.15, p. 149
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic

BIBLIOGRAPHY

rocks, Ph.D. Thesis, Carleton University
Cummings, J.M. (1937): Possibilities for the Manufacture of Mineral Wool, BC Government Publication

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092C 011**

NATIONAL MINERAL INVENTORY:

NAME(S): **NITINAT LAKE - NW**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C10W
BC MAP:
LATITUDE: 48 41 48 N
LONGITUDE: 124 48 54 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of limestone bluff.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5395326
EASTING: 366445

COMMODITIES: Limestone Marble Building Stone Dimension Stone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Silica Dolomite
COMMENTS: In thinly-bedded siliceous layers and dolomitic beds.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R04 Dimension stone - marble R09 Limestone
DIMENSION: 2800 Metres STRIKE/DIP: 110/50E TREND/PLUNGE:
COMMENTS: Generally strikes 100 to 120 degrees, dips 35 to 65 degrees east and extends for 2.8 kilometres.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Limestone
Marble
Granodiorite
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP:
COMMENTS: Hosted within a belt of plutonic and mafic metamorphic rocks.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1957
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	53.3000	Per cent

COMMENTS: Taken at 3 metre intervals across 229 metres along shore. Grade is for CaO.
REFERENCE: Bulletin 40, page 98.

CAPSULE GEOLOGY

The Nitinat Lake - NW showing is located near the south end of Nitinat Lake on the northwest shore, 4 kilometres from the Pacific Ocean.

A mass of limestone, up to a kilometre wide, extends northeast along the shore of Nitinat Lake for 2.8 kilometres. The limestone is part of the Paleozoic and/or Mesozoic Westcoast Complex and is in fault contact with Westcoast Complex granodiorite and diorite to the northwest. The thickly-bedded limestone generally strikes 100 to 120 degrees and dips 35 to 65 degrees northeast. A few dykes intrude the limestone.

The deposit generally consists of coarse-grained, white limestone (marble) containing some fine-grained, thinly-bedded siliceous layers and a few dolomitic beds. A sample comprised of chips taken at 3 metre intervals along the shore for 229 metres contained 53.3 per cent CaO, 0.39 per cent MgO, 3.38 per cent insolubles, 0.34 per cent R2O3, 0.17 per cent Fe2O3, 0.006 per cent MnO, 0.008 per cent P2O5, 0.06 per cent sulphur and 42.3 per cent ignition loss (Bulletin 40, page 98).

BIBLIOGRAPHY

EMPR BULL *40, p. 97,98
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24, 1990; 1992-18, pp. 48, 50-51
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC MAP 17A; 1386A
GSC MEM 13, pp. 44-46; 196
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
CANMET RPT 452, Vol. 15, p. 149; 811 Part 5, p.141
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Cummings, J.M. (1937): Possibilities for the Manufacture of Mineral Wool; B.C. Government Publication

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092C 012**

NATIONAL MINERAL INVENTORY:

NAME(S): **RED DOG**, FROST LAKE

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E
BC MAP:
LATITUDE: 48 41 01 N
LONGITUDE: 124 09 35 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located several hundred metres north to northeast of Doe Lake (known as Frost or Shark Lake), (Assessment Report 6502, Figure 3).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5392934
EASTING: 414640

COMMODITIES: Copper, Iron, Magnetite, Silver, Zinc

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite, Magnetite, Covellite, Pyrrhotite, Sphalerite
ALTERATION: Garnet, Actinolite, Epidote, Quartz
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated, Podiform, Massive
CLASSIFICATION: Skarn, Porphyry
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Basalt
Basaltic Tuff
Andesite
Diorite
Dacitic Dike
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1977

COMMODITY	GRADE	
Silver	10.2900	Grams per tonne
Copper	1.7100	Per cent

COMMENTS: From a 91 centimetre chip sample.
REFERENCE: Assessment Report 6502, Figure 9.

CAPSULE GEOLOGY

The Red Dog area is underlain by massive volcanic rocks, dominantly basalts and andesites, of the Upper Triassic Karmutsen Formation, Vancouver Group. Overlying these are massive limestone of the Upper Triassic Quatsino Formation, Vancouver Group. The strata has been cut by several stocks and dyke/sill swarms ranging in composition from diorite to aplite and dacite, sometimes feldspar-phyric. These rocks are bounded to the north, east and south by a large mass of intrusive rock of the Lower to Middle Jurassic Island Plutonic Suite.

A diorite stock, about 250 by 320 metres wide, has cut along an apparently northwest trending contact (or fault) between massive limestone and andesitic volcanics. The stock exhibits moderate pyritization (3 per cent) with occasional chalcopyrite along close-spaced joints and fractures.

CAPSULE GEOLOGY

Several skarn showings have been developed in both the volcanic and limestone units at or near intrusive contacts. The skarns are up to 5 metres wide and contain varying amounts of sulphides, locally massive. Mineralization is typically podiform, discontinuous and leached. Two types of skarns have been developed: 1) garnet, actinolite, plus or minus chalcopyrite and pyrite in limestone adjacent dacite dykes; and 2) massive magnetite, chalcopyrite and pyrite with lesser amounts of garnet, epidote, actinolite and quartz in basalt or basaltic tuff. Other minerals which have also been reported in the skarns include goethite, covellite, malachite, azurite and rare pyrrhotite and sphalerite.

In 1977, Western Mines Limited sampled part of one area, 60 by 180 metres, containing numerous skarns formed at the south end of the diorite stock. Six samples ranging from 0.6 to 2 metres in width, four of which were leached gossan, assayed from 0.149 per cent copper to 1.71 per cent copper, from 2.74 to 15.43 grams per tonne silver and from 0.03 to 0.10 grams per tonne gold (Assessment Report 6502, Figure 9).

BIBLIOGRAPHY

EMPR ASS RPT 6380, *6502, *14565, *15295, 16184, *18174
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1970-291; 1971-226; 1977-E106
EMPR OF RGS 24
EMPR PF (Kowall, C.E. (1970): Summary of Follow-Up work; Apps, G.E. (1971): Report on the Red Dog Mineral Claim)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/06 REVISED BY: GJP FIELD CHECK: Y

MINFILE NUMBER: **092C 013**

NATIONAL MINERAL INVENTORY:

NAME(S): **DELPHI**, JUBILEE, BRASS (L.78), IRON CROWN (L.79), TYRO (L.77), DIBENEDETTO

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W
BC MAP:
LATITUDE: 48 59 37 N
LONGITUDE: 124 19 29 W
ELEVATION: 820 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of old workings on Iron Crown (Lot 79) claim.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5427591
EASTING: 403095

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Pyrrhotite Magnetite
ASSOCIATED: Quartz Calcite
ALTERATION: Epidote
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Podiform Breccia
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
DIMENSION: 15 Metres STRIKE/DIP: 005/80E TREND/PLUNGE:
COMMENTS: Attitude of vein on Brass claim (Lot 78); veins are up to 15.2 metres long and are generally less than 23 centimetres in width.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian Jurassic	Sicker	Nitinat	Island Plutonic Suite

LITHOLOGY: Pyroxene Tuff
Pyroxene Breccia
Volcanic Rock
Greenstone
Granodiorite

HOSTROCK COMMENTS: The Delphi Lake stock is probably related to the Early to Middle Jurassic Island Plutonic Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1930
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	1.0000	Per cent

COMMENTS: Sample of pyritized quartz from dump. Trace gold.
REFERENCE: Minister of Mines Annual Report 1930 page 303.

CAPSULE GEOLOGY

The Delphi showings are located just south of the 49th parallel on Vaughn Creek approximately 8.5 kilometres north of Cowichan Lake. The claims were first staked in 1900.

A series of subparallel, steeply dipping quartz-calcite veins crosscut pyroxene phyric tuffs and breccias of the Middle Devonian Nitinat Formation (Sicker Group). The veins are probably genetically related to the Delphi Lake stock, 300 metres to the south, which is probably related to the Early to Middle Jurassic Island Plutonic Suite. The area has undergone regional greenschist metamorphism.

Mineralization consists of disseminated pyrite, chalcopyrite and pyrrhotite in veins and pods of magnetite in epidote-rich, skarn-like rocks. A sample of pyritized quartz from the dump on the Iron Crown claim assayed trace gold and 1 per cent copper (Minister of Mines

CAPSULE GEOLOGY

Annual Report 1930, page 303). The veins are up to 15.2 metres long and are generally less than 23 centimetres wide. A vein on the Brass claim strikes 005 degrees and dips 80 degrees east.

The workings consist of a 2.5 metre shaft on the Brass claim (Lot 78), a 10 metre shaft on the Iron Crown claim (Lot 79) and a short adit on the Tyro claim (Lot 77), collectively known as the Delphi or Jubilee property.

BIBLIOGRAPHY

EMPR AR 1902-236; 1904-247; 1905-215; 1908-149; 1918-268; *1930-302; 303
EMPR ASS RPT 6963, 7880
EMPR BULL *37, pp. 60-61
EMPR EXPL 1978-E125
EMPR FIELDWORK 1977, p. 23; 1986, pp. 223-229; 1987, pp. 81-91; 1988, pp. 61-74; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF *1987-2; 1988-8; 1989-6; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; Claim location sketches, Jubilee Mining Co., 1949; Laanela, H. (1965): Mineral Occurrences of the E&N Land Grant)
GSC MAP 17-1968; 49-1963; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 69-25; 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 014** NATIONAL MINERAL INVENTORY:

NAME(S): **ALLIES**, FRANCE, SERBIA, BRITAIN, VICTORIA, BELGIUM, CLOSE, MT BUTTLE

STATUS: Showing MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 58 22 N NORTHING: 5425287
LONGITUDE: 124 20 01 W EASTING: 402404
ELEVATION: 1020 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Based on description only (Property File - Laanela, H. (1965): Mineral Occurrences of the E&N Land Grant). The Close showings (092C 112) are centered about 1 kilometre to the north of the main Allies showings; there is some overlap of the two properties.

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L05 Porphyry Mo (Low F- type)
SHAPE: Tabular
DIMENSION: 2000 x 600 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Veins generally strike slightly west of north and dip steeply east and occur over a 2000 by 600 metre area. Veins range from a few centimetres to 1.5 metres in width and can be traced for up to 11.3 metres.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Sicker	Nitinat	
Jurassic			Island Plutonic Suite

LITHOLOGY: Monzonite
Granodiorite
Greenstone
Volcanic Rock

HOSTROCK COMMENTS: The Saanich granodiorite is probably related to the Early to Middle Jurassic Island Plutonic Suite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1965
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Molybdenum	0.4000	Per cent

COMMENTS: Sample #14, higher grade pieces from shear, fine molybdenite in walls.
REFERENCE: Property File - Laanela, H. (1965).

CAPSULE GEOLOGY

The Allies showings occur at the headwaters of Green River just north of Mount Buttle over an area 2 by 0.6 kilometres. There is some overlap with the Close showings (092C 112) located about 1 kilometre to the north.

The area is underlain by volcanic rocks (greeenstone) of the Middle Devonian Nitinat Formation, Sicker Group. These volcanic rocks have been intruded by the Saanich granodiorite which is probably related to the Early to Middle Jurassic Island Plutonic Suite.

A series of subparallel quartz veins carry erratically

CAPSULE GEOLOGY

distributed accessory amounts of pyrite, molybdenite and chalcopyrite. The veins crosscut a monzonitic (aplogranitic) marginal phase of the Delphi Lake/Saanich granodiorite stock. The veins, generally 10 to 30 centimetres wide but up to 1.5 metres, generally strike slightly west of north and dip steeply east. The sulphides occur as disseminations, and as coarse crystals or aggregates up to 10 centimetres across. Molybdenite occurs in flakes, clumps and rosettes from grain size to several centimetres across, most commonly as rosettes.

A grab sample (#14) taken from the higher grade pieces in a shear zone with fine molybdenite in the walls assayed 0.4 per cent molybdenum (Property File - Laanela, 1965).

Workings consist of 2 adits, a shaft and several trenches. The mineralization appears to be related to the emplacement of a late, high level monzonitic phase of intrusion into Nitinat Formation volcanics. The volcanics are preserved in a pendant on the ridge crest of Mount Buttle.

BIBLIOGRAPHY

EMPR AR 1908-150; 1918-269; 1922-243
EMPR ASS RPT 6063, 6963, 7880
EMPR BULL *37, p. 60; *9, pp. 73-76
EMPR EXPL 1978-E125
EMPR FIELDWORK 1977, p. 23; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; 1988-8; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963 and Cominco E & N South Block Geological Report on 92B and C, 1968; *Laanela, H. (1965): Mineral Occurences of the E&N Land Grant, Gunnex Ltd.)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 69-25; 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: Y

MINFILE NUMBER: **092C 015**

NATIONAL MINERAL INVENTORY:

NAME(S): **FAIRSERVICE CREEK**, COWICHAN LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 47 56 N
LONGITUDE: 124 02 51 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of outcrop on logging road (Open File 1987-2).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5405629
EASTING: 423076

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: STRIKE/DIP: 138/55W TREND/PLUNGE:
COMMENTS: Bedding strikes 132 to 145 degrees and dips 55 to 56 degrees south.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone
Chert
Tuff
Breccia
Pillow Basalt

HOSTROCK COMMENTS: The Mount Mark Formation is Upper Pennsylvannian to Lower Permian in age.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located at the southern margin of the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Fairservice Creek showing is located 2.5 kilometres south of the community of Lake Cowichan, 25 kilometres west of Duncan.

A band of limestone outcrops just east of Fairservice Creek and continues east-southeast for at least 2.4 kilometres. The limestone has been correlated to the Upper Pennsylvannian to Lower Permian Mount Mark Formation, Buttle Lake Group (previously Buttle Lake Formation, Sicker Group). In this vicinity, bedding strikes 132 to 145 degrees and dips 55 to 56 degrees southwest. The limestone is overlain to the southwest by pillowed basalts of the Upper Triassic Karmutsen Formation, Vancouver Group and underlain to the northeast by bedded chert, tuff and breccia of the Upper Devonian McLaughlin Ridge Formation, Sicker Group.

The deposit is comprised of light grey to white, fine to medium grained, crinoidal limestone with a few intercalations of thinly bedded sandstone, siltstone and argillite.

BIBLIOGRAPHY

EMPR BULL 37, pp. 16,17; *40, pp. 46,47
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; 1988-8; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; Yole, R.W. (1972): Preliminary Map, Fairservice Mountain Area)
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13

BIBLIOGRAPHY

GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30, p. 18
GAC PROCEEDINGS Vol. 20, pp. 30-40
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Yole, R.W. (1964): A Formal Stratigraphic Study of Upper Paleozoic rocks of Vancouver Island, B.C., Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092C 016**

NATIONAL MINERAL INVENTORY:

NAME(S): **MARBLE BAY**, COWICHAN LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 50 10 N
LONGITUDE: 124 07 18 W
ELEVATION: 178 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Site of sample #2 (Bulletin 40 page 47).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5409844
EASTING: 417690

COMMODITIES: Limestone

MINERALS

SIGNIFICANT: Calcite
ASSOCIATED: Silica
COMMENTS: Contained in chert beds and siliceous limestone beds.
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 4750 x 300 Metres STRIKE/DIP: 315/51W TREND/PLUNGE:
COMMENTS: Limestone strikes northwest, dips 30 to 72 degrees west, is up to 300 metres thick and extends for 4.75 kilometres.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone
Chert
Tuff
Breccia
Basalt

HOSTROCK COMMENTS: The Mount Mark Formation is Upper Pennsylvannian to Lower Permian in age.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located at the southern margin of the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1956
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	51.5000	Per cent

COMMENTS: Taken at 3 metre intervals across 61 metres. Grade given for CaO.
REFERENCE: Bulletin 40 page 47.

CAPSULE GEOLOGY

The Marble Bay showing is located at the east end of Cowichan Lake, 30 kilometres west-northwest of Duncan.

A 150 to 300 metre thick limestone bed strikes northwest for 4.75 kilometres across the peninsula at the east end of Cowichan Lake. The limestone has been correlated to the Upper Pennsylvannian to Lower Permian Mount Mark Formation, Buttle Lake Group (previously Buttle Lake Formation, Sicker Group). The bed dips between 30 and 72 degrees southwest. The limestone is overlain by Upper Triassic Karmutsen Formation, Vancouver Group basalt and underlain by bedded chert, tuff and breccia of the Upper Devonian McLaughlin Ridge Formation, Sicker Group. A few dykes intrude the limestone.

The formation consists of chert and well-bedded siliceous limestone interbedded with relatively pure, light grey to white, massive, fine to medium grained limestone containing abundant crinoid fragments. Thin sections reveal numerous crinoid stems and sponge

CAPSULE GEOLOGY

spicules. A chip sample taken at 3.0 metre intervals across 61 metres of limestone just north of Marble Bay on the south side of the peninsula contained 51.5 per cent CaO, 0.84 per cent MgO, 5.70 per cent insolubles, 0.28 per cent R2O3, 0.10 per cent Fe2O3, 0.02 per cent MnO, 0.04 per cent P2O5, 0.011 per cent sulphur, 41.4 per cent ignition loss and 0.13 per cent water (Bulletin 40, page 47, Sample 2).

BIBLIOGRAPHY

EMPR BULL 37, pp. 16,17; *40, pp. 46,47
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1989 pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990; 1992-18, pp. 19, 20-21
EMPR PF (In 092B General File: Jones, W.C. (1959): Geology of The Cowichan River Valley; In 092C General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC BULL 23; 40
GSC MAP 17A; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30, p. 18
GAC PROCEEDINGS Vol. 20, pp. 30-40
Yole, R.W. (1964): A Formal Stratigraphic Study of Upper Paleozoic rocks of Vancouver Island, B.C., Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092C 017** NATIONAL MINERAL INVENTORY: 092C16 Cu1

NAME(S): **BLUE GROUSE (L.32,L.33)**, SUNNYSIDE, DAD'S BIRTHDAY, LE HUREL, G-H, E

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 50 27 N NORTHING: 5410484
LONGITUDE: 124 13 26 W EASTING: 410198
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Blue Grouse Crown grants (Lots 32, 33) (Property File - Nic-Nik Resources Ltd., Prospectus November 1988). See also Sunnyside (092C 108), located 800 metres to the south.

COMMODITIES: Copper Silver Gold Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite Sphalerite
ASSOCIATED: Quartz Calcite
ALTERATION: Epidote Actinolite Garnet Chlorite Magnetite Hematite
ALTERATION TYPE: Skarn Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Stratabound Podiform Vein
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: The orebody has been displaced to the northeast by a thrust fault.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Parson Bay	
Jurassic-Cretaceous			Unnamed/Unknown Informal

LITHOLOGY: Limy Tuff
Limy Sediment/Sedimentary
Limestone
Feldspar Porphyry
Feldspar Pyroxene Porphyry
Skarn
Basalt
Tuff
Andesitic Flow

HOSTROCK COMMENTS: Primary host are sediments within the upper Karmutsen Formation, but Quatsino Formation is also present. Dykes are Bonanza Group related.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact Regional RELATIONSHIP: Syn-mineralization GRADE: Hornfels Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	0.0430	Grams per tonne
Copper	0.7000	Per cent

COMMENTS: One-metre chip sample from tuff with copper staining at site BGN-4.
REFERENCE: Assessment Report 19387.

CAPSULE GEOLOGY

The Blue Grouse mine is located on the south side of Cowichan Lake, 4.8 kilometres northeast of Honeymoon Bay. Mineralized outcrops on the property were first located between 1900 and 1910.

CAPSULE GEOLOGY

The mine was abandoned in 1960, reportedly leaving some reserves. The workings were rehabilitated in 1979 by Corrie Copper Ltd. Copper mineralization of mineable grade was reported to be present at the 1100 level. The workings were backfilled sometime between 1987 and 1989. The Sunnyside workings (092C 108) are located 800 metres to the south.

The Cowichan Lake area is at the eastern end of the Cowichan uplift, one of a series of major geanticlines on Vancouver Island. The area is underlain by pyroclastic, sedimentary and volcanic rocks of the Paleozoic Sicker Group, the Mississippian to Permian Buttle Lake Group, the Upper Triassic Vancouver Group and the Lower Jurassic Bonanza Group which have been intruded by Triassic gabbros (informally named Mount Hall) and Early to Middle Jurassic Island Plutonic Suite rocks, and overlapped by Upper Cretaceous sediments of the Nanaimo Group.

The Vancouver Group comprises pillow and massive basalt, volcaniclastics, tuffs and breccias of the Karmutsen Formation; siltstone, argillite and micrite of the Quatsino Formation and limestone, tuff and argillite of the Parson Bay Formation.

The property is underlain by Karmutsen Formation volcanics and Parson Bay Formation sediments. Sediments of the Nanaimo Group and volcanics of the Bonanza Group occur near the property. These are cut by numerous Jurassic feldspar and feldspar-pyroxene porphyry dykes related to the Bonanza Group.

The orebodies occur in limestone and tuffaceous members which are folded in a series of overturned folds. The beds are displaced by a series of thrust faults which have a general east strike and dips of 10 to 20 degrees south. Garnet-epidote-actinolite skarns are developed in limy tuff, limy sediments and limestone, apparently interbedded with the upper portions of Karmutsen Formation basalts.

Mineralization was present in ten small tabular sulphide zones and consisted of chalcopyrite, pyrrhotite, pyrite and lesser magnetite and sphalerite.

The main orebody, hosted in volcanic rocks, was the G-H. The ore consisted of a skarn zone which formed a southwest plunging pipe-like body extending from the surface to the 335 metre level. The mineralization comprised chalcopyrite, pyrite and pyrrhotite irregularly occurring as stringers and small masses. The orebody was displaced to the northeast, the top block moved 305 metres to the north and 46 to 61 metres to the east in relation to the lower block.

The E ore body, 300 metres due south of the G-H, was a 3 to 4 metre wide tuffaceous horizon mineralized with pyrrhotite. The pyrrhotite almost completely replaced the bedded rock and was veined with small stringers and irregular masses of chalcopyrite and pyrite. Small grains of hematite were noted locally.

The mine was in production from 1917 to 1919 and from 1956 to 1960. From 249,298 tonnes of rock, 6,814,623 kilograms of copper, 2,508,644 grams of silver and 218 grams of gold were produced. Exploration in 1989 located several gossanous zones in the southwest portion of the property. A 1-metre chip sample (109075) of intermediate tuff with copper staining from the BGN-4 site assayed 0.7 per cent copper and 0.043 gram per tonne gold (Assessment Report 19387). Sampling results ranged from 0.0007 to 1.1824 per cent copper and 0.001 to 0.043 gram per tonne gold (Assessment Report 19387).

BIBLIOGRAPHY

EMPR AR 1906-212; 1915-290; 1916-312,366; 1917-267; 1918-299,307; 1927-339; 1928-364; 1929-370; 1930-289; 1931-163; 1952-213; 1953-17; 1954-166; 1955-79; *1956-120; 1957-69; 1958-60; 1959-138; 1960-115; 1965-241
EMPR ASS RPT 97, 616, 6297, 8895, 8896, 17039, *19387, 21391, 23579
EMPR BC METAL MM00049
EMPR BULL *37, pp. 54-57; 101, pp. 57, 147, Appendix 6
EMPR EXPL 1977-E107; 1979-126; 1980-161
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR GEM 1977-E107
EMPR INDEX 3-190; 4-119
EMPR MP MAP 1992-2
EMPR OF *1987-2; RGS 24, 1990
EMPR P 1989-3, p. 103
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963 and Mellin, R.G. (1930): Vancouver Island Copper Situation; Report on Possible Ore Control for Cowichan Copper Mines Ltd. date and author unknown; Self-Potential Survey Maps; Skerl, A.C. (unknown): Report on a Self-Potential Survey and Notes on a Visit to the Property; Cowichan Copper Sections A-A', B-B'; Drill Hole plan, 1918; Surface Geology, 1952; Skerl, A.C.

BIBLIOGRAPHY

(1953): Geophysical Report, Cowichan Copper; Fyles, J. (1953): Notes on the Blue Grouse Copper Property; Skerl, A.C. (1953): Report on a Self-Potential Survey of part of the property of Cowichan Copper Company and Letter re: Results; Skerl, A.C. (1953): Remarks on the Cowichan Copper Company; Cowichan Copper Co. Ltd. Prospectus July, 1953; Cowichan Copper Geological and Topographic Map, 1953; Nelson, D. (1954): Letter re: Gravity Determinations on the Ore to Cowichan copper; Unknown Author (1954): Letter re: Sampling of the Northeast Raise to Cowichan Copper Company; Skerl, A.C. (1954): Memorandum on Policy and Notes on a Visit to Cowichan Copper; Northwestern Explorations Ltd. Geology Map, 1954; Skerl, A.C. (1954): Geology of 1200 Level; Projections, 1954; Clipping from Times Feb. 6, 1954; Skerl, A.C. (Sept. and April 1954, 1955): Progress Report to the Cowichan Copper Company; Level Plans, Underground Plans, Assay Plans 1954, 1955; Cowichan Lake Topographic Map, 1955; Cowichan Copper Photo, 1959; Blue Grouse Mine plan, 1959; Malcolm, D.C. (1964): Cowichan Copper Co. Ltd. Blue Grouse Mine; Malcolm, D.C. (1965): Blue Grouse Group Geological Report; Eastwood, G.E.P. (1975-1980) Upper Sutton Creek area and Hornet notes, maps, sketches; Nic-Nik Resources Ltd., Prospectus, Nov. 1988)
EMR MP CORPFILE (Cowichan Copper Co. Ltd.; Consolidated Mining and Smelting Co. Ltd.)
GSC MAP 17A; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
GCNL #249, 1956
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 99-100
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 018**

NATIONAL MINERAL INVENTORY:

NAME(S): **COMEGO**, WIDOW, ANNE, CASCADE, KITCHENER, SHERK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 55 43 N
LONGITUDE: 124 11 09 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of skarn mineralization located on south fork of Chemainus River (Bulletin 37, page 57).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5420198
EASTING: 413142

COMMODITIES: Copper, Gold, Silver, Molybdenum, Tungsten, Zinc

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Pyrrhotite, Molybdenite, Magnetite, Scheelite, Sphalerite, Tetrahedrite, Arsenopyrite, Bornite, Tennantite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Garnet, Actinolite, Quartz, Calcite, Epidote, Chlorite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Shear, Vein
CLASSIFICATION: Skarn, Hydrothermal, Epigenetic
SHAPE: Tabular
DIMENSION: 500 x 90 x 30 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: The main skarn zone is 30 metres wide by 90 metres thick and possibly up to 500 metres long.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Upper Triassic	Vancouver	Karmutsen	
Triassic			Unnamed/Unknown Informal

LITHOLOGY: Chert, Cherty Sediment/Sedimentary, Cherty Tuff, Argillaceous Sediment/Sedimentary, Gabbroic Sill, Diabase, Feldspar Porphyry, Quartz Diorite, Agglomerate, Porphyritic Basalt

HOSTROCK COMMENTS: Triassic sills and dykes informally called Mount Hall gabbro.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE:
COMMENTS: Located within the Cowichan uplift.

CAPSULE GEOLOGY

The Comego showing is located on the Widow claims about 6.5 kilometres north of Youbou at the headwaters of Chemainus River. The claims were originally staked in 1902 as the Cascade claim. Considerable exploration has been done on the property.

Skarns are developed in the Mississippian to Pennslvanian Fourth Lake Formation (Buttle Lake Group) sediments which have been intruded by Triassic diabase and gabbro sills informally called the Mount Hall gabbro. Mineralization may, however, be related to the nearby Jurassic Reynard Creek diorite stock. The rock types in the area comprise chert, cherty tuffs and sediments, agglomerates and argillites.

Mineralization consists of chalcopyrite, pyrite, pyrrhotite, magnetite, minor molybdenite, sphalerite, tetrahedrite, rare bornite and arsenopyrite. Pyritiferous quartz- carbonate altered shear zones

CAPSULE GEOLOGY

outcrop in the Chemainus River south of the areas of skarn mineralization. Assays from the quartz-carbonate zones are very low.
Mineralization occurs as three types: 1) Quartz-calcite-garnet-actinolite skarn with magnetite, chalcopyrite, pyrrhotite, pyrite and locally tetrahedrite replacing sediments 2) Quartz veins hosting molybdenite, pyrite and chalcopyrite; and 3) quartz-carbonate veins in shear zones.

BIBLIOGRAPHY

EMPR AR 1906-211; 1919-239; 1948-158,160; 1969-223
EMPR ASS RPT 641, 2167, 1949, 2849, 8282, *10102, 20091
EMPR BULL 9, p. 94; *37, p. 57
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR GEM 1969-223
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990; 1991-17
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; Montgomery, J.H. (1970): Report; Geology Map NBC Syndicate, 1969)
GSC MAP 1386A
GSC MEM 13, p. 164
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/20 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 019**

NATIONAL MINERAL INVENTORY:

NAME(S): **EL CAPITAN**, ACE, CAPITAN, SPANIARD, RAP CREEK, CAP, PAINT POT

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 57 20 N
LONGITUDE: 124 13 24 W
ELEVATION: 1360 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of workings (Bulletin 37, pages 61-63).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5423236
EASTING: 410444

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite Arsenopyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Limonite Malachite Hematite
COMMENTS: Mineralogy inferred from description.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Regular
MODIFIER: Sheared
DIMENSION: 60 x 60 x 1 Metres
STRIKE/DIP: 100/90N
TREND/PLUNGE:
COMMENTS: Shear zone can be traced for 60 metres vertically, 60 metres horizontally and the material is never more than 1 metre wide.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Porphyritic Basalt
Hornblende Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: VEINS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	26.0500	Grams per tonne

COMMENTS: High assay from Paint Pot quartz veins.
REFERENCE: Property File - Dayton Developments, 1989.

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	68.5600	Grams per tonne
Copper	8.0000	Per cent

COMMENTS: Highest assays from sampling across 3 metres of shear zone at the El Capitan workings.
REFERENCE: Property File - Dayton Developments, 1989.

CAPSULE GEOLOGY

The El Capitan prospect is located 8 kilometres north of Youbou on the flanks of El Capitan Mountain. The prospect encompasses old underground workings and a quartz vein located approximately 120 metres to the southeast of the workings (Paint Pot). The claim was

CAPSULE GEOLOGY

staked in 1925, adits #1 and #2 and a tunnel were developed in 1927-30 and adit #3 was completed in 1932-35.

The area is underlain by volcanic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group.

Mineralization occurs in shear zones and quartz veins in massive porphyritic basalt. In the workings, a shear zone, 1 metre wide, occurs along the south wall of a hornblende porphyry dyke. The dyke is 3 metres wide, strikes 080 degrees and is nearly vertical. The shear zone exhibits copper and iron oxidation and hosts pyrite, pyrrhotite, chalcopyrite, arsenopyrite and minor amounts of quartz and calcite. Sampling across 3 metres of the shear zone assayed up to 68.56 grams per tonne gold and 8 per cent copper (Property File - Dayton Developments, 1989). The workings are in bad condition and therefore exploration in 1986 was unable to confirm previous (1979) assays of up to 141.27 grams per tonne gold, 44.35 grams per tonne silver and 2.16 per cent copper (Assessment Report 7832).

To the south of the workings, about 120 metres, a quartz vein in a shear zone hosts chalcopyrite mineralization (Paint Pot). The vein strikes 155 degrees, dips 45 degrees east, is exposed for 4 metres and is 0.15 to 0.40 metres wide. Chip samples from quartz veins assayed up to 26.05 grams per tonne gold (Property File - Dayton Developments, 1989).

BIBLIOGRAPHY

EMPR AR 1927-337; 1928-364; 1929-370; 1930-289; 1932-202; 1933-249; 1935-F52
EMPR ASS RPT *7832, *15065, *18394
EMPR BULL 1, pp. 131,132; 37, pp. 61-63
EMPR EXPL 1979-126; 1986-C148
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 19 pp. 503-510
EMPR MP MAP 1992-2
EMPR OF *1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963 Special Report No.39, 1937; *Dayton Developments Corp., Statement of Material Facts, Nov. 1989 and Sept. 1990)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/27 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 020**

NATIONAL MINERAL INVENTORY:

NAME(S): **COTTONWOOD**, CAPITAN, EL CAPITAN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 56 56 N
LONGITUDE: 124 12 38 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of workings (Bulletin 37, page 63).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5422480
EASTING: 411367

COMMODITIES: Gold Copper Cobalt

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Arsenopyrite Chalcopyrite Erythrite
ASSOCIATED: Quartz
ALTERATION: Erythrite Limonite Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 150 x 9 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: The shear zone has been traced for 150 metres and is up to 9 metres wide; up to 1.8 metres is mineralized.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Porphyritic Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SHOWING
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	24.0000	Grams per tonne

COMMENTS: Highest assay from samples of veins and shears.
REFERENCE: Property File - Dayton Developments, 1989.

CAPSULE GEOLOGY

The Cottonwood showing is located near the El Capitan prospect (092C 019), on the flanks of El Capitan Mountain. In 1927 to 1929 three short adits and two opencuts were developed on the property.

The area is underlain by porphyritic basalt of the Upper Triassic Karmutsen Formation, Vancouver Group.

The showing consists of a continuous shear zone which contains lenses of quartz and iron oxides. Pyrite and pyrrhotite occur locally with the iron oxides. The shear zone has been traced for 150 metres and is up to 9 metres wide, with up to 1.8 metres mineralized. Material from an old dump is reported to have contained massive pyrite, pyrrhotite, arsenopyrite, chalcopyrite and erythrite coatings.

Grab samples from shears and quartz veins assayed up to 24.0 grams per tonne gold (Property File - Dayton Developments, 1989).

BIBLIOGRAPHY

EMPR AR 1927-338; 1928-365; 1929-370
EMPR ASS RPT 7832, *15065, *18394
EMPR BULL 37, p. 63

BIBLIOGRAPHY

EMPR EXPL 1979-126; 1986-C148
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 19 pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; Chemainus River Area Geology Map, 1969; In 092C 019 - Dayton Developments Corp., Statement of Material Facts, Nov. 1989)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/27 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 021** NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER LEAF (L.29G)**, MOUNTAIN ASH (L.28G), HEMLOCK FR. (L.30G)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 57 57 N
LONGITUDE: 124 13 39 W
ELEVATION: 750 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Crown grants Lots 28-30. The main adit is on the Silver Leaf claim at 792 metres. The two other adits occur on the Mountain Ash claim, about 305 metres south of the main adit.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5424384
EASTING: 410157

COMMODITIES: Gold, Silver, Copper

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Arsenopyrite, Chalcopyrite
ASSOCIATED: Quartz, Calcite
ALTERATION: Limonite, Silica
ALTERATION TYPE: Oxidation, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear, Vein, Discordant
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 1 Metres STRIKE/DIP: 270/65S TREND/PLUNGE:
COMMENTS: Shear zone strikes west and dips 65 degrees south; the sulphide zone is up to 1.2 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Greenstone

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHOWING REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1955
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	150.8300	Grams per tonne
Gold	17.1400	Grams per tonne
Copper	4.5000	Per cent

COMMENTS: Over 1.3 metres, sample #6.
REFERENCE: Bulletin 37, page 65.

CAPSULE GEOLOGY

The Silver Leaf showings are located just to the north of the El Capitan prospect (092C 019). The claims were staked in about 1911. Previous work consists of 3 adits, the first and main adit was driven in 1922-23 and the other two were driven in 1945.

The area is underlain by massive basalt of the Upper Triassic Karmutsen Formation, Vancouver Group. The area is cut by east striking, steeply dipping shear zones which contain sulphide mineralization with gold values. Some zones are up to 610 metres in vertical distance, and 1.6 kilometres in length but these are not known to contain mineralization. The shorter, rusty zones are the best mineralized.

The showings consist of 3 shear zones which strike 270 degrees and dip 65 degrees south. The shear zones contain massive sulphide pods in a quartz-calcite sheared basalt gangue. The sulphide-rich

CAPSULE GEOLOGY

zone is up to 1.2 metres wide. Mineralization consists of pyrite, chalcopyrite, pyrrhotite and minor arsenopyrite.
A sample, taken over 1.3 metres, assayed 17.14 grams per tonne gold, 150.83 grams per tonne silver, and 4.5 per cent copper (Bulletin 37 page 65).

BIBLIOGRAPHY

EMPR AR 1919-224; 1921-215; 1922-243; 1923-243; 1926-323; 1927-348; 1928-376; 1930-302; 1937-F33
EMPR ASS RPT 7832
EMPR BULL 1, (1932) p. 136; *37, pp. 63-65
EMPR EXPL 1979-126
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; In 092C 020: Chemainus River Area Geology Map, 1969; Sketch of Main showings, Date unknown; Report on Silver Leaf, Author and Date unknown; Stevenson, J.S.(1937): Special Report #39 and Maps; Report by Associate Mining Engineer, 1938; Notes, Sketch's and Composite Plan, 1949; Laanela, H. (1965): E.N. Report Occurrence #40; Mines Inspection Report, 1975)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/20 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 022**

NATIONAL MINERAL INVENTORY: 092C9 Fe1

NAME(S): **BUGABOO**, CONQUEROR (L.172), DANIEL (L.173), CYRUS (L.171), JENNIE (L.174)

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C10E 092C09W
BC MAP:
LATITUDE: 48 39 35 N
LONGITUDE: 124 30 39 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Conqueror Crown grant claim (Lot 172), (NTS Map 92C/10).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5390731
EASTING: 388745

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite Pyrite Pyrrhotite
ALTERATION: Pyroxene Garnet Actinolite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn Industrial Min.
TYPE: K03 Fe skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Pyroxene Skarn
Limestone
Diorite

HOSTROCK COMMENTS: Mineralization occurs at the contact of Westcoast Complex diorite and a limestone roof pendant.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: BUGABOO REPORT ON: Y

CATEGORY: Combined YEAR: 1960
QUANTITY: 4400000 Tonnes

COMMODITY	GRADE
Magnetite	100.0000 Per cent

COMMENTS: Combined total indicated, possible and probable ore in the Daniel and Conqueror ore zones.
REFERENCE: Property File - Noranda Mines Report 1960, Menzies, M. and Nichols.

CAPSULE GEOLOGY

The Bugaboo ore deposits consist of massive magnetite occurring within zones of pyroxene skarn formed along the contact of diorite of the Mesozoic and/or Paleozoic Westcoast Complex and a limestone roof pendant of similar age. The skarn appears to be of two phases. The first is an older garnet-epidote assemblage found only as a remnant within the massive magnetite; the second is the later pyroxene skarn that surrounds the magnetite body. Actinolite is a minor constituent in the zone of alteration.

The magnetite occurs as large, irregular massive bodies entirely surrounded by skarn. It is essentially free of impurities and has only a small percentage of included sulphides. Assays of magnetite yielded grades up to 69.2 per cent iron with 0.5 per cent sulphur (Minister of Mines Annual Report 1902, page H220). The only sulphides present are pyrite and pyrrhotite.

Two relatively high-grade orebodies, the Daniel and the Conqueror, have been located.

The shape of the Daniel orebody resembles a flattened cylinder with its axis oriented east of north and plunging about 20 degrees to the north. The orebody is apparently limited on all sides by extensive intrusions of dioritic and porphyritic rocks, with limestone found at depth below the ore. The drill indicated tonnage

CAPSULE GEOLOGY

of the Daniel orebody is 1,537,000 tonnes. Additional probable ore of 508,000 tonnes raises the Daniel ore potential to 2,045,000 tonnes. The average grade of the Daniel ore is 55.67 per cent iron and 3.61 per cent sulphur (Menzies and Nicolls, 1960).

The Conqueror orebody strikes northwest and, on the surface is divided into the "West" and "East" pipe-like orebodies. Conqueror East plunges steeply west while Conqueror West appears to dip steeply south and thus may join the East body at depth. These orebodies are surrounded by recrystallized limestone, cut by porphyry dykes, and contain inclusions of unreplaced skarn. A large mass of diorite lies 60 metres to the south. Drill indicated reserves, as of 1960, were reported to be 1,069,000 tonnes. Additional possible reserves of 1,252,000 tonnes have also been reported, of which 454,000 tonnes are probable ore. Conqueror ore averages 54.31 per cent iron and 2.21 per cent sulphur (Menzies and Nicolls, 1960).

A combined total indicated, possible and probable ore in the Daniel and Conqueror ore zones of 4.4 million tonnes magnetite is calculated (Property File - Noranda Mines Report 1960, Menzies, M. and Nichols).

BIBLIOGRAPHY

EMPR AR 1902-219; 1905-249; *1916-275,283; 1959-140; 1960-116
EMPR FIELDWORK 1989, pp. 503-510
EMPR MAP 65 (1989)
EMPR OF 1992-1; 1992-9
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown; Aeromagnetic map of the Bugaboo and Gordon creeks area, Noranda Mines Limited, 1957; *Menzies, M.M. and Nicolls, O.W (1960): Final Report for 1960 on the Port Renfrew Iron Property)
GSC EC GEOL *3 (1926), p. 168
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
CANMET RPT *47, p. 11

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/11 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 023**

NATIONAL MINERAL INVENTORY: 092C9 Fe1

NAME(S): **DAVID (L.170)**, CONQUEROR, BUGABOO

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C10E 092C09W
BC MAP:
LATITUDE: 48 39 32 N
LONGITUDE: 124 30 12 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Lot 170 (NTS Map 092C/10).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5390628
EASTING: 389295

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite
ALTERATION: Pyroxene Actinolite Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Limestone
Skarn

HOSTROCK COMMENTS: Mineralization occurs at the contact of Westcoast Complex diorite and limestone found as a roof pendant in the diorite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The David area is underlain by the contact of diorite of the Mesozoic and/or Paleozoic Westcoast Complex and a limestone roof pendant of similar age. The skarn appears to be of two phases. The first is an older garnet-epidote assemblage found only as a remnant within the massive magnetite; the second is the later pyroxene skarn that surrounds the magnetite body. Actinolite is a minor constituent in the zone of alteration.

The principal showings on the David Crown grant (Lot 170) are located in the southwest corner, about 500 metres due south of the falls on the Bugaboo property (092C 022). Magnetite is exposed in five isolated patches in an horizontal north and south distance of 71 metres, but there is no indication that the magnetite is continuous between these patches. The grade of the David magnetite is approximately the same grade as at the Bugaboo occurrence (Conqueror deposit).

BIBLIOGRAPHY

EMPR AR 1906-256; 1916-283
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC EC GEOL *3, Vol.1 (1926), p. 174
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
CANMET RPT 47, p. 11

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 024**

NATIONAL MINERAL INVENTORY: 092C9 Fe1

NAME(S): **ELIJAH (L.207)**, CONQUEROR

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C10E 092C09W
BC MAP:
LATITUDE: 48 39 45 N
LONGITUDE: 124 30 10 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Lot 207 (NTS Map 092C/10).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5391028
EASTING: 389344

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite
ALTERATION: Garnet Tremolite Pyroxene Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Limestone
Skarn

HOSTROCK COMMENTS: Mineralization occurs at the contact of Westcoast Complex diorite and limestone found as a roof pendant.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Elijah area is underlain by the contact of diorite of the Mesozoic and/or Paleozoic Westcoast Complex and a limestone roof pendant of similar age. The skarn appears to be of two phases. The first is an older garnet-epidote assemblage found only as a remnant within the massive magnetite; the second is the later pyroxene skarn that surrounds the magnetite body.

One small, low-grade lens of magnetite with pyrite and skarn occurs on the main diorite-limestone contact; two small, almost sulphide-free, lenses of magnetite with minor disseminated garnet and tremolite occur in the limestone along a tongue of diorite. One of the latter is 7.5 metres high and 6 metres wide, surrounded by drift; the other, 4.5 metres to the west of it, shows a width of 3 metres and length of 3.6 metres and is also surrounded by drift. A small tunnel has been driven below this exposure.

BIBLIOGRAPHY

EMPR AR 1908-252; 1916-283
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC EC GEOL *3, Vol.1 (1926), p. 175
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 025**

NATIONAL MINERAL INVENTORY: 092C9 Fe1

NAME(S): **SIRDAR (L.143)**, GENERAL WHITE (L.142), BUGABOO, BUGABOO CREEK

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 39 32 N
LONGITUDE: 124 29 03 W
ELEVATION: 580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Lot 143 (NTS Map 092C/09).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5390600
EASTING: 390706

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite Pyrite
ALTERATION: Magnetite Pyroxene Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn Replacement Industrial Min.
TYPE: K03 Fe skarn

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Quartz Diorite
Limestone
Hornblende Porphyry Dike
Lamprophyre Dike
Skarn

HOSTROCK COMMENTS: Mineralization occurs as a replacement of a limestone roof pendant or inclusion within diorite of the Westcoast Complex.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SIRDAR REPORT ON: Y

CATEGORY: Combined YEAR: 1926
QUANTITY: 86900 Tonnes

COMMODITY	GRADE	
Iron	56.0000	Per cent

COMMENTS: Estimated reserves in all categories(proven, probable, possible).
The grade is taken from one sample only and is not representative.
REFERENCE: Geological Survey of Canada Economic Geology Series No.3, pp. 177-181.

CAPSULE GEOLOGY

The Sirdar area is underlain by the contact of diorite of the Mesozoic and/or Paleozoic Westcoast Complex and a limestone roof pendant of similar age. The deposit consists of a single lens of magnetite containing pyrite disseminations and limestone inclusions, cut by hornblende porphyry and lamprophyre dykes, and enclosed in quartz diorite. Magnetite probably replaced a limestone inclusion.

The magnetite occurs as a massive deposit almost completely surrounded by quartz diorite porphyry. It has a maximum extension in a northwest direction of 38 metres, a maximum width in a northeast direction of 27 metres, and a proven depth of 15 metres to the level of the tunnel. The deposit may have a general northeasterly dip.

A sample of the ore gave the following analysis: iron, 56.57 per cent; insolubles, 8.52 per cent; sulphur, 2.75 per cent; phosphorous, 0.121 per cent (CANMET Report No. 47, page 11). Based on the apparent dimensions of the deposit, Young and Uglow (Geological Survey of Canada Economic Geology Series No.3, 1926) made an estimate of the reserves as proven - 9000 tonnes, probable - 8900 tonnes, and possible - 69,000 tonnes.

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR AR 1902-219; 1904-253,302; 1905-216; 1916-282,275
EMPR BULL 3 (1917), p. 14
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
EMR MP CORPFILE (International Iron Mines; Noranda Mines Ltd.)
GSC EC GEOL *3, Vol.1 (1926), pp. 177-181
GSC MAP 196A; 1386A
GSC MEM 13, p. 189
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
CANMET RPT 47, p. 10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 026**
NATIONAL MINERAL INVENTORY: 092C16 Mn2

NAME(S): **SHERK LAKE**, SHERK, STRIKER, MALJO CREEK

STATUS: Showing
MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 55 16 N
NORTHING: 5419393
LONGITUDE: 124 12 41 W
EASTING: 411257
ELEVATION: 1060 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 805 metres south of Sherk Lake which is just southwest of the Chemainus River (Bulletin 37, page 69).

COMMODITIES: Rhodonite Gemstones Manganese

MINERALS
SIGNIFICANT: Rhodonite Rhodochrosite Jasper Pyrite Pyrrhotite
MINERALIZATION AGE: Lower Mississippian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodonts

DEPOSIT
CHARACTER: Massive Stratiform Podiform
CLASSIFICATION: Metamorphic Sedimentary Epigenetic Industrial Min.
TYPE: Q02 Rhodonite Q05 Jasper
SHAPE: Irregular
DIMENSION: 305 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Jasper horizon, traced along strike for more than 305 metres and up to 1 metre wide; contains irregular masses of rhodonite and rhodochrosite.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

DATING METHOD: Fossil
MATERIAL DATED: Conodonts

LITHOLOGY: Cherty Tuff
Tuffaceous Chert
Jasper
Chert
Limestone

HOSTROCK COMMENTS: Manganese mineralization is hosted in the Lower Mississippian Shaw Creek Member (Personal Communication - Nick Massey, 1991).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located within the Cowichan uplift.

CAPSULE GEOLOGY

The Sherk Lake showing is located about 805 metres south of Sherk Lake, which is 5.5 kilometres north of Cowichan Lake.

The area is underlain by Upper Devonian McLaughlin Ridge Formation (Sicker Group) mafic volcanics and Mississippian to Pennsylvannian Fourth Lake Formation (Buttle Lake Group) ribbon cherts and crinoidal limestone. A major anticline occurs to the east and the area is highly faulted.

Rhodonite, rhodochrosite and jasper occur in cherts and cherty tuffs of the Fourth Lake Formation in the Lower Mississippian Shaw Creek Member (dated by conodonts, Personal Communication - Nick Massey, 1991). Rhodonite development is restricted to dark ribbon chert and it may be cut by major faults. Pyrite and pyrrhotite also occur in the area hosted by felsic tuffs.

A cherty tuff bed contains a jasper horizon which hosts irregular, lenticular masses of rhodonite and rhodochrosite. The jasper horizon has been traced along strike for more than 305 metres and is up to 1 metre wide. The largest lens is several centimetres wide and 30 to 61 centimetres long.

The rhodonite and jasper have been analyzed for sulphide content and the assays were low in gold, silver, copper, and molybdenum (Assessment Report 16210).

BIBLIOGRAPHY

EMPR ASS RPT 13962, 14302, 15117, *16210
EMPR BULL 37, pp. 65-67; *69
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1988, pp. 61-74; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF *1987-2; 1988-24; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; In Commodity File - Sargent, H. (1956): Manganese occurrences in B.C. and Leaming, S.F. (1966): Rhodonite in B.C. in The Canadian Rockhound and Danner, W. R. (1976) Gem Materials of B.C.)
GSC MAP 17-1968; 49-1963; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 72-53; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Cowley, P. (1979) Correlation of Rhodonite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 105
Sargent, H. (1939): Manganese Deposits of Cowichan Lake Munition Resources Commission of Canada, 1920 p.92

DATE CODED: 1990/06/21 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 027** NATIONAL MINERAL INVENTORY: 092C9 Fe1

NAME(S): **BADEN POWELL (L.140)**, LITTLE BOBS (L.141), GENERAL FRENCH (L.139), BUGABOO CREEK

STATUS: Developed Prospect Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 39 18 N NORTHING: 5390175
LONGITUDE: 124 29 22 W EASTING: 390309
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of Lots 140 and 141 (NTS Map 092C/09). See also Bugaboo (092C 022), David (092C 023), Elijah (092C 024), and Sirdar (092C 025).

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite Pyrite
ALTERATION: Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn Industrial Min.
TYPE: K03 Fe skarn

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Quartz Diorite
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: BADEN POWELL REPORT ON: Y

CATEGORY: Combined YEAR: 1926
QUANTITY: 89800 Tonnes

COMMODITY	GRADE	
Iron	59.0000	Per cent

COMMENTS: A combined estimate in the proven and probable categories. The grade is for one sample only and not representative.
REFERENCE: Geological Survey of Canada, Economic Geology Series No.3, page 186.

CAPSULE GEOLOGY

The Baden Powell magnetite deposit occurs on the steep northeastern side of a mountain sloping down to Bugaboo Creek. A northwest trending limestone roof pendant is underlain by quartz diorite of the Mesozoic and/or Paleozoic Westcoast Complex.

The orebody is lenticular and outcrops along a northwest trend for about 106 metres. The greatest exposed width is 27 metres and the greatest proven depth is 46 metres. The upper contact of the deposit is against quartz diorite; the dip of the contact is 50 degrees into the hill. The central part of the orebody is high-grade magnetite; the outer edges are mixed with metamorphosed rock and impregnated with pyrite.

Based on the apparent dimensions of the deposit, Young and Uglow made an estimate of the reserves: proven, 33,800 tonnes; probable, 56,000 tonnes. A sample of the higher grade part of the deposit graded 59.34 per cent iron, 5.93 per cent insolubles, 2.57 per cent sulphur, 0.012 per cent phosphorous and 1.14 per cent manganese oxide (Geological Survey of Canada Economic Geology Series No.3, page 185).

Two tunnels, 15 metres apart vertically, were developed on the deposit in the early part of the century.

BIBLIOGRAPHY

EMPR AR 1902-219; 1904-253,301; 1905-216; 1916-282,275

BIBLIOGRAPHY

EMPR BULL 3 (1917), p. 14; 101, p. 148
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
EMR MP CORPFILE (International Iron Mines; Noranda Mines Ltd.)
GSC EC GEOL *3, Vol.1 (1926), p. 168
GSC MAP 196A; 1386A
GSC MEM 13, p. 189
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
CANMET RPT 47, p. 10
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 78-79

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **ECOOLE HARBOUR**, BARCLAY SOUND, SEDDALL ISLAND

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 58 12 N
LONGITUDE: 125 04 05 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Limestone outcrop on Seddall Island (Geological Survey of Canada Open File 1272).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5426182
EASTING: 348651

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: STRIKE/DIP: 117/60N TREND/PLUNGE:
COMMENTS: Attitude of limestone.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Volcanic Rock

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Developed on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

The Ecoole Harbour showing is located on the south side of Seddall Island in Barclay Sound, 36 kilometres southwest of Port Alberni.

A deposit of white, crystalline limestone of the Upper Triassic Quatsino Formation (Vancouver Group) extends westward from the harbour for 1.5 kilometres. The limestone strikes 117 degrees, dips 60 degrees northeast and is overlain by volcanics of the Lower Jurassic Bonanza Group.

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
GSC SUM RPT 1902, p. 62
CANMET RPT 811, Part 5, p. 141
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1989/06/30 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1990/02/21 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 029**

NATIONAL MINERAL INVENTORY:

NAME(S): **TIDE**, EBB

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C10W
BC MAP:
LATITUDE: 48 42 14 N
LONGITUDE: 124 44 21 W
ELEVATION: 60 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the southeast corner of Sprise Lake. A second minor showing is located about 1.25 kilometres due north of these coordinates (Assessment Report 4690).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5395999
EASTING: 372043

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Quartz diorite of the Mesozoic and/or Paleozoic Westcoast Complex is intruded by apophyses of quartz monzonite, possibly of the Lower to Middle Jurassic Island Plutonic Suite. The diorite outcrops are characterized by an abundance of metavolcanic and metasedimentary xenoliths. Discrete blocks of garnetite and epidote-garnet-diopside skarn occur within the intrusive rock.

The Tide showings occur near the southeast corner of Sprise Lake, near the intersection of two faults. The mineralization consists of fine to medium grained pyrite disseminations and stringers with lesser amounts of chalcopyrite, in diorite. About 1.25 kilometres to the north, minor pyrite and malachite stain occur as a fracture-filling in a quartz monzonite outcrop.

BIBLIOGRAPHY

EMPR ASS RPT *4690
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222; 1971-226; 1972-256
EMPR OF RGS 24
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1990/12/18 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 030**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROSE (L.124)**, THORN (L.125), NEWTON

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 38 05 N
LONGITUDE: 124 26 24 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the Gordon River, at the centre of Crown grant Lot 124 (NTS Map 092C/09).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5387852
EASTING: 393908

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite
ALTERATION: Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Several exposures of magnetite occur close to Gordon River, about 8 kilometres from its mouth. The main showings are on the Rose and Thorn claims on the northeast side of river. The Thorn showings are about 400 metres north of the Rose workings. The magnetite occurs at or near the contact of a northwest trending limestone roof pendant and the encompassing diorite of the Mesozoic and/or Paleozoic Westcoast Complex.

Two tunnels and a shaft were excavated on the Rose occurrence by 1902. One drift was reported to have cut diagonally through 18 metres of ore mixed with country rock. There are at least 3 exposures of magnetite on the Thorn claim, the largest having a triangular shape measuring 24 by 18 by 12 metres. The smaller masses are vein-like stringers in limestone.

BIBLIOGRAPHY

EMPR AR *1902-219; 1903-215; 1905-249; *1916-275,281
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
GSC EC GEOL *3, Vol.1, p. 188
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
CANMET RPT 47, p. 9

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 031**

NATIONAL MINERAL INVENTORY:

NAME(S): **TALLY (L.519-521)**, HARRIS CREEK, TALLY ONE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E
BC MAP:
LATITUDE: 48 39 31 N
LONGITUDE: 124 12 11 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located at about 365 to 580 metres above Harris Creek, about 14 to 15 kilometres by trail from the mouth of the creek (Geological Survey of Canada Economic Geology Series No.3, page 190).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5390205
EASTING: 411406

COMMODITIES: Iron, Magnetite, Copper, Cobalt, Silver

MINERALS

SIGNIFICANT: Magnetite Pyrite
COMMENTS: Samples contained values for copper, cobalt and silver.
ALTERATION: Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Limestone
Garnetite
Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

INVENTORY

ORE ZONE: SHOWING
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1967
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	17.1400	Grams per tonne
Cobalt	0.5000	Per cent
Copper	1.5000	Per cent

REFERENCE: Property File - Mineral Deposit Inventory Card.

CAPSULE GEOLOGY

The area is underlain by diorite of the Paleozoic and/or Mesozoic Westcoast Complex. The diorite is in contact along irregular boundaries with crystalline limestone of the Upper Triassic Quatsino Formation, Vancouver Group. In places the limestone is cut by tongues of diorite, which have locally been altered to nearly solid garnet.

The Tally showings occur on the steep north slope of a mountain at about 600 to 800 metres elevation, just above Harris Creek. Considerable magnetite float occurs along the hillside, and in some cases, blocks of solid magnetite up to 60 or 90 centimetres in the longest dimension were found. Magnetite mixed with garnet, epidote and some pyrite is exposed on a face 3 metres high and 3 metres long, underlying limestone. The magnetite found as float was of much better grade than that found in place.

Samples assayed up 1.5 per cent copper, 0.5 per cent cobalt and 17.14 grams per tonne silver; pit samples graded up to 3.5 per cent copper (Property File - Mineral Deposit Inventory Card).

BIBLIOGRAPHY

EMPR AR 1917-454
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
GSC EC GEOL *3, Vol.1, p. 190
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/02 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 032**

NATIONAL MINERAL INVENTORY:

NAME(S): **SARITA RIVER**, BRITISH PACIFIC (L.25), BLACK BEAR (L.23), MIDDAY (L.26), UNION (L.54), EUREKA (L.24), OMA, KID, KATHY, RC, POETT HEIGHTS, DOER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 52 44 N
LONGITUDE: 124 59 15 W
ELEVATION: 380 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Upper showing at the southwest corner of the British Pacific (Lot 25) Crown grant (Property File - Rattler Resource Prospectus May, 1988).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5415897
EASTING: 354281

COMMODITIES: Copper, Zinc, Lead, Gold, Silver, Iron

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Chalcopyrite, Sphalerite, Galena, Magnetite
ASSOCIATED: Garnet, Pyroxene, Chlorite, Actinolite, Epidote
ALTERATION: Garnet, Pyroxene, Chlorite, Actinolite, Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Stockwork, Shear
CLASSIFICATION: Skarn, Hydrothermal
SHAPE: Irregular
MODIFIER: Sheared, Fractured

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone, Marble, Basalt, Andesite, Tuff, Rhyolite, Pyroclastic Rock, Granite, Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

CAPSULE GEOLOGY

The British Pacific showings are located 60 kilometres southwest of Port Alberni just south of the Numukamis Reserve No.1. The Doer showing (092C 006) is located just to the west. In the Sarita River area, exploration for iron is recorded in 1895 and activity apparently continued until 1922 during which time an adit was developed on the Reserve.

The area is underlain by carbonate rocks of the Upper Triassic Quatsino Formation, Vancouver Group and volcanic rocks of the Lower Jurassic Bonanaza Group. These have been intruded by Early to Middle Jurassic Island Plutonic Suite granitic rocks. The structural trend is northwest with easterly dips. Mineralization consists of pyrite, pyrhhotite, chalcopyrite, sphalerite, galena and possibly tetrahedrite in skarns and shear zones.

The skarn zones formed in the more siliceous shattered volcanics and tuffs of the Bonanza Group at the contact with Quatsino limestone as a result of the intrusive event. The contact of skarn with unreplaced rock is sharply defined but irregular. Skarn formation in volcanics is incomplete away from the limestone and mainly forms pods, tabular bodies and veins. Skarn mineralization comprises

CAPSULE GEOLOGY

garnet, pyroxene, epidote, actinolite and chlorite.

The occurrence comprises two main skarn showings, the Upper and Lower on Lot 25, a shear zone on the Black Bear Crown grant (Lot 23) and breccia zones on the Midday Crown grant (Lot 26).

The Upper and Lower showings consist of pyritic calcic skarns in sheared acidic Bonanza volcanics, mineralized with pyrrhotite and minor chalcopyrite. Selected samples taken near the Upper showing assayed 526 grams per tonne silver and drilling results were up to 1.37 grams per tonne gold and 193.34 grams per tonne silver (Assessment Report 18662). Surface samples of the Lower showing, 366 metres to the north, assayed 1.37 grams per tonne gold and 1.71 grams per tonne silver (Assessment Report 18662). A bluff of massive magnetite occurs just west of the Lower showing hosted in mafic to intermediate Bonanza volcanics. A drilling program in 1988, on the Lower showing, had disappointing results.

Drilling, on the Black Bear Crown grant in 1979, to the north of the showings, on a shear zone assayed up to 25.362 grams per tonne gold and 30.852 grams per tonne silver (Assessment Report 18662).

On the Midday Crown grant (Lot 26), just west of the showings, limestone breccia zones are mineralized with pyrite, sphalerite and chalcopyrite.

BIBLIOGRAPHY

EMPR AR 1899-784; 1896-4; 1897-566; 1902-215; 1906-189; 1916-275; 1961-111; 1965-77; 1966-77
EMPR ASS RPT 5472, 7943, 7976, *9509, 13968, *18662
EMPR EXPL 1979-124
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1971-227
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown; in 103P 118 - Marshall Creek Annual Report 1965; Miscellaneous Road Maps of area c.1973; Rattler Resource Ltd. Prospectus, May 1988)
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1, p. 191-198
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
CANMET RPT No. 47, p.12
GCNL #155,#159,#161,#233, 1979; #5,#6,#9,#27,#37,#38,#61,#95,#180, #237, 1980; #5,#10,#80,#82, 1981; #8, 1987
N MINER May 21, 1981
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/19 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 033** NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNTAIN**, COPPER ISLAND, BARCLAY, CLIFTON, CHARMER, PILOT FR., RAINBOW, SUNBEAM

STATUS: Developed Prospect Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 55 22 N NORTHING: 5420933
LONGITUDE: 125 04 05 W EASTING: 348508
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized outcrop located at the highest point, 800 metres west of Clifton Point on Tzartus Island (Annual Report 1902 p. 218).

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite Chalcopyrite Pyrite
ASSOCIATED: Garnet
ALTERATION: Garnet Epidote Quartz
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Stratiform Layered Podiform
CLASSIFICATION: Skarn Industrial Min.
TYPE: K03 Fe skarn
SHAPE: Irregular
DIMENSION: 21 x 12 Metres STRIKE/DIP: /25E TREND/PLUNGE:
COMMENTS: Dip varies from 25 to 30 degrees east. Dimensions of massive magnetite.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesitic Tuff
Tuffaceous Sediment/Sedimentary
Skarn
Garnetite
Diorite
Granodiorite Dike
Diorite Dike
Limestone
Volcanic
Granite

HOSTROCK COMMENTS: Mineralization is hosted in rocks mapped as Quatsino Formation limestone (Geological Survey of Canada Open File 821).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: STOCKPILE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1902
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Iron	50.4000	Per cent

COMMENTS: From stockpile of the main ore zone.
REFERENCE: Minister of Mines Annual Report 1902 page 218.

CAPSULE GEOLOGY

The Copper Island crown grants cover the area about 1.5 kilometres west from and including Clifton Point on the west coast of Tzartus Island, Barclay Sound. Most of mineralization occurs on the Mountain claim, 800 metres from Clifton Point.

Work recorded from 1899 to 1901 comprises prospecting, stripping, trenching, opencuts, a 4 metre shaft, and a 31 metre

CAPSULE GEOLOGY

tunnel. Much of the ore, approximately 1814 tonnes, was mined from the main showing and stockpiled. In 1961, 690 metres of diamond drilling were completed.

Tzartus Island is underlain by volcanic rocks of the Lower Jurassic Bonanza Group and limestones of the Upper Triassic Quatsino Formation, Vancouver Group. These are intruded by the granitic rocks of the Early to Middle Jurassic Island Plutonic Suite. East and northwest trending Tertiary faults transect the island.

The orebodies are hosted in gently (25 to 30 degrees) east dipping interbedded andesitic tuffs and tuffaceous sediments. These are in fault-contact (northwest trending) with diorite.

The main showing (largely mined out) is an irregular shaped body of massive magnetite. This is roughly 12 by 21 metres and is close to the contact. Massive mineralization grades into irregular lenses of magnetite (up to 10 centimetres thick) interlayered with garnet or a quartz-epidote skarn. Garnet and minor chalcopyrite and pyrite impregnate the magnetite lenses. Other showings, exposed at higher elevations to the east, are in contact with diorite and comprise similar magnetite-garnet and magnetite-quartz-epidote layering conformable to primary bedding. This grades into garnetite then unaltered tuff. Mineralization is cut by numerous diorite and granodiorite sills and dykes. Total surface exposure is estimated at 272 metres between elevations of 200 and 245 metres with shallow depth (cut off by diorite intrusions).

The most representative sample, taken from the stockpile in 1902, assayed 50.4 per cent iron, 0.053 per cent phosphorus and 0.3 per cent sulphur (Minister of Mines Annual Report 1902, page 218). The ore is not considered to be of commercial grade.

BIBLIOGRAPHY

EMPR AR 1899-784; 1900-920; 1901-1095; *1902-218,223; 1906-255; 1916-285; 1961-111
EMPR BULL 101, p. 148
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC BULL 172
GSC EC GEOL *No. 3, Vol. 1, p. 198-205
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
CANMET RPT No. 47, p.12
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 149

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/19 REVISED BY: SNB FIELD CHECK: N

MINFILE NUMBER: **092C 034** NATIONAL MINERAL INVENTORY: 092C15 Cu2

NAME(S): **ROB**, BORNITE, O.G.M., NADIRA, WALLY, HAPPY CAMPER

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 55 25 N NORTHING: 5420196
LONGITUDE: 124 35 55 W EASTING: 382897
ELEVATION: 450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main skarn zone on Horse Creek (Property File - Dawson, 1971).

COMMODITIES: Copper Silver Lead

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Pyrite Pyrrhotite Galena
ALTERATION: Garnet Epidote Ilvaite Actinolite Magnetite
Malachite Azurite Hematite
ALTERATION TYPE: Skarn Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn
SHAPE: Regular
MODIFIER: Sheared
DIMENSION: 610 x 152 Metres STRIKE/DIP: 315/80S TREND/PLUNGE:
COMMENTS: Main skarn zone strikes north-northwest and dips steeply south, conformable with the regional strike.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Porphyritic Andesite
Feldspar Porphyry Dike
Diorite

HOSTROCK COMMENTS: Feldspar porphyry dykes of unknown affinity.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: PITS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1969
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	6.8600	Grams per tonne
Copper	1.7300	Per cent

COMMENTS: Weighted average of 90 samples taken over a total of 235 metres. Assays ranged from 0.1 to 5.6 per cent copper.
REFERENCE: Assessment Report 2115.

CAPSULE GEOLOGY

The Rob occurrence is located 9.7 kilometres due west of Cowichan Lake on Horse Creek.

The property was initially staked as the Southern Cross in the 1930's to cover a skarn zone mineralized with copper and magnetite. The property was intermittently explored between 1941 and 1960. In 1960, a test run of 4665 tonnes was taken from open pits, producing 61,929 kilograms of copper. Exploration commenced again in 1969 continuing until 1972. No further work was undertaken until 1986 when the skarn mineralization was tested for gold content.

The area is underlain by sedimentary and volcanic rocks of the Upper Triassic Vancouver Group and the Lower Jurassic Bonanza Group. The Vancouver Group comprises limestone, calcareous siltstone, shale,

CAPSULE GEOLOGY

cherty limestone and chert of the Quatsino Formation and pillow basalt, tuff, breccia and minor flows of the Karmut- sen Formation. The Bonanza Group consists of basaltic to rhyolitic tuff, breccias and flows with minor greywacke and argillite. These have been intruded by Early to Middle Jurassic Island Plutonic Suite granitic rocks and feldspar porphyry dykes of unknown affinity. The area is structurally complex, containing several sets of faults with evidence of drag folding.

Skarn mineralization is hosted in Quatsino Formation limestone and porphyritic andesite of the Bonanza Group near contacts with diorite intrusions and feldspar porphyry dykes.

Three types of skarn occur on the property:

1) Ilvaite-garnet-epidote-magnetite in calcium-rich rocks
2) Epidote-actinolite-garnet in less calcium-rich rocks (andesite
3) Laminated pyrrhotite-magnetite-chalcopyrite

All three types contain chalcopyrite as erratic disseminations and as small masses along fractures and veinlets. Hematite, bornite and lesser pyrite and pyrrhotite are occasionally present. Malachite and azurite occur on fractures. Chalcopyrite and pyrite also occur in volcanic rocks, usually associated with epidote and quartz-filled amygdules. Chalcopyrite and galena were observed in limestone at one locality, and chalcopyrite has been noted in sheared diorite.

The main skarn zone, conformable with regional strike (strikes north-northwest, dips steeply south) is lenticular in shape and covers an area 610 by 152 metres. Skarn mineralization is exposed at widely scattered locations in creek gullies and along roads on the property. The best exposure is at the small pits developed in 1960 by Nadira Mines Ltd. The weighted average of 90 chip samples taken over a total of 235 metres was 1.73 per cent copper (ranging from 0.1 to 5.6 per cent) and 6.86 grams per tonne silver (Assessment Report 2115). A sampling program undertaken to assess the gold content of the skarns resulted in low values.

BIBLIOGRAPHY

EMPR AR 1931-165; 1932-202; 1953-170; 1956-123; 1957-71; 1959-138; 1960-112
EMPR ASS RPT 291, *2115, 3098, 3375, *3723, *4105, *15015, 20031
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR GEM 1969-221; 1971-227
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown; Nadira Mines Ltd. Self-Potential Survey Map, 1955; Nadira Mines Ltd., Prospectus 1956; Nadira Mines Ltd. Surface Survey maps & notes, 1960; *Dawson, J.M. (1971): Report on the Nadira Copper Property; Anselmo, G.L. (1972): Geochemical Report on Rob Claims; Homenuke, A.M. (1973): Nadira Copper Property - Rob Claims; Letter to Minister of Mines from Amax Explorations, Feb. 1975)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/19 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 035** NATIONAL MINERAL INVENTORY:

NAME(S): **VIKING**, LORRY, ZONE 1, ZONE 2, ZONE 3

STATUS: Prospect Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 46 36 N NORTHING: 5403204
LONGITUDE: 124 05 30 W EASTING: 419797
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate location of adit and centre of mineralized zones (Minister of Mines Annual Report 1955, page 79 and Property File - Elwell, J.P. (1967): Location Map).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Bornite Magnetite
ASSOCIATED: Quartz
ALTERATION: Silica Malachite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Fractured Faulted

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Feldspar Porphyry
Diorite
Granodiorite
Quartz Diorite

HOSTROCK COMMENTS: The Island Plutonic Suite is Early to Middle Jurassic in age.

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1967
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	30.8520	Grams per tonne
Copper	7.6500	Per cent

COMMENTS: Grab sample from trenching on fractured volcanics with veins and masses of quartz and chalcopyrite.
REFERENCE: Property File - Elwell, 1967.

CAPSULE GEOLOGY

The Viking showings are located east of the Robertson River, approximately 5 kilometres south of Mesachie Lake. There are remains of an old cabin at the 610 metre level and an opencut was developed on a quartz vein in the early 1900's.

The area is underlain by volcanic rocks of the Upper Triassic Karmutsen Formation (Vancouver Group) and diorite, granodiorite and quartz diorite of the Early to Middle Jurassic Island Plutonic Suite. The showing is underlain by basalt which is cut by an irregular body of feldspar porphyry (probably Jurassic in age). Both have been cut by several tight shear zones which have been locally silicified and weakly mineralized with quartz and disseminated chalcopyrite.

CAPSULE GEOLOGY

The main showing consists of a high grade chalcopyrite shoot in a quartz vein structure about 1.8 metres in width. An adit was driven, on Viking 2 claim, on the shoot at the 762 metre level for 82.3 metres. The adit was cleared and examined in 1967 (Property File - Elwell, J.P.). A mineralized fault/shear hosts a sinuous quartz vein, averaging 10 centimetres in width, which is heavily mineralized at intervals with chalcopyrite. It was reported that the vein was widening and mineralization improving below the level, but this could not be checked as the cut was filled with water.

Five zones of mineralization have been outlined on the Viking property. These consist of two types of mineralization: 1) vein in shear zones hosted in volcanics and 2) disseminated mineralization in basalts and related rocks.

A mineralized fault zone, striking northwest and dipping at about 60 degrees east, comprises Zone 1. The hanging wall of the fault can be traced by a steep rocky bluff with malachite-stained and copper mineralized float found downslope. Above the adit, near the post of Viking 1 and 2 claims, trenching revealed fractured volcanics with veins and masses of quartz and chalcopyrite. This zone may be part of a shear zone parallel to that found in the adit. A grab sample assayed 7.65 per cent copper with 30.852 grams per tonne silver (Property File - Elwell, 1967).

Zone 2 is located 106 metres northeast of the adit, at 542 metres elevation. The zone consists of a shear in basaltic rocks which outcrop on a steep bluff. Blasting of the bluff has exposed a well-fractured shear zone containig quartz stringers with pyrite, chalcopyrite and bornite as disseminations, small blebs and fracture-fillings. Malachite is present as surface alteration. Two samples, taken across 1.83 metres, assayed 4.6 and 1.05 per cent copper respectively, with 33.78 grams per tonne silver (Property File - Elwell, 1967).

Zone 3 occurs on the Viking 3 claim, 366 metres to the northwest of Zone 1. Stripping has revealed a pod of magnetic basalt, mineralized with chalcopyrite. Copper-stained and mineralized volcanics have also been noted.

Zones 4 and 5 comprise pyrite, chalcopyrite and bornite as fracture-fillings and disseminations in basaltic rocks. These have not been located, but occur in this area.

BIBLIOGRAPHY

EMPR AR 1937-F33; *1955-79; 1956-122
EMPR BULL 37
EMPR FIELDWORK 1978, pp. 38-40; *1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; 1988-8; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; Various maps E & N Land grant, 1966; *Elwell, J.P. (1966): Report on Viking Claim Group; Elwell, J.P. (1967): Report on the Mineral Properties of Viking Mines Ltd.)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 036**

NATIONAL MINERAL INVENTORY:

NAME(S): **HILLCREST**, MAXI, ARROW

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E 092C16E
BC MAP:
LATITUDE: 48 44 52 N
LONGITUDE: 124 04 44 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Hillcrest showing on the Maxi claim (Assessment Report 8209). This occurrence includes the Arrow showing (450 metres to the north-northwest).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5399979
EASTING: 420690

COMMODITIES: Copper Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite Pyrrhotite Chalcopyrite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn
DIMENSION: 150 x 30 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: The Hillcrest showing trends northeast and outcrops over an area 150 metres long and 30 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Andesite
Granodiorite
Skarn

HOSTROCK COMMENTS: Mineralization occurs at the contact of volcanic rock and granodiorite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1966
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	2.6000	Per cent

COMMENTS: From a 7 metre length of drill core.
REFERENCE: White, L.G. (1966): Report on the Fraser Property.

CAPSULE GEOLOGY

The Hillcrest occurrence is underlain by Lower Jurassic Bonanza Group volcanics consisting of lava, tuff and breccia of mainly basaltic to rhyolitic composition. It contains occasional interbeds and sequences of marine argillite and greywacke. A stock of the Early to Middle Jurassic Island Plutonic Suite (formerly called the Island Intrusions) lies to the southwest of the showings. The volcanics have been intruded by dykes and irregularly shaped bodies of granodiorite, granite porphyry and diorite porphyry. Limestone, reported to occur as lenses and roof pendants in both the volcanics and the intrusive, is probably related to the Quatsino Formation, Vancouver Group.

Mineralization consists of magnetite, pyrrhotite and chalcopyrite occurring irregularly along the contact of a basalt (andesite?) flow and a fine-grained granodiorite intrusive. The area has been extensively trenched and skarn outcrops at a number of locations over an area 150 metre longs and 30 metres wide. The zone appears to trend in a northeast direction and granite dykes appear to cut the mineralization at several locations. Assays range up to 2.18

CAPSULE GEOLOGY

per cent copper with 5.49 grams per tonne silver over 1 metre (Assessment Report 8209, page 8). Several X-ray holes were reported to have been completed with one grading 2.60 per cent over 7 metres (White, 1966).

BIBLIOGRAPHY

EMPR AR 1956-122; 1963-123; 1968-106
EMPR ASS RPT *8209, *9856, 15111, 19032
EMPR BULL 37
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR GEM 1969-223
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
EMPR PF (*White, L.G. (1966): Report on the Fraser Property For Copper Ridge Mines (see Anomaly - 092C 041); Seraphim, R.H. (1969): Report on the Robertson River Claims of Albeta Mines Ltd. (see Alpha-Beta - 092C 039))
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 69-25; 72-44; 76-1A; 79-30

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1991/01/10	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092C 037**

NATIONAL MINERAL INVENTORY: 092C15,16 Cu1

NAME(S): **AVALLIN**, FD, WABANA , CAYCUSE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 51 47 N
LONGITUDE: 124 33 40 W
ELEVATION: 440 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches between Jasper and Granite creeks, 2.75 kilometres southeast of the Nitinat River, 42 kilometres east of Bamfield (Assessment Report 11196).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5413407
EASTING: 385506

COMMODITIES: Copper, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite
COMMENTS: Rare bornite.
ASSOCIATED: Magnetite, Actinolite, Pyrite
ALTERATION: Magnetite, Actinolite, Chlorite, Epidote, Diopside
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated, Vein
CLASSIFICATION: Skarn, Hydrothermal
SHAPE: Irregular
MODIFIER: Faulted, Fractured

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Skarn
Feldspar Porphyritic Dike
Calcareous Tuff
Calcareous Argillite
Dacite
Granodiorite
Basalt

HOSTROCK COMMENTS: Parson Bay Formation (Vancouver Group) sediments and Bonanza Group volcanics are also present.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SKARN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1983

COMMODITY	GRADE	
Silver	20.5600	Grams per tonne
Copper	3.7900	Per cent

COMMENTS: From mineralized skarn.
REFERENCE: Assessment Report 11196.

CAPSULE GEOLOGY

The area is underlain by extensively faulted rocks of the Upper Triassic Vancouver Group and the Lower Jurassic Bonanza Group. The basal Vancouver Group sequence is comprised of basalt flows, breccias and tuffs of the Karmutsen Formation overlain by Quatsino Formation limestone, which in turn is overlain by black argillites of the Parsons Bay Formation. The overlying Bonanza Group consists of a sequence of argillites, cherts, cherty tuffs, volcanic and/or sedimentary breccias, sandstones and basaltic to rhyolitic flows.

The entire package of rocks have been broadly to tightly folded, with axes generally trending northwest.

CAPSULE GEOLOGY

Isoclinally folded limestone, calcareous tuff and calcareous argillite are the major units on the Avallin property and are overlain by dacitic volcanics of the Bonanza Group. The sequence is subvertical to vertical, with a regional northwest strike. Local contact metamorphism is evident along the margins of granodiorite and feldspar porphyritic dykes that intrude limestone.

Mineralization is primarily associated with irregular bands and lenses of skarn developed in Quatsino Formation limestone near feldspar porphyry dykes. Sulphide mineralization occurs in actinolite-magnetite skarn which forms smaller zones within a broader chlorite-epidote-diopside zone. Aggregates of chalcopyrite, pyrite and rare bornite are intimately associated with the magnetite.

Fracture-related epidote-chalcopyrite veinlets are developed locally in basalt flows of the Karmutsen Formation. Traces of bornite also occur in the veinlets.

Grab samples from mineralized skarn assayed up to 3.79 per cent copper and 20.56 grams per tonne silver (Assessment Report 11196).

BIBLIOGRAPHY

EMPR AR 1956-124; 1957-72; 1959-138
EMPR ASS RPT 642, 2163, *11196, 12530, *16813
EMPR EXPL 1976-E109,E110
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR GEM 1969-221
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown; Claim and location map, 1955; Self-Potential Survey map, 1955)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/16 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 038**

NATIONAL MINERAL INVENTORY:

NAME(S): **NITINAT**, TANITIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 53 56 N
LONGITUDE: 124 34 14 W
ELEVATION: 50 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located in the vicinity of the Nitinat River and Parker Creek (Minister of Mines Annual Report 1956, page 124).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5417405
EASTING: 384895

COMMODITIES: Copper Iron Magnetite

MINERALS
SIGNIFICANT: Chalcopyrite Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
COMMENTS: Possible skarn zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Volcanic Rock
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Tanitin showing is located near Parker Creek and Nitinat River, somewhere within a group of 96 claims.

The area is underlain by Lower Jurassic Bonanza volcanics. Mineralization comprises chalcopyrite and magnetite in a possible skarn zone.

Work done in 1956 includes a geophysical survey, diamond drilling on an anomaly, surface work and a 3.6 metre adit. No other information is available.

BIBLIOGRAPHY

EMPR AR *1956-124
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR OF 1988-24; RGS 24
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC BULL 172
GSC EC GEOL No. 3 Vol. 1
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968) Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/18 REVISED BY: SNB FIELD CHECK: N

MINFILE NUMBER: **092C 039** NATIONAL MINERAL INVENTORY:

NAME(S): **ALPHA-BETA**, ALPHA (L.1G), BETA (L.2G), TABOGA (L.3G)

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 44 00 N NORTHING: 5398387
LONGITUDE: 124 05 29 W EASTING: 419748
ELEVATION: 350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located just east to southeast of the mouth of Long Creek in Robertson River (Composite Plan of the Ore Zones, Albeta Mines Ltd., 1962).

COMMODITIES: Copper Silver Gold Iron

MINERALS
SIGNIFICANT: Chalcopyrite Magnetite Pyrite
ALTERATION: Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Massive
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn K03 Fe skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Andesite
Limestone
Granodiorite
Diorite
Skarn

HOSTROCK COMMENTS: Volcanics, intrusive and limestone are associated with the skarn occurrence but the volcanic is the main host.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: ALPHA-BETA REPORT ON: Y

CATEGORY: Combined YEAR: 1963
QUANTITY: 11482 Tonnes

COMMODITY	GRADE	
Copper	2.2000	Per cent

COMMENTS: An estimate of the ore reserve presumably before any shipment of ore was made. Combined ore reserves from 9 zones above 920 Level.
REFERENCE: Property File - Progress Report for Sept., Oct., and Nov., 1963.

CAPSULE GEOLOGY

The Alpha-Beta occurrence area is underlain by Lower Jurassic Bonanza Group volcanics consisting of lava, tuff and breccia of mainly basaltic to rhyolitic composition. It contains occasional interbeds and sequences of marine argillite and greywacke. A stock of the Early to Middle Jurassic Island Plutonic Suite (formerly called the Island Intrusions) lies to the southwest of the showings. The volcanics have been intruded by dykes and irregularly shaped bodies of granodiorite, granite porphyry and diorite porphyry. Limestone, reported to occur as lenses and roof pendants in both the volcanics and the intrusive, is probably related to the Quatsino Formation, Vancouver Group.

The lavas and sediments and the granodiorite have been locally silicified and altered to skarn. The skarns are of four main types: 1) garnet-epidote; 2) red garnetite; 3) light buff to brown

CAPSULE GEOLOGY

garnetite; and 4) epidotite. Magnetite occurs most commonly in with the garnet-epidote skarn but also occurs with the others. Distribution of skarn in drill core indicates that it may form along favourable beds and also along fractures in tuff, andesite or granodiorite. Pyrite and chalcopyrite are found locally in the skarn and, like the magnetite, usually in the garnet-epidote type.

The original showings were located in 1904 at the confluence of the Robertson River and "Long" Creek. In 1928, an adit was collared in Long Creek and work continued until about 1930. The property was acquired in the early 1960's by Albeta Mines Limited and work continued. By the end of 1963, several hundred metres of diamond drilling and at least 233 metres of underground development had occurred as well as substantial stripping, trenching and geophysical work.

Ore sections opened up in the mineralized area shows some continuity for nearly 120 metres underground, averaging 1.4 to 3.0 per cent copper over widths averaging 1.5 to 1.8 metres. The host skarn is known to attain widths in excess of 27 metres. A high grade series of ore shoots on a parallel zone averaged 8.60 per cent copper over a 1.4 metre true width, as ascertained from 5 diamond-drill holes.

A combined ore reserve figure calculated in April 1963, from 9 zones above the 920 level, was reported to total 11,482 tonnes grading an average of 2.20 per cent copper. Another 2700 tonnes in the probable and possible category were estimated below the 920 level; and 3,600 tonnes were estimated in the possible category above the 920 level (Progress Report for Sept., Oct., and Nov., 1963, Albeta Mines Ltd.).

In 1963, a total of 535 tonnes of ore with a grade of 4 per cent was mined and shipped from the Alpha-Beta property (Minister of Mines Annual Report 1963, page 122). From this ore, a total of 10,264 grams of silver, 187 grams of gold and 23,390 kilograms of copper were produced (Mineral Policy data). By November 1963, shipping-grade ore had been depleted and the mining operations were terminated.

BIBLIOGRAPHY

EMPR AR 1910-249; 1927-338; 1929-369; 1930-288; 1931-162; 1937-F33; 1956-122; *1962-125; 1963-122; 1966-78
EMPR ASS RPT 169
EMPR BC METAL MM00046
EMPR BULL 101, p. 149, Appendix 6
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-223; 1970-291; 1971-226
EMPR INDEX 4-119
EMPR OF RGS 24
EMPR PF (Plan of Workings, 1929; Sketch of geology and workings, B.C. Department of Mines, 1938; Special for Minister of Mines 1937, by J.S. Stevenson; Annual Reports for 1962 and 1963, 1969 Albeta Mines Limited; *Progress Reports, Oct. 1, 1961 to Nov. 30, 1963 and 1966 (J-Line and K-L anomalies); Apps, G.E (1961): Report on the Robertson River Property, Albeta Mines Ltd.; Sloan, D.A. (1962): Report on the Property of Albeta Mines; J-Line and K-L Anomalies plan, G.E. Apps, 1966; Miscellaneous Reports and correspondence for Albeta Mines Ltd.; Seraphim, R.H. (1969): Report on the Robertson River Claims of Albeta Mines Ltd.; Kowall, C.F. (1969): Report on Prospecting Albeta Option)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 98

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/08 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 040**

NATIONAL MINERAL INVENTORY:

NAME(S): **CROWN**, ROSEA, STELLA

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E
BC MAP:
LATITUDE: 48 44 33 N
LONGITUDE: 124 05 20 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 800 metres northeast of the confluence of Robertson River and Long Creek, at about 600 metres elevation (Special Report for the Minister of Mines Annual Report 1937, by J.S. Stevenson).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5399403
EASTING: 419947

COMMODITIES: Copper, Iron, Magnetite, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Magnetite
ALTERATION: Diopside, Andradite, Garnet, Epidote, Actinolite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Massive
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Dioritic Greenstone
Basalt
Andesite
Rhyolite
Limestone
Granodiorite
Diorite
Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1938

COMMODITY	GRADE	
Gold	8.2200	Grams per tonne
Copper	0.9000	Per cent
Iron	19.1000	Per cent

COMMENTS: Sample taken across 5.5 metres.
REFERENCE: Sketch of Workings on the Crown Group, 1938 (Property File).

CAPSULE GEOLOGY

The Crown occurrence is underlain by Lower Jurassic Bonanza Group volcanics consisting of lava, tuff and breccia of mainly basaltic to rhyolitic composition. It contains occasional interbeds and sequences of marine argillite and greywacke. A stock of the Early to Middle Jurassic Island Plutonic Suite lies to the southwest of the showings. The volcanics have been intruded by dykes and irregularly shaped bodies of granodiorite, granite porphyry and diorite porphyry. Limestone, reported to occur as lenses and roof pendants in both the volcanics and the intrusive, is probably related to the Quatsino Formation, Vancouver Group.

According to Stevenson (1937) mineralization consists of irregular areas of abundant magnetite and lesser amounts of chalcopyrite in a lime-silicate gangue that consists largely of pyroxene, diopside, andradite, epidote and a little actinolite. What little unaltered rock is left in the occurrence area is a dioritic

CAPSULE GEOLOGY

greenstone containing varying amounts of diopside. Other reports indicate that mineralized areas on the Crown occurrence consist of pyrrhotite and chalcopyrite (Minister of Mines Annual Report 1930).

Extensive stripping was done on the property in the 1930's, exposing, at one location, a mineralized area with a width of about 18 metres. Two samples taken at the showings assayed 8.22 grams per tonne gold, 0.9 per cent copper, 19.1 per cent iron and a trace of silver over 5.5 metres; and 0.34 grams per tonne gold, 1.2 per cent copper, 17.1 per cent iron and a trace of silver over 12 metres (Sketch of the Workings on the Crown Group (showing assays), 1938).

BIBLIOGRAPHY

EMPR AR *1930-288; *1931-163; 1937-F33
EMPR ASS RPT *169
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
EMPR PF (*Special Report for the Minister of Mines Annual Report for 1937, by J.S. Stevenson; *Sketch of the Workings on the Crown Group, 1938)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 041**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANOMALY**, MAXI, FRASER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E
BC MAP:
LATITUDE: 48 44 49 N
LONGITUDE: 124 04 12 W
ELEVATION: 540 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Anomaly showing on Maxi claim (Assessment Report 8209). Approximately 600 metres east of the Hillcrest showing (092C 036).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5399878
EASTING: 421342

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite
ALTERATION: Actinolite Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Basalt
Granodiorite
Limestone
Diorite

HOSTROCK COMMENTS: Skarn mineralization occurs in volcanic rocks. Limestone and intrusives occur in the volcanics.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1980

COMMODITY	GRADE	
Silver	19.8900	Grams per tonne
Copper	2.4600	Per cent

COMMENTS: From a 1.3 metre chip sample.
REFERENCE: Assessment Report 8209.

CAPSULE GEOLOGY

The Anomaly occurrence is underlain by Lower Jurassic Bonanza Group volcanics consisting of lava, tuff and breccia of mainly basaltic to rhyolitic composition. It contains occasional interbeds and sequences of marine argillite and greywacke. A stock of the Early to Middle Jurassic Island Plutonic Suite lies to the southwest of the showings. The volcanics have been intruded by dykes and irregularly shaped bodies of granodiorite, granite porphyry and diorite porphyry. Limestone, reported to occur as lenses and roof pendants in both the volcanics and the intrusive, is probably related to the Quatsino Formation, Vancouver Group.

Two parallel east striking shear zones in andesite tuffs contain pyrrhotite, pyrite and chalcopyrite in a skarn of actinolite and minor garnet. The western most zone has been exposed by bulldozing for about 46 metres along a 100 to 115 degree strike; and the eastern zone has been exposed roughly parallel to the first zone. A 1.3 metre sample assayed 2.46 per cent copper, 0.08 per cent zinc and 19.89 grams per tonne silver (Assessment Report 8209).

BIBLIOGRAPHY

EMPR AR 1956-122; *1963-123; 1968-106
EMPR ASS RPT *8209, *9856, 15111, 19032
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-223
EMPR OF RGS 24
EMPR PF (Map of Diamond-holes, Hillcrest Copper, Anomaly Group, 1963;
*White, L.G. (1966): Report on the Fraser Property For Copper
Ridge Mines; *Seraphim, R.H. (1969): Report on the Robertson River
Claims of Albeta Mines Ltd. (see Alpha-Beta - 092C 039))
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 042** NATIONAL MINERAL INVENTORY:

NAME(S): **GOLD DYKE**

STATUS: Showing Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 52 13 N NORTHING: 5413949
LONGITUDE: 124 22 37 W EASTING: 399027
ELEVATION: 670 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of diamond drill hole 213-4 (Assessment Report 15821).

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS
SIGNIFICANT: Pyrite Sphalerite Galena Arsenopyrite Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Porphyritic Andesite
Andesite
Felsite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	2.0000	Grams per tonne
Gold	1.3890	Grams per tonne
Lead	1.5000	Per cent
Zinc	1.0400	Per cent

COMMENTS: Sample from DDH 213-4, from the 78 to 80.47 metre interval of quartz-carbonate veining in porphyritic andesite.
REFERENCE: Assessment Report 15821.

CAPSULE GEOLOGY

The Gold Dyke showing is located 2.5 kilometres south of Caycuse on the southern shore of Cowichan Lake. The Eagle showing (092C 145) is just to the south.

The area is underlain by southeasterly dipping Lower Jurassic Bonanza Group intermediate to felsic volcanic rocks. These are cut by numerous faults infilled with quartz-carbonate material.

Drilling in 1986 revealed pyrite, galena, sphalerite and trace chalcopyrite and arsenopyrite in drill core. Pyrite, 1 to 20 percent, and trace chalcopyrite is disseminated throughout the rock units. Generally associated with more siliceous zones, coarse sphalerite and galena (up to 4 per cent) occur disseminated in quartz-carbonate and siliceous veins. The siliceous veins are up to 0.10 metres wide. Associated with vuggy portions of quartz-carbonate veins, arsenopyrite occurs in irregular masses.

A sample from DDH 213-4, from the 78 to 80.47 metre interval, of quartz-carbonate veining in porphyritic andesite, assayed 1.389 grams per tonne gold, 2 grams per tonne silver, 1.5 per cent lead and 1.04 per cent zinc (Assessment Report 15821). This was the highest assay result.

CAPSULE GEOLOGY

Geochemistry suggests that mineralization may extend another 100 metres to the east and is open to the west.

BIBLIOGRAPHY

EMPR ASS RPT *15821
EMPR BULL 37
EMPR FIELDWORK 1977, p. 23; 1986, pp. 223-229; 1987, pp. 81-91; 1988, pp. 61-74; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF *1987-2; 1988-24; 1989-6; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 17-1968; 49-1963; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1990/12/28 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/12/28 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 043**

NATIONAL MINERAL INVENTORY:

NAME(S): **MARBLE COVE LIMESTONE**, BARCLAY SOUND

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 54 56 N
LONGITUDE: 125 06 17 W
ELEVATION: 15 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Limestone outcrop (Geological Survey of Canada Open File 1272).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5420204
EASTING: 345800

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 1000 x 750 Metres STRIKE/DIP: 164/70N TREND/PLUNGE:
COMMENTS: Attitude and dimension of limestone mass.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Volcanic Rock
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Developed on a shallow marine platform of ocean rift volcanics.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Marble Cove Limestone showing outcrops on the west side of Tzartus Island in Barclay Sound, 45 kilometres southwest of Port Alberni.

A limestone mass of the Upper Triassic Quatsino Formation (Vancouver Group), up to 750 metres wide, extends northeastward from Marble Cove for 1000 metres. The limestone is bounded by volcanics of the Lower Jurassic Bonanza Group to the southeast. The deposit is separated from a body of granodiorite of the Early to Middle Jurassic Island Plutonic Suite to the north by a west trending fault. Bedding strikes 164 degrees and dips 70 degrees northeast.

BIBLIOGRAPHY

EMPR AR 1911-208
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
GSC SUM RPT 1902, p. 63
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Cummings, J.M. (1937): Possibilities for the Manufacture of Mineral Wool, p. 10; B.C. Government Publication

DATE CODED: 1989/06/30 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1990/02/21 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 044**

NATIONAL MINERAL INVENTORY: 092C8 Au1

NAME(S): **SOMBRIO PLACERS**, SOMBRIO POINT, LOSS CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C08W 092C09W
BC MAP:
LATITUDE: 48 29 12 N
LONGITUDE: 124 17 13 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the coast of Vancouver Island between the mouths of the Sombrio River and Loss Creek (Geological Survey of Canada Memoir 13, page 155).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5371193
EASTING: 404907

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
COMMENTS: Native mercury in the sands was reported circa 1909, but this could be spillage from previous attempts at gold recovery.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Glacial/Fluvial Gravels
Recent			Postglacial Sediments

LITHOLOGY: Gravel
Sand
Slate

HOSTROCK COMMENTS: Placer gold found in glacial and postglacial sediments was probably derived from quartz veins in slate of the Leech River Complex.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Overlap Assemblage Pacific Rim

CAPSULE GEOLOGY

The Sombrio Placers, on the southwest coast of Vancouver Island near Sombrio Point, occur in a fairly level coastal area composed of sand, gravel and clay from 60 to 120 metres in depth. These gold placers are apparently the remains of a glacial delta deposited by glacial and postglacial rivers that drained southwestward through the Leech River valley. The east side of the delta is cut by Loss Creek, and the west side, up to 3 kilometres away, by the Sombrio River.

The Leech River fault stretches from west of Victoria westward along the Leech River and Loss Creek valleys to the coast near Sombrio Point. To the north of the fault the area is underlain by metamorphic rock of the Jurassic to Cretaceous Leech River Complex. To the south of the fault the rocks are mainly basalts of the Eocene Metchosin Volcanics. The gold is thought to have been derived from quartz veins and stringers known to occur in slate of the Leech River Complex.

The Spaniards first identified gold in the area in 1792; the name "Sombrio" is Spanish for colours. Elaborate camps and engineering works were constructed on the property from 1900 to 1930. Some production was reported to have occurred from 1907 to 1914 utilizing a 50-man monitor and sluice operation. Work continued on the deposit in the 1970's and 1980's. An estimate of the size of the deposit was given by Clapp as 155,000,000 cubic yards (Geological Survey of Canada Memoir 13, page 155).

BIBLIOGRAPHY

EMPR AR 1909-151; 1910-161; 1913-290; 1914-386; 1915-290; 1916-367; 1929-369; 1930-287
EMPR ASS RPT 7368, 10896, 12407
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR OF RGS 24

BIBLIOGRAPHY

EMPR PF (Map of the Hydraulic Gold Leases - Sombrio and Loss Rivers, Sombrio Placer Mining Syndicate, 1930's; Geochemical Report on Loss Creek and Sombrio Claim Groups, Armside Mining Company Limited, 1974; Report on the Sombrio Point Alluvial Gold Deposit, Ian M. Sherwin)
GSC MAP 1386A
GSC MEM 13, p. 154
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
CAN ROCKHOUND Internet Magazine, Summer 1997, Vol. 1, No. 3; Rockhounding on Vancouver Island
GCNL #216,#227, 1983; #5,#35, 1984; #9,#116, 1985
IPDM Nov/Dec, 1983
N MINER Dec.8,29, 1983; Feb.2,20, Mar.22, Oct.27, 1984
WWW http://www.canadianrockhound.com/issues.html, Summer 97, Article 8
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 75

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/03 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 045**

NATIONAL MINERAL INVENTORY:

NAME(S): **ENTERPRISE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14W
BC MAP:
LATITUDE: 48 56 22 N
LONGITUDE: 125 16 06 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing at highest point at the centre of Prideaux Island (Minister of Mines Annual Report 1906 page 189).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5423204
EASTING: 333893

COMMODITIES: Copper Mercury

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Cinnabar
COMMENTS: Gold recovery was reported, but samples only assayed trace gold. Cinnabar uncertain, no mercury in assay.
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 7 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The vein is 6.7 metres wide at surface.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex
Jurassic			Island Plutonic Suite

LITHOLOGY: Diabase
Limestone
Diorite
Meta Volcanic Rock
Meta Sediment/Sedimentary Rock
Granitic Rock

HOSTROCK COMMENTS: The showing plots in metamorphic rocks mapped as Westcoast Complex (Geolgical Survey of Canada Open File 821).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Enterprise showing occurs on the southeast coast of Prideaux Island in Sechart Channel.

The area is underlain by the Paleozoic and/or Mesozoic Westcoast Complex comprising diorites, metavolcanic and metasedimentary rocks. These are intruded by granitic rocks of the Early to Middle Jurassic Island Plutonic Suite. Lenses of recrystallized limestone and skarn occur within the Westcoast Complex.

Chalcopyrite and pyrite with possible traces of cinnabar are disseminated through a quartz vein at a contact between limestone and diabase. The width of the quartz vein is reported as 6.7 metres at the surface. The contact has reportedly been seen on Nettle Island and further to the southeast. Movement along the contact is indicated by well-defined slickensides and brecciation of the quartz. Surface workings and a 12.1 metre shaft were reported in 1906. Claims of high gold and mercury values were not reproduced in assay results (trace gold, no mercury) possibly due to the oxidation of the ore on the dump (Minister of Mines Annual Report 1906, page 189).

BIBLIOGRAPHY

EMPR AR *1906-189
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC MAP 1386A
GSC MEM 13

BIBLIOGRAPHY

GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/18 REVISED BY: SNB FIELD CHECK: N

MINFILE NUMBER: **092C 046**

NATIONAL MINERAL INVENTORY:

NAME(S): **PAGET**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W
BC MAP:
LATITUDE: 48 49 11 N
LONGITUDE: 124 21 42 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate location of workings (Open File 1987-2 and Minister of Mines Annual Report 1906 page 213).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5408309
EASTING: 400047

COMMODITIES: Gold Zinc Lead

MINERALS
SIGNIFICANT: Arsenopyrite Pyrite Sphalerite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Discordant
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 2 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The vein, 1.8 metres wide, is well-defined.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granite
Diorite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Paget showing is located about 8 kilometres south of Cowichan Lake on a slope drained by the Gordon River.

The area is underlain by granite, diorite and granodiorite of the Early to Middle Jurassic Island Plutonic Suite.

The workings are located at 808 and 758 metres elevation and consist of an upper and lower tunnel.

The upper tunnel was driven at 070 degrees for 18.3 metres on a well-defined quartz vein. The vein is about 1.8 metres wide and is mineralized with arsenopyrite, pyrite, sphalerite and minor galena. High gold values have been reported, but the values must be sporadic because a sample from the dump containing arsenopyrite assayed negative results.

The lower tunnel, almost parallel with the upper tunnel, was also reported to be 18.3 metres long. The tunnel is flooded, however, and therefore cannot be explored. This tunnel was apparently in gravel and no ore was encountered.

BIBLIOGRAPHY

EMPR AR *1907-H213
EMPR ASS RPT 8805
EMPR BULL 37
EMPR FIELDWORK 1977, p. 23; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF *1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30

BIBLIOGRAPHY

Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 047**

NATIONAL MINERAL INVENTORY:

NAME(S): **GLADYS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 58 20 N
LONGITUDE: 124 56 25 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the south side of the Alberni canal opposite from the Monitor occurrence (092C 007), (Minister of Mines Annual Report 1904, page 243).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5426182
EASTING: 358008

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Arsenopyrite
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Massive
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Quatsino	Island Plutonic Suite

LITHOLOGY: Limestone
Diabase Dike
Granodiorite

HOSTROCK COMMENTS: Mineralization occurs in limestone near a large body of granodiorite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1906
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	79.5400	Grams per tonne
Gold	6.8600	Grams per tonne
Copper	16.4300	Per cent

REFERENCE: Minister of Mines Annual Report 1907, page 194.

CAPSULE GEOLOGY

The area of the Gladys occurrence is underlain by Upper Triassic Vancouver Group rocks consisting of basalts of the Karmutsen Formation, which are overlain by, or interbedded with, limestone of the Quatsino Formation. A large body of granodiorite of the Early to Middle Jurassic Island Plutonic Suite (formerly the Island Intrusions) has intruded the strata.

Skarn ore, exposed between about 60 and 120 metres elevations, strikes north in limestone on the south side of the Alberni canal. The ore is reported to consist of garnetite, pyrite and little chalcopyrite and arsenopyrite; it is also reported to be similar to that of the Edith occurrence (092C 048). Two shafts have been sunk on the zone at 106 metres and 120 metres elevations. On the south side of the uppermost shaft the streak of ore, about 15 centimetres wide, has been cut off by a diabase dyke that strikes northwest.

An assay of selected samples graded 16.43 per cent copper, 79.54 grams per tonne silver and 6.86 grams per tonne gold (Minister of Mines Annual Report 1913, page 194).

BIBLIOGRAPHY

EMPR AR 1904-243; 1905-211; *1906-194; 1909-146; 1911-191; *1913-276; 1916-321

BIBLIOGRAPHY

EMPR BULL 3 (1917), (Sketch map following p. 22 showing location)
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
EMPR PF (Brewer, W.M. (1906): Report on the Edith Group of Mineral Claims
GSC MAP 196A; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24	CODED BY: GSB	FIELD CHECK: N
DATE REVISED: 1991/01/16	REVISED BY: GJP	FIELD CHECK: N

MINFILE NUMBER: **092C 048**

NATIONAL MINERAL INVENTORY:

NAME(S): **EDITH (L.108)**, BLACK BEAR (L.109)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 58 21 N
LONGITUDE: 124 56 01 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The Edith showing is reported to occur about 400 metres east of the Gladys occurrence (092C 047), (Minister of Mines Annual Report 1913, page 276). The Gladys showing is reported to be located on the opposite side of Alberni canal from the Monitor occurrence (092C 007), Minister of Mines Annual Report 1904, page 243).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5426200
EASTING: 358497

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite Magnetite
ALTERATION: Garnet Calcite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive Vein Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Granodiorite

HOSTROCK COMMENTS: The mineralization occurs in both limestone and granodiorite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1913
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	137.1400	Grams per tonne
Gold	3.4300	Grams per tonne
Copper	5.0000	Per cent

COMMENTS: From a 0.6 metre chip sample.
REFERENCE: Minister of Mines Annual Report 1913, page 276.

CAPSULE GEOLOGY

The area of the Edith occurrence is underlain by Upper Triassic Vancouver Group rocks consisting of basalts of the Karmutsen Formation, which are overlain by, or interbedded with, limestone of the Quatsino Formation. A large body of granodiorite of the Early to Middle Jurassic Island Plutonic Suite (formerly the Island Intrusions) has intruded the strata.

Lenses of skarn ore are reported to lie at the contact of crystalline limestone and granodiorite. The lenses consist of chalcopyrite disseminated through pyrrhotite and containing very little magnetite. The gangue minerals are reported to be garnetite and limestone. A grab sample of this material assayed 8.2 per cent copper, 75.43 grams per tonne silver and a trace of gold (Minister of Mines Annual Report 1916, page 321).

In addition to these ore lenses, there are two fissures in granodiorite that occur parallel to each other, and can be traced on surface for about 60 metres in a northwest direction. The vein-filling in these fissures is made up of pyrite, pyrrhotite and chalcopyrite in a garnetite gangue. The fissures vary in width from about 30 to 60 centimetres. An average sample across 0.6 metres

CAPSULE GEOLOGY

assayed 5 per cent copper, 137.14 grams per tonne silver and 3.43 grams per tonne gold (Minister of Mines Annual Report 1913, page 276).

BIBLIOGRAPHY

EMPR AR 1900-920; *1906-194; 1912-327; *1913-276; *1916-321; 1931-166
EMPR BULL 3 (1917), (Sketch map following p. 22 showing location)
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
EMPR PF (*Brewer, W.M. (1906): Report on the Edith Group of Mineral Claims
GSC MAP 196A; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 049**

NATIONAL MINERAL INVENTORY:

NAME(S): **POETT NOOK**, NUMUKAMIS BAY, BARCLAY SOUND

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 52 54 N
LONGITUDE: 125 03 43 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of surface trace of upper limestone horizon (Geological Survey of Canada Open File 1272).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5416351
EASTING: 348832

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 1750 x 250 Metres STRIKE/DIP: 123/65W TREND/PLUNGE:
COMMENTS: Attitude and dimension of limestone bands.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Black Argillite
Mafic Flow
Mafic Sill

HOSTROCK COMMENTS: Limestone bands are separated by a mafic flow or sill.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Developed on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

The Poett Nook showing is located on the south shore of Numukamis Bay, on the west side of Barclay Sound.

Two limestone bands of the Upper Triassic Quatsino Formation (Vancouver Group), up to 250 metres in width, extend westward for up to 1750 metres. The bands are separated by a mafic flow or sill. This sequence is overlain by black limestone and argillite of the Upper Triassic Parson Bay Formation (Vancouver Group). Bedding strikes 123 degrees and dips 65 degrees southwest.

BIBLIOGRAPHY

EMPR AR 1911-208
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1989/06/30 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1990/02/21 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 050**

NATIONAL MINERAL INVENTORY:

NAME(S): **MARBLE COVE**, MARBLE COVE 1-5

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 54 56 N
LONGITUDE: 125 06 12 W
ELEVATION: 121 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Showing on a knoll about 121 metres elevation and 470 metres northeast of Marble Cove (Minister of Mines Annual Report 1917, page 245). Location uncertain.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5420201
EASTING: 345902

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite Magnetite
ALTERATION: Garnet Epidote Hornblende
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Disseminated Podiform Shear
CLASSIFICATION: Skarn Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Volcanic Rock
Granitic Rock

HOSTROCK COMMENTS: Mineralization is hosted in limestone mapped as Quatsino Formation (Geological Survey of Canada Open File 1272).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DUMP

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1917

COMMODITY	GRADE	
Silver	3.4300	Grams per tonne
Copper	2.3000	Per cent

COMMENTS: Sample from dump next to adit on main showing, also trace gold.
REFERENCE: Minister of Mines Annual Report 1917, page 245.

CAPSULE GEOLOGY

The main Marble Cove showing is located on a limestone knoll at about 470 metres northeast of Marble Cove on the west coast of Tzartus Island (locally known as Copper Island) in Barclay Sound. Previous work was conducted in 1917 and consisted of a 0.8 kilometre trail from the shore to the main showing, a 30.4 metre adit at the base of the limestone knoll and some trenching.

Tzartus Island is underlain by Lower Jurassic Bonanza Group volcanics and Upper Triassic Quatsino Formation limestone (Vancouver Group). These are intruded by granitic rocks of the Early to Middle Jurassic Island Plutonic Suite. Geological Survey of Canada Open File 1272 indicates an east trending regional fault just north of the showing.

The main showing is a 9 by 18 metre lens of massive, grading to disseminated, chalcopyrite and pyrite in a calcsilicate gangue grading into crystalline limestone. The showing occurs a short distance from a limestone/igneous contact.

Five other showings outcrop within 385 metres southwest of the main showing. Two consist of pyrrhotite-filled fractures within gossanous shear zones in Bonanaza volcanics. Lenses of chalcopyrite

CAPSULE GEOLOGY

in a garnetite outcrop occur at a limestone/igneous contact 322 metres from the main showing. Two showings comprise disseminated chalcopyrite associated with pyrrhotite and magnetite in a hornblende-epidote-garnet skarn within Quatsino limestone.

A grab sample from the dump next to the adit on the main showing assayed 2.3 per cent copper, 3.43 grams per tonne silver and trace gold (Minister of Mines Annual Report 1917, page 245).

BIBLIOGRAPHY

EMPR AR *1917-245; *1918-259
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/17 REVISED BY: SNB FIELD CHECK: N

MINFILE NUMBER: **092C 051**

NATIONAL MINERAL INVENTORY:

NAME(S): **BENSON**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14W
BC MAP:
LATITUDE: 48 52 59 N
LONGITUDE: 125 23 01 W
ELEVATION: 25 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing occupies the entire area of Benson Island, previously known as Hawkins Island, the location is for the highest point on the island (Annual Report 1918 p. 260).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5417195
EASTING: 325256

COMMODITIES: Iron, Magnetite

MINERALS
SIGNIFICANT: Magnetite
ALTERATION: Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform, Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Skarn
Granodiorite
Meta Volcanic
Meta Sediment/Sedimentary Rock
Diorite
Granite

HOSTROCK COMMENTS: The showing plots in metamorphic rocks mapped as Westcoast Complex (Geological Survey of Canada Open File 821).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: OUTCROP

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1918

COMMODITY	GRADE	
Iron	44.5000	Per cent

COMMENTS: Sample from magnetite outcrop.
REFERENCE: Annual Report 1918 page 260.

CAPSULE GEOLOGY

The Benson showing occupies the entire area of Benson Island (previously known as Hawkins Island) located within the Broken Group Islands in Barclay Sound.

The area is underlain by the Paleozoic and/or Mesozoic Westcoast Complex comprising diorites, metavolcanic and metasedimentary rocks including lenses of recrystallized limestone and skarn. These are intruded by granitic rocks of the Early to Middle Jurassic Island Plutonic Suite.

On Benson Island, these limestone and skarn lenses are hosted in a rock resembling granodiorite. Mineralization, apparently of limited extent, consists of magnetite.

A sample from one of the magnetite outcrops assayed 44.5 per cent iron (Annual Report 1918 p. 260). No other information is available.

BIBLIOGRAPHY

EMPR AR *1918-260

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/17 REVISED BY: SNB FIELD CHECK: N

MINFILE NUMBER: **092C 052**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUDBURY PACIFIC**, ECOLE, ECOOLE, HOGE, SEDDALL

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 58 05 N
LONGITUDE: 125 03 25 W
ELEVATION: 0 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Showing located on a point just below mean sea level, near Ecoole; location very uncertain (Minister of Mines Annual Report 1917, page 246).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5425944
EASTING: 349458

COMMODITIES: Nickel

MINERALS

SIGNIFICANT: Pyrrhotite Arsenopyrite
COMMENTS: Nickel mineral not identified; assay result.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Shear
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Irregular
MODIFIER: Sheared Fractured
DIMENSION: 1 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: The breccia zone is 1.2 to 1.5 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Diorite
Breccia
Volcanic Rock
Carbonate
Granodiorite

HOSTROCK COMMENTS: Mineralization plots in Bonanza Group volcanics (Geological Survey of Canada Open File 821).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1917
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Nickel	1.9000	Per cent

COMMENTS: Sample #2, taken across 0.20 metre of mineralized breccia material.
REFERENCE: Minister of Mines Annual Report 1917, page 246.

CAPSULE GEOLOGY

The Sudbury Pacific showing is located just below mean sea level on Seddall Island, near Ecoole. The location is uncertain from the description given of the work done in 1917.

The area is underlain by volcanic rocks of the Lower Jurassic Bonanza Group and carbonate rocks of the Upper Triassic Quatsino Formation, Vancouver Group. These have been intruded by granitic rocks of the Early to Middle Jurassic Island Plutonic Suite.

The showing comprises small lenses of pyrrhotite and associated arsenopyrite hosted in breccia material in a fractured and fissured zone within diorite (possibly granodiorite). This zone is about 1.2 or 1.5 metres wide. The showing can be examined only at extreme low tide.

Two samples, each taken across 0.20 metre of mineralized breccia material, assayed 0.35 (sample 1) and 1.9 per cent nickel (sample 2)

CAPSULE GEOLOGY

(Minister of Mines Annual Report 1917, page 246).

BIBLIOGRAPHY

EMPR AR *1917-246
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/20 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 053**

NATIONAL MINERAL INVENTORY:

NAME(S): **PETERSON**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W
BC MAP:
LATITUDE: 48 55 23 N
LONGITUDE: 124 27 35 W
ELEVATION: 91 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Open File 1987-2 has been adjusted to reflect reported elevation.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5419929
EASTING: 393069

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Chalcopyrite assumed ("copper ore").
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Epigenetic
SHAPE: Irregular
MODIFIER: Fractured
COMMENTS: "Seam" in altered and shattered shale.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Shale
Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Overlap Assemblage
Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1906
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	1.0000	Per cent

COMMENTS: Sample from pile at mouth of tunnel. Trace gold and silver.
REFERENCE: Minister of Mines Annual Report 1906 page 213.

CAPSULE GEOLOGY

The Peterson occurrence is located near the northwest end of Cowichan Lake, 91.44 metres above the lake.

The area is underlain by volcanic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group and of the Lower Jurassic Bonanza Group and sediments of the Upper Cretaceous Comox Formation, Nanaimo Group.

A narrow seam in the face of a cliff contains a small amount of chalcopyrite. The seam is hosted in highly altered and shattered shale of the Comox Formation which is cut by fine-grained igneous dykes.

A 4.6 metre tunnel has been driven northeast from the seam along a fissure in the rock. The shattered rock in the roof of the tunnel and the overhanging cliff makes the workings dangerous. No mineralization was observed in the workings.

A sample from a small pile at the tunnel mouth assayed 1 per cent copper with traces of gold and silver (Minister of Mines Annual Report 1906 p. 213).

BIBLIOGRAPHY

EMPR AR *1906-213
EMPR BULL 37

BIBLIOGRAPHY

EMPR FIELDWORK 1977, p. 23; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 69-25; 72-44; 76-1A; 79-30
CJES Vol. 15 No. 3 1978, pp. 405-423
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
McGugan, A. (1962): Upper Cretaceous Foraminiferal zones, Vancouver Island in Journal of the Alberta Society of Petroleum Geologists

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 054**

NATIONAL MINERAL INVENTORY:

NAME(S): **COPPER KING**, COPPER KING 1,4,6, FLORENCE, COPPER QUEEN 1-3

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 58 44 N
LONGITUDE: 124 45 22 W
ELEVATION: 230 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Showing is located 8 kilometres east of Alberni Inlet on a logging road north of Coleman Creek, exact location uncertain (Minister of Mines Annual Report 1928, page 366).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5426595
EASTING: 371502

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Pyrrhotite
ASSOCIATED: Hornblende Epidote Garnet Quartz
ALTERATION: Hornblende Epidote Garnet Quartz
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Disseminated
CLASSIFICATION: Skarn
DIMENSION: 2 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Two metres of chalcopyrite occur in an old adit.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Granitic Rock
Skarn
Limestone
Volcanic Rock

HOSTROCK COMMENTS: Showing plots in granitic rocks mapped as Island Plutonic Suite (Geological Survey of Canada Open File 821).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: ADIT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1900
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Copper	18.0000	Per cent

COMMENTS: From 27.3 metre adit; also assayed "$6.00 per ton" gold.
REFERENCE: Minister of Mines Annual Report 1900, page 921.

CAPSULE GEOLOGY

The Copper King showing is located 8 kilometres east of Alberni Inlet beside the logging road north of Coleman Creek. The location is uncertain from the description (Minister of Mines Annual Report 1928, page 366).

The region is underlain by Vancouver Group rocks comprising Upper Triassic Quatsino Formation limestones overlain by Lower Jurassic Bonanza Group volcanics. These are intruded by granitic rocks of the Early to Middle Jurassic Island Plutonic Suite. Northwest trending Tertiary faults cut the underlying rocks.

A massive pyrrhotite vein, up to 2.4 metres wide with trace chalcopyrite occurs within a gangue of hornblende with associated garnetite, epidote and quartz. The vein is reportedly traced "for some distance". No host rock is mentioned, but the showing plots in rocks mapped as granites of the Island Plutonic Suite. Mineralization suggests skarnification.

CAPSULE GEOLOGY

In 1900, a bulk sample from a 27.3 metre adit assayed 18 per cent copper and "gold $6.00 per ton" (Minister of Mines Annual Report 1900, page 921). Previous work includes trail improvements, prospecting and trenching; a nearby opencut exposed "clean" chalcopyrite up to 1.8 metres wide (Minister of Mines Annual Report

BIBLIOGRAPHY

EMPR AR *1900-921; *1928-366
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Argsea, Noranda Mines Ltd., date unknown)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/18 REVISED BY: SNB FIELD CHECK: N

MINFILE NUMBER: **092C 055**

NATIONAL MINERAL INVENTORY:

NAME(S): **COPPER PRINCE**, COPPER PRINCE 1-3

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 59 19 N
LONGITUDE: 124 47 36 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Vein located 3.2 kilometres east of Alberni Inlet; location uncertain (Minister of Mines Annual Report 1928, page 366).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5427739
EASTING: 368804

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: "good grade" chalcopyrite.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite
Limestone
Volcanic Rock
Granitic Rock

HOSTROCK COMMENTS: Showing plots in rocks mapped as granodiorite of the Island Plutonic Suite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Copper Prince is located 3.2 kilometres east of Alberni Inlet near the logging road on the north side of Coleman Creek. The exact location is uncertain from the description (Minister of Mines Annual Report 1928, page 366).

The area is underlain by Upper Triassic Quatsino Formation (Vancouver Group) limestones and Lower Jurassic Bonanza Group volcanics. These are intruded by granitic rocks of the Early to Middle Jurassic Island Plutonic Suite.

A small chalcopyrite vein occurs in a fissure in granodiorite. The vein has been traced for several hundred metres. Previous work comprises many opencuts with "good grade" chaclopyrite reported. No other information is available.

BIBLIOGRAPHY

EMPR AR *1928-366
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/18 REVISED BY: SNB FIELD CHECK: N

MINFILE NUMBER: **092C 056**

NATIONAL MINERAL INVENTORY:

NAME(S): **WW**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 59 19 N
LONGITUDE: 124 47 21 W
ELEVATION: 212 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Showing exposed beside logging road north of Coleman Creek, 5.6 kilometres east of Alberni Inlet; exact location is uncertain.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5427732
EASTING: 369109

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite
ASSOCIATED: Actinolite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Irregular
MODIFIER: Faulted Sheared
DIMENSION: 30 x 1 Metres STRIKE/DIP: 080/50N TREND/PLUNGE:
COMMENTS: Fault is 0.6 metres wide and can be traced for 30 metres to the south.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Andesite
Volcanic Rock
Granitic Rock

HOSTROCK COMMENTS: Showing plots in rocks mapped as Island Plutonic Suite (Geological Survey of Canada Open File 821).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The WW showing is located beside the logging road north of Coleman Creek, 5.6 kilometres east of Alberni Inlet. The exact location is uncertain. The showing could possibly be part of the Copper King showing (092C 054).

The area is underlain by Lower Jurassic Bonanza Group volcanics and limestones of the Upper Triassic Quatsino Formation, Vancouver Group. These are intruded by granitic rocks of the Early to Middle Jurassic Island Plutonic Suite.

Mineralization consists of chalcopyrite, pyrite and pyrrhotite hosted in a matrix of actinolite in a fault 0.6 metres wide. The fault has been traced for 30 metres to the south and occurs at a contact between andesite (hanging wall) and limestone (footwall). The showing plots in rocks mapped as Island Plutonic Suite (Geological Survey of Canada 821).

BIBLIOGRAPHY

EMPR AR *1963-124
EMPR FIELDWORK 1989, pp. 503-510
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
EMPR OF 1988-24; RGS 24, 1990
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic

BIBLIOGRAPHY

rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/17 REVISED BY: SNB FIELD CHECK: N

MINFILE NUMBER: **092C 057**

NATIONAL MINERAL INVENTORY:

NAME(S): **MEADE CREEK**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 50 44 N
LONGITUDE: 124 04 49 W
ELEVATION: 260 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate location of centre of canyon (Minister of Mines Annual Report 1950 page 204).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5410850
EASTING: 420742

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Quaternary			Glacial/Fluvial Gravels
Jurassic			Island Plutonic Suite

LITHOLOGY: Gravel
Unconsolidated Sediment/Sedimentary
Volcanic Rock
Intrusive Rock

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

CAPSULE GEOLOGY

The Meade Creek placer comprises two leases located on Meade Creek, 2.5 miles west of Lake Cowichan village. The leases extend upstream from about 152 metres above the CNR railway bridge, covering more than 1.6 kilometres of the creek bed.

The area is underlain by volcanic and sedimentary rocks of the Devonian Nitinat Formation (Sicker Group) which have been intruded by granitic rocks of the Early to Middle Jurassic Island Plutonic Suite.

The panning and sluicing was done along a stretch 671 metres long between 800 metres and 1600 metres above the bridge. The creek flows through a canyon along this stretch which contains stream debris that ranges in size from fine sand to boulders 1.2 metres in diameter. In the canyon, fine colors are seen in most pans containing bedrock material and in sand among the roots of the trees near the high water mark, 0.5 metres or so above bedrock.

Gold is also reported to have been panned from overburden near the creek as much as 6.1 metres above high water level outside the canyon.

BIBLIOGRAPHY

EMPR AR *1950-204
EMPR BULL 37
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF *1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30

BIBLIOGRAPHY

CAN ROCKHOUND Internet Magazine, Summer 1997, Vol. 1, No. 3;
Rockhounding on Vancouver Island
WWW http://www.canadianrockhound/summer97/cr9701308_
vancouver_island.html
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with
emphasis on the relationships of mineral deposits to plutonic
rocks, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of
British Columbia, Vol. 1: Vancouver Island, p. 101

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1991/01/10	REVISED BY:	DEJ	FIELD CHECK:	N

MINFILE NUMBER: **092C 058**

NATIONAL MINERAL INVENTORY:

NAME(S): **KINSLEY**, LELLA

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 32 31 N
LONGITUDE: 124 24 13 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 1 KM

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5377489
EASTING: 396399

COMMENTS: Located a few kilometres south of the mouth of the San Juan River, in Port San Juan (Assessment Report 14320). The old Kinsley claims described in the Annual Report for the year 1900 may not be the same as the new Kinsley claims reported on in Assessment Report 14320.

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l01 Au-quartz veins

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Slate
Schist
Meta Greywacke
Rhyolite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist
Amphibolite

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1986

COMMODITY	GRADE	
Gold	1.9500	Grams per tonne

REFERENCE: Assessment Report 14320.

CAPSULE GEOLOGY

The area, according to Muller, is underlain by a Metagreywacke-Schist Unit and an Argillite-Metagreywacke Unit, both of the Jurassic to Cretaceous Leech River Complex (Geological Survey of Canada Open File 821). The former unit consists of metagreywacke, meta-arkose and quartz-feldspar biotite schist; the latter consists of thinly bedded greywacke and argillite, slate, phyllite and quartz-biotite schist.

A quartz vein, up to 3.5 metres wide, with good gold values, occurs in slate and was actively worked at the turn of the century. About 20 metres of tunnelling was reported done at this time. In 1986, an investigation revealed many northeast trending quartz veins cutting greywacke and schists. An old trench discovered at this time exposed a quartz vein and a rhyolite dyke, both trending to the northeast. A sample of the material from the trench assayed 1.95 grams per tonne gold (Assessment Report 14320).

BIBLIOGRAPHY

EMPR AR *1900-928
EMPR ASS RPT *14320
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR GEM 1970-292

BIBLIOGRAPHY

EMPR OF RGS 24
EMPR PF (Philp, R.H.D. (1970): Report on the San Juan Properties of
Purbell Mines Ltd. (in the Val file - 092C 089)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
GCNL #142, 1971

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 059**

NATIONAL MINERAL INVENTORY:

NAME(S): **OX**, CAROL 1, MOSQUITO CREEK, POTOSI

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 34 00 N
LONGITUDE: 124 16 56 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near Mosquito Creek, about 6 kilometres from its mouth in the San Juan River (Assessment Report 15105).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5380080
EASTING: 405405

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Arsenopyrite Gold
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Slate
Phyllite
Calc-silicate
Aplite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1981

COMMODITY	GRADE	
Gold	50.0500	Grams per tonne

REFERENCE: Assessment Report 9807.

CAPSULE GEOLOGY

The area is underlain by a slate-phyllite unit and calc-silicate unit, both of the Jurassic to Cretaceous Leech River Complex. In this vicinity the metasediments are intruded by aplite sills and dykes.

Mineralization in the calc-silicate unit consists of disseminated pyrite, pyrrhotite and magnetite. Mineralization in the aplite intrusives consists of disseminated grains and clusters of pyrrhotite, pyrite and arsenopyrite. Mineralization in the slate-phyllite consists of disseminated pyrite cubes in foliation surfaces and abundantly disseminated pyrite and pyrrhotite in siliceous lensoid laminae, quartz veins and cross-veins.

The quartz veins contain varied amounts of carbonate and tend to occur in areas of abundant siliceous interlayering. A few specimens containing free gold were collected. One sample from a narrow quartz vein assayed 50.05 grams per tonne gold (Assessment Report 9807, Figure 3). Gold in four separate quartz showings occur within 190 metres. One vein is traceable for 46 metres. The quartz showings strike approximately south-southwest. Just to the east, panned concentrate sampling in Mosquito Creek, while investigating the Potosi claims, resulted in visible gold grams (Assessment Report 20050).

BIBLIOGRAPHY

EMPR ASS RPT *9807, 10519, 14699, *15105, 17223, 20050, 21427

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 77

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/11/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 060**

NATIONAL MINERAL INVENTORY:

NAME(S): **DICKSON**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 55 10 N
LONGITUDE: 124 40 35 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Short adit along the west bank of Little Nitinat River, 3.5 kilometres south of Francis Lake and 36 kilometres east-northeast of Bamfield.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5419855
EASTING: 377189

COMMODITIES: Silver Lead

MINERALS
SIGNIFICANT: Pyrite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1916
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	47.9900	Grams per tonne

COMMENTS: Grab from vein.
REFERENCE: Minister of Mines Annual Report 1916 page K313.

CAPSULE GEOLOGY

The Dickson occurrence comprises several small quartz veinlets hosted in granodiorite of the Early to Middle Jurassic Island Plutonic Suite. A short crosscut adit (8.5 metres) had been driven to intersect two veins mineralized with pyrite and minor galena. The veins range up to 15 centimetres in width. A grab sample from one vein assayed 47.99 grams per tonne silver (Minister of Mines Annual Report 1916, page K313).

Two more parallel quartz veinlets occur 122 metres north of the adit in the bed of the Little Nitinat River.

BIBLIOGRAPHY

EMPR AR *1916-K313,K314
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/14 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 061**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER KING**, COPPER QUEEN, LIQUID SUNSHINE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 59 13 N
LONGITUDE: 124 58 23 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate location of Silver King samples (Assessment Report 15199).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5427880
EASTING: 355652

COMMODITIES: Gold, Silver, Copper

MINERALS

SIGNIFICANT: Pyrrhotite, Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Dacite
Andesite
Limestone
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1986

COMMODITY	GRADE	
Silver	20.9000	Grams per tonne
Gold	12.3400	Grams per tonne

COMMENTS: Sample from siliceous zone.
REFERENCE: Assessment Report 15199.

CAPSULE GEOLOGY

The Silver King showings are located on Limestone Bay, on the west side of Alberni Inlet, 45 kilometres southwest of Port Alberni. The Happy John (092C 008) showings and the Monitor mine (092C 007) occur respectively to the east.

The area is underlain by rocks of the Upper Triassic Vancouver Group, comprising Karmutsen Formation volcanics and Quatsino Formation sediments, and Lower Jurassic Bonanza Group volcanics. At the showings, these sheared and fractured rocks comprise limestone, argillite, dacite and andesite.

There are several mineral occurrences in the area; these occur in skarns, in areas of shearing and in areas of silicification. The geology and mineralization is very similar to that of the Monitor mine and may actually be the extension of the Monitor zones.

Mineralization comprising pyrrhotite and chalcopyrite occurs in sheared and siliceous dacite.

From six samples of the showing on the Silver King claim, the highest assay was 6.856 grams per tonne (Assessment Report 15199). A sample from a siliceous zone on the Copper Queen claim, 150 metres east of the Silver King, assayed 12.34 grams per tonne gold and 20.9

CAPSULE GEOLOGY

grams per tonne silver (Assessment Report 15199).

BIBLIOGRAPHY

EMPR ASS RPT *15199
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1991/01/22 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 062**

NATIONAL MINERAL INVENTORY:

NAME(S): **PANTHER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 53 59 N
LONGITUDE: 124 37 53 W
ELEVATION: 420 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Opencut 750 metres east of Worthless Creek and 3 kilometres north of the Nitinat River, 34 kilometres east-northeast of Bamfield.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5417591
EASTING: 380439

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Hornblende Granodiorite
Garnetite
Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: OPENCUT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1918
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	13.7100	Grams per tonne
Copper	3.8000	Per cent

REFERENCE: Minister of Mines Annual Report 1918 page K299.

CAPSULE GEOLOGY

A skarn zone of undetermined extent is developed at the contact between limestone of the Upper Triassic Quatsino Formation (Vancouver Group) and hornblende granodiorite of the Early to Middle Jurassic Island Plutonic Suite. Several well-defined dykes also occur.

At the Panther showing an opencut crosscuts a mineralized skarn approximately 90 centimetres wide, striking north and dipping 37 degrees west. Chalcopyrite and pyrrhotite apparently are the main sulphides. Garnetite is developed in a portion of the zone.

A grab sample from the opencut assayed 3.8 per cent copper and 13.71 grams per tonne silver. A second sample from the garnetite assayed 0.2 per cent copper (Minister of Mines Annual Report 1918, page K299).

BIBLIOGRAPHY

EMPR AR *1918-K299
EMPR OF 1988-24; RGS 24, 1990
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30

BIBLIOGRAPHY

Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/14 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 063**
NATIONAL MINERAL INVENTORY: 092C10 Cu1

NAME(S): **MAL**, MARCHAND CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C10E
BC MAP:
LATITUDE: 48 44 55 N
LONGITUDE: 124 43 35 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On Marchand Creek, about 300 metres inland from Nitinat Lake (Minister of Mines Annual Report 1963, pages 123-124).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5400948
EASTING: 373096

COMMODITIES: Copper, Silver, Zinc, Lead

MINERALS
SIGNIFICANT: Chalcopyrite, Sphalerite, Pyrite
ASSOCIATED: Quartz, Chlorite, Clinozoisite, Actinolite, Hypersthene, Thuringite
ALTERATION: Chlorite, Clinozoisite, Actinolite, Hypersthene
ALTERATION TYPE: Chloritic, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear, Massive
CLASSIFICATION: Hydrothermal, Epigenetic
DIMENSION: 7 Metres
STRIKE/DIP: 130/85N
TREND/PLUNGE:
COMMENTS: Attitude and dimension of shear zone hosting mineralization up to 0.60 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Quartz Monzonite
Quartz Diorite
Andesite Porphyritic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1963
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	72.6900	Grams per tonne
Copper	2.1700	Per cent
Zinc	1.9400	Per cent

COMMENTS: Reported to be an average value of 6 shallow drill holes drilled along a 90 metre length of outcrop.
REFERENCE: National Mineral Inventory 092C10 Cu1.

CAPSULE GEOLOGY

The Mal occurrence is underlain by coarse-grained quartz monzonite of the Early to Middle Jurassic Island Plutonic Suite (formerly the Island Intrusions). The monzonite contains inclusions of saussuritized quartz diorite of the Mesozoic and/or Paleozoic Westcoast Complex and volcanic rocks. These rocks are cut by several southeast trending, steeply dipping, slightly porphyritic andesite dykes.

The mineralization occurs in a fault zone about 7.6 metres wide striking 130 degrees and dipping 75 degrees to the northeast. The fault cuts the monzonite, quartz diorite and the andesite dykes. A few light coloured granitic stringers a few centimetres in width have been intruded along the fault.

Chalcopyrite, sphalerite and pyrite occur in the fault in bands or lenses up to 0.6 metres wide. The gangue consists of quartz, chlorite, clinozoisite, actinolite, hypersthene and a black opaque iron-silicate mineral thought to be thuringite. The sphalerite is a

CAPSULE GEOLOGY

dark variety and veins the thuringite.
Six shallow diamond-drill holes over a 90 metre length of outcrop averaged 2.17 per cent copper, 1.94 per cent zinc and 72.69 grams per tonne silver (National Mineral Inventory 092C10 Cu1).

BIBLIOGRAPHY

EMPR AR *1963-123; *1964-168; 1965-239; 1966-78
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM *1972-256
EMPR OF RGS 24
EMPR PF (*Marshall Creek Copper Co., Prospectus, Nov, 1963; Various maps and plans, 1965; Marshall Creek Copper Co. Ltd., Second Annual Report, 1965)
EMR MP CORPFILE (Marshall Creek Copper Co. Ltd.)
GSC MAP 196A; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/18 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 064**

NATIONAL MINERAL INVENTORY:

NAME(S): **ARCHER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E 092C16W
BC MAP:
LATITUDE: 48 52 40 N
LONGITUDE: 124 30 06 W
ELEVATION: 701 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drillhole collars along a road cut exposing a pyritic zone, near the headwaters of Raymond Creek, 5.5 kilometres south of the western end of Cowichan Lake (Assessment Report 17164).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5414956
EASTING: 389897

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Calcite Epidote Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
SHAPE: Irregular
MODIFIER: Faulted Folded

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Dacite
Siliceous Andesite
Chert
Feldspar Porphyritic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1987

COMMODITY	GRADE	
Silver	11.5000	Grams per tonne
Gold	2.8000	Grams per tonne

COMMENTS: Shear zone intersection.
REFERENCE: Assessment Report 17164.

CAPSULE GEOLOGY

The area is underlain by extensively faulted rocks of the Upper Triassic Vancouver Group and the Lower Jurassic Bonanza Group. The basal Vancouver Group sequence is comprised of basalt flows, breccias and tuffs of the Karmutsen Formation overlain by Quatsino Formation limestone, which in turn is overlain by black argillites of the Parsons Bay Formation. The overlying Bonanza Group consists of a sequence of argillites, cherts, cherty tuffs, volcanic and/or sedimentary breccias, sandstones and basaltic to rhyolitic flows.

The overall package of rocks have been broadly to tightly folded with fold axes generally trending northwest, and have been intruded by granodioritic and feldspar porphyritic dykes.

At the Archer showing, a pyritic fracture/shear zone occurs in dacite (possibly siliceous andesite) and chert of the Bonanza Group. Pyrite occurs as stringers and fine to coarse disseminations. Some calcite and epidote veinlets are also evident in this zone. Several massive pods of pyrite up to 1 metre thick occur locally in bedded chert; minor magnetite was also observed. Drill core from holes intersecting this zone assayed up to 2.8 grams per tonne gold and 11.5 grams per tonne silver (Assessment Report 17164).

BIBLIOGRAPHY

EMPR ASS RPT *17164
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown and B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1991/01/20 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1991/01/20 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 065** NATIONAL MINERAL INVENTORY: 092C14 Hg1

NAME(S): **SECHART (L.3)**, BALMORAL, AZOGIE, SECH 1

STATUS: Prospect Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 57 37 N NORTHING: 5425467
LONGITUDE: 125 14 38 W EASTING: 335752
ELEVATION: 50 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Center of Crown grant Lot 3 (Assessment Report 12196).

COMMODITIES: Mercury

MINERALS
SIGNIFICANT: Cinnabar Mercury
ALTERATION: Silica Sericite Chlorite Ankerite
ALTERATION TYPE: Silicific'n Chloritic Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I08 Silica-Hg carbonate H02 Hot spring Hg
SHAPE: Irregular
MODIFIER: Faulted Fractured

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Andesitic Greenstone
Quartz Diorite
Gabbro
Limestone

HOSTROCK COMMENTS: The host is a metavolcanic phase of the Westcoast Complex.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1940
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Mercury	0.1600	Per cent

COMMENTS: From a 1.5 metre chip sample.
REFERENCE: Bulletin 5 - Mercury Deposits of British Columbia, 1940.

CAPSULE GEOLOGY

The Sechart mercury deposit is located 24 kilometres east of Ucluelet in Barclay Sound. The deposit, known since 1890, had considerable development work done on it by 1911. More development work was conducted from 1916 to 1917 and again in 1928 and 1969. To date, the property is developed by about 107 metres of drifts and two shafts, one 10 metres in depth and the other 5 metres.

The geology of the area is dominated by coarse-grained quartz diorite of the Paleozoic and/or Mesozoic Westcoast Complex, containing slices of metamorphic rock. To the north of the workings, Muller (Geological Survey of Canada Open File 821) has mapped a northwest trending pendant of limestone, of similar age to the Westcoast Complex.

In the immediate vicinity of the workings the rocks consist of andesitic greenstone, gabbro and minor limestone. The deposit occurs in ankeritized and silicified greenstone. Mineralization consists of patches and streaks of cinnabar and native mercury. The mercury mineralization penetrated along fault zones and fractures with associated silica flooding and sericite, chlorite and ankerite alteration. One sample taken in sheared rotten greenstone across 1.5 metres assayed 0.16 per cent mercury (Bulletin No.5, page 88). The

CAPSULE GEOLOGY

narrow scattered zones of mercury are considered uneconomic.

BIBLIOGRAPHY

EMPR AR 1896-556; 1911-191; 1916-325; 1921-348; *1927-341; *1929-373
EMPR ASS RPT *12196
EMPR BULL 1, p. 5; *5, p. 85
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-220
EMPR OF 1988-24; RGS 24, 1990
GSC MAP 196A; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
GSC SUM RPT 1918B, p. 21; 1919B, p. 18
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 148

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/15 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 066**

NATIONAL MINERAL INVENTORY:

NAME(S): **SANTA MARIA ISLAND**, SAR, SAR 1

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 53 26 N
LONGITUDE: 125 01 50 W
ELEVATION: 3 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft at the highwater mark on the south tip of Santa Maria Island, in Numukamis Bay across from Tzartus Island, 10 kilometres northeast of Bamfield.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5417277
EASTING: 351159

COMMODITIES: Copper, Iron, Magnetite, Silver

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Chalcopyrite, Tetrahedrite, Magnetite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated, Layered
CLASSIFICATION: Volcanogenic
TYPE: K01 Cu skarn
DIMENSION: 4 Metres STRIKE/DIP: /39S TREND/PLUNGE: 053/
COMMENTS: Bands of massive to disseminated pyrite are 1 to 4 metres wide, trend 47 to 58 degrees and dip 32 to 45 degrees south.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Volcanic
Diorite
Limestone
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.5100	Per cent

COMMENTS: Across 0.8 metres of massive sulphide.
REFERENCE: Assessment Report 18773.

CAPSULE GEOLOGY

The Santa Maria Island showings are located at the southern tip of the island.

The island and adjacent shore are underlain by sedimentary rocks of the Upper Triassic Quatsino Formation (Vancouver Group) and volcanic rocks of the Lower Jurassic Bonanza Group. These have been intruded by granitic rocks of the Early to Middle Jurassic Island Plutonic Suite.

At the south end of Santa Maria Island, just at the high water mark, a shaft was sunk on a small exposure of magnetite containing sulphides. Iron ore was extracted, from a skarn developed at the contact of limestone and granodiorite, from here many years ago (Minister of Mines Annual Report 1896, Bulletin 1, page 4).

More recently documented mineralization consists of massive to disseminated pyrite with pyrrhotite, chalcopyrite, and tetrahedrite. The mineralization occurs in a series of 3 or 4 subparallel, 1 to 4 metre bands which trend 47 to 58 degrees and dip 45 to 32 degrees south. The bands are hosted in Bonanza volcanics or fine grained

CAPSULE GEOLOGY

diorite. A chip sample (#18902) across 0.8 metres of massive sulphide from this area assayed 0.51 per cent copper (Assessment Report 18773).

BIBLIOGRAPHY

EMPR AR *1896 (Bulletin 1 p.4)
EMPR ASS RPT *18773
EMPR BULL 1
EMPR OF 1988-24; RGS 24, 1990
EMPR FIELDWORK 1989, pp. 503-510
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/15 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 067**

NATIONAL MINERAL INVENTORY:

NAME(S): **SOUTHERN CROSS (L.329)**, LIGUID SUNSHINE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 59 43 N
LONGITUDE: 124 59 11 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adits on Lot 329 (Assessment Report 15199).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5428832
EASTING: 354701

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite Copper
COMMENTS: Traces of copper.
ASSOCIATED: Hornblende Grossularite Diopside Actinolite
ALTERATION: Grossularite Diopside Actinolite Chlorite Epidote Silica
ALTERATION TYPE: Skarn Chloritic Epidote Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein Shear Massive
CLASSIFICATION: Skarn Hydrothermal Epigenetic
SHAPE: Irregular
MODIFIER: Sheared Faulted
DIMENSION: 4 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: "Skarn-like" body is up to 4 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Bonanza	Undefined Formation	

LITHOLOGY: Limestone
Diabase
Volcanic Rock
Intrusive Rock

HOSTROCK COMMENTS: Karmutsen Formation (Vancouver Group) volcanics are also present in area.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: WORKINGS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	23.7000	Grams per tonne
Copper	2.9000	Per cent

COMMENTS: Sample from old workings.
REFERENCE: Assessment Report 15199.

CAPSULE GEOLOGY

The Southern Cross occurrence is located on the east side of Uchucklesit Harbor, 10 kilometres west of the west end of Cowichan Lake. A small amount of production came from this occurrence in 1905 and 1906.

The area is underlain by rocks of the Upper Triassic Vancouver Group, comprising Karmutsen Formation volcanics and Quatsino Formation sediments, and Lower Jurassic Bonanza Group volcanics.

There are several mineral occurrences in the area; these occur in skarns, in areas of shearing and in areas of silicification.

At the Southern Cross, a 12 metre adit exposes a limestone-diabase contact mineralized with chalcopyrite, pyrite and copper. A second adit was driven 30 metres downhill in an attempt to intersect the mineralization at depth. An opencut was developed on a 2.5 metre wide vein occurring at the limestone-volcanic contact. The face of

CAPSULE GEOLOGY

an opencut over the tunnel shows 1.5 metres of solid pyrites, with traces of copper in a hornblende gangue, this was the source of the ore. The mineralization disappears at about 18.3 metres in the tunnel. Some chalcopyrite ore, evidently from a shaft now full of water, was found on the dump.

Alteration consists of chlorite, epidote, silicification and grossularite-diopside-actinolite skarn. A "skarn-like" body in the area, up to 4 metres wide, is mineralized with pyrite, pyrrhotite, chalcopyrite and actinolite at a limestone/intrusive contact. The contact is marked by a northeast trending fault which dips steeply to the east.

A grab sample from the workings assayed 2.9 per cent copper and 23.7 grams per tonne silver (Assessment Report 15199). In the period 1905 to 1906, 290 tonnes of ore was shipped producing 5,132 grams of silver and 6,104 kilograms of copper.

BIBLIOGRAPHY

EMPR AR 1899-850; 1902-230; 1903-191; 1904-243; 1906-190; 1907-221; 1913-277; *1928-368
EMPR ASS RPT *15199
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
EMPR PF (Sections showing development work on Southern Cross Group, date and author unknown)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/20 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 068**

NATIONAL MINERAL INVENTORY:

NAME(S): **ALFREDA (L.777)**, SHADOW

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 37 04 N
LONGITUDE: 124 25 46 W
ELEVATION: 50 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the east slope of the Gordon River valley about 5 kilometres above the river's mouth (Geological Survey of Canada Memoir 13, page 157).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5385953
EASTING: 394651

COMMODITIES: Gold, Silver, Copper

MINERALS
SIGNIFICANT: Magnetite, Pyrite, Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear, Vein
CLASSIFICATION: Hydrothermal, Epigenetic, Skarn
DIMENSION: 8 Metres
STRIKE/DIP: 130/
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Limestone
Schist

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1909
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	171.4300	Grams per tonne
Gold	3.3400	Grams per tonne

REFERENCE: Geological Survey of Canada Summary Report 1909, page 91.

CAPSULE GEOLOGY

The area of the Alfreda occurrence is underlain by an assemblage of plutonic and metamorphic rock of the Mesozoic to Paleozoic Westcoast Complex.

A 7.6 metre wide shear zone, striking 130 degrees in diorite, contains quartz lenses mineralized with disseminated grains of pyrite and magnetite, which have been locally altered to limonite. The sheared diorite has the appearance of a chlorite or amphibole schist. Associated with the quartz is a very little feldspar and sericite. The quartz is reported to have assayed 3.34 grams per tonne gold and 171.43 grams per tonne silver (Geological Survey of Canada Memoir 13, page 157).

In the same vicinity, skarn deposits, in recrystallized limestone, were also observed to contain magnetite, pyrite and sparse chalcopyrite (Assessment Report 8943).

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT *8943
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM *13, p. 157
GSC OF 463; 821

BIBLIOGRAPHY

GSC P 72-44; 76-1A; 79-30
GSC SUM RPT *1909, p. 91
GCNL #142, 1971

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/10 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 069**

NATIONAL MINERAL INVENTORY:

NAME(S): **JAN**, EXT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C08E
BC MAP:
LATITUDE: 48 27 32 N
LONGITUDE: 124 00 33 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: One occurrence is reported to be situated about 5 kilometres from the mouth of the Jordan River on a small tributary which enters the river from the east (Geological Survey of Canada Memoir 13, page 172). Similar mineralization associated with the same geology is found in the region (Assessment Report 544).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5367798
EASTING: 425391

COMMODITIES: Copper Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite Pentlandite Bornite Sphalerite
ASSOCIATED: Quartz Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics
Eocene			Sooke Gabbro

LITHOLOGY: Basalt
Andesite
Gabbro
Diabase
Granite
Hornblendite
Pegmatite

HOSTROCK COMMENTS: Mineralization typically occurs in Metchosin basalts near contacts with the Sooke Gabbro.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by basalt of the Eocene Metchosin Volcanics and gabbroic and diabase intrusions related to the coeval Sooke Gabbro occur nearby. The basalt and gabbroic rocks are sheared, brecciated and altered. Granitic intrusions have formed large breccia zones with hornblendite and pegmatites intruding and filling the brecciated older rock.

Pyrrhotite with lesser chalcopyrite and pyrite are reported to occur in shear zones, and pyrite and chalcopyrite are also present in quartz stringers (up to 10 centimetres wide). This mineralization occurs in "andesite", adjacent to a Tertiary intrusive (Geology, Exploration and Mining in British Columbia 1970, page 293).

Pyrrhotite and magnetite are also reported to be widespread in the shear zones and along gabbro contacts, and chalcopyrite and rare sphalerite occur with the iron minerals. Pentlandite and bornite occur in small amounts in the sulphides and some areas of pyrite also occur (Assessment Report 544).

BIBLIOGRAPHY

EMPR ASS RPT *544, 2928
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR GEM *1970-293
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM *13, p. 172
GSC OF 463; 821

BIBLIOGRAPHY

GSC P 72-44; 76-1A; 77-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/11/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 070**

NATIONAL MINERAL INVENTORY:

NAME(S): **KLANAWA AND CANYON**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 51 05 N
LONGITUDE: 124 43 35 W
ELEVATION: 380 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5412373
EASTING: 373355

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION: 9 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Chalcopyrite occurs across 9 metres width.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Volcanic
Quartz Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Klanawa and Canyon occurrence area is near major lineaments separating Lower Jurassic Bonanza Group volcanics from Early to Middle Jurassic quartz diorite of the Island Plutonic Suite. In 1931, some "good chalcopyrite ore" was brought in from the showing and was reported to occur across a width of 9 metres. The mineralization is inferred to be hosted in a shear zone in Bonanza Group volcanics.

BIBLIOGRAPHY

EMPR AR *1931-A165
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
EMPR OF 1988-24; RGS 24, 1990
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/17 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 071**

NATIONAL MINERAL INVENTORY:

NAME(S): **SPANISH**, PROVIDENCE COVE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 32 23 N
LONGITUDE: 124 22 11 W
ELEVATION: 240 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Centre of major claim group showing attitude of gold bearing-vein. (Minister of Mines Annual Report 1893, page 1079, Sketch Map). Two claims are shown on the Sketch Map covering ground about 2 kilometres to the west.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5377197
EASTING: 398896

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins
DIMENSION:
STRIKE/DIP: 060/45N
TREND/PLUNGE:
COMMENTS: Attitude of vein.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Schist
Slate
Granite
Argillite
Meta Greywacke

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Crescent
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist

CAPSULE GEOLOGY

The area, according to Muller, is underlain by a Metagreywacke-Schist Unit and an Argillite-Metagreywacke Unit, both of the Jurassic to Cretaceous Leech River Complex (Geological Survey of Canada Open File 821). The former unit consists of metagreywacke, meta-arkose and quartz-feldspar biotite schist; the latter consists of thinly bedded greywacke and argillite, slate, phyllite and quartz-biotite schist

A gold nugget was reported to have been found, in 1893, in a small stream flowing into Providence Cove. Further prospecting led to the discovery of several quartz veins, all carrying small quantities of gold on the surface outcrops (Minister of Mines Annual Report 1893, page 1079). A sketch map, accompanying the Annual Report, shows the location of two claim groups which apparently cover the showings. One of the veins strikes 060 and dips 45 degrees to the north and occurs in "micaceous slates and granites".

BIBLIOGRAPHY

EMPR AR *1893-1079
EMPR ASS RPT 9206, 11322
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of

BIBLIOGRAPHY

British Columbia, Vol. 1: Vancouver Island, p. 76

DATE CODED: 1985/07/24
DATE REVISED: 1990/12/05

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092C 072**

NATIONAL MINERAL INVENTORY:

NAME(S): **SARITA RIVER LIMESTONE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 53 29 N
LONGITUDE: 124 59 13 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of surface trace of limestone (Geological Survey of Canada Open File 1272).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5417285
EASTING: 354358

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 2500 x 750 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Volcanic Rock

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: Developed on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

The Sarita River limestone showing outcrops on the river, 2.5 kilometres east of Numukamis Bay on the west side of Barclay Sound.
Limestone of the Upper Triassic Quatsino Formation (Vancouver Group), up to 750 metres wide, extends westward for 2.5 kilometres along the Sarita River. The deposit is bounded to the east, west and south by mafic volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group). The limestone is in fault contact with Lower Jurassic Bonanza Group volcanics to the north.

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
GSC SUM RPT 1902, pp. 61,63
CANMET RPT 811, p. 141
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1989/06/30 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1990/02/21 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 073** NATIONAL MINERAL INVENTORY: 092C8 Cu1

NAME(S): **SUNRO**, SUNRO MINE, SUNLOCH AND GABBRO,
SUNLOCH 6 (L.797), SUNLOCH, GABBRO,
RIVER, CENTRE, CAVE,
VULCAN, JORDAN RIVER

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C08E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 26 54 N NORTHING: 5366648
LONGITUDE: 124 01 59 W EASTING: 423609
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of the River zone, near the centre of the Sunloch 6 claim (Lot 797) (NTS Map 092C/8).

COMMODITIES: Copper Gold Silver Molybdenum Nickel
Cobalt

MINERALS

SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite Molybdenite Pentlandite
Copper Cubanite
COMMENTS: Pentlandite occurs locally in pyrrhotite.
ASSOCIATED: Hornblende Quartz
ALTERATION: Hornblende Scapolite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic Replacement
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu
SHAPE: Irregular
MODIFIER: Fractured
DIMENSION: 340 x 335 x 30 Metres STRIKE/DIP: 150/75S TREND/PLUNGE:
COMMENTS: River zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics
Eocene			Sooke Gabbro

LITHOLOGY: Basalt
Hornblende Gabbro
Hornblendite
Hornfels

HOSTROCK COMMENTS: The ore zones are mainly in the Metchosin basalts near contacts with gabbroic intrusions. Minor ore zones also occur in the gabbro.

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Crescent
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: SUNRO REPORT ON: Y

CATEGORY: Indicated YEAR: 1973
QUANTITY: 423782 Tonnes

COMMODITY	GRADE	
Copper	1.3300	Per cent

COMMENTS: Probable.
REFERENCE: Northern Miner - December 27, 1973.

ORE ZONE: SUNRO REPORT ON: Y

CATEGORY: Measured YEAR: 1973
QUANTITY: 1030465 Tonnes

COMMODITY	GRADE	
Copper	1.4700	Per cent

COMMENTS: Proven.
REFERENCE: Northern Miner - December 27, 1973.

CAPSULE GEOLOGY

The Metchosin Volcanics form a belt 8 to 16 kilometres wide which extends west-northwest across the southern end of Vancouver Island. The volcanics consist principally of basalt and some diabase. Near the Sunro mine they include porphyritic and non-porphyritic, amygdaloidal varieties; beyond the mine area, well-developed pillow lavas, flow breccias and fragmental types are found. They strike 120 to 130 degrees and dip 15 to 30 degrees northward, although in places they may be vertical or dip steeply southward. Fossils found in interbedded basaltic sandstone indicate an Eocene age (Geological Survey of Canada Memoir 96, page 290).

The mineralization of the Sunro mine appears to be genetically related to the emplacement and crystallization of the Eocene Sooke Gabbro within the Metchosin Volcanics, the orebodies occurring near contacts. The gabbro, possibly comagmatic and coeval with the volcanics, occurs as several stock-like masses of augite gabbro that trend northwesterly across the southern tip of the island. However, these bodies in the Sunro vicinity are elongate, striking with the enclosing volcanics, and may be sills. Three northwesterly trending bands of gabbro occur on the Sunro property, ranging in width from 150 to 900 metres, separated by about 1 kilometre of basalt, and known to extend along strike for about 6.5 kilometres. The centre band, from 600 to 900 metres wide, is the widest of the bands and the most important, hosting copper mineralization in shears in basalt along both contacts. The rock is a dark greenish grey coarse-grained hornblende gabbro with conspicuous plagioclase crystals. Some relicts of primary augite remain as cores surrounded by the secondary hornblende. Some white patches occur in the gabbro where plagioclase has been hydrothermally altered to scapolite. The basalt in the contact zone has a definite hornfels texture.

The oldest rocks in the area form the Jurassic to Cretaceous Leech River Complex and consist of a series of argillites and sandstone that have been metamorphosed into slaty and quartzose schists. The complex is in contact with the northern boundary of the Metchosin Volcanics along the west striking Leech River fault. Marine sandstones and conglomerates of the Oligocene Sooke Formation overlie the volcanics and gabbro along the southern boundary of their exposure near the ocean. Many diabase dykes are exposed, cutting the gabbro in the Jordon River canyon. They range in width from just a few millimetres up to about 3 metres, but widths of about 1 metre are typical.

The basalt surrounding the ore-bearing shear zones has been extensively replaced by hornblende, and in the shear zones this hornblendized basalt has been mineralized with chalcopyrite, pyrrhotite, pyrite and small amounts of molybdenite. Microscopic lathes of cubanite have been noted in some specimens of chalcopyrite, and minute blebs and wisps of pentlandite have been seen in pyrrhotite. Much of the pyrite has a striking colloform texture. A small amount of native copper, as disseminated grains and as a leaf-like coating on short slips, has been seen in core from holes drilled beyond the mineralized zones. Scattered grains of magnetite are common, not only in the ore zones but also beyond them.

The ore sulphides form a pattern of gash-like veinlets and irregular lenticular masses in the hornblende rock of the shear zones. Some chalcopyrite veinlets also contain quartz. In addition to its occurrence as veinlets and lenses, a small amount of chalcopyrite occurs as disseminated grains.

As many as 16 mineralized zones have been located on the property since it was discovered in 1915. The zones typically occur in basalt but at least three minor zones are located in areas mapped as gabbro. Three zones along the northeast contact of the gabbro body, the River, Cave and Centre, have proved to be the most promising. The River zone ranges in width from 30 centimetres to about 30 metres and is traceable along strike for about 335 metres, and to a depth of 340 metres. The zone is roughly parallel to the trend of contact, striking 150 degrees and appearing to dip from 70 to 80 degrees southwest. The Cave zone, about 200 metres southwest from the River zone, trends at 140 degrees and contains widely spaced stringers and lenses of chalcopyrite over a width of about 40 metres. The zone has a proven length of 180 metres (possibly as much as 460 metres) and a vertical extent of 150 metres. The Centre zone, located about 90 metres southeast from the River zone, strikes 110 degrees and dips vertically. It has been traced for a length of 200 metres and to a known depth of 97 metres. Where exposed underground, the zone comprises a 36 metre width of widely spaced stringers of chalcopyrite.

Production commenced in 1962 and proceeded intermittently for 8 years until 1974, most or all of the production apparently coming from the River and Cave zones.

Measured (proven) reserves are 1,030,465 tonnes grading 1.47 per

CAPSULE GEOLOGY

cent copper; and indicated (probable) reserves are 423,782 tonnes grading 1.33 per cent copper (Northern Miner - December 27, 1973).
A property visit in May 2000 and sampling by J. Houle showed elevated values in nickel and cobalt.

BIBLIOGRAPHY

EM EXPL 2000-25-32
EMPR AR 1916-366; 1917-265; 1918-300; 1919-235; 1920-220; 1921-232; 1922-254; 1923-271; 1924-255; 1925-303,450; 1928-362; 1929--368; 1931-162; 1949-222; *1950-180,193; 1955-79; 1956-124; 1957-72; 1958-60; 1959-141; 1960-116; 1961-113; *1962-A47,A51,127; 1963-A47,A51,124; 1964-169,294; 1965-239; 1966-A48,A52,79; 1967-A50,A55,78; 1968-A50,A55,106; 1972-A51,A55; 1973-A51,A56; 1974-A117,A122; 1975-A96; 1978-128
EMPR BC METAL MM00057
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR GEM 1969-224; 1970-292; 1971-225; 1972-240; 1973-225; 1974-164
EMPR INDEX 4-125
EMPR MAP 65 (1989)
EMPR OF RGS 24; 1992-1
EMPR PF (Various mine plans and map - 1920's, 1960's and 1970's; Starr, C.C. (1926): Report on the Examination of the Gabbro Mine; History of the Sunloch Mine 1915 to 1965; Young, J.W. (1951): Sunloch Copper Mine; Correspondence between Ken Rose and Neil McKechnie, 1962; Report on the Jordan River Mines by G.H. Kerr, 1974; Richardson, A.J. (1977): Report on the Closing of the Jordan River Mine; Photographs of the mine; Houle, Jacques (2000): Property Visit notes and sample results)
EMR MIN BULL MR 223 (1989) B.C. 89
EMR MIN RES BR Sunro (Sunloch and Gabbro)
EMR MRD RESOURCE FILE MC-167-C3-2-25
EMR MP CORPFILE (Cowichan Copper Co. Ltd.; Sunloch Mines Ltd.; Gabbro Copper Mines Ltd.; Hedley Mascot Gold Mines Ltd.; Giant Mascot Mine Ltd.; Sunro Mines Ltd.; Sheep Creek Mines Ltd.)
EMR MP RESFILE (Sunro Mine)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 77-1A; 79-30
GSC SUM RPT 1919, Part B, pp. 20-30
CIM *Vol.58, No.635, pp. 297-303
CMJ 1930 to 1962, 1972-73
GCNL #161, 1971; June 5,1974
N MINER July, 1971; *Dec.27, 1973; July 24, 1975
WWW http://www.commerceresources.com
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 72-73
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/11/26 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 074**

NATIONAL MINERAL INVENTORY:

NAME(S): **COW**, POGO, COW 12-16

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E 092B13W
BC MAP:
LATITUDE: 48 54 08 N
LONGITUDE: 124 00 41 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Pogo showing (Open File 1987-2).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5417079
EASTING: 425880

COMMODITIES: Copper, Lead, Zinc, Gold, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Galena, Sphalerite, Pyrite, Pyrrhotite
ASSOCIATED: Chalcedony, Quartz, Carbonate
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear, Vein, Disseminated
CLASSIFICATION: Hydrothermal, Igneous-contact
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
DIMENSION: 20 Metres
STRIKE/DIP: 097/85S
TREND/PLUNGE:
COMMENTS: Main quartz-carbonate vein, 5 to 20 centimetres wide, has been expose by trenching for 20 metres.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Upper Devonian	Sicker	McLaughlin Ridge	
Triassic			Unnamed/Unknown Informal
Jurassic			Island Plutonic Suite

LITHOLOGY: Tuff
Volcaniclastic Rock
Cherty Argillite
Cherty Tuff
Gabbroic Dike
Argillite
Volcanic Rock
Quartz Diorite
Granodiorite

HOSTROCK COMMENTS: Triassic gabbro is informally called the Mount Hall gabbro.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1986
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.0900	Per cent
Lead	0.4800	Per cent
Zinc	0.4200	Per cent

COMMENTS: Highest assays from different 1.5 metre samples of the Pogo showing. Zinc sample was over 3 metres.
REFERENCE: Assessment Report 14462.

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	13.0300	Grams per tonne

COMMENTS: Main vein on Cow 14 claim (sample 14204) over 5 centimetres.
REFERENCE: Assessment Report 16097.

CAPSULE GEOLOGY

The Cow showing is located 27 kilometres northwest of Duncan. Several showings occur in the area; the Pogo showing was the initial discovery.

The property is underlain by Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group) cherty argillite and by Upper Devonian McLauglin Ridge Formation (Sicker Group) volcaniclastics. These rocks are intruded by granodiorite and quartz diorite of the Early to Middle Jurassic Island Plutonic Suite and Triassic gabbro (informally called the Mount Hall gabbro). Sulphide mineralization occurs in rusty shear zones as disseminations, and/or stringers along bedding, cleavage or crosscutting fractures. Mineralization is hosted in laminated sediments and volcaniclastics spatially associated with the gabbroic dykes. Pyrite and minor chalcopyrite are finely disseminated throughout the rocks.

The Pogo showing, near the centre of the Cow property on the Cow 15 claim, consists of pyrrhotite, pyrite (up to 5 per cent), chalcopyrite (less than 1 per cent), sphalerite and galena. Spahlerite and galena have not been confirmed for the Pogo showing and if present would be rare. Mineralization occurs disseminated, along fracture planes and in quartz-carbonate stringers (up to 2 centimetres wide) in a fractured-medium grained gabbroic dyke which intrudes black cherty argillites of the Fourth Lake Formation (previously known as the "Sediment-Sill Unit" of the Paleozoic Sicker Group). Mineralization occurs at a synclinal fold axis where the sill is "pinched" as it crosses from the west limb to the east limb. The best assays are 0.42 per cent zinc over 3 metres, 0.48 per cent lead, 0.09 per cent copper and trace silver from different 1.5 metre samples (Assessment Report 14462).

The area of the main quartz carbonate vein, on the Cow 14 claim, is underlain by pyroclastic and sedimentary rocks of the McLaughlin Ridge Formation adjacent to a gabbro dyke (130 metres to the east). The rocks trend west-northwest, are tightly folded and contain 3 to 5 per cent pyrrhotite. The vein occurs in a east trending shear zone, several metres wide, in silty, sandy and lapilli tuffs. The vein, exposed along strike for 20 metres, strikes 94 to 100 degrees and dips 85 degrees south. The vein, 5 to 20 centimetres wide, is well-mineralized with pyrite (2 to 10 per cent) and lesser amounts of pyrrhotite, galena and sphalerite (up to 3 per cent) and chalcopyrite. The highest assay from a sample (#14024) of vein material was 13.03 grams per tonne gold over 5 centimetres (Assessment Report 16097).

On the Cow 12 claim, several mineralized shears hosted in northwest trending fine-grained sediments of the Fourth Lake Formation are exposed along a road. These define a 100 metre wide zone of sporadic mineralization. The shears are up to 0.20 metres wide, gougy, limonitic and contain up to 5 per cent each of pyrite and chalcopyrite. A few pyrite and chalcopyrite bearing shear zones adjacent to gabbroic rocks carry weakly elevated gold values and up to 28 grams per tonne silver (Assessment Report 16097).

BIBLIOGRAPHY

EMPR AR 1964-171
EMPR ASS RPT 566, *14462, *16097
EMPR BULL 37
EMPR EXPL 1986-C138,C139,C147
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; 1988-8; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; Canadian Pacific, Chemainus River Copper Prospect Maps and sketches, E.N. 122, 1964)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
GCNL #56,#67, 1986

BIBLIOGRAPHY

WIN Jan. 1987
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 075**

NATIONAL MINERAL INVENTORY:

NAME(S): **AB**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W
BC MAP:
LATITUDE: 48 51 29 N
LONGITUDE: 124 17 35 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location uncertain (Geology, Exploration and Mining 1969 page 222 and Open File 1987-2).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5412483
EASTING: 405155

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Chalcocite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Jurassic	Bonanza	Undefined Formation	Island Plutonic Suite

LITHOLOGY: Volcanic Rock
Intrusive Rock

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Located in the Cowichan uplift.

CAPSULE GEOLOGY

The AB showing is located on the south side of Cowichan Lake, 1 mile south-southeast of the Island No.6 Highway.

The area is underlain by volcanic rocks of the Lower Jurassic Bonanaza Group which have been intruded by Early to Middle Jurassic Island Plutonic Suite granitic rocks.

Chalcopyrite, pyrite and chalcocite are associated with the volcanic rocks. No other information is available.

BIBLIOGRAPHY

EMPR BULL 37
EMPR FIELDWORK 1977, p. 23; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR GEM *1969-222
EMPR OF 1987-2; RGS 24, 1990
EMPR MP MAP 1992-2
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24
DATE REVISED: 1991/01/10
CODED BY: GSB
REVISED BY: DEJ
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092C 076**

NATIONAL MINERAL INVENTORY:

NAME(S): **CANDY**, STRIKER, MEADE CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 53 27 N
LONGITUDE: 124 05 45 W
ELEVATION: 650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 8 kilometres northwest of Lake Cowichan (Open File 1987-2).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5415899
EASTING: 419674

COMMODITIES: Copper, Gold, Silver, Rhodonite, Gemstones

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrrhotite, Pyrite, Rhodonite, Rhodochrosite, Spessartine, Jasper
COMMENTS: Sulphides in veins and shear zones; manganese minerals in replacement pods.
ASSOCIATED: Quartz
MINERALIZATION AGE: Lower Mississippian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodonts

DEPOSIT

CHARACTER: Vein, Podiform, Shear, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic, Metamorphic, Industrial Min.
TYPE: J03 Mn veins and replacements; Q02 Rhodonite
SHAPE: Irregular
MODIFIER: Faulted, Folded
COMMENTS: Replacement pods are stratiform in Lower Mississisippian Shaw Creek Formation (Personal Communication - Nick Massey, 1991).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
DATING METHOD:	Fossil		
MATERIAL DATED:	Conodonts		
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt, Andesite, Tuff, Cherty Tuff, Diorite, Granodiorite, Argillite

HOSTROCK COMMENTS: Sulphide mineralization primarily hosted in volcanic and igneous rocks and manganese minerals are hosted in cherty tuffs and sediments.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	5.5000	Grams per tonne
Gold	0.5500	Grams per tonne
Copper	0.5000	Per cent

COMMENTS: Sample from creek containing rhodonite (#85SBT-23).
REFERENCE: Assessment Report 15117.

INVENTORY

ORE ZONE: SHOWING REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	3.8000	Grams per tonne
Gold	0.9120	Grams per tonne
Copper	0.0604	Per cent

COMMENTS: Sample from diorite body containing fracture pyrite and quartz veins with disseminated pyrite.
REFERENCE: Assessment Report 15117.

CAPSULE GEOLOGY

The Candy showings are located about 8 kilometres northeast of the community of Lake Cowichan.

The area is underlain by Devonian Nitinat Formation Formation (Sicker Group) volcanics and Mississippian to Pennsylvannian Fourth Lake Formation (Buttle Lake Group) sediments intruded by sills, dykes and granitic rocks probably of the Jurassic Island Plutonic Suite. The area is highly faulted and major folds are present. The Paleozoic Sicker Group rocks have undergone greenschist metamorphism.

The showings are underlain by massive basaltic flows, vesicular flows, tuffs, andesitic tuffs, cherty tuffs and argillite. Granodiorite and diorite plugs are exposed on the property.

Mineralization occurs in intrusion-related veins and shear zones, replacement pods of rhodonite, rhodochrosite and jasper, and syndepositional pyrite in argillites.

The original Candy showing consisted of chalcopyrite and pyrrhotite in quartz veins in fractured and sheared andesites and basalts. The location of this showing is uncertain.

Samples of a diorite body containing fracture pyrite and quartz veins with disseminated pyrite assayed 0.32 to 0.912 grams per tonne gold, 3.8 grams per tonne silver and 0.0319 to 0.0604 per cent copper (Assessment Report 15117). A sample from a shear zone (85SNT-107) assayed 0.510 grams per tonne gold (Assessment Report 15117).

Sample #85SBT-23 from a south flowing creek contains a 3 millimetre band of rhodonite which assayed 0.5 per cent copper, 5.5 grams per tonne silver and 0.55 grams per tonne gold (Assessment Report 15117). A second rhodonite occurrence was noted along the eastern road and was banded with spessartine and jasper (Assessment Report 15117). The manganese minerals are hosted in the Lower Mississippian Shaw Creek Member (dated by conodonts, Personal Communication - Nick Massey, 1991).

BIBLIOGRAPHY

EMPR ASS RPT 13962, 14302, *15117, 16210
EMPR BULL 37
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR GEM *1969-223
EMPR MP MAP 1992-2
EMPR OF *1987-2; RGS 24,1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; In Commodity File - Sargent, H. (1956): Manganese occurrences in B.C. and Leaming, S.F. (1966): Rhodonite in B.C. in The Canadian Rockhound and Danner, W. R. (1976): Gem Materials of B.C.)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 72-53; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Cowley, P. (1979): Correlation of Rhodonite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia
Sargent, H. (1939): Manganese Deposits of Cowichan Lake Munition Resources Commission of Canada, 1920, p.92

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 077**

NATIONAL MINERAL INVENTORY:

NAME(S): **EBB 1-12**, RW, DC

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C10W
BC MAP:
LATITUDE: 48 41 57 N
LONGITUDE: 124 45 26 W
ELEVATION: 60 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pits 1 to 5 (Geology, Exploration and Mining 1972, Figures 23,24).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5395504
EASTING: 370703

COMMODITIES: Copper, Zinc, Gold, Silver

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Sphalerite, Chalcopyrite
ALTERATION: Garnet, Epidote, Diopside
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn
SHAPE: Irregular
MODIFIER: Faulted

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Quartz Diorite
Quartz Monzonite
Garnetite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: PIT

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1972

COMMODITY	GRADE	
Silver	13.7100	Grams per tonne
Copper	1.9200	Per cent

REFERENCE: Geology and Exloration in B.C. 1972, page 258.

CAPSULE GEOLOGY

Quartz diorite of the Mesozoic and/or Paleozoic Westcoast Complex is intruded by apophyses of quartz monzonite, possibly of the Early to Middle Jurassic Island Plutonic Suite. The diorite outcrops are characterized by an abundance of metavolcanic and metasedimentary xenoliths. Discrete blocks of garnetite and epidote-garnet-diopside skarn occur within the intrusive rock and form the knob on which the mineralization occurs.

The Ebb 1-12 showing consists of a 1 to 2 metre wide sheeted zone containing massive pyrite, pyrrhotite and lesser amounts of sphalerite and chalcopyrite. It strikes northwest and dips 50 degrees southwest. One pit sample assayed 0.69 grams per tonne gold, 0.01 per cent copper and 0.06 per cent zinc across 2 metres; another pit sample, also taken across 2 metres assayed 1.92 per cent copper, and 13.71 grams per tonne silver (Geology and Exploration in British Columbia 1972, page 258).

BIBLIOGRAPHY

EMPR ASS RPT *4690
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222; 1971-226; *1972-256
EMPR OF RGS 24
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC MAP 1386A

BIBLIOGRAPHY

GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 078**

NATIONAL MINERAL INVENTORY:

NAME(S): **T.B.**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 51 33 N
LONGITUDE: 124 38 05 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drillhole collar (TB-2) just west of a small tributary 400 metres south of the Nitinat River, 39 kilometres east-northeast of Bamfield (Property File - Freberg, 1971).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5413089
EASTING: 380098

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Pyrite Magnetite
ALTERATION: Silica Sericite Pyrite
ALTERATION TYPE: Silicific'n Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Andesite
Tuff Breccia
Flow
Quartz Diorite Dike
Diabase Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The T.B. occurrence area is mainly underlain by Lower Jurassic Bonanza Group basaltic to andesitic pyroclastics and flows with some interbedded volcano-sedimentary rocks. A small wedge of Upper Triassic Karmutsen Formation (Vancouver Group) basalt occurs to the north and appears to be in fault contact with the Bonanza Group.

The pyroclastic rocks are multicoloured tuff breccias with interbedded amygdaloidal and massive flows. There are some interbedded siliceous rocks of rhyolitic composition. The volcano-sedimentary rocks generally dip moderately south to east and consist of thin-bedded tuffaceous shale, siltstone, greywacke and minor amounts of bedded siliceous sedimentary rocks. The Bonanza sequence is intruded by dykes and small stocks ranging in composition from diabase to quartz diorite. Some recrystallization, chloritization and epidotization has taken place near these intrusions.

Elongate alteration zones related to shears and hosted in the volcanic rocks contain quartz, sericite and pyrite. These zones commonly contain relatively unaltered dykes.

The siliceous, sericitic and pyritic alteration zones are not consistently well mineralized. Some contain pods and stringers of chalcopyrite and lesser amounts of bornite. Minor magnetite is evident in drill core.

BIBLIOGRAPHY

EMPR ASS RPT 2549
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR GEM 1970-290; *1971-228-230
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat

BIBLIOGRAPHY

Lake Area, Noranda Mines Ltd., date unknown; Freberg, R.A. (1971): Report on Diamond Drilling)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/15 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 079**

NATIONAL MINERAL INVENTORY:

NAME(S): **NAN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 44 17 N
LONGITUDE: 124 15 17 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: The Harris Creek property (including Nan claims) was a 9 square kilometre block of land in the E & N Railway Grant which covered the upper reaches of Harris Creek (Philp, 1969).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5399097
EASTING: 407747

COMMODITIES: Iron, Copper, Magnetite, Zinc

MINERALS

SIGNIFICANT: Magnetite, Chalcopyrite, Sphalerite
ALTERATION: Garnet, Epidote, Diopside, Calcite, Hematite
ALTERATION TYPE: Skarn, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Skarn
SHAPE: Irregular
MODIFIER: Faulted

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Andesite
Limestone
Skarn

HOSTROCK COMMENTS: The andesite is presumed to belong to the Bonanza Group but Karmutsen Formation volcanics also occur in the vicinity.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1969
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	1.0000	Per cent
Iron	21.5000	Per cent

REFERENCE: Philp (1969): Report on the Harris Creek Property (Property File).

CAPSULE GEOLOGY

The area is underlain by a series of basaltic flows and related pyroclastics of the Karmutsen Formation and is overlain by, or interbedded with, limestone of the Quatsino Formation; both formations belong to the Upper Triassic Vancouver Group. Andesite to rhyolite tuffs and breccias, with minor intercalated greywacke and argillite, of the Lower Jurassic Bonanza Group overlie the Upper Triassic rocks. Intruding this stratigraphic assemblage is the Early to Middle Jurassic Island Plutonic Suite (formerly the Island Intrusions) of monzonite to diorite composition.

Outcrops on the Nan property consist of a thick sequence of volcanic rocks, generally andesite in composition, interbedded with limestone. Magnetite-chalcopyrite mineralization occurs at several points where skarn has developed along the lower limestone-volcanic contact. In all instances the skarn has developed where east or northeast trending faults cut the contact, and in places the mineralization extends for a limited distance along the faults. The skarn consist of garnet, epidote, diopside and calcite. Magnetite is the principal economic mineral present and contains erratic amounts

CAPSULE GEOLOGY

of chalcopyrite. Minor amounts of sphalerite and hematite have also been noted.

Mineralization occurs in three separate areas. At the first, along road H.C. 1821 and immediately to the south, magnetite and erratic chalcopyrite mineralization are exposed at 4 points within an area measuring 60 by 30 metres. A selected sample from here assayed 1.0 per cent copper and 21.5 per cent iron (Philp, 1969). Maximum visible exposed thickness of the magnetite is about 1.2 metres.

The second region where mineralization occurs is 400 metres southwest of the first. Here, a series of epidote-magnetite skarn boulders occur along a logging road and appear to be near their source.

The third region lies approximately 600 metres west of road H.C. 1820. Garnet skarn is developed along the hanging wall and footwall of a northeast trending fault which is exposed in a near vertical face in a southeast flowing creek. A series of magnetite lenses, containing minor chalcopyrite, outcrop intermittently and are indicated by magnetics for a distance of almost 100 metres, following a limestone-volcanic contact. Minor sphalerite was noted in the limestone along the hanging wall of the fault.

BIBLIOGRAPHY

EMPR ASS RPT 3849, 468, 4792, 8679
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222
EMPR OF RGS 24
EMPR PF (Sketch Map (in 092C 100 file); *Philp, R.H.D (1969): Report on the Harris Creek Property for Grandeur Mines Ltd.; Prospectus, New Cosmic Industries Ltd., 1972)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/03 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 080**

NATIONAL MINERAL INVENTORY:

NAME(S): **JASPER 1**, MAIN, TAM 24, JASPER 1-4, JAS, EASY, PAN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 51 15 N
LONGITUDE: 124 34 54 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Main/discovery showing (Assessment Report 17105).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5412450
EASTING: 383977

COMMODITIES: Copper, Silver, Lead, Zinc

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Sphalerite, Galena
ASSOCIATED: Quartz
ALTERATION: Silica, Chlorite, Epidote, Hematite, Kaolin
ALTERATION TYPE: Silicific'n, Chloritic, Epidote, Oxidation, Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Shear, Disseminated, Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins; G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Regular
MODIFIER: Fractured, Sheared
DIMENSION: 30 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Massive sulphides in crude bands are exposed over 30 metres at the main showing.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Mafic Volcanic
Rhyolite
Intermediate Volcanic
Felsic Volcanic
Volcaniclastic
Hematite Breccia
Chlorite Breccia
Tuffaceous Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: MAIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1987

COMMODITY	GRADE	
Silver	6.0000	Grams per tonne
Copper	1.6500	Per cent
Zinc	3.5200	Per cent

COMMENTS: 1.34 metre intersection.
REFERENCE: Assessment Report 17105.

CAPSULE GEOLOGY

The Jasper 1 showings are located between Caycuse Creek and Jasper Creek 7 kilometres northeast of the north end of Nitinat Lake. The showings were previously staked as the TAM claims between 1971 and 1975. The TAM 16 (092C 081) showing occurs about 900 metres south of the Main showing.

The area is underlain by mafic to felsic volcanics, breccia, tuff and siltstone of the Lower Jurassic Bonanaza Group. The rocks have undergone faulting and shearing. The Main showing is hosted in chloritized mafic volcanics near the contact with a rhyolite flow complex.

CAPSULE GEOLOGY

The Jasper 1 showing comprises 3 occurrences. Three styles of sulphide mineralization are present: 1) massive 2) fracture-filling and 3) disseminated.

The Main showing, exposed in a road cut over 30 metres near the centre of the claim, comprises several small fracture controlled wedges of massive sulphides separated by weakly mineralized silicified and kaolin altered mafic volcanic rock. Individual zones are up to 2 metres long and 50 centimetres wide comprising 80 to 90 per cent pyrite, 5 to 20 per cent sphalerite, 1 to 5 per cent chalcopyrite and trace galena. The Main showing is located at the intersection of two fracture systems which display intense fracturing, alteration, pyritization and quartz-stockwork development. Sulphides appear to have filled narrow, irregular fractures that were subsequently faulted and commonly display a crude banding which is locally brecciated and cut by a quartz stockwork. Epidotization and hematization of the mafic and, to a lesser extent, the felsic volcanic rocks is common. Chloritization is rare except in the chlorite breccia unit. The best drill intersection was across 1.34 metres grading 1.65 per cent copper, 3.52 per cent zinc and 6 grams per tonne silver (Assessment Report 17105).

In the area, medium grained pyrite, sphalerite and chalcopyrite occur within fractures up to 2 centimetres wide and 10 centimetres long. A grab sample from one of these assayed 0.61 per cent copper and 1.3 per cent zinc (Assesment Report 17105). Disseminated sulphides occur as pyrite in fracture zones and chalcopyrite and sphalerite related to massive or fracture-filling sulphides.

South of the Main showing, about 500 metres, pyrite, sphalerite and chalcopyrite occur in fractured intermediate volcanic rocks. To the north, 175 metres, pyrite and chalcopyrite occur in similar rocks. A quartz breccia gold vein is reported to occur about 300 metres southwest of the Main showing. A rock chip yielded 19 grams per tonne gold from this vein (Assessment Report 24716).

All occurrences located on the property, except one, are localized within the elongate fracture zones.

The Jasper property consists of three MINFILE occurrences known from north to south as the Jasper 1 (092C 080), Tam 16 (092C 081) and the Pan (Easy)(092C 088). The Tam and Easy properties were previously staked by Hudson Bay Mining and Smelting who conducted geological mapping, soil and rock geochemistry and an induced polarization (IP) geophysical survey in 1970 and 1971. Also in 1971 , Marshall Creek Copper conducted and extensive soil sampling survey on the Pan (Easy) and Tam properties. In 1980 and 1981, Malibar Mines conducted soil sampling on the Jasper property. In 1984, a prospecting program was carried out by Ron Bilquest. Falconbridge followed in 1985 by conducting a geological, soil and VLF-electromagnetic program. Asamara then conducted a brief geology, soil and electromagnetics survey in 1987. The property lapsed and was relocated by Arne Birkeland in 1994. Geological mapping and sampling consisting of 39 rocks, 40 silts and 133 soils was carried out. A geological and geochemical progam was completed in 1995. The property was optioned to Consolidated Taywin Resources Inc. (later renamed Inspiration Mining Corporation) in 1995 and from December 1995 to June 1996, a work program was carried out consisting of 84 soil samples, a 1.2 kilometre IP survey, a 3 kilometre VLF and Horizontal Loop survey and a 2.1 kilometre ground magnetics survey.

Inspiration Mining plans drilling in 1999.

BIBLIOGRAPHY

EM EXPL 2001-23-31
EMPR ASS RPT *3025, 3649, 5857, 10388, *12260, 13916, 16700, *17105, 24087, 24232, *24716
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR GEM 1971-227; 1972-260; 1976-E109
EMPR OF 1988-24; RGS 24, 1990; 1999-2
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown; Diamond Drill Plan TAM-EASY Claims, Noranda Exploration, 1971; Birkeland, A.O. (2001): Property Exam Jasper Property, 34 pages)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
WWW http://www.infomine.com/
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

BIBLIOGRAPHY

Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/20 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 081**

NATIONAL MINERAL INVENTORY:

NAME(S): **TAM 16**, JASPER 1, JASPER 1-4, JAS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 50 49 N
LONGITUDE: 124 35 06 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing located about 900 metres south of the Jasper 1 main showing (092C 080) (Assessment Report 17105).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5411653
EASTING: 383716

COMMODITIES: Copper Zinc

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Sphalerite
ASSOCIATED: Quartz
ALTERATION: Silica Chlorite Epidote Hematite Kaolin
ALTERATION TYPE: Silicific'n Chloritic Epidote Oxidation Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Massive Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Intermediate Volcanic
Mafic Volcanic
Felsic Volcanic
Volcaniclastic
Hematite Breccia
Chlorite Breccia
Tuffaceous Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The TAM 16 showing is located on the Jasper 1 claim, about 900 metres south of the Jasper 1 (Main) showing (092C 080) between Caycuse Creek and Jasper Creek 7 kilometres northeast of the north end of Nitinat Lake. The showing was staked on the TAM claims between 1971 and 1975.

The area is underlain by mafic to felsic volcanics, breccia, tuff and siltstone of the Lower Jurassic Bonanaza Group. The rocks are fractured and have undergone faulting and shearing.

Sulphide mineralization on the Jasper 1 claim occurs in three styles: 1) massive 2) fracture-filling and 3) disseminated.

The showing comprises pyrite, chalcopyrite and sphalerite hosted in fractured, silicified and kaolin altered intermediate volcanic rocks. Epidotization and hematization of mafic and, to a lesser extent, felsic volcanic rocks is common. Chloritization is rare except in the chlorite breccia unit.

In the area, medium grained pyrite, sphalerite and chalcopyrite occur within fractures. Disseminated sulphides occur as pyrite in fracture zones and chalcopyrite and sphalerite related to massive or fracture-filling sulphides. Massive sulphides occur at the Main showing (092C 080). All occurrences located on the property, except one, are localized within elongate fracture zones.

See the Jasper 1 MINFILE description for further details.

BIBLIOGRAPHY

EMPR ASS RPT *3025, 3649, 5857, 10388, *12260, 13916, 16700, *17105, 24087, 24232, *24716
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR GEM 1971-227; 1972-260; 1976-E109

BIBLIOGRAPHY

EMPR OF 1988-24; RGS 24, 1990; 1999-2
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown; Diamond Drill Plan TAM-EASY Claims, Noranda Exploration, 1971; Birkeland, A.O. (2001): Property Exam Jasper Property, 34 pages (see 092C 080))
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1998/12/21 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 082**

NATIONAL MINERAL INVENTORY:

NAME(S): **DA**, PC

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 51 15 N
LONGITUDE: 125 02 44 W
ELEVATION: 580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5413262
EASTING: 349951

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Diorite
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Da occurrence covers a quartz diorite plug within diorite, both of the Early to Middle Jurassic Island Plutonic Suite. Upper Triassic intermediate volcanics of the Karmutsen Formation (Vancouver Group) outcrop to the northeast and east.

The quartz diorite is strongly pyritized. Minor amounts of molybdenite and chalcopyrite occur in quartz-filled fractures in the quartz diorite and diorite.

BIBLIOGRAPHY

EMPR ASS RPT 600, 3794, 6799, *8181
EMPR BULL 9
EMPR EXPL 1978-E125
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1971-226; 1972-258
EMPR OF 1988-24; RGS 24, 1990
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/17 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 083**

NATIONAL MINERAL INVENTORY:

NAME(S): **WET**, SR

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 50 11 N
LONGITUDE: 124 57 38 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Area of drilling of stockwork zone, 2.5 kilometres east of Rousseau Lake, 750 metres southeast of South Sarita River and 14 kilometres east of Bamfield (Assessment Report 7927).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5411122
EASTING: 356135

COMMODITIES: Molybdenum

MINERALS

SIGNIFICANT: Molybdenite
ASSOCIATED: Quartz Pyrite
ALTERATION: Silica Biotite Chlorite Actinolite Calcite Epidote
ALTERATION TYPE: Silicific'n Biotite Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Felsite
Siliceous Felsic Volcanic Rock
Quartz Monzonite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1980

COMMODITY	GRADE	
Molybdenum	0.1560	Per cent

COMMENTS: Across 3 metres.
REFERENCE: Assessment Report 7927.

CAPSULE GEOLOGY

The Wet occurrence is underlain by intermediate to felsic volcanics of the Lower Jurassic Bonanza Group which are intruded by a complex of porphyritic quartz monzonite, diorite, quartz diorite and feldspar porphyry correlated with the Early to Middle Jurassic Island Plutonic Suite.

Diamond drilling intersected a complex stratified sequence of hydrothermally altered andesites, dacites, rhyolites and silicified equivalents of felsic rocks (felsites). The volcanic units are intruded by dykes and sills of quartz feldspar porphyry, diabase, diorite and andesite. The volcanics lie above propylitically altered medium-grained intrusives varying in composition from quartz monzonite to granodiorite. The contact between the volcanics and intrusives is marked by a zone of cataclastic deformation which encompasses both rock types and includes major breccia, shear and fault structures.

Molybdenite occurs primarily in silicified and biotitized felsic volcanic units. Dark green andesitic sections which are altered to chlorite-actinolite, calcite and epidote, contain quartz-pyrite veins and fine-grained disseminated pyrite but rarely hosts quartz-

CAPSULE GEOLOGY

molybdenite vein stockworks. These stockworks are more common in the biotite hornfelsed felsites where fine molybdenite flakes occur on the margins of fine quartz veins and as disseminations through silica-flooded zones.

Several generations of veining and fracturing in the pervasively silicified felsites are observed from the crosscutting relationships within the quartz-pyrite-molybdenite stockwork zone.

In the underlying intrusive rocks, molybdenite occurs in a few isolated quartz-pyrite veins and as a "paint" on a number of tight shear faces.

Assays from drill core are generally low (0.0x per cent), but a high of 0.156 per cent molybdenum across 3 metres was recorded (Assessment Report 7927).

BIBLIOGRAPHY

EMPR AR 1966-77; 1968-104
EMPR ASS RPT 5772, 6129, *7927
EMPR BULL 9
EMPR EXPL 1975-E93; 1976-E108,E109
EMPR FIELDWORK 1977, pp. 23-25; 1989, pp. 503-510
EMPR GEOLOGY 1976, pp. 41-42
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown; Claim map, topographic map and location map of percussin drill holes)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/17 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 084**

NATIONAL MINERAL INVENTORY:

NAME(S): **SPENCER CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 57 57 N
LONGITUDE: 124 51 15 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of surface trace of limestone body (Geological Survey of Canada Open File 1272).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5425314
EASTING: 364292

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
COMMENTS: Occurs as rare patches and bands.
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 3500 x 600 Metres STRIKE/DIP: 105/25E TREND/PLUNGE:
COMMENTS: Attitude of bedding near centre of limestone mass.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Andesite
Dacite
Volcanic Rock
Andesitic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Developed on a shallow marine platform of ocean rift volcanics.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1968
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	55.4800	Per cent

COMMENTS: Across 290 metres. Grade given for CaO.
REFERENCE: Minister of Mines Annual Report 1968, page 319.

CAPSULE GEOLOGY

The Spencer Creek showing is located 1.5 to 5 kilometres southeast of Alberni Inlet, 33 kilometres south of Port Alberni.

A fault-bounded mass of Upper Triassic Quatsino Formation, Vancouver Group limestone, averaging 600 metres in width, extends northwest for 3.5 kilometres. The mass is bounded to the northeast by andesite of the Upper Triassic Karmutsen Formation (Vancouver Group) and to the southwest by dacite of the Lower Jurassic Bonanza Group. Two small fault-bounded volcanic masses lie within the deposit to the southeast. The limestone strikes 105 degrees and dips 25 degrees northeast near the central portion of the mass. The limestone is cut by a few discontinuous andesitic dykes 1.2 to 12 metres thick which mainly strike northwest and dip vertically, although a few of the narrower ones strike northwest.

The deposit consists of fine-grained, dark grey limestone containing numerous white calcite veinlets. Dolomite occurs as irregular brownish patches and as bands up to 0.3 metres thick. Irregular small lenses of black chert are present in the limestone to the south. Three chip samples taken in succession across the north end of the deposit over a total length of 290 metres averaged 55.48 per cent CaO, 0.32 per cent MgO, 0.40 per cent insolubles, 0.16 per

CAPSULE GEOLOGY

cent R2O3, 0.09 per cent Fe2O3, 0.08 per cent MnO, 0.03 per cent P2O5, less than 0.01 per cent sulphur, 43.74 per cent ignition loss and 0.09 per cent water (Minister of Mines Annual Report 1968, page 319, Samples 1 to 3).

BIBLIOGRAPHY

EMPR AR *1968-318-320
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24, p. 27; RGS 24, 1990; 1992-18, pp. 37-38
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092C 085**

NATIONAL MINERAL INVENTORY:

NAME(S): **HARRIS CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E
BC MAP:
LATITUDE: 48 41 22 N
LONGITUDE: 124 14 05 W
ELEVATION: 667 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Site of sample #3 (Industrial Mineral File - Map 92C/9E).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5393669
EASTING: 409130

COMMODITIES: Limestone Marble

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite Silica
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone R04 Dimension stone - marble
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 3000 x 1000 Metres STRIKE/DIP: 325/50N TREND/PLUNGE:
COMMENTS: Limestone strikes northwest, dips 20 to 80 degrees north, are up to 3000 metres in length and 1000 metres in width.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: Developed on a shallow marine platform of ocean rift volcanics.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1968
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	54.5400	Per cent

COMMENTS: Taken across 152 metres at 6.1 metre intervals. Grade for CaO.
REFERENCE: Minister of Mines Annual Report 1966, page 270.

CAPSULE GEOLOGY

The Harris Creek showing is located approximately 7 kilometres southwest of Lake Cowichan at the headwaters of Harris and Lens creeks.

A limestone bed of the Upper Triassic Quatsino Formation, Vancouver Group is broken up into five major northwest trending masses by a network of west-northwest and north trending faults. The limestone masses, up to 3 kilometres in length and 1 kilometre in width, occur over a northeast-southwest distance of 3 kilometres. The limestone in individual fault blocks generally strikes west-northwest and dips 20 to 80 degrees north.

The various masses are composed of fine grained, dark grey to black limestone that weathers medium to light grey. The limestone is generally high calcium in composition, although a few magnesian limestone beds are present. Siliceous protrusions are sometimes displayed on weathered surfaces. A chip sample taken every 6.1 metres along 152 metres of outcrop contained 54.54 per cent CaO, 1.00 per cent MgO, 0.39 per cent insolubles 0.16 per cent R2O3, 0.07 per cent Fe2O3, less than 0.01 per cent MnO, 0.02 per cent P2O5, 0.004 per cent sulphur and 43.65 per cent ignition loss (Minister of Mines Annual Report 1966, page 270, Sample 3).

BIBLIOGRAPHY

EMPR AR *1966-269,270
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24, 1990; 1992-18, pp. 37, 39
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092C 086** NATIONAL MINERAL INVENTORY:

NAME(S): **GORDON RIVER**, BLACK CARMANAH, CARMANAH BLACK, MATRIX MARBLE

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 45 50 N NORTHING: 5402079
LONGITUDE: 124 20 36 W EASTING: 401283
ELEVATION: 290 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Site of sample #6 (Industrial Mineral File - Map 92C/16).

COMMODITIES: Limestone Marble

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R04 Dimension stone - marble R09 Limestone
DIMENSION: 2000 x 1500 Metres STRIKE/DIP: /32N TREND/PLUNGE: 325/
COMMENTS: Limestone trends northwest, dips 25 to 40 degrees north, extends for 2000 metres and is 1000 to 1500 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Volcanic Rock
Calcite Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Developed on a shallow marine platform of ocean rift volcanics.

INVENTORY

ORE ZONE: ROADCUT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1966
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	54.7200	Per cent

COMMENTS: Randomly taken along 60 metre roadcut. Grade for CaO.
REFERENCE: Minister of Mines Annual Report 1966 page 270.

CAPSULE GEOLOGY

The Gordon River showing is located south of the Gordon River logging camp, 25 kilometres southwest of Cowichan Lake.

A limestone mass, of the Upper Triassic Quatsino Formation (Vancouver Group) extends west-northwest from Gordon River for 2 kilometres and is 1 to 1.5 kilometres in width. The limestone is underlain by basaltic volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group which outcrop along the southern margin of the deposit. The limestone is in fault contact with Karmutsen and Lower Jurassic Bonanza Group volcanics to the north. Bedding within the limestone mass dips 25 to 45 degrees north.

The limestone is fine grained, dark grey to black on fresh surfaces, weathering to medium to light grey. It is generally high calcium in composition, but does contain a few magnesian beds. A sample of randomly collected chips taken along a 60 metre long road-cut next to the Gordon River contained 54.72 per cent CaO, 0.21 per cent MgO, 1.30 per cent insolubles, 0.24 per cent R2O3, 0.17 per cent Fe2O3, 0.02 per cent MnO, 0.02 per cent P2O5, 0.068 per cent sulphur and 43.22 per cent ignition loss (Minister of Mines Annual Report 1966, page 270, Sample 6).

Matrix Marble Corp. produces Black Carmanah from the area.

BIBLIOGRAPHY

EMPR AR 1911-208; *1966-269,270
EMPR BULL 37
EMPR FIELDWORK 1977, p. 23; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990; 1992-18, pp. 37, 39-40
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
WWW http://www.matrixmarble.com
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092C 087**

NATIONAL MINERAL INVENTORY:

NAME(S): **NIXON CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W
BC MAP:
LATITUDE: 48 50 16 N
LONGITUDE: 124 28 43 W
ELEVATION: 738 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Site of sample S3331 (sample 5) (Industrial Mineral File - Map 92C/16)

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5410477
EASTING: 391501

COMMODITIES: Limestone Marble

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone R04 Dimension stone - marble
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 2500 Metres STRIKE/DIP: 045/22W TREND/PLUNGE:
COMMENTS: Limestone strikes northeast, dips 05 to 40 degrees northwest and extends for 2500 metres.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Volcanic Rock
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Developed on a shallow marine platform of ocean rift volcanics.

INVENTORY

ORE ZONE: ROADCUT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1966
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	54.5200	Per cent

COMMENTS: Taken at 30 metre intervals across 60 metre roadcut. Grade for CaO.
REFERENCE: Minister of Mines Annual Report 1966 page 270.

CAPSULE GEOLOGY

The Nixon Creek showing is located along the west side of the creek, 30 kilometres west of the community of Lake Cowichan

The showing is comprised of two limestone horizons of the Upper Triassic Quatsino Formation, Vancouver Group. These strike northeast for 2.5 kilometres and dip 05 to 40 degrees northwest. The two horizons are separated by a mafic flow or sill. The upper horizon is overlain by argillite of the Upper Triassic Parson Bay Formation, Vancouver Group and volcanics of the Lower Jurassic Bonanza Group. The lower horizon is underlain by mafic volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. This sequence is segmented by several faults trending west-northwest.

The horizons consist of fine grained, dark grey to black, high calcium limestone. A chip sample taken at 3.0 metre intervals along a 60 metre long road-cut from the upper horizon, contained 54.52 per cent CaO, 0.23 per cent MgO, 1.65 per cent insolubles 0.34 per cent R2O3, 0.21 per cent Fe2O3, 0.03 per cent MnO, 0.04 per cent P2O5, 0.024 per cent sulphur and 43.37 per cent ignition loss (Minister of Mines Annual Report 1966, page 270, Sample 5).

BIBLIOGRAPHY

EMPR AR *1966-269,270
EMPR BULL 37
EMPR FIELDWORK 1977, p. 23; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990; 1992-18, pp. 37, 40
EMPF PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/30 REVISED BY: PSF FIELD CHECK: Y

MINFILE NUMBER: **092C 088**

NATIONAL MINERAL INVENTORY:

NAME(S): **PAN**, JD, MAR,
EASY, SHEAR, UPPER CAMP CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 49 05 N
LONGITUDE: 124 34 59 W
ELEVATION: 533 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Easterly showing (Geology, Exploration and Mining 1971 page 228).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5408439
EASTING: 383792

COMMODITIES: Copper, Zinc, Lead, Gold, Silver

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite, Bornite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Massive, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic, Volcanogenic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Siliceous Andesite
Andesite
Felsic Volcanic
Mafic Volcanic
Tuff
Limestone
Granodiorite
Quartz Feldspar Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1972

COMMODITY	GRADE	
Silver	8.2200	Grams per tonne
Gold	0.1714	Grams per tonne
Copper	5.3500	Per cent

COMMENTS: Sampled across 1.07 metres.
REFERENCE: Assessment Report 3671.

CAPSULE GEOLOGY

The Pan showing is located 6.4 kilometres east of Nitinat Lake just north of the Caycuse River.

The area is underlain by mafic to felsic volcanic and sedimentary rocks of the Lower Jurassic Bonanaza Group and limestone of the Upper Triassic Quatsino Formation (Vancouver Group). These are intruded by granodiorite of the Early to Middle Jurassic Island Plutonic Suite and quartz feldspar porphyry dykes.

Mineralization consists of pyrite, chalcopyrite and bornite. Massive and diseminated pyrite occurs in all volcanic rocks and chalcopyrite occurs in siliceous andesite.

Two narrow massive pyrite-chalcopyrite lenses occur at the 465 metre elevation level, 100 metres east of the Pan road showing. At the Pan road showing, a weighted average interval over 1.99 metres wide yielded 4.59 per cent copper, 17.37 per cent zinc and 0.89 per lead (Assessment Report 24716). A grab sample (#8577) across 1.07 metres assayed 5.35 per cent copper, 0.1714 grams per tonne gold and

CAPSULE GEOLOGY

8.22 grams per tonne silver (Assessment Report 3671).

A sample from the "Polymetallic Shear Zone", located about 400 metres southeast of the Pan road showing yielded 0.89 gram per tonne gold 0.3 per cent zinc, 3.6 grams per tonne silver and 0.06 per cent lead (Assessment Report 24716).

A sample taken at the Easy showings, about 600 metres south-southeast of the Pan area, is reported to have yielded greater than 5 per cent copper and 8 grams per tonne silver over a 1.1 metre width (Assessment Report 24716). Recent mapping at the Easy zone indicates the presence of a silicified pyritic argillic zone. Narrow pyrite breccia zones were also mapped in the area of the Easy showing.

Several new showings were discovered in 1995/1996 in the Upper Camp Creek road area, located about 500 metres north of the Pan area. Mapping in this area encountered a siliceous tuff of exhalite which is at the contact of a rhyolite flow comlex. Two massive pyrite-chalcopyrite lenses and, seven narrow polymetallic sulphide showings are reported. The best sample from the lense assayed 8.9 per cent copper over 0.4 metres while the polymetallic showings yielded up to 2.3 per cent copper over 0.7 metres (Assessment Report 24716). The polymetallic sulphide showings are indicated over a strike length of at least 400 metres confined to a felsic volcanic sequence and the "Four Mile Alteration Zone".

BIBLIOGRAPHY

EMPR ASS RPT *3671, 24087, 24232, *24716
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR GEM *1971-228
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown; Birkeland, A.O. (2001): Property Exam Jasper Property, 34 pages (see 092C 080))
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1998/12/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 089**

NATIONAL MINERAL INVENTORY:

NAME(S): **VAL**, SUE, JIM,
CATY, SAN JUAN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 35 37 N
LONGITUDE: 124 22 40 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of area of widely scattered sparse mineralization (Assessment Report 3672).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5383197
EASTING: 398410

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Folded Faulted
COMMENTS: Quartz veins are up to 0.60 metre wide.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Pacific Rim Complex
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Chert
Argillite
Tuff
Meta Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area, according to Muller, is underlain by an east trending band of rocks called Chert-Argillite-Volcanic Unit, of the Mesozoic Pacific Rim Complex. In this area the rocks are reported to consist of deformed cherts, argillites, limestone, sandstone, pyroclastics and volcanic flows. These are in contact to the north with metamorphic rocks of the Mesozoic and/or Paleozoic Westcoast Complex consisting of gneiss, migmatite and metadiorite.

Quartz veins, up to 0.6 metre in width, containing minor pyrite, pyrrhotite and chalcopyrite are reported to cut both intrusive and sedimentary rock. Samples sent for assay revealed an insignificant content of gold and silver.

Several old adits were located about 1.5 kilometres west-northwest of the mouth of the Gordon River (just north of the road). Minor pyrite and a trace of chalcopyrite were noted in cherty sediments on the dump. North of these adits, about 1200 metres, is a locality where an outcrop hosts pyrrhotite, pyrite and chalcopyrite (Assessment Report 4940, Map #2). In Fairy Creek, about 750 metres north of the main road, traces of chalcopyrite and malachite were noted (Assessment Report 3672). An old shaft, located about 500 metres west of where Fairy Creek crosses the road and a few hundred metres north of the road, was sunk into a bed of highly folded chert (Assessment Report 4941).

Conformable bands of pyrite, pyrrhotite and chalcopyrite were observed in tuff 800 metres north of the lapsed San Juan property of Perbell Mines (Assessment Report 4940, page 5).

BIBLIOGRAPHY

EMPR ASS RPT *3672, 4359, *4940, *4941, 12184

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR GEM 1970-292; 1972-226; 1973-226; 1974-165
EMPR OF RGS 24
EMPR PF (Philp, R.H.D. (1970): Report on the San Juan Properties of Purbell Mines Ltd.)
GSC MAP 1386A
GSC MEM 13
GSC OF 463
GSC P 72-44; 74-1A; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/06 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 090**

NATIONAL MINERAL INVENTORY: 092F9 Fe2

NAME(S): **REKO 3**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 39 27 N
LONGITUDE: 124 18 01 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Zone 8, just east of Renfrew Creek (Geology and Exploration in B.C. 1975, page G38).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5390199
EASTING: 404245

COMMODITIES: Iron, Copper, Magnetite

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite, Pyrrhotite, Pyrite
ALTERATION: Garnet, Epidote, Pyroxene, Silica
ALTERATION TYPE: Skarn, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn, Replacement

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Limestone
Andesite
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area of the Reko 3 occurrence is mapped by Muller (Geological Survey of Canada Open File 821) as primarily diorite of the Mesozoic and/or Paleozoic Westcoast Complex. An east trending band of limestone is also mapped. Volcanic rock of the Lower Jurassic Bonanza Group lies to the north.

The north part of the Reko property is underlain by grey to white crystalline limestone, and the central and south part is underlain mainly by intrusive breccia. Several bodies of limestone also occur in the central and south part. The primary fragments of the breccia are fine grained and dark grayish green in colour, resembling andesite, and some contain amygdules. This andesitic rock was successively intruded by mafic-rich and mafic-poor diorite. The breccia grades to massive, mesocratic diorite to the south, and to massive andesite at about the 600 metre level on the west side of the east ridge. A set of long, narrow, fine-grained grey dykes strike 020 degrees and transects all other rocks. Most limestone bodies have been successively intruded by dykes of andesite and leuco-diorite. It is thought likely that, prior to diorite intrusion andesite underlay the limestone and also intruded it.

Two zones make up the Reko 3 occurrence. Zone 7 consists of two small exposures of massive pyrrhotite containing networks of chalcopyrite. Zone 8 (North Pit zone), located within a few hundred metres of Zone 8, consists of numerous small exposures of magnetite and skarn on two knolls and in a small quarry. In one hole massive to near massive magnetite with minor pyrite from 2.7 metres to 9.7 metres occurs. It is estimated that Zone 8 contains about 33,000 tonnes of magnetite (Geology and Exploration in British Columbia 1974, page 170).

See also Reko 10 (092C 091), Reko 38 (092C 110) and Reko North (092C 146).

BIBLIOGRAPHY

EMPR ASS RPT 5029
EMPR FIELDWORK 1989, pp. 503-510

BIBLIOGRAPHY

EMPR GEM 1972-242; 1973-226; *1974-166-170
EMPR GEOLOGY *1975 pp. 39-42
EMPR OF *1988-28, p. 56
EMPR OF RGS 24
EMPR PF (Reako Explorations Ltd., Prospectus, 1972; Reako Explorations Ltd., Statement of Material Facts, 1972; Various maps and sketches, 1970's)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
GCNL #147,#157,#196,#235, 1972; #20,#21,#26,#43,#69,#117,#143,#212, 1973; #9, 1974; *#207,#223, 1975

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 091**

NATIONAL MINERAL INVENTORY: 092C9 Fe2

NAME(S): **REKO 10**

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 38 35 N
LONGITUDE: 124 17 35 W
ELEVATION: 360 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Zone 2, just east of Renfrew Creek (Geology and Exploration in B.C. 1975, page 38).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5388584
EASTING: 404750

COMMODITIES: Iron, Copper, Gold

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite, Pyrrhotite, Pyrite
ALTERATION: Garnet, Epidote, Pyroxene, Silica
ALTERATION TYPE: Skarn, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn, Replacement
TYPE: K03 Fe skarn, K01 Cu skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Paleozoic-Mesozoic	Bonanza	Undefined Formation	Westcoast Complex

LITHOLOGY: Limestone
Andesite
Diorite
Garnetite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: REKO

REPORT ON: Y

CATEGORY: Inferred
YEAR: 1975
QUANTITY: 4500000 Tonnes

COMMODITY	GRADE	
Iron	22.0000	Per cent

REFERENCE: George Cross News Letter No.207, (October), 1975.

CAPSULE GEOLOGY

The area of the Reko occurrences is mapped by Muller (Geological Survey of Canada Open File 821) as primarily diorite of the Mesozoic and/or Paleozoic Westcoast Complex. An east trending band of limestone is also mapped. Volcanics of the Lower Jurassic Bonanza Group lie to the north.

The north part of the Reko property is underlain by grey to white crystalline limestone, and the central and south part is underlain mainly by intrusive breccia. Several bodies of limestone also occur in the central and south part. The primary fragments of the breccia are fine grained and dark grayish green in colour, resembling andesite, and some contain amygdules. This andesitic rock was successively intruded by mafic-rich and mafic-poor diorite. The breccia grades to massive, mesocratic diorite to the south, and to massive andesite at about the 600 metre level on the west side of the east ridge. A set of long, narrow, fine-grained grey dykes strike 020 degrees and transects all other rocks. Most limestone bodies have been successively intruded by dykes of andesite and leucodiorite. It is thought that, prior to diorite intrusion, andesite underlay the limestone and also intruded it.

There are 4 zones included in the Reko 10 occurrence. Zone 1 (South Pit A) is exposed for 12 metres and a width of about 5 metres. Drilling has indicated that it is not much larger than the surface exposure. It consists of 35 per cent magnetite, 35 per cent garnet

CAPSULE GEOLOGY

and 30 per cent pyrrhotite. Chalcopyrite occurs as small blebs, minute veinlets and fine disseminations. Rocks in the drill holes include limestone and andesite. An estimated 41,000 tonnes of ore occurs in Zone 1 (Geology and Exploration in B.C., 1974, page 170). No grade was given.

Zone 2 (South Pit B) is located about 200 metres southwest of Zone 1. A drill hole put down on the centre of the zone shows magnetite disseminated in epidote-pyroxene-garnet skarn from 2.4 to 25 metres. Pyrite and chalcopyrite occur locally. Rock types found include garnetite and andesite. An estimated 970,000 tonnes of ore were calculated for Zone 2 (Geology and Exploration in B.C, 1974, page 170. No grade was given.

Zone 3 (South Pit C) is located about 425 metres northwest of Zone 2. The zone is not exposed and is known only from the drilling of a magnetic anomaly. A hole put down on the centre of the zone shows, from 19 to 24 metres, magnetite, pyrrhotite and pyrite, both disseminated and as veins or veinlets. Below 24 metres the rock is predominantly diorite. Zone 3 has an estimated 32,000 tonnes or ore (Geology and Exploration in B.C., 1974, page 170). No grade was given.

In 1975, Reako Explorations Ltd. reported an ore reserve estimate on the Reko property (see Reko 3 -- 092C 090, Reko 38 -- 092C 110 and Reko North -- 092C 146) of 4,500,000 tonnes grading 22 per cent iron (George Cross News Letter No.207, 1975). The same reference also reported a 4.6 metre section of drill core (location not reported) that graded 1.5 per cent copper and 6.86 grams per tonne gold.

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT 5029
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1972-242; 1973-226; *1974-166-170
EMPR GEOLOGY *1975 pp. 39-42
EMPR OF *1988-28, p. 56
EMPR OF RGS 24
EMPR PF (Reako Explorations Ltd., Prospectus, 1972; Reako Explorations Ltd., Statement of Material Facts, 1972; Various maps and sketches, 1970's)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
GCNL #147,#157,#196,#235, 1972; #20,#21,#26,#43,#69,#117,#143,#212, 1973; #9, 1974; #207,#223, 1975

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 092**

NATIONAL MINERAL INVENTORY:

NAME(S): **TZARTUS ISLAND**, COPPER ISLAND, BARCLAY SOUND

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 56 44 N
LONGITUDE: 125 03 03 W
ELEVATION: 90 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Center of surface trace of limestone (Geological Survey of Canada Open File 1272).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5423430
EASTING: 349838

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 1500 x 700 Metres STRIKE/DIP: 164/70W TREND/PLUNGE:
COMMENTS: Limestone strikes 150 to 178 degrees, extends for 1.5 kilometres and is up to 700 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Granodiorite
Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Developed on a shallow marine platform of ocean rift volcanics.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Tzartus Island limestone showing is located on the northeast corner of the island, 40 kilometres southwest of Port Alberni.

Limestone of the Upper Triassic Quatsino Formation (Vancouver Group), up to 700 metres wide, outcrops for 1.5 kilometres northward along the shore. The limestone strikes 150 to 178 degrees and dips 70 degrees southwest. The mass is bounded to the west by granodiorite of the Jurassic Island Intrusions. Dykes are reported to intrude this limestone.

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR AR *1911-208
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; *1272
GSC P 72-44; 76-1A; 79-30
GSC SUM RPT 1902, p. 63
CANMET RPT 811, Part 5, p. 141
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Cummings, J.M. (1937): Possibilities of the Manufacture of Mineral Wool, p. 10; B.C. Government Publication
Falconbridge File

DATE CODED: 1989/06/30 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1990/02/21 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 093**

NATIONAL MINERAL INVENTORY:

NAME(S): **DORE 30**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 42 55 N
LONGITUDE: 124 21 19 W
ELEVATION: 560 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the headwaters of Hemmingsen Creek (Sketch Map, Property File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5396691
EASTING: 400309

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Monzonite

HOSTROCK COMMENTS: The upper reaches of Hemmingsen Creek appear to be almost entirely underlain by intrusive rock (Sketch Map, Property File).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Dore 30 occurrence area is underlain by a series of basaltic flows and related pyroclastics of the Karmutsen Formation and is overlain by, or interbedded with, limestone of the Quatsino Formation; both formations belong to the Upper Triassic Vancouver Group. Andesite to rhyolite tuffs and breccias, with minor intercalated greywacke and argillite, of the Lower Jurassic Bonanza Group overlie the Upper Triassic rocks. Intruding this stratigraphic assemblage is the Early to Middle Jurassic Island Plutonic Suite of monzonite to diorite composition.

Molybdenite, chalcopyrite and sulphides are disseminated in a shear zone in quartz monzonite.

BIBLIOGRAPHY

EMPR ASS RPT 3849, 468, 4792, 8679
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222
EMPR OF RGS 24
EMPR PF (*Sketch Map (in Dore 99 - 092C 100 file))
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/03 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 094**

NATIONAL MINERAL INVENTORY:

NAME(S): **WOLF**, REN, MEAD, FOX

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C08E
BC MAP:
LATITUDE: 48 27 01 N
LONGITUDE: 124 06 01 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of mineralized zones on the Mead Group No 1 (Assessment Report 2229, Map 2).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5366933
EASTING: 418642

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics
Eocene			Sooke Gabbro

LITHOLOGY: Basalt
Gabbro

HOSTROCK COMMENTS: Mineralization is generally in Metchosin basalt near Sooke Gabbro intrusion.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Wolf area is underlain by Eocene Metchosin Volcanics consisting of bedded basaltic tuffs interbedded with pillow and amygdaloidal basaltic flows striking easterly and dipping 20 to 80 degrees to the north. These are sheared, altered and brecciated but show very little folding. The volcanics are cut by a series of steeply dipping gabbro dykes, possibly comagmatic and coeval with the volcanics. The largest dyke is 800 metres wide, the remainder are from 30 to 50 metres wide. The gabbros are also brecciated, sheared and altered.

Pyrite and pyrrhotite are the predominant sulphide minerals with minor associated chalcopyrite. Small amounts of bornite and flecks of native copper are present. Magnetite has been found concentrated in the gabbro at a few locations. The sulphides occur in highest concentrations in areas of most intense shearing, and the largest of the zones usually are found close to gabbro or mafic dykes and are associated with a system of feldspathic stringers with or without free quartz. The sulphides sometimes occur in a disseminated form but mostly as cleavage films or in elongated blebs controlled by the orientation of the shear zone. None of the zones could be traced for more than 100 metre or so, and very seldom over widths greater than 5 metres.

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT *2229, 4104, 4751, 6272, 7814
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR GEM 1972-241; 1973-225; 1974-165; 1977-E106
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 77-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/11/27 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 095**

NATIONAL MINERAL INVENTORY:

NAME(S): **UCHUCKLESIT INLET**, BARCLAY SOUND

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 59 07 N
LONGITUDE: 124 58 33 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of surface trace of limestone (Geological Survey of Canada Open File 1272).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5427700
EASTING: 355444

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Irregular
MODIFIER: Folded Faulted
DIMENSION: 1750 x 200 Metres STRIKE/DIP: 070/35S TREND/PLUNGE:
COMMENTS: Limestone strikes 050 to 090 degrees and dips 25 to 45 degrees south.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Volcanic Rock
Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Developed on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

The Uchucklesit Inlet limestone showing extends northwest for 1.7 kilometres along the northeast shore of the inlet and onto Limestone Island near the entrance to Alberni Inlet.

The limestone, of the Upper Triassic Quatsino Formation (Vancouver Group), is in contact with Lower Jurassic Bonanza Group volcanics to the northeast.

The 200 metre wide limestone block is fault-bounded, tightly folded and intruded by dykes. Bedding strikes 050 to 090 degrees and dips 25 to 45 degrees southeast.

BIBLIOGRAPHY

EMPR AR 1911-208
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
GSC SUM RPT 1902, p. 62
CANMET RPT 811, Part 5, p. 141
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Cummings, J.M. (1937): Possibilities for the Manufacture of Mineral Wool; B.C. Government Publication

DATE CODED: 1989/06/30 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1990/06/21 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 096**

NATIONAL MINERAL INVENTORY:

NAME(S): **A1**, GAMBLER, OMAR,
RC 3, DAN 1, SUNNY,
R.S., B.S.

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 52 47 N
LONGITUDE: 124 58 40 W
ELEVATION: 333 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location of Gambler mineralized area on the A1 claim (Property File - Katanga Mines Ltd., Prospectus, 1971).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5415971
EASTING: 354996

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Tetrahedrite Pyrrhotite
ALTERATION: Garnet Diopside Epidote Magnetite Silica
ALTERATION TYPE: Skarn Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Podiform Shear
CLASSIFICATION: Skarn
SHAPE: Irregular
MODIFIER: Sheared
DIMENSION: 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Sampled outcrop exposure of skarn is 1.6 metres long.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Skarn
Volcanic Rock
Granite
Granodiorite
Diorite
Quartz Diorite

HOSTROCK COMMENTS: Skarn zones are hosted in limestone and silicified zones and shears occur in volcanics.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: OUTCROP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1971
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	0.3430	Grams per tonne
Copper	0.3100	Per cent

COMMENTS: From 1.6 metre long outcrop (No. 7, sample #59524) exposure; highest assay from sampling program.
REFERENCE: Property File - Katanga Mines Ltd. Prospectus, 1971.

CAPSULE GEOLOGY

The A1 showings (previously the Gambler) are located near the mouth of the Sarita River on the southeast side of Barclay Sound, 60 kilometres south of Port Alberni and 19 kilometres north of Bamfield. The Sarita River area was explored at the turn of the century for iron ore and more recently, in the 1960's and 1970's, for copper.

The area is underlain by volcanic rocks of the Lower Jurassic Bonanza Group and limestone of the Upper Triassic Quatsino Formation, Vancouver Group. These have been intruded by granitic rocks of the

CAPSULE GEOLOGY

Early to Middle Jurassic Island Plutonic Suite. The area is highly sheared and has undergone regional greenschist facies metamorphism.

Mineralization is abundant over a considerable area in highly sheared and metamorphosed limestone. Mineralization consists predominantly of pyrrhotite with inclusions of chalcopyrite, minor bornite and tetrahedrite accompanied by abundant garnet, diopside and epidote.

Eight outcrops were sampled in 1971, the highest assay was from outcrop No.7 (#59524) and the results were 0.31 per cent copper and 0.343 grams per tonne silver across a 1.6 metre linear exposure (Property File - Katanga Mines Ltd. Prospectus Sept. 1971). "Blind" diamond drilling in 1980 returned low gold and silver values from 3 holes (Assessment Report 7976).

Mineralization to the west near the Sarita River property (092C 036) on the old Omar claims occurs as lenses of magnetite and zones of pyrrhotite containing minor chalcopyrite. Silver values obtained may indicate the presence of tetrahedrite. Sampling indicates a zone about 914 by 610 metres with mineralization occurring in altered silicified zones and shears in volcanics.

BIBLIOGRAPHY

EMPR ASS RPT 5472, *7976, 9509, 13698
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1971-227
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown; *Katanga Mines Ltd. Prospectus, Sept.1971)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/18 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 097**

NATIONAL MINERAL INVENTORY:

NAME(S): **BUS**, GOLD

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15W
BC MAP:
LATITUDE: 48 55 06 N
LONGITUDE: 124 56 52 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pit, 500 metres northeast of the summit of Mount Blenheim, 4 kilometres west of Sarita Lake, 20 kilometres northeast of Bamfield (Assessment Report 4357).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5420206
EASTING: 357306

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Magnetite Pyrrhotite Arsenopyrite
ASSOCIATED: Epidote Chlorite Calcite Quartz
ALTERATION: Epidote Chlorite Calcite Actinolite Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Stockwork
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION:
STRIKE/DIP: 165/42E
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Andesite
Rhyolite
Dacite
Quartz Diorite
Quartz Feldspar Porphyry Dike
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1973
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	1.1200	Per cent

REFERENCE: Assessment Report 4357.

CAPSULE GEOLOGY

Quartz diorite and lesser quartz monzonite of the Early to Middle Jurassic Island Plutonic Suite occupies most of the Bus occurrence area. In the northeast are volcanic rocks of the Lower Jurassic Bonanza Group consisting of intercalated and thinly-bedded andesites with minor rhyolite and dacite. In the southeast portion are massive and commonly amygdaloidal or porphyritic basalts correlated with the Upper Triassic Karmutsen Formation (Vancouver Group). Quartz feldspar porphyry and feldspar porphyry dykes, from 5 to 20 metres wide, intrude both the Bonanza Group and the quartz diorite, being more common in the former.

Steeply dipping faults and shear zones transect all rock types. Pyrite disseminations, stringers and small pods associated with quartz patches, veinlets and stockworks are often found within the silicified shear and fault zones. These mineralized faults are usually adjacent to or near porphyry dykes in Bonanza Group rocks. Sparse arsenopyrite was observed in one shear zone; minor malachite

CAPSULE GEOLOGY

and chalcopyrite in another. A grab sample from a shear zone assayed 9 grams per tonne silver (Assessment Report 8719).

A pit exposes lenses and stringers of pyrite-chalcopyrite-magnetite +/- pyrrhotite within a shear zone striking 165 degrees and dipping 42 degrees east. The shear is hosted in Karmutsen Formation basalt. Epidote, chlorite, calcite and minor actinolite were also observed in the shear. Grab samples from this zone assayed up to 1.12 per cent copper (Assessment Report 4357).

BIBLIOGRAPHY

EMPR ASS RPT 4357, *8719
EMPR GEM 1973-227,228
EMPR OF 1988-24; RGS 24
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
EMPR FIELDWORK 1989, pp. 503-510
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/18 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 098**

NATIONAL MINERAL INVENTORY:

NAME(S): **CR**, HANK, CC,
KELLY

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E 092C16W
BC MAP:
LATITUDE: 48 48 11 N
LONGITUDE: 124 29 53 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Hank claim near CR zone (Assessment Report 12618).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5406645
EASTING: 389999

COMMODITIES: Copper Silver Zinc Gold

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Sphalerite
ASSOCIATED: Quartz Tremolite
ALTERATION: Garnet Epidote Actinolite Ilvaite Magnetite
Malachite Azurite Hematite
ALTERATION TYPE: Skarn Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated Massive
CLASSIFICATION: Skarn
SHAPE: Irregular
MODIFIER: Sheared Faulted
DIMENSION: 12 Metres STRIKE/DIP: 075/75N TREND/PLUNGE:
COMMENTS: The CR zone, 12 metres thick, trends east.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Altered Volcanic Rock
Carbonate
Skarn
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP:
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	7.3000	Grams per tonne
Copper	2.0200	Per cent
Zinc	0.0450	Per cent

COMMENTS: Weighted average across 1.55 metres of exposed section of the zone.
REFERENCE: Assessment Report 12618.

CAPSULE GEOLOGY

The CR showing is located on the bank of the Caycuse River (on the Hank claim) 23 kilometres southwest of the village of Caycuse. On the Caycuse River, copper mineralization was first observed in 1920.

The area is underlain by intermediate volcanic and minor intercalated impure carbonate rocks of the Upper Triassic Karmutsen Formation, Vancouver Group. These have been intruded by diorite of the Early to Middle Jurassic Island Plutonic Suite. The Caycuse River is believed to be a major fault. The rocks, comprising basalt, limestone, marble, and diorite, are altered and sheared.

The skarns are primarily exposed on the north side of the Caycuse River and form an en echelon arrangement. Skarn occurs as

CAPSULE GEOLOGY

pods and tabular vertical bodies, replacing impure limestone or volcanic rocks. The mineral assemblage comprises quartz and tremolite with lesser amounts of garnet, epidote, actinolite and ilvaite. Mineralization consisting of pyrite, chalcopyrite, magnetite and minor sphalerite occurs within massive irregular sulphide pods. Magnetite occurs ubiquitously in small amounts and iron oxides, malachite and azurite are common. Volcanic rocks are locally altered to a dark green massive and dense hornfels containing massive and disseminated pyrite and minor chalcopyrite in small lenses.

The CR zone strikes 75 degrees and the bedding dips 60 to 80 degrees north. The 12 metre thick zone occurs within the alteration halo of diorite. Rock chip samples, taken from the exposed sections of the CR zone, assayed a weighted average over 1.55 metres of 2.02 per cent copper, 0.045 per cent zinc, and 7.3 grams per tonne silver (Assessment Report 12618). Diorite, in the footwall limestone bed, contained an estimated 0.5 to 1 per cent disseminated copper in chalcopyrite over 1 metre (Assessment Report 11232).

A brecciated zone in a north trending fault, exposed in the north bank of the Caycuse River, was sampled and the highest assay was 0.17 grams per tonne gold and 62.32 grams per tonne silver (Assessment Report 12618).

The Cougar Creek or CC showing has been described as follows: "good grade chalcopyrite occurs in the limestone skarns over an area 120 metres long and 30 metres wide in narrow folded bands of limestone and tuff".

BIBLIOGRAPHY

EMPR ASS RPT 11232, *12618, 16162
EMPR BULL 37
EMPR FAME FILE (1987 E161)
EMPR FIELDWORK 1977, p. 23; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR GEM 1975-43
EMPR MP MAP 1992-2
EMPR OF 1987-2; 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown and B.C. Forest Products Road Map, Cowichan Lake Area, 1963; Northcote, K.E. (1975): Reports, Notes, Assays, Sections)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1987/06/10 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1991/02/01 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 099**

NATIONAL MINERAL INVENTORY:

NAME(S): **DORE 52**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 42 11 N
LONGITUDE: 124 19 48 W
ELEVATION: 350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of showings on Hemmingsen Creek (Sketch Map, Property File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5395300
EASTING: 402145

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Monzonite
Quartz

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Chalcopyrite is disseminated in a shear zone in quartz monzonite. The area is underlain by a stock of the Early to Middle Jurassic Plutonic Suite which varies in composition from diorite to quartz monzonite. The stock has intruded Upper Triassic Vancouver Group rocks consisting of Quatsino Formation limestone and Karmutsen Formation andesite, as well as Lower Jurassic Bonanza Group volcanics.

BIBLIOGRAPHY

EMPR ASS RPT 3849, 468, 4792, 8679
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222
EMPR OF RGS 24
EMPR PF (*Sketch Map (in Dore 99 - 092C 100 file))
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 100**

NATIONAL MINERAL INVENTORY:

NAME(S): **DORE 99**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 42 40 N
LONGITUDE: 124 18 57 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near a tributary of Hemmingsen Creek that flows southwest from Mount Bolduc (Sketch Map, Property File). Coordinates are for the copper showing.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5396177
EASTING: 403202

COMMODITIES: Copper, Iron, Magnetite

MINERALS
SIGNIFICANT: Chalcopyrite Magnetite
COMMENTS: The magnetite is probably skarn related.
ASSOCIATED: Quartz
COMMENTS: The quartz is assumed to occur as a vein.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Skarn Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Jurassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Andesite
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by a series of basaltic flows and related pyroclastics of the Karmutsen Formation and is overlain by, or interbedded with, limestone of the Quatsino Formation; both units belong to the Upper Triassic Vancouver Group. Andesite to rhyolite tuffs and breccias, with minor intercalated greywacke and argillite, of the Lower Jurassic Bonanza Group overlie the Upper Triassic rocks. Intruding this stratigraphic assemblage is the Early to Middle Jurassic Island Plutonic Suite of monzonite to diorite composition.

The Dore 99 occurrence comprises two showings, as shown by a geology sketch map of the area (Property File). The first consists of chalcopyrite in quartz within limestone. Diorite and Karmutsen andesite occur within a few hundred metres to the east. The second showing, about 500 metres east of the first and near the northwest bank of a creek, consists of magnetite and sulphides in andesite. The creek bed marks the contact with limestone to the southeast.

BIBLIOGRAPHY

EMPR ASS RPT 3849, 468, 4792, 8679
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222
EMPR OF RGS 24
EMPR PF (*Sketch Map)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 101**

NATIONAL MINERAL INVENTORY:

NAME(S): **DORE 97**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 42 24 N
LONGITUDE: 124 19 06 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on a tributary of Hemmingsen Creek that drains southwest from Mount Bolduc, at a point about 500 metres up from the confluence of the two creeks (Sketch Map, Property File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5395687
EASTING: 403010

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Diorite
Quartz Monzonite

HOSTROCK COMMENTS: Copper mineralization occurs in both limestone and intrusive.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Chalcopyrite occurs on a slip in limestone of the Upper Triassic Quatsino Formation, Vancouver Group. A contact with a stock of the Early to Middle Jurassic Island Plutonic Suite diorite to quartz monzonite occurs within a few hundred metres to the west of the showing. Chalcopyrite is also reported to occur as disseminations within the intrusive, about 300 metres to the northwest.

BIBLIOGRAPHY

EMPR ASS RPT 3849, 468, 4792, 8679
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222
EMPR OF RGS 24
EMPR PF (*Sketch Map (in Dore 99 - 092C 100 file))
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 102**

NATIONAL MINERAL INVENTORY:

NAME(S): **TL5798**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 43 05 N
LONGITUDE: 124 22 38 W
ELEVATION: 650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the divide between Gordon River and the headwaters of Hemmingsen Creek (Sketch Map, Property File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5397029
EASTING: 398700

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The TL5798 showing consists of disseminated chalcopyrite in diorite. The area is underlain by a stock of the Early to Middle Jurassic Island Plutonic Suite.

BIBLIOGRAPHY

EMPR ASS RPT 3849, 468, 4792, 8679
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222
EMPR OF RGS 24
EMPR PF (*Sketch Map (in Dore 99 - 092C 100 file))
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1991/01/04 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 103**

NATIONAL MINERAL INVENTORY:

NAME(S): **POLLY**, DORE, BOLDUC

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 43 50 N
LONGITUDE: 124 17 16 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 3 to 4 kilometres northeast of Mount Bolduc (Sketch Map, Property File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5398304
EASTING: 405303

COMMODITIES: Copper Iron Magnetite

MINERALS
SIGNIFICANT: Chalcopyrite Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Diorite
Limestone
Basalt
Andesite

HOSTROCK COMMENTS: Copper mineralization is in diorite and magnetite is in limestone.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by a series of basaltic flows and related pyroclastics of the Karmutsen Formation and is overlain by, or interbedded with, limestone of the Quatsino Formation; both units belong to the Upper Triassic Vancouver Group. Andesite to rhyolite tuffs and breccias, with minor intercalated greywacke and argillite, of the Lower Jurassic Bonanza Group overlie the Upper Triassic rocks. Intruding this stratigraphic assemblage is the Early to Middle Jurassic Island Plutonic Suite of monzonite to diorite composition.

The Polly occurrence comprises two showings, as shown by a sketch geology map of the area (Property File). The first consists of disseminated chalcopyrite in diorite and is located about 1.5 to 2 kilometres northeast of Mount Bolduc. The second, about 500 metres northwest of the first and near the northwest bank of a creek, consists of magnetite and chalcopyrite in limestone.

BIBLIOGRAPHY

EMPR ASS RPT 3849, 468, 4792, 8679
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222
EMPR OF RGS 24
EMPR PF (*Sketch Map (in Dore 99 - 092C 100 file); Philp, R.H.D (1969): Report on the Harris Creek Property for Grandeur Mines Ltd. (in Nan - 092C 079 file); Prospectus, New Cosmic Industries Ltd., 1972)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/02 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 104**

NATIONAL MINERAL INVENTORY:

NAME(S): **DL**, DORE 153

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 43 06 N
LONGITUDE: 124 16 41 W
ELEVATION: 540 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located Near the switchback of Branch Road HC 1800 (Assessment Report 4792, Map 4). Another showing occurs several hundred metres to the north (Sketch Map, Property File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5396933
EASTING: 405995

COMMODITIES: Copper Magnetite Iron

MINERALS
SIGNIFICANT: Magnetite Pyrrhotite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Limestone
Diorite

HOSTROCK COMMENTS: Mineralization occurs in volcanics and limestone.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by a series of basaltic flows and related pyroclastics of the Karmutsen Formation and is overlain by, or interbedded with, limestone of the Quatsino Formation; both units belong to the Upper Triassic Vancouver Group. Andesite to rhyolite tuffs and breccias, with minor intercalated greywacke and argillite, of the Lower Jurassic Bonanza Group overlie the Upper Triassic rocks. Intruding this stratigraphic assemblage is the Early to Middle Jurassic Island Plutonic Suite of monzonite to diorite composition.

The volcanics have undergone varying degrees of alteration, shearing and fracturing. Secondary magnetite and pyrite with minor chalcopyrite and pyrrhotite are commonly found in altered zones. Narrow interbedded bands of limestone have skarn zones developed along their contact with diorite intrusive. These are weakly mineralized with pyrite, magnetite and lesser chalcopyrite. Massive magnetite is found as float.

BIBLIOGRAPHY

EMPR ASS RPT 3849, 468, *4792, 8679
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222
EMPR OF RGS 24
EMPR PF (*Sketch Map (in Dore 99 - 092C 100 file); Philp, R.H.D (1969): Report on the Harris Creek Property for Grandeur Mines Ltd. (in Nan - 092C 079 file); *Prospectus, New Cosmic Industries Ltd., 1972)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/03 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 105**

NATIONAL MINERAL INVENTORY:

NAME(S): **ARSENIO**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14W
BC MAP:
LATITUDE: 48 59 46 N
LONGITUDE: 125 26 10 W
ELEVATION: 70 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 700 metres southwest of Maggie Lake (Assessment Report 17400).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5429883
EASTING: 321810

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Arsenopyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote Limonite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Igneous-contact Hydrothermal Epigenetic
DIMENSION:
STRIKE/DIP: 032/68W
TREND/PLUNGE:
COMMENTS: Attitude of quartz lenses.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Dacitic Dike

HOSTROCK COMMENTS: The host rock is assumed to be Westcoast Complex; the affinity of the dacite dyke is unkown.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.7700	Grams per tonne

REFERENCE: Assessment Report 17400.

CAPSULE GEOLOGY

The Arsenio showing is located approximately 750 metres southwest of Maggie Lake.

The area is underlain by an assemblage of diorites to quartz diorites belonging to the Paleozoic and/or Mesozoic West Coast Complex.

The showing consists of quartz lenses, heavily mineralized with arsenopyrite, that occur at the contact of a dacite dyke. The dyke, from 30 to 40 centimetres in width, strikes 032 degrees and dips 68 degrees west through an unspecified host rock (assumed to be diorite). A lense or vein has been exposed in a creek bed along a strike length of 10 metres. The quartz pods and lenses range from 1 to 5 centimetres in length. Alteration consists of chlorite, lesser epidote, and limonite. Arsenic values are 2.5 to 3.5 per cent and one rock sample contained 0.77 grams per tonne gold (Assessment Report 17400).

BIBLIOGRAPHY

EMPR AR 1962-111,122
EMPR ASS RPT *17400
EMPR BULL 55
EMPR EXPL 1988-C84
EMPR FIELDWORK 1989, pp. 503-510

BIBLIOGRAPHY

EMPR OF 1988-24; RGS 24, 1990
GSC MAP 17-1968; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 68-50; 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/04/10 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 106**

NATIONAL MINERAL INVENTORY:

NAME(S): **DORE 162**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 40 28 N
LONGITUDE: 124 15 58 W
ELEVATION: 230 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of scattered showings located northeast of Hemmingsen Creek (Sketch Map, Property File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5392040
EASTING: 406792

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear Massive
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Andesite
Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by a series of basaltic flows and related pyroclastics of the Karmutsen Formation and is overlain by, or interbedded with, limestone of the Quatsino Formation; both units belong to the Upper Triassic Vancouver Group. Andesite to rhyolite tuffs and breccias, with minor intercalated greywacke and argillite, of the Lower Jurassic Bonanza Group overlie the Upper Triassic rocks. Plutonic rock of the Paleozoic and or Mesozoic Westcoast Complex is mapped in the area.

Scattered showings of chalcopyrite, specular hematite and massive sulphides occur in Karmutsen andesite, at one location in quartz stringers. A sample of the quartz stringers assayed 3.25 per cent copper (Sketch Map, Property File). A body of quartz monzonite intrudes the andesite to the southeast and at one location chalcopyrite is reported in fractures along or near the contact.

BIBLIOGRAPHY

EMPR ASS RPT 3849, 468, 4792, 8679
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222
EMPR OF RGS 24
EMPR PF (*Sketch Map (in Dore 99 - 092C 100 file))
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 107**

NATIONAL MINERAL INVENTORY:

NAME(S): **HARRIS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 44 22 N
LONGITUDE: 124 16 30 W
ELEVATION: 750 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the headwaters of Harris Creek (Sketch Map, Property File).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5399276
EASTING: 406259

COMMODITIES: Iron, Magnetite, Copper

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Diorite

HOSTROCK COMMENTS: Mineralization occurs at the contact of limestone and a granitic intrusion.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by a series of basaltic flows and related pyroclastics of the Karmutsen Formation and is overlain by, or interbedded with, limestone of the Quatsino Formation; both units belong to the Upper Triassic Vancouver Group. Andesite to rhyolite tuffs and breccias, with minor intercalated greywacke and argillite, of the Lower Jurassic Bonanza Group overlie the Upper Triassic rocks. Intruding this stratigraphic assemblage is the Early to Middle Jurassic Island Plutonic Suite of monzonite to diorite composition.

Magnetite with chalcopyrite occurs at the contact of a granitic intrusion and limestone. Andesite is reported to underlie the limestone.

BIBLIOGRAPHY

EMPR ASS RPT 3849, 468, 4792, 8679
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-222
EMPR OF RGS 24
EMPR PF (*Sketch Map (in Dore 99 - 092C 100 file); Philp, R.H.D (1969): Report on the Harris Creek Property for Grandeur Mines Ltd. (in Nan 092C 079 file))
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1991/01/03
DATE REVISED: / /
CODED BY: GJP
REVISED BY:
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092C 108** NATIONAL MINERAL INVENTORY: 092C16 Cu1

NAME(S): **SUNNYSIDE (L.34,L.39)**, HERE-IT-IS, BLUE GROUSE

STATUS: Past Producer Underground MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 50 14 N NORTHING: 5410084
LONGITUDE: 124 13 28 W EASTING: 410150
ELEVATION: 330 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 800 metres south of the Blue Grouse deposit (092C 017) and was originally part of that property (Property File - Skerl, A.C. (1953): Geophysical Report).

COMMODITIES: Copper Silver Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite Arsenopyrite
ASSOCIATED: Quartz Zeolite
ALTERATION: Garnet Epidote Actinolite Zeolite
ALTERATION TYPE: Skarn Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Stratabound Podiform
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Parson Bay	
Upper Triassic	Vancouver	Karmutsen	
Jurassic-Cretaceous			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Basalt
Limy Sediment/Sedimentary
Tuff
Feldspar Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact Regional RELATIONSHIP: GRADE: Hornfels Greenschist
COMMENTS: Located in the Cowichan upift.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	1.2000	Per cent

COMMENTS: Sample (#10958) across 1 metre of weakly argillically altered volcanic rock containing five white zeolite veinlets.
REFERENCE: Assessment Report 19387.

CAPSULE GEOLOGY

The Sunnyside deposit was part of the Blue Grouse mine (092C 017) which is located on the south side of Cowichan Lake, 4.8 kilometres northeast of Honeymoon Bay. The Sunnyside workings are about 800 metres south of the main Blue Grouse workings. Developmental work on the Sunnyside deposit was first reported in 1906. The mine was abandoned in 1960 with some reserves left at the Blue Grouse main workings.

The Cowichan Lake area is at the eastern end of the Cowichan uplift, one of a series of major geanticlines on Vancouver Island. The area is underlain by pyroclastic, sedimentary and volcanic rocks of the Paleozoic Sicker Group, the Mississippian to Permian Buttle Lake Group, the Upper Triassic Vancouver Group and the Lower Jurassic

CAPSULE GEOLOGY

Bonanza Group which have been intruded by Triassic gabbros (informally named Mount Hall) and Early to Middle Jurassic Island Plutonic Suite rocks and overlapped by Upper Cretaceous sediments of the Nanaimo Group.

The Vancouver Group comprises pillow and massive basalt, volcaniclastics, tuffs and breccias of the Karmutsen Formation, siltstone, argillite and micrite of the Quatsino Formation and limestone, tuff and argillite of the Parson Bay Formation.

The area is underlain by Karmutsen Formation volcanics and Parson Bay Formation sediments. These are cut by numerous Jurassic feldspar and feldspar-pyroxene porphyry dykes.

The orebodies occur in limestone and tuffaceous members which are folded in a series of overturned folds. The beds are displaced by a series of thrust faults which have a general east strike and dips of 10 to 20 degrees south.

Chalcopyrite-bearing skarn is developed at the contact between Parson Bay Formation limestone (Sutton member) and Karmutsen Formation basalts. Lenses of chalcopyrite occur in a quartz gangue along the contact zone which is up to 100 metres wide. Garnet-epidote-actinolite skarns are also developed in limy tuff, limy sediments and limestone, apparently interbedded with the upper portions of Karmutsen Formation basalts.

A few open pits and short adits comprise the workings. From this property 104 tonnes of ore were mined in 1917, yielding 4159 kilograms of copper and 218 grams of silver. A 1-metre chip sample across weakly argillically altered volcanic rock containing five white zeolite veinlets assayed 1.2 per cent copper (Assessment Report 19387). A rock sample assayed 1.0 per cent copper, 12.2 grams per tonne silver, and 4.8 per cent zinc (Assessment Report 23579).

BIBLIOGRAPHY

EMPR AR 1906-212; *1917-268; 1927-339; 1928-364; 1953-170; 1954-166; 1957-69; 1958-160
EMPR ASS RPT 8895, 8896, 17039, *19387, *23579
EMPR BC METAL MM00056
EMPR BULL *37, p. 57; 101, p. 152, Appendix 6
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR INDEX 3-215
EMPR OF 1987-2; RGS 24, 1990
EMPR MP MAP 1992-2
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; In 092C 017: Eastwood, G.E.P. (1975-1980): Upper Sutton Creek area and Hornet notes, maps, sketches)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 99-100

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/20 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 109**

NATIONAL MINERAL INVENTORY:

NAME(S): **RITE 2**, RAIN 2, RITE AND RAIN, SKYLINE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W 092F01W
BC MAP:
LATITUDE: 48 59 30 N
LONGITUDE: 124 22 41 W
ELEVATION: 680 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Target D on Rite 2 claim; this is the southern extension of the Rite and Rain property (092F 562).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5427444
EASTING: 399190

COMMODITIES: Gold, Silver, Molybdenum, Copper

MINERALS

SIGNIFICANT: Pyrite, Molybdenite, Chalcopyrite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Silica, Ankerite, Sericite, Epidote, Hematite, Limonite
ALTERATION TYPE: Silicific'n, Carbonate, Sericitic, Epidote, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
SHAPE: Irregular
MODIFIER: Faulted, Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Volcaniclastic Rock
Volcanic Rock
Granodiorite

HOSTROCK COMMENTS: The Island Plutonic Suite is Early to Middle Jurassic in age.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Silver	3.9000	Grams per tonne
Gold	0.4000	Grams per tonne
Copper	0.0427	Per cent

COMMENTS: From outcrop containing a quartz vein which crosscuts a granodioritic dyke along a shear plane.
REFERENCE: Assessment Report 18635.

CAPSULE GEOLOGY

The Rite 2 showing is located 40 kilometres southwest of Nanaimo, 2 kilometres south of the Rite 1 showing (092F 562).

The area is underlain by tuff, chert and argillite of the Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group) which have been intruded by diorite and granodiorite of the Early to Middle Jurassic Island Plutonic Suite. A broad zone of imbricate faulting and shearing is present and exposures of fault breccia, intense shearing and alteration occur.

Exploration in 1988 identified four target areas characterized by gold, silver, arsenic, copper and molybdenite mineralization hosted in quartz-sulphide veins within quartz-ankerite, sericite, fuchsite and hematite bearing shear zones. The main target has a strike length of 3.2 kilometres over widths up to 1 kilometre, within

CAPSULE GEOLOGY

which a series of 10 to 100 metre wide alteration packages occur. These comprise the Rite and Rain property which includes the Rite 1 showing (092F 562).

On the Rite 2 claim, target D was anomalous in copper and molybdenum plus or minus gold and silver. The anomalies occur associated with quartz veins crosscutting volcaniclastic and intrusive rocks. The veins are up to 0.10 metres wide and contain up to 15 per cent pyrite, 4 per cent molybdenite and trace chalcopyrite. The volcaniclastic rocks adjacent to intrusives are locally intensely epidote altered. The area of interest is approximately 600 by 1200 metres.

A grab sample was taken from an outcrop containing a quartz vein which crosscuts a granodioritic dyke along a shear plane. This sample (#25063) assayed 0.4 grams per tonne gold , 3.9 grams per tonne silver, and 0.0427 per cent copper (Assessment Report 18635). Molybdenum has been documented on the nearby Close occurrence (092C 112) to the south.

BIBLIOGRAPHY

EMPR ASS RPT 12132, *18635
EMPR BULL 9; 37
EMPR FIELDWORK 1977, p. 23, 1986, pp. 223-229; 1987, pp. 81-91; 1988, pp. 61-74; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; 1988-24; *1989-6; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; In 092F 562: Galico Resources Inc. Prospectus April, 1989)
GSC MAP 17-1968; 49-1963; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1990/06/21 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1991/01/21 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 110**

NATIONAL MINERAL INVENTORY:

NAME(S): **REKO 38**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 39 13 N
LONGITUDE: 124 18 30 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Zone 5 (Geology in B.C. 1975, page G38).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5389777
EASTING: 403644

COMMODITIES: Magnetite Copper

MINERALS
SIGNIFICANT: Magnetite Pyrrhotite Chalcopyrite Pyrite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn Replacement

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Andesite
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area of the Reko occurrences is mapped by Muller (Geological Survey of Canada Open File 821) as primarily diorite of the Mesozoic and/or Paleozoic Westcoast Complex. An east trending band of limestone is also mapped. Volcanics of the Lower Jurassic Bonanza Group lie to the north of the Reko property.

The north part of the Reko property is underlain by grey to white crystalline limestone, and the central and south part is underlain mainly by intrusive breccia. Several bodies of limestone also occur in the central and south part. The primary fragments of the breccia are fine grained and dark grayish green in colour, resembling andesite, and some contain amygdules. This andesitic rock was successively intruded by mafic-rich and mafic-poor diorite. The breccia grades to massive, mesocratic diorite to the south, and to massive andesite at about the 600 metre level on the west side of the east ridge. A set of long, narrow, fine-grained grey dykes strike 020 degrees and transects all other rocks. Most limestone bodies have been successively intruded by dykes of andesite and leuco-diorite. It is thought that prior to diorite intrusion andesite underlay the limestone and also intruded it.

Three zones make up the Reko 38 occurrence. Zone 4 (Martin's Pit), located on a bluff, consists of irregular veins, pockets and masses of magnetite in partly skarned diorite. Drilling into the base of the exposure in 1974 showed substantial lengths of magnetite.

Zone 5 (Northwest zone), located 900 metres north-northeast of Zone 4, consists of a mixture of magnetite and sulphide minerals in skarn. Abundant magnetite occurs with chalcopyrite, pyrrhotite and pyrite in one drill hole, from 0.6 to 8 metres. From 20 to 26.5 metres the core is mostly massive pyrrhotite, containing lenses and blebs of chalcopyrite. Zone 5 is estimated to have about 35,000 tonnes of ore (Geology and Exploration in B.C. 1974, page 170). No grade of ore was given.

Zone 6 (Falls) is located about 250 metres southeast of Zone 5. A mixture of magnetite and skarn is exposed over an area of about 9 square metres and a height of 3.7 metres. It is flanked by diorite and andesite.

See also Reko 3 (092C 090), Reko 10 (092C 091) and Reko North (092C 146).

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT 5029
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1972-242; 1973-226; *1974-166-170
EMPR GEOLOGY *1975, pp. 39-42
EMPR OF *1988-28, p. 56
EMPR OF RGS 24
EMPR PF (Reako Explorations Ltd., Prospectus, 1972; Reako Explorations Ltd., Statement of Material Facts, 1972; Various maps and sketches, 1970's)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
GCNL #147,#157,#196,#235, 1972; #20,#21,#26,#43,#69,#117,#143,#212, 1973; #9, 1974; #207,#223, 1975

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/12/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 111**

NATIONAL MINERAL INVENTORY:

NAME(S): **FITINAT**, FIT 2-3, MARG

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 46 43 N
LONGITUDE: 124 44 30 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drill site (Assessment Report 14432).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5404308
EASTING: 372049

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Quartz Epidote
ALTERATION TYPE: Silicific'n Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Monzonite Dike
Fine Grained Diorite Dike
Feldspar Porphyry Rhyodacite
Felsic Tuff
Andesitic Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1985

COMMODITY	GRADE	
Copper	0.0500	Per cent
Molybdenum	0.0300	Per cent

COMMENTS: Drill hole stopped before target.
REFERENCE: Assessment Report 14432.

CAPSULE GEOLOGY

The Fitinat claim is located on the west shore of Nitinat Lake, 7 kilometres southwest of the mouth of the Nitinat River. From 1979 to 1984 a program comprising soil and rock sampling, and geophysical surveys outlined molybdenum and copper zones. In 1985, 2 holes were drilled but abandoned short of target.

The area is underlain by Lower Jurassic Bonanza Group felsic to andesitic tuffs, intruded by Early to Middle Jurassic Island Plutonic Suite rocks comprising fine grained diorite and quartz monzonite dykes and plugs.

Mineralization consists of minor disseminated molybdenite, chalcopyrite and pyrite in quartz vein stockworks hosted mainly by quartz monzonite dykes and plugs. Two possible ages of quartz veining occurs, the mineralization ia associated with the earlier grey quartz veins. Molybdenite occurs along vein selvages.

Epidotization on fractures and intense silicification occurs in nearby tuffs. Tuffs dip gently to the north and northwest and are interbedded with feldspar porphyry rhyodacite.

A sample of drill core assayed 0.05 per cent copper and up to 0.03 per cent molybdenum (Assessment Report 14432).

BIBLIOGRAPHY

EMPR ASS RPT 8288, 11889, *12814, *14432
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR GEM 1972-258
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1991/01/21	REVISED BY:	SNB	FIELD CHECK:	N

MINFILE NUMBER: **092C 112**

NATIONAL MINERAL INVENTORY:

NAME(S): **CLOSE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W
BC MAP:
LATITUDE: 48 58 34 N
LONGITUDE: 124 19 47 W
ELEVATION: 740 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample 4960 on southeastern corner of Close claim (Assessment Report 8782).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5425652
EASTING: 402695

COMMODITIES: Molybdenum Copper

MINERALS

SIGNIFICANT: Molybdenite Chalcopyrite Pyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Silica Chlorite Epidote
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Stockwork Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Fractured Faulted
DIMENSION: 2500 x 2000 x 1 Metres
STRIKE/DIP: 340/75E
TREND/PLUNGE:
COMMENTS: Veins, up to 1.5 metres wide, occur in a 2 by 2.5 kilometre area. The veins strike between 320 and 360 degrees and dip 65 to 75 degrees east.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite
Volcanic
Sediment/Sedimentary

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
METAMORPHIC TYPE: Contact Regional
RELATIONSHIP:
GRADE: Hornfels Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.5560	Per cent
Molybdenum	0.6250	Per cent

COMMENTS: Sample 4960 from 41 centimetre quartz vein, minor gold and silver.
REFERENCE: Assessment Report 8782.

CAPSULE GEOLOGY

The Close showing is located just west of Delphi Lake, 32 kilometres southwest of Nanaimo. The Close claim covers the northern Allies showings (092C 014). One crosscut and several trenches were opened in the early 1900's (probably part of the Allies workings).

The area is underlain by volcanic rocks of the Devonian Nitinat Formation, Sicker Group intruded by Early to Middle Jurassic Island Plutonic Suite rocks. Major northeast and northwest striking faults have resulted in fracturing of the intrusive rocks. These fractures are generally quartz-filled and some host mineralization.

Mineralization consisting of molybdenite, chalcopyrite and pyrite occurs in siliceous veins and shears in intrusive rocks and disseminated in adjacent volcanics. Molybdenite occurs sparsely disseminated in fissures, veinlets and veins up to 1.5 metres wide

CAPSULE GEOLOGY

over an area 2 by 2.5 kilometres. The veins strike between 320 and 360 degrees with dips between 65 and 85 degrees east.

A sample from a 41 centimetre quartz vein assayed 0.625 per cent molybdenite and 0.556 per cent copper (Assessment Report 8782).

BIBLIOGRAPHY

EMPR ASS RPT 6963, 7880, *8782
EMPR BULL 9, pp. 73-76; 37, p. 60
EMPR FIELDWORK 1977, p. 23; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR GEM 1977-E107; 1978-E125
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 113** NATIONAL MINERAL INVENTORY: 092C16 Mn7

NAME(S): **ROCKY**, STRIKER, OSIRUS A,
MT. FRANKLIN, MOFO, MEADE CREEK

STATUS: Past Producer Open Pit MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 54 01 N NORTHING: 5417035
LONGITUDE: 124 10 27 W EASTING: 413948
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main showing in southwest corner of Osirus A claim; the historic Rocky deposit is located somewhere in this vicinity (within 3 km) (Assessment Report 18097).

COMMODITIES: Rhodonite Gemstones Manganese Copper

MINERALS
SIGNIFICANT: Rhodonite Jasper Rhodochrosite Spessartine Pyrite Chalcopyrite
ASSOCIATED: Chalcedony Magnesite Calcite Quartz
COMMENTS: Manganese oxides.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Lower Mississippian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodonts

DEPOSIT
CHARACTER: Massive Stratabound Podiform Vein
CLASSIFICATION: Metamorphic Sedimentary Epigenetic Industrial Min.
TYPE: Q02 Rhodonite
SHAPE: Irregular
MODIFIER: Folded
DIMENSION: Metres STRIKE/DIP: 149/30E TREND/PLUNGE:
COMMENTS: Orientation of 1 metre square zone. Age reference - Personal Communication, Nick Massey, 1991.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
DATING METHOD:	Fossil		
MATERIAL DATED:	Conodonts		
Jurassic			Island Plutonic Suite

LITHOLOGY: Chert
Cherty Tuff
Limestone
Granite
Diorite

HOSTROCK COMMENTS: Manganese minerals are hosted in the Lower Mississisippian Shaw Creek Member (Personal Communication - Nick Massey, 1991).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located within the Cowichan uplift.

CAPSULE GEOLOGY

The Rocky deposit is located on the south slopes of Mount Franklin, about 3.5 kilometres north of Youbou. The Rocky workings have not been located, but are believed to be in the vicinity of the Osirus A claim.

The area is underlain by rocks of the Early to Middle Jurassic Island Plutonic Suite which intrude Upper Devonian McLaughlin Ridge Formation (Sicker Group) mafic volcanics and Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group) ribbon cherts and crinoidal limestone. A major anticline occurs to the east of the property and the area is highly faulted.

Rhodonite and jasper occur in lenticular masses in cherts and cherty tuffs of the Lower Mississippian Shaw Creek Member (dated by conodonts, Personal Communication - Nick Massey, 1991) with associated rhodocrosite and spessartine. Disseminated pyrite and chalcopyrite occur in quartz veins associated with diorite. Rhodonite development is restricted to areas of very dark ribbon

CAPSULE GEOLOGY

chert which may be cut by major faults. Chert occurs in the general vicinity of Island Plutonic Suite intrusives and major faults. The main rhodonite pod is adjacent to a fault.

The main showing on the Osirus A claim is good quality, deep pink rhodonite which compares favourably with Hill 60 (092B 027) rhodonite. Lower quality rhodonite also occurs in the area. Rhodonite locally occurs in bands 2 to 5 millimetres wide and in crackle breccia veinlets and lenses. A faint pink colouration was noted in wider alteration zones. The main zone strikes 149 degrees and dips 30 degrees east over a 1 metre square area. The zone is capped by intense maganese oxide staining.

Surface stripping was done on the Rocky claim in 1977 and 1978; 555 kilograms of rhodonite were produced (Exploration in British Columbia 1977, 1978). The quantity of gem quality rhodonite on the Osirus A claim is low.

BIBLIOGRAPHY

EMPR ASS RPT 13962, 14302, 15117, 16210, *18097, 19028
EMPR BULL *37, pp. 65-67
EMPR EXPL 1977-E255; 1978-E293
EMPR FIELDWORK 1978, pp. 38-40; *1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF *1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; In Commodity File - Sargent, H. (1956): Manganese occurrences in B.C. and Leaming, S.F. (1966): Rhodonite in B.C. in The Canadian Rockhound and Danner, W. R. (1976): Gem Materials of B.C.; Plan of Stripping, date and source unknown)
EMPR SUM OF EXPL & DEV 1977
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-53 pp.32,56; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Cowley, P. (1979): Correlation of Rhodonite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 102
Sargent, H. (1939): Manganese Deposits of Cowichan Lake Munition Resources Commission of Canada, 1920 p. 92

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 114** NATIONAL MINERAL INVENTORY: 092C16 Mn4

NAME(S): **WARDROPER**, WARDROPER CREEK, STRIKER, COTT 6, COTT

STATUS: Showing MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 55 56 N NORTHING: 5420704
LONGITUDE: 124 16 28 W EASTING: 406659
ELEVATION: 825 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing (Open File 1987-2).

COMMODITIES: Rhodonite Manganese Gemstones

MINERALS
SIGNIFICANT: Rhodonite
MINERALIZATION AGE: Lower Mississippian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodonts

DEPOSIT
CHARACTER: Podiform Stratiform Concordant
CLASSIFICATION: Metamorphic Sedimentary Epigenetic Industrial Min.
TYPE: Q02 Rhodonite
SHAPE: Tabular
DIMENSION: Metres STRIKE/DIP: 345/55E TREND/PLUNGE:
COMMENTS: Age reference - Personal Communication, Nick Massey, 1991.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

DATING METHOD: Fossil
MATERIAL DATED: Conodonts

LITHOLOGY: Chert
Cherty Tuff

HOSTROCK COMMENTS: Manganese mineralization is hosted in the Lower Mississippian Shaw Creek member (Personal Communication - Nick Massey).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

CAPSULE GEOLOGY

The Wardroper showings are located 4 kilometres north of Cowichan Lake and 88 kilometres northwest of Victoria. The showing was first reported in 1939.

The occurrence comprises several lenses of rhodonite and yellow manganiferous chert in cherty tuff of the Lower Mississippian Shaw Creek Member (dated by conodonts, Personal Communication - Nick Massey, 1991) of the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group.

Individual lenses are less than 30 centimetres wide but together they total about 3 metres and are exposed for about 6 metres along strike. The lenses are parallel to bedding which strikes 165 degrees and dips 55 degrees northeast.

BIBLIOGRAPHY

EMPR ASS RPT 13962, 14302, 15117, 17736, 19028
EMPR BULL *37, p. 69
EMPR FIELDWORK 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 72-53; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Cowley, P. (1979): Correlation of Rhodonite Deposits on Vancouver

BIBLIOGRAPHY

Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia
Danner, W. R. (1976): Gem Materials of B.C.
Sargent, H. (1939): Manganese Deposits of Cowichan Lake

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 115** NATIONAL MINERAL INVENTORY: 092C16 Mn5

NAME(S): **MEADE**, MEADE CREEK, STRIKER, ANOMALY, COW 1-4

STATUS: Showing MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 51 57 N NORTHING: 5413073
LONGITUDE: 124 03 02 W EASTING: 422954
ELEVATION: 825 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Open File 1987-2.

COMMODITIES: Rhodonite Manganese Gemstones Copper

MINERALS
SIGNIFICANT: Rhodonite Garnet Pyrite Pyrrhotite Chalcopyrite
COMMENTS: Minor chalcopyrite.
MINERALIZATION AGE: Lower Mississippian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodonts

DEPOSIT
CHARACTER: Podiform Stratiform Concordant Massive
CLASSIFICATION: Metamorphic Sedimentary Epigenetic Industrial Min.
TYPE: Q02 Rhodonite
SHAPE: Tabular
COMMENTS: Age reference - Personal Communication, Nick Massey, 1991.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

DATING METHOD: Fossil
MATERIAL DATED: Conodonts

LITHOLOGY: Cherty Tuff

HOSTROCK COMMENTS: Manganese mineralization is hosted in the Lower Mississippian Shaw Creek Member (Personal Communication - Nick Massey, 1991).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

CAPSULE GEOLOGY

The Meade Creek showing is located 1.5 kilometres east of Meade Creek, 5 kilometres north of the community of Lake Cowichan and 65 kilometres northwest of Victoria. This showing has been known since 1939 and is located on the northeast corner of the Cow property (092C 074).

The area is underlain by Upper Devonian McLaughlin Ridge Formation (Sicker Group) volcanics and Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group) sediments intruded by sills, dykes and granitic rocks of the Early to Middle Jurassic Plutonic Suite. The area is highly faulted and major folds are present. The rocks have undergone greenschist facies metamorphism.

The showings are underlain by a basalt, andesite, cherty tuffs, cherty argillites and andesite tuffs. Diorite dykes and plugs are exposed on the property.

The Meade Creek occurrence consists of lenses containing rhodonite and manganiferous garnet in red and white cherty tuffs of the Lower Mississippian Shaw Creek Member (dated by conodonts, Personal Communication - Nick Massey, 1991). Lenses are up to 1 metre wide and appear to be more or less continuous along strike between 2 opencuts about 61 metres apart. The lenses are thinly coated with oxides.

A fault structure on the lower north slopes of Hill 60 contains 0.22 percent copper, 3.8 grams per tonne silver and 0.024 grams per tonne gold (rock chip sample # 86STRAT-70). The rock has been silicified, clay and limonite altered and contains malachite. Other samples from this structure assayed much lower. Trace amounts of chalcopyrite, sphalerite and galena were noted in the area. Argillites and cherty argillites in the Hill 60 area contain 15 to 20 per cent pyrite and pyrrhotite. Samples from a shear assayed low values

CAPSULE GEOLOGY

in molybdenum, lead, zinc, arsenic and gold.

BIBLIOGRAPHY

EMPR ASS RPT 13962, 14302, 14891, 15117, 16122, *16210, 18097, 18640
EMPR BULL *37 p. 68
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 19
pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan
Lake Area, 1963; In Commodity File - Sargent, H. (1956): Manganese
occurrences in B.C. and Leaming, S.F. (1966): Rhodonite in B.C. in
The Canadian Rockhound and Danner, W. R. (1976): Gem Materials of
B.C.; Sketches, date and author unknown)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 72-53; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with
emphasis on the relationships of mineral deposits to plutonic
rocks, Ph.D. Thesis, Carleton University
Cowley, P. (1979): Correlation of Rhodonite Deposits on Vancouver
Island and Saltspring Island, British Columbia, Unpublished B.Sc.
Thesis, University of British Columbia
Sargent, H. (1939): Manganese Deposits of Cowichan Lake

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 116** NATIONAL MINERAL INVENTORY: 092C16 Mn6

NAME(S): **STANLEY CREEK**, CHEM, LOOKOUT, COW 7

STATUS: Showing MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 51 28 N NORTHING: 5412144
LONGITUDE: 124 01 01 W EASTING: 425407
ELEVATION: 850 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Rhodonite showing located on the Cow 7 claim, east of the head of Stanley Creek (Open File 1987-2).

COMMODITIES: Gold, Silver, Copper, Manganese, Rhodonite, Gemstones

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Magnetite, Rhodonite
ASSOCIATED: Quartz, Jasper
ALTERATION: Hematite, Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Lower Mississippian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodonts

DEPOSIT

CHARACTER: Vein, Stratiform, Disseminated, Shear
CLASSIFICATION: Hydrothermal, Epigenetic, Volcanogenic, Industrial Min.
TYPE: G01 Algoma-type iron-formation, Q02 Rhodonite
SHAPE: Irregular
MODIFIER: Sheared, Faulted
DIMENSION: 2000 x 700 x 10 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Hematitic chert horizon is up to 10 metres wide, has been traced for 700 metres and has a possible continuation along strike of several kilometres. Age reference - Personal Communication Nick Massey, 1991.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

DATING METHOD: Fossil
MATERIAL DATED: Conodonts

LITHOLOGY: Cherty Tuff, Chert, Argillite, Volcanic Rock, Volcaniclastic Rock, Hematite Chert, Iron Formation

HOSTROCK COMMENTS: Manganese mineralization is hosted in the Lower Mississippian Shaw Creek Member (Personal Communication - Nick Massey, 1991).

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1979
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Manganese	42.2500	Per cent

COMMENTS: Microprobe.
REFERENCE: Property File - Cowley, 1979.

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	17.6000	Grams per tonne
Gold	1.4000	Grams per tonne
Copper	1.5800	Per cent

COMMENTS: Limonitic shears.
REFERENCE: Assessment Report 16053.

CAPSULE GEOLOGY

The Stanley Creek showing is located 4 kilometres northeast of Lake Cowichan on the Cow 7 claim (Chem property), east of the head of Stanley creek. The rhodonite has been known of since about 1939 and exploration in 1986 discovered sulphide mineralization in the area.

The property is underlain by pyroclastic and sedimentary rocks of the Upper Devonian McLaughlin Ridge Formation (Sicker Group) and the Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group). Lithologies comprise cherty tuff, chert, argillite, iron formation, volcanic and volcaniclastic rocks.

Sulphide mineralization consists of widely disseminated pyrite and chalcopyrite associated with shear zones and stratiform iron-rich deposits consisting of layered pyrite and magnetite.

Rhodonite occurs in thinly laminated chert and cherty tuff of the Fourth Lake Formation in the Lower Mississippian Shaw Creek Member (dated by conodonts, Personal Communication - Nick Massey, 1991) adjacent to a Jurassic granodiorite stock. The showing consists of two irregular lenses of rhodonite, parallel to the bedding, about 5 to 30 centimetres wide and 6 metres long. Microprobe analyses assayed 42.25 per cent MnO (Cowley, 1979).

Three hundred metres to the northeast, limonitic shears, trending east and up to 20 centimetres wide, are mineralized with 5 per cent pyrite and 2 to 3 per cent chalcopyrite. A sample assayed 1.4 grams per tonne gold, 17.6 grams per tonne silver, and 1.58 per cent copper (Assessment Report 16053).

A hematitic chert (iron formation) horizon has been traced for 700 metres, possibly extending along strike for several kilometres. The horizon is up to 10 metres wide and hosts pyrite, magnetite and up to 0.3 grams per tonne gold (Assessment Report 16053). Several fault zones cut this unit and, where exposed, are enriched in manganese, barium, zinc and anomalous gold values. These may be the source of the well mineralized float found on the property. The bed, composed of blue-grey cryptocrystalline quartz (sporadically jasperoidal), contains up to 5 per cent pyrite and specular hematite and several per cent magnetite.

BIBLIOGRAPHY

EMPR ASS RPT *15013, *16053
EMPR BULL 37, p. 68
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 19 pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; In Commodity File - Sargent, H. (1956): Manganese occurrences in B.C. and Leaming, S.F. (1966): Rhodonite in B.C. in The Canadian Rockhound and Danner, W. R. (1976): Gem Materials of B.C.)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 72-53 p. 34,56; 76-1A; 79-30
PERS COMM (Nick Massey, GSB, 1991)
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Cowley, P. (1979): Correlation of Rhodonite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 96-97
Sargent, H. (1939): Manganese Deposits of Cowichan Lake

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 117** NATIONAL MINERAL INVENTORY:

NAME(S): **AMORE**, AMORE 2

STATUS: Past Producer Open Pit MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 58 53 N NORTHING: 5426181
LONGITUDE: 124 17 02 W EASTING: 406059
ELEVATION: 825 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of samples from northern portion of Amore 2 claim (Assessment Report 16227).

COMMODITIES: Gold Silver Lead Zinc Molybdenum

MINERALS
SIGNIFICANT: Sphalerite Arsenopyrite Galena Molybdenite Pyrite Pyrrhotite Chalcopyrite Gold
ASSOCIATED: Quartz Carbonate
ALTERATION: Silica Ankerite
ALTERATION TYPE: Silicific'n Carbonate Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear Massive
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: STRIKE/DIP: 315/ TREND/PLUNGE:
COMMENTS: Vein, 3 to 30 centimetres wide, occurs in a shear zone. Bedding strikes northwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Chert
Cherty Tuff
Cherty Argillite
Argillite
Tuff
Quartz Diorite
Diorite
Basalt

HOSTROCK COMMENTS: Diorite to quartz diorite intrudes Karmutsen volcanics on the southern portion of the claim.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	4.4000	Grams per tonne
Gold	19.2000	Grams per tonne

COMMENTS: Over 2 metres of cherty argillite crosscut by quartz veins. Highest assay from sampling program (Sample 18205).
REFERENCE: Assessment Report 16227.

CAPSULE GEOLOGY

The Amore showing is located on the Amore 2 claim 11 kilometres northwest of Youbou on Cowichan Lake. The area was originally prospected in the 1910's and 1920's.
The area is underlain by sedimentary and volcaniclastic rocks

CAPSULE GEOLOGY

of the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group and basaltic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group. These have been intruded by rocks of the Early to Middle Jurassic Island Plutonic Suite.

The claim is underlain by chert, cherty argillite, cherty tuff, tuff and argillite of the Fourth Lake Formation in the northern portion and in the south by Karmutsen Formation volcanics intruded by diorite to quartz diorite. To the northeast of the claim, lenses of jasper a few metres thick dip steeply and strike north.

Mineralization occurs mainly in shears and quartz veins within cherty sediments in the northern portion of the claim. One sulphide-rich vein, 3 to 30 centimetres wide, lies in a shear zone in silicified and carbonatized rocks. Gold mineralization occurs with galena, sphalerite and arsenopyrite in quartz veins, stringers and lenses. Mineralization comprising pyrite, arsenopyrite, galena, molybdenite and chalcopyrite occurs as massive sulphide lenses and stringers in siliceous zones, quartz veins and altered tuffs. Mineralization appears to be structurally controlled.

Drilling and trenching in 1978 traced the sulphide-rich vein for 30 metres (Assessment Report 7187). A 1.8-tonne shipment of ore in 1978 to the Tacoma smelter (personal communication, Efrem Specogna, 2003) produced approximately 685.6 grams per tonne gold (Assessment Report 7187).

A sampling program on the northern portion of the claim resulted in a highest assay of 19.2 grams per tonne gold and 4.4 grams per tonne silver from a 2 metre chip sample of cherty argillite (Assessment Report 16227, Sample 18205).

BIBLIOGRAPHY

EMPR ASS RPT *7187, 7880, 8782, 9861, 10324, 10970, 11302, 12002, 14116, 14316, 15258, *16227
EMPR BULL 9; 37
EMPR EXPL 1978-E125; 1979-126; 1986-C149
EMPR FIELDWORK 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 118**

NATIONAL MINERAL INVENTORY:

NAME(S): **DIXON ISLAND**, BARKLEY SOUND

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14E
BC MAP:
LATITUDE: 48 51 10 N
LONGITUDE: 125 07 12 W
ELEVATION: 25 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Dixon Island (NTS Map 92C/14).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5413257
EASTING: 344486

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite
COMMENTS: Hosted in a belt of plutonic and mafic metamorphic rocks.

CAPSULE GEOLOGY

Limestone is reported to occur on Dixon Island and Dixon Point in Barclay Sound, within the Paleozoic and/or Mesozoic Westcoast Complex.

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 503-510
EMPR IND MIN FILE (McGammon, J.W. (1973): Limestone occurrences of B.C. - (in Ministry Library))
EMPR OF 1988-24 p.21; RGS 24, 1990
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24
DATE REVISED: 1989/06/30
CODED BY: GSB
REVISED BY: PSF
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092C 119**

NATIONAL MINERAL INVENTORY:

NAME(S): **NI**, N.I., LITTLE NITINAT,
CAMP, COPPER, SUMMIT,
A.B.C, NIT, NAT,
LX, NITINAT, AL,
FLORA , SKARN

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 53 02 N
LONGITUDE: 124 41 13 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Camp zone along a main road paralleling Little Nitinat River, 7 kilometres north of Nitinat Lake, 40 kilometres east-northeast of Bamfield (Assessment Report 7731).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5415920
EASTING: 376328

COMMODITIES: Gold, Silver, Copper, Zinc, Lead

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Chalcopyrite, Galena, Sphalerite, Marcasite
ASSOCIATED: Quartz
ALTERATION: Silica, Clay
ALTERATION TYPE: Silicific'n, Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Massive, Shear
CLASSIFICATION: Epigenetic, Hydrothermal, Volcanogenic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Sheared, Faulted
DIMENSION: 10 x 1 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Copper zone is a 1.5 metre wide block, traced for at least 10 metres. Shear zones strike southwest.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Porphyritic Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: COPPER
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1980

COMMODITY	GRADE	
Silver	209.7900	Grams per tonne
Gold	1.7000	Grams per tonne
Copper	5.0000	Per cent
Lead	0.1600	Per cent
Zinc	0.5700	Per cent

COMMENTS: Sample across 1.5 metres.
REFERENCE: Assessment Report 7731.

INVENTORY

ORE ZONE: CAMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1980
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	44.6100	Grams per tonne
Gold	1.3000	Grams per tonne
Copper	0.1700	Per cent
Lead	6.8700	Per cent
Zinc	6.6100	Per cent

COMMENTS: Sample across 1.3 metres.
REFERENCE: Assessement Report 7731.

CAPSULE GEOLOGY

The Ni showings are located along the Little Nitinat River near its confluence with the Nitinat River, 40 kilometres south of Port Alberni. An adit, 3.3 metres long, reported in 1916 on the Flora claim is located 300 metres north of the Camp zone.

The area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) basalts. Upper Triassic Quatsino Formation (Vancouver Group) limestone occurs to the south, and Early to Middle Jurassic Island Plutonic Suite granodiorite to the north. The property appears to be located at the junction of two shear zones. Faults trending north occur along the Little Nitinat River and the rocks have undergone greenschist facies metamorphism.

Mineralization occurs as massive sulphides and fault controlled. Argillic alteration is best developed in felsic volcanic rocks with silicification along some of the larger faults. Mineralization comprises massive sulphide lenses of pyrite, pyrrhotite, chalcopyrite, galena and sphalerite and shear/fracture zones with pyrite, sphalerite and galena. Marcasite was noted in the work done in 1916.

At the Camp and Copper zones, sheared basalt is the dominant rock type. As exposed in the Camp zone area, a shear strikes 145 degrees with dips generally to the southwest. Drilling at the Camp zone intersected basalt, at times porphyritic, and a grey siliceous unit containing variable amounts of disseminated pyrite and pyrrhotite. One hole also intersected a section of quartz vein material mineralized with galena, sphalerite and minor chalcopyrite. A core sample across a 1.3 metre section assayed 0.17 per cent copper, 6.87 per cent lead, 6.61 per cent zinc, 94.61 grams per tonne silver and 1.3 grams per tonne gold (Assessment Report 7731).

A surface grab sample from the Copper zone, 350 metres south of the Camp zone, assayed 0.16 per cent lead, 0.57 per cent zinc, 5.01 per cent copper, 209.79 grams per tonne silver and 1.7 grams per tonne gold across 1.5 metres (Assessment Report 7731). The Copper zone is a 1.5 metre wide block of massive sulphides and has been traced for at least 10 metres.

Soil sampling in 1988 on the west side of the Little Nitinat River yielded a number of anomalous zones which strike toward the Camp zone 1.3 kilometres away (Assessment Report 17406).

BIBLIOGRAPHY

EMPR AR 1916-314; 1968-105
EMPR ASS RPT 2019, 2195, 4279, *7731, 13706, *17406
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown; Osborne, W. (1972): Supplement and Maps to the 1972 Geological Report on the Little Nitinat Property, Noranda Exploration; Forfeited claim documents from Noranda Exploration, 1974)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/22 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 120**

NATIONAL MINERAL INVENTORY:

NAME(S): **FAITH**, DORIS, OZZARD

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14W
BC MAP:
LATITUDE: 48 55 59 N
LONGITUDE: 125 28 03 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Showings along a beach, 5 kilometres directly east of Ucluelet (Annual Report 1935 p. F54-55).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5422949
EASTING: 319287

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION: 30 x 18 Metres STRIKE/DIP: 350/60E TREND/PLUNGE:
COMMENTS: Shear zone is 18 metres wide and mineralization occurs over 30 metres on the beach.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Pacific Rim Complex

LITHOLOGY: Chert
Limestone
Dolomite
Graphitic Slate

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1937
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	7.5400	Grams per tonne

COMMENTS: Highest assay from grab samples of pyritic material from shear zone.
REFERENCE: Geological Survey of Canada Memoir 204 page 30.

CAPSULE GEOLOGY

The Faith occurrence area is underlain by Jurassic and Cretaceous Pacific Rim Complex sedimentary rocks. Mineralized showings occur over a 30 metre stretch of beach and consist of pyrite in tiny (1-2 millimetre) quartz veinlets and disseminations within a shear zone 18 metres wide. The shear zone strikes 350 degrees and dips 60 degrees east. Host rocks comprise chert, dolomitized limestone and some graphitic slate. Grab samples of pyritic material from the shear zone assayed up to 7.54 grams per tonne gold (Geological Survey of Canada Memoir 204, page 30).

BIBLIOGRAPHY

EMPR AR *1935-F54,F55
EMPR ASS RPT 17740
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC MAP 1386A
GSC MEM 13; *204-29,30
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic

BIBLIOGRAPHY

rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/15 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 121**

NATIONAL MINERAL INVENTORY:

NAME(S): **WRECK BAY**, BLACK SAND, FLORENCIA BAY, LOST SHOE CREEK

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C13E
BC MAP:
LATITUDE: 48 59 39 N
LONGITUDE: 125 37 34 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the base of the cliffs on Florencia Bay.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5430131
EASTING: 307906

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold Magnetite Silica
MINERALIZATION AGE: Pleistocene

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers
COMMENTS: Placers occur on beach where wave action has concentrated the fine gold.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pleistocene			Glacial/Fluvial Gravels

LITHOLOGY: Sand
Gravel
Clay

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Wreck Bay (now Florencia Bay) beach placers occur between Kennedy Lake and the west coast of Vancouver Island. The placers extend from Ucluelet to Tofino Inlet on a flat coastal plain composed of unconsolidated sands, fine gravels and thin beds of blue clay.

These Pleistocene sediments contain a small amount of black sand (magnetite) and fine gold which is being continually concentrated at the base of the cliffs along the bay. Prospectors and campers have historically panned the sand periodically. The amount of sand is small and the quantity of gold is very small where concentration due to wave action has not taken place. The gold probably comes from the quartz veins that occur to the west of Kennedy Lake.

In 1900, 23,996 grams of gold are reported to have been removed from these sands (Annual Report 1900 p. 924). The deposit appears to have been mined out between 1899-1902. The discovery was made by Charles C. Binns in 1898.

BIBLIOGRAPHY

EMPR AR *1899-609,786; 1900-724,921,*924; 1901-1098; 1902-233; 1907-248; 1909-146; 1910-151; 1921-209,236; 1927-343; 1931-160; 1933-246
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24, 1990
EMPR PF (Bremner, J.M. (1970): Geology of Wreck Bay, UBC Masters Thesis)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
GSC SUM RPT *1918 Part B p.38
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Daily Colonist July 18,29, Sept. 7, Oct. 9, 1900; June 29, 1901
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of

BIBLIOGRAPHY

British Columbia, Vol. 1: Vancouver Island, p. 145
Times Colonist Islander March 8, 1998, p. 6 (article by Walter Guppy)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/06/21 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 122** NATIONAL MINERAL INVENTORY:

NAME(S): **UCLUELET**

STATUS: Showing MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C13E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 56 54 N NORTHING: 5424907
LONGITUDE: 125 34 28 W EASTING: 311513
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Site of sample #1 along highway (Minister of Mines Annual Report 1962, page 151).

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Jurassic
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Radiolaria

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 120 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone outcrops for 120 metres along beach.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Pacific Rim Complex

DATING METHOD: Fossil
MATERIAL DATED: Radiolaria

LITHOLOGY: Limestone
Brecciated Chert
Basaltic Flow
Tuff
Chert

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Estevan Strandflat
TERRANE: Pacific Rim
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Hosted in a chert-volcanic melange belt.

INVENTORY

ORE ZONE: ROADCUT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1962
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	55.1300	Per cent

COMMENTS: Taken at 0.61 metre intervals across 9.14 metres of roadcut. Grade for CaO.
REFERENCE: Minister of Mines Annual Report 1962, page 153.

CAPSULE GEOLOGY

The Ucluelet limestone showing is exposed for 30 metres along the Tofino-Ucluelet Highway, 1.9 kilometres northwest of Ucluelet. The limestone also outcrops for 120 metres along the beach, 300 metres south of the highway exposure.

The showing is associated with brecciated grey chert, dark green basaltic flows, tuffs and ribbon chert of the Jurassic Pacific Rim Complex. All units are extensively faulted. The limestone displays numerous northwest striking, vertical joints spaced 5 to 25 centimetres apart.

The showing is composed of fine-grained, massive limestone containing a few crinoid fragments and numerous coarse-grained calcite veinlets. A chip sample taken at 0.61 metre intervals across 9.14 metres of limestone exposed along the highway, contained 55.13 per cent CaO, 0.33 per cent MgO, 0.60 per cent insolubles, 0.23 per cent R_2O_3, 0.19 per cent Fe_2O_3, 0.018 per cent MnO, trace of P_2O_5,

CAPSULE GEOLOGY

0.041 per cent sulphur, 43.52 per cent ignition loss and 0.06 per cent water (Minister of Mines Annual Report 1962, page 153, Sample 1).

BIBLIOGRAPHY

EMPR AR *1962-113,151-153
EMPR BULL 55 pp.19-24
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24, 1990
GSC BULL 23; 40
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1989/06/29	REVISED BY:	PSF	FIELD CHECK:	N

MINFILE NUMBER: **092C 123**

NATIONAL MINERAL INVENTORY:

NAME(S): **WILDCAT**, OZZARD

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C14W
BC MAP:
LATITUDE: 48 59 26 N
LONGITUDE: 125 29 21 W
ELEVATION: 228 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Mineralized outcrop, location uncertain (Assessement Report 354).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5429392
EASTING: 317910

COMMODITIES: Magnetite

MINERALS
SIGNIFICANT: Magnetite Pyrrhotite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diorite
Quartz Diorite
Meta Sediment/Sedimentary Rock
Meta Volcanic Rock

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Wildcat occurrence area is underlain by the Mesozoic-Paleozoic Westcoast Complex comprising diorite and quartz diorite intrusive rocks with minor metavolcanics and metasediments. A mineralized outcrop contains some magnetite, pyrrhotite and pyrite. A magnetometer survey (1961) over the area of the outcrop established an anomaly less than 30 metres in length which was localized by a fault contact with a lens of sulphide (Assessment Report 354).

BIBLIOGRAPHY

EMPR AR 1961-114
EMPR ASS RPT *354, 17740
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/15 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092C 124**

NATIONAL MINERAL INVENTORY:

NAME(S): **GAD**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E
BC MAP:
LATITUDE: 48 34 23 N
LONGITUDE: 124 11 59 W
ELEVATION: 220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located just over a kilometre south of the San Juan River, from a point 15 kilometres from the river's mouth in Port San Juan. The occurrence is located for several hundreds of metres to the east and west of the above coordinates.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5380691
EASTING: 411503

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Layered
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Greywacke
Argillite
Pillow Volcanic
Calc-silicate
Schist
Aplite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Gad showing is reported to occur in an area of sheared, metamorphosed and deformed greywacke, argillite, calc-silicate, pillowed volcanics and carbonaceous schists, chert and aplite dykes. The area is mapped as the Argillite-Metagreywacke Unit of the Jurassic to Cretaceous Leech River Complex. Mineralization consists of a narrow extensive band of massive magnetite ("iron formation"?) that outcrops for a length of 2300 metres (Assessment Report 11459).

BIBLIOGRAPHY

EMPR ASS RPT *11459
EMPR EXPL 1983-181
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/11/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 125**

NATIONAL MINERAL INVENTORY:

NAME(S): **LORI**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 46 04 N
LONGITUDE: 124 38 06 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of claims (Assessment Report 9579).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5402931
EASTING: 379859

COMMODITIES: Copper, Silver, Gold, Lead, Zinc

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Sphalerite, Galena
ALTERATION: Silica, Hematite
ALTERATION TYPE: Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Vein, Massive
CLASSIFICATION: Hydrothermal, Epigenetic
SHAPE: Irregular
MODIFIER: Sheared, Faulted
DIMENSION: 2 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Alteration zones are 1 to 2 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Tuff
Dacitic Tuff
Andesitic Tuff
Andesite
Volcanic Breccia
Porphyritic Andesitic Dike
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: CONTACT
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1981

COMMODITY	GRADE	
Silver	164.2000	Grams per tonne
Gold	1.5400	Grams per tonne
Copper	3.2600	Per cent
Lead	0.4000	Per cent
Zinc	0.4000	Per cent

COMMENTS: Sample (0816A) containing massive sulphide stringers at the contact in dacitic tuff.
REFERENCE: Assessment Report 9579.

CAPSULE GEOLOGY

The Lori showing is located 65 kilometres due west of Duncan, 3.5 km northeast of Nitinat Lake. The area, between Jasper Creek and Campus Creek and 4 kilometres east from Nitinat River, was explored in 1971-72.

The area is underlain by Lower Jurassic Bonanza Group tuffs, breccias and flows ranging from andesite to rhyodacite overlying Quatsino Formation limestone and Karmutsen Formation volcanics, both of the Upper Triassic Vancouver Group. These are all intruded by quartz diorite of the Early to Middle Jurassic Island Plutonic Suite.

The property is underlain by strongly fractured and faulted light grey massive dacitic to andesitic crystal tuffs and flows,

CAPSULE GEOLOGY

massive maroon volcanic breccia and grey coarsely porphyritic andesitic to dioritic dykes (?).

Narrow, silicified and strongly pyritized dacitic tuffs locally host disseminated pyrite and stringers of massive pyrite, chalcopyrite, sphalerite and lesser galena. The alteration zones are characterized by a heavy iron stain and are generally 1 to 2 metres wide. One zone comprises a 15 centimetre band hosting stringers of massive pyrite and chalcopyrite with occasional coarse blebs of sphalerite and minor fine galena. Pyrite is concentrated in siliceous volcanic rocks in or near fault and shear structures.

A sample (#816A) of massive sulphide stringers in dacitic rocks at a contact zone, assayed 3.26 per cent copper, 0.40 per cent lead, 0.40 per cent zinc, 164.2 grams per tonne silver and 1.54 grams per tonne gold (Assessment Report 9579).

BIBLIOGRAPHY

EMPR ASS RPT 2549, 3649, *9579
EMPR BULL 37
EMPR FIELDWORK 1986, pp. 223-229; 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1987-2; 1988-24; 1989-6
GSC MAP 17-1968; 49-1963; 1386A
GSC MEM 13
GSC OF 463; *821; 1272
GSC P 68-50; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1991/01/07 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1991/01/09 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 126**

NATIONAL MINERAL INVENTORY:

NAME(S): **PAULA**, MARATHON, TAURUS, MCKAY

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W
BC MAP:
LATITUDE: 48 56 16 N
LONGITUDE: 124 18 54 W
ELEVATION: 480 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of samples M1-R to M4-R from Paula vein (Assessment Report 18093).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5421372
EASTING: 403699

COMMODITIES: Gold, Silver, Copper

MINERALS
SIGNIFICANT: Pyrite, Pyrrhotite, Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
DIMENSION:
STRIKE/DIP: 035/76E
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Jurassic			Island Plutonic Suite

LITHOLOGY: Tuff
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

CAPSULE GEOLOGY

The Paula vein is located on the Marathon claim which straddles McKay Creek, north of Cowichan Lake. The Amore 2 (092C 117) showing, which produced a small amount of ore in 1979, adjoins the Taurus claim which to date has no known mineralization.

The area is underlain by granodiorite of the Early to Middle Jurassic Island Plutonic Suite and hornfelsed basalt, andesite and rhyolite tuff of the Upper Devonian McLaughlin Ridge Formation, Sicker Group. The granodiorite is cut by narrow aplite and basalt dykes.

Mineralization occurs in a narrow discontinuous quartz vein which appears to lie at the contact between the volcanic and intrusive rocks hosted in a shear zone in the volcanics. The vein contains up to 30 per cent sulphides comprising pyrite, pyrrhotite and minor chalcopyrite. The vein, 1 to 15 centimetres wide, pinches out 5 metres to the south, strikes 35 to 60 degrees and dips 76 to 85 degrees east.

The average weighted assay of grab samples of "better material" taken over a 42 centimetre width of the vein and shear (M1-R to M3-R) was 152.20 grams per tonne gold (Assessment Report 18093). One sample contained 1.97 per cent copper and 50 grams per tonne silver (M1-R) (Assessment report 18093).

About 300 metres to the south, a shear zone approximately 15 metres wide, assayed low in gold from sub-shears and 0.93 per cent copper from an altered dyke (Assessment report 18093).
Mineralization is related to the intrusive event and appears to favour structural zones developed along contact zones.

BIBLIOGRAPHY

EMPR ASS RPT *11311, 16541, 17422, 17932, *18093
EMPR BULL 37
EMPR EXPL 1983-189
EMPR FIELDWORK 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510

BIBLIOGRAPHY

EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1985/11/07 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1991/01/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 127** NATIONAL MINERAL INVENTORY:

NAME(S): **HEATHER**, CAROL S, CAROL, TANIA, TANIA S, LUCIA

STATUS: Showing MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W 092C15E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 48 58 19 N NORTHING: 5425404
LONGITUDE: 124 29 16 W EASTING: 391121
ELEVATION: 730 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main showing. Checked and located by Steve Friday in 1988, see Open File 1987-2.

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Ankerite Clay Chlorite Sericite
ALTERATION TYPE: Carbonate Argillic Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Discordant
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: STRIKE/DIP: 320/55S TREND/PLUNGE:
COMMENTS: The shear zone strikes northwest and dips between 50 and 60 degrees southwest. The mineralized zone occurs near the central part of a large antiform.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Devonian	Sicker	Nitinat	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesitic Tuff
Volcanic Rock
Volcaniclastic Rock

HOSTROCK COMMENTS: The Sicker Group is Paleozoic in age.

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	8.5700	Grams per tonne
Copper	0.1800	Per cent

COMMENTS: Highest values from surface grab samples.
REFERENCE: Assessment Report 13516.

CAPSULE GEOLOGY

The Heather showing is located 40 kilometres southwest of Nanaimo and 7 kilometres north of Cowichan Lake.

The area is within the Cowichan uplift and is underlain by Paleozoic Sicker Group rocks. These, in the area of the showing, conmprise northwest trending volcanic and volcaniclastic rocks of the Upper Devonian McLaughlin Ridge and Devonian Nitinat formations. Intrusions of the Early to Middle Jurassic Island Plutonic Suite also occur in the area.

The main showing, on the Carol S claim, was discovered by trenching in 1982 and comprises quartz-carbonate veining containing disseminated pyrite and minor chalcopyrite. The mineralization

CAPSULE GEOLOGY

occurs in a northwest striking, 50 to 60 degree south dipping, shear zone (bounded by faults) hosted in andesitic tuffs in the central part of a large antiform. Alteration consists of ankerite, clay, chlorite and sericite in the immediate vicinity of the mineralization. The shear zone extends for 3 kilometres onto the Tania S and Tania S3 claims. Surface grab samples of the shear zone assayed 8.57 grams per tonne gold and 0.18 per cent copper (Assessment Report 13516). Drilling in 1984 encountered intensely sheared green tuff and minor cherty sections. The best intersection was 3 grams per tonne gold over 1.5 metres and occurred in the upper contact area of a cherty and hematized section (Assessment Report 13516). Mineralization appears to decrease with depth. Drilling in 1987 confirmed the orientation of the shear zone but the results were poor. Wide zones of altered andesitic tuff with low gold values are present at shallow levels, less than 50 metres, but at greater depths these zones thin.

The McDougall (092C 134) vein occurs on the Heather property approximately 1.7 kilometres to the north of the main showing.

BIBLIOGRAPHY

EMPR ASS RPT *11303, 11346, *12445, *13516, 15206, 16357, 16805, 17833, 17835, 18521
EMPR BULL 37
EMPR FIELDWORK 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; 1988-24; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
WIN Jan. 1987
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Chevron File
Falconbridge File
Falconbridge File

DATE CODED: 1985/12/09 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/09/18 REVISED BY: DEJ FIELD CHECK: Y

MINFILE NUMBER: **092C 128**

NATIONAL MINERAL INVENTORY:

NAME(S): **ECHO 1**, ECHO 2, ECHO 1-4, ECHO, ASH

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 47 04 N
LONGITUDE: 124 11 07 W
ELEVATION: 630 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of 1985 sampling on the mineralized shear zone at the southeast corner of the Echo 1 claim.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5404171
EASTING: 412933

COMMODITIES: Gold, Copper, Silver

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Calcite
ALTERATION: Malachite, Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
SHAPE: Irregular
MODIFIER: Sheared
DIMENSION: 6 Metres
STRIKE/DIP: 066/63E
TREND/PLUNGE:
COMMENTS: Mineralization occurs in a 6.5 metre zone within a shear.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basaltic Tuff
Tuff
Crystal Tuff
Feldspar Porphyry Basalt
Feldspar Porphyry
Basalt
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1986
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	42.5000	Grams per tonne
Gold	218.6000	Grams per tonne
Copper	3.0300	Per cent

COMMENTS: Highest gold assay from sampling program (86RD-13).
REFERENCE: Assessment Report 14496.

CAPSULE GEOLOGY

The Echo showing, on the Echo 1 and 2 claims, is located 4 kilometres south of Honeymoon Bay on Cowichan Lake, just north of Nineteen Creek. The area was prospected in 1985.

The area is underlain by a succession of basaltic tuffs, feldspar porphyry basalt, crystal tuffs and basalt of the Lower Jurassic Bonanza Group intruded by diorite of the Early to Middle Jurassic Island Plutonic Suite.

Mineralization, consisting of malachite and chalcopyrite, occurs in a 6.5 metre zone within a main shear zone in basaltic tuffs. The zone comprises a network of irregularly branching shears, 5 to 12

CAPSULE GEOLOGY

centimetres in thickness. The shears are irregularly spaced and, on average, strike 066 degrees and dip 63 degrees east. Abundant small fractures and secondary shears, striking between 245 and 272 degrees and dipping 65 to 80 degrees north, are coated with malachite and iron oxides. Locally, up to 25 per cent of the sheared rock material is malachite.

To the northwest and west, the shear zone and host tuffs are cut by a complex network of 1 to 5 millimetre thick, calcite-filled fractures and shears.

A total of fourteen 0.5 kilogram samples were taken from random rock chip sampling conducted over an area 2 metres wide and 2 metres high of the mineralized shear zone. The samples assayed between 0.35 to 218.6 grams per tonne gold, 0.52 to 3.15 per cent copper and 5.0 to 42.5 grams per tonne silver (Assessment Report 14996).

BIBLIOGRAPHY

EMPR ASS RPT 10331, *14996
EMPR BULL 37
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 19
pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan
Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with
emphasis on the relationships of mineral deposits to plutonic
rocks, Ph.D. Thesis, Carleton University
WWW http://www.infomine.com/

DATE CODED: 1986/12/15 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/12/20 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 129**

NATIONAL MINERAL INVENTORY:

NAME(S): **MIKE**, NTI

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 55 09 N
LONGITUDE: 124 05 05 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main showing (Assessment Report 15578).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5419037
EASTING: 420533

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Arsenopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 14 x 1 Metres STRIKE/DIP: 098/83S TREND/PLUNGE:
COMMENTS: Veins, trending east, are up to 1.0 metre wide. One vein has been exposed along strike for 14 metres.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Upper Devonian	Sicker	McLaughlin Ridge	
Triassic			Unnamed/Unknown Informal

LITHOLOGY: Chert
Argillite
Limestone
Gabbroic Dike
Conglomerate
Pyroclastic Flow

HOSTROCK COMMENTS: Triassic dykes and sills are informally called Mount Hall gabbro.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: Pre-mineralization GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	3.2000	Grams per tonne
Gold	0.2000	Grams per tonne
Copper	0.9000	Per cent

COMMENTS: Sample of vein material near gabbro dyke.
REFERENCE: Assessment Report 15578.

CAPSULE GEOLOGY

The Mike showing is located in the Chemainus River valley, between Meade Creek and Chemainus River, near the Rheinhart Creek junction, approximately 28 kilometres northwest of Duncan.

The area is underlain by pyroclastics and sediments of the Paleozoic Sicker Group and the Mississippian to Permian Buttle Lake Group. These have been intruded by Triassic gabbros and Early to Middle Jurassic Island Plutonic Suite granodiorites to quartz diorites. The gabbroic sills and dykes are thought to be coeval with Upper Triassic Karmutsen Formation basalts and are informally

CAPSULE GEOLOGY

referred to as the Mount Hall gabbro. The sediments and pyroclastics are silicified and hornfelsed near the intrusive contact.

The Sicker Group on the Mike property is comprised of cherty tuffs to agglomerates of the Upper Devonian McLaughlin Ridge Formation. The Buttle Lake Group comprises chert, argillite, siltstone, sandstone, conglomerate and minor limestone with pyroclastic flows of the Mississippian to Pennsylvanian Fourth Lake Formation, and limestone, marble with minor chert, argillite and sandstone of the Upper Pennsylvanian to Lower Permian Mount Mark Formation. The contacts between these formations appear to be fault related. The rocks are weakly regionally metamorphosed, probably to lower greenschist facies, and are folded along a northwest trending fold axis.

Mineralization occurs in east trending shears and quartz veins hosted in the Mississippian to Pennsylvanian Fourth Lake Formation fine-grained sediments and the Triassic gabbro dykes. Quartz veins, up to 1.0 metre in width, contain pyrite, pyrrhotite, chalcopyrite, minor arsenopyrite and anomalous gold values (up to 60.0 grams per tonne gold).

The main showing consists of five east trending quartz veins. The uppermost vein is comprised of vuggy, bluish-grey quartz within a shear zone up to 2.0 metres in width striking 098 degrees and dipping 83 degrees southwest.

In 1986, sampling across 1.0 metre, along a strike length of 14 metres, averaged 18.617 grams per tonne gold (Assessment Report 15578). Sampling of the four other quartz veins ranged from 1.1 to 27.09 grams per tonne gold (Assessment Report 15578).

A 10 centimetre wide shear zone, striking 133 degrees and dipping 65 degrees northwest cuts silicious siltstone and is mineralized with pyrrhotite and pyrite. Up to 0.5 per cent copper with low gold, silver, cobalt and tungsten values were obtained.

An area containing quartz veins, well-mineralized with pyrite and chalcopyrite, is located near the gabbro dyke associated with the gold-bearing veins. A sample of this vein material in 1986 assayed 0.2 grams per tonne gold, 3.2 grams per tonne silver, 0.9 per cent copper and 0.17 per cent arsenic (Assessment Report 15578).

BIBLIOGRAPHY

EMPR ASS RPT *11347, 12173, *12606, 12909, *15578, 17447
EMPR BULL 37
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 701; 821; 1272
GSC P 72-44; 76-1A; 79-30
GCNL Dec. 5, 1986
WIN Jan. 1987
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1987/08/31 CODED BY: LLC FIELD CHECK: N
DATE REVISED: 1990/12/13 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 130**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVERCROSS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 57 44 N
LONGITUDE: 124 33 35 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Old pit exposing mineralized zone at the northern edge of the claim (Assessment Report 15958).

MINING DIVISION: Alberni
Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5424428
EASTING: 385834

COMMODITIES: Silver Copper

MINERALS

SIGNIFICANT: Bornite Malachite
ASSOCIATED: Epidote Calcite Quartz
ALTERATION: Chlorite Epidote Calcite Quartz Malachite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Massive
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: D03 Volcanic redbed Cu
DIMENSION: 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The mineralized zone exposed in an old pit is 1.5 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Unnamed/Unknown Formation	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Siliceous Andesite
Amygdaloidal Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	95.9000	Grams per tonne
Copper	10.0000	Per cent

COMMENTS: The copper assay was reported as greater than 10 per cent.
REFERENCE: Assessment Report 15958.

CAPSULE GEOLOGY

The Silvercross showing is located 33 kilometres southeast of Port Alberni and 8 kilometres northwest of the west end of Cowichan Lake. There is evidence of previous work on the property but none has been documented.

The area is underlain by Lower Jurassic Bonanza Group rocks comprising mainly amygdaloidal basalts and lesser silicified andesites and volcanic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group.

Disseminated to massive bornite and malachite are seen in epidote-calcite-quartz veinlets hosted in silicified andesite in an old pit. The veinlets are thought to be deuterically related to the original magma. Silver is associated with the copper mineralization, assaying up to 95.9 grams per tonne silver and greater than 10 per cent copper from grab samples of the pit (Assessment Report 15958). The mineralized zone exposed in the pit is 1.5 metres wide with unknown length. Alteration minerals are the same as those filling the amygdales, which are mainly chlorite and palagonite.

BIBLIOGRAPHY

EMPR ASS RPT *15958

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1987/11/27 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1991/01/07 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 131**

NATIONAL MINERAL INVENTORY:

NAME(S): **3 X 3**, GAD

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E
BC MAP:
LATITUDE: 48 34 25 N
LONGITUDE: 124 14 00 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of claim (Assessment Report 17779).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5380792
EASTING: 409024

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Sulphide Magnetite
COMMENTS: Sulphides not identified.
ASSOCIATED: Quartz Chlorite Hematite
ALTERATION: Silica Chlorite Epidote Actinolite Magnetite Hematite
ALTERATION TYPE: Silicific'n Chloritic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins
SHAPE: Irregular
MODIFIER: Sheared Folded

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Chlorite Schist
Graphitic Schist
Argillite
Chlorite Sericite Schist
Mudstone
Quartz Muscovite Schist

HOSTROCK COMMENTS: The host rocks are part of the Argillite-Metagreywacke unit of the Leech River Complex (Formation?).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
Pacific Rim
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the San Juan River belt.

INVENTORY

ORE ZONE: OUTCROP
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	14.3980	Grams per tonne
Gold	7.3360	Grams per tonne

COMMENTS: Sample #6 was the highest assay result from the sampling program; gold ranged from 0.014 to 7.336 g/t and silver from 2.06 to 14.398 g/t.
REFERENCE: Assessment Report 17779.

CAPSULE GEOLOGY

The 3 X 3 showing occurs on the 3 X 3 claim located 25 kilometres east of Port Renfrew in the San Juan River belt. The Gad showing (092C 124) is immediately to the east.

The area is underlain by metasedimentary rocks of the Jurassic to Cretaceous Leech River Complex (Formation?) which has been intruded by diorite (gneissic) to the east. In this vicinity, the metasediments consist of chlorite-sericite schist, phyllitic mudstone, shale, argillite, graphitic schist, iron formation and meta-amphibolite. These beds strike east and dip steeply to the north. The Leech River Complex is bounded by the San Juan fault to the north and the Leech River fault to the south. A number of

CAPSULE GEOLOGY

northeast and northwest crossfaults occur in the area.
Mineralization is hosted in areas of silicification, consisting of quartz stringers and stockworks, chloritization and oxidation (hematite). Mineralized quartz stringers are hosted primarily in sheared chlorite schist, graphitic schist, argillite and chlorite-sericite schist. Magnetite occurs in meta-amphibolite. Other sulphides were not identified.
The highest assay came from a chip sample taken from an outcrop of silicified chlorite schist; the assay result was 7.336 grams per tonne gold and 14.398 grams per tonne silver. Values from 14 samples (1 from the adjoining Gad claim) ranged from 0.14 to 7.336 grams per tonne gold and 2.06 to 14.398 grams per tonne silver (Assessment Report 17779).

BIBLIOGRAPHY

EMPR ASS RPT *17779
EMPR FIELDWORK 1989 pp. 503-510
EMPR OF RGS 24, 1990
EMPR PF (Butter Rock Resources, Prospectus, Feb. 1991)
GSC MAP 1386A
GSC MEM 13
GSC OF 463, 821
GSC P 72-44; 76-1A; 79-30
WWW http://www.infomine.com/index/properties/3X3.html
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1990/06/25 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1994/01/06 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 132**

NATIONAL MINERAL INVENTORY:

NAME(S): **LLOYD**, MANHATTAN, IKE, JUMBO

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 51 53 N
LONGITUDE: 124 40 28 W
ELEVATION: 130 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Lloyd claim (Assessment Report 17566).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5413769
EASTING: 377198

COMMODITIES: Gold, Silver, Copper, Zinc, Lead

MINERALS

SIGNIFICANT: Pyrite, Sphalerite, Chalcopyrite, Galena, Marcasite, Pyrrhotite, Magnetite
ALTERATION: Silica, Limonite
ALTERATION TYPE: Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated
CLASSIFICATION: Volcanogenic, Hydrothermal
DIMENSION: 1 Metres
STRIKE/DIP:
TREND/PLUNGE: 045/
COMMENTS: Massive sulphide mineralization in narrow bands, from 0.1 to 1.0 metre wide, within northeast trending, moderately northwest dipping dacitic felsite.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Unnamed/Unknown Formation	

LITHOLOGY: Fine Grained Dacitic Felsite
Dacite Tuff
Rhyodacite Tuff
Gossan

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1982

COMMODITY	GRADE	
Silver	37.7100	Grams per tonne
Gold	2.8110	Grams per tonne
Copper	0.4800	Per cent
Zinc	5.3800	Per cent

COMMENTS: Sample (assumed to be chip) across 3 metres. Highest assay from trenching.
REFERENCE: Assessment Report 11143.

CAPSULE GEOLOGY

The Lloyd showing is located on the Lloyd claim (previously Jumbo) which is near the Ni showings (092C 119), 135 kilometres west of Duncan.

The area is underlain by Lower Jurassic Bonanza Group volcanics comprising dacitic to rhyodacitic tuffs, tuff breccias and prophyries and lesser andesitic porphyries which generally trend northeast with moderate northwest dips.

Significant mineralization was observed in four zones, characterized by limonite gossan, along the old logging railway grade. The zones vary from 1 to 3 metres in thickness. Mineralization is hosted in siliceous fine-grained dacitic felsite which hosts variable amounts of disseminated sulphides (up to 75 per cent). Mineralization consists of disseminated and fracture- coating pyrite and narrow stringers and bands of massive sulphides comprising pyrite, sphalerite, chalcopyrite and minor galena in a siliceous

CAPSULE GEOLOGY

gangue. Marcasite, pyrrhotite and magnetite are present in lesser amounts. The massive sulphide bands vary from 0.1 to 1.0 metre in width but are generally under 0.6 metres wide.

The highest assay from a 1982 trenching program came from a sample taken from showing #3 across 3 metres. The results were 2.811 grams per tonne gold, 37.71 grams per tonne silver, 0.48 per cent copper and 5.38 per cent zinc (Assessment Report 11143).

BIBLIOGRAPHY

EMPR ASS RPT *11143, 17566
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1990/06/25 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/11/07 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 133**

NATIONAL MINERAL INVENTORY:

NAME(S): **HARBEY**, JR

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 55 27 N
LONGITUDE: 124 09 42 W
ELEVATION: 680 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Harbey claim (Assessment Report 17125).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5419676
EASTING: 414905

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite Sulphide
COMMENTS: Gold and silver mineralogy not known.
ALTERATION: Pyrite Silica Limonite Hematite Kaolinite
ALTERATION TYPE: Pyrite Silicific'n Oxidation Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
COMMENTS: Shear zones in pyritized chert and diorite host mineralization.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Upper Devonian	Sicker	McLaughlin Ridge	
Triassic			Unnamed/Unknown Informal
Jurassic			Island Plutonic Suite

LITHOLOGY: Chert
Diorite
Gabbro
Diabase
Granodiorite
Intrusive Rock
Volcanic Rock

HOSTROCK COMMENTS: Triassic gabbro is informally named Mount Hall gabbro. The Island Plutonic Suite is Early to Middle Jurassic in age.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	0.6900	Grams per tonne
Gold	1.2000	Grams per tonne

COMMENTS: Sample (chip assumed) across 1.2 metres of chert from a shear zone.
REFERENCE: Assessment Report 17125.

CAPSULE GEOLOGY

The Harbey showing occurs on the Harbey claim located at the headwaters of Reynard Creek, 6 kilometres northeast of Youbou. The Comego (092C 018) showing is 1.6 kilometres to west.

The area is within the Cowichan uplift comprising Paleozoic Sicker Group sedimentary and volcanic rocks. Triassic diabase and gabbro sills and dykes (informally Mount Hall gabbro), coeval with Karmutsen Formation (Vancouver Group) volcanics, occur in the area. Granodiorite and quartz diorite of the Early to Middle Jurassic Island Plutonic Suite intrude the rocks in the area.

Mineralization occurs in shear zones in pyritized, and/or hematitic chert, and in pyritized and silicified sheared diorite. The chert outcrops on the southern portion of the claim and is part

CAPSULE GEOLOGY

of the Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group). The intrusives have locally been kaolinitized, the chert has been silicified, and limonite staining was noted.

A sample across 1.2 metres of chert from a shear zone assayed 1.2 grams per tonne gold and 0.69 grams per tonne silver (Assessment Report 17125). A 0.61 metre sample of rusty, sheared diorite assayed 12.07 grams per tonne gold and 3.77 grams per tonne silver (Assessment Report 17125).

BIBLIOGRAPHY

EMPR ASS RPT *17125, 19618
EMPR BULL 37
EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1988, pp. 61-74; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; 1988-24; *1989-6; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 17-1968; 49-1963; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1990/06/25 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/06/25 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 134**

NATIONAL MINERAL INVENTORY:

NAME(S): **MCDOUGALL**, HEATHER, LUCIA S

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W
BC MAP:
LATITUDE: 48 59 35 N
LONGITUDE: 124 29 14 W
ELEVATION: 720 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: McDougall vein(s) (Open File 1987-2).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5427749
EASTING: 391207

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Ankerite Hematite
ALTERATION TYPE: Carbonate Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 12 Metres STRIKE/DIP: 045/90 TREND/PLUNGE:
COMMENTS: Three veins occur en echelon, the largest is 12 by 0.3 metres. They have a northeast strike and dip near vertically.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Upper Devonian	Sicker	McLaughlin Ridge	
Jurassic			Island Plutonic Suite

LITHOLOGY: Flow Breccia
Volcanic Rock

HOSTROCK COMMENTS: The Sicker Group is Paleozoic in age.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Gold	9.1500	Grams per tonne

COMMENTS: Panel sample, 6.5 by 0.25 metres, from largest vein.
REFERENCE: Assessment Report 17833.

CAPSULE GEOLOGY

The McDougall showing is located 40 kilometres southwest of Nanaimo and 7 kilometres north of Cowichan Lake. This showing occurs on the Heather property (092C 127), 1.7 kilometres north of the main showing.

The area is within the Cowichan uplift and is underlain by Paleozoic Sicker Group rocks. The showing is underlain by northwest trending Devonian Nitinat and Upper Devonian McLauglin Ridge formations comprising volcanic and volcaniclastic rocks. Early to Middle Jurassic Island Plutonic Suite intrusives also occur in the area.

The McDougall showing consists of three en echelon quartz veins which strike northeast and dip near vertically. The veins locally contain trace pyrite and chalcopyrite-rich (2-3 percent) malachite-stained pods. The veins occur in relatively unaltered Nitinat flow breccias. The veins are 12.0 by 0.3 metres, 4.5 by 0.3 metres and 2.0 by 0.2 metres in size, respectively.

The highest gold value was obtained from a panel sample, 6.5 by 0.25 metres in size, of the largest vein. This sample assayed 9.15

CAPSULE GEOLOGY

grams per tonne gold (Assessment Report 17833).
Diamond drilling results in 1988 were disappointing.

BIBLIOGRAPHY

EMPR ASS RPT *17833, 17835, 18521
EMPR BULL 37
EMPR FIELDWORK 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF *1987-2; RGS 24. 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
WIN Jan. 1987
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Falconbridge File
Falconbridge File

DATE CODED: 1990/09/18 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 135**

NATIONAL MINERAL INVENTORY:

NAME(S): **MICHIGAN CREEK**, DAR, DAR 6,8-9, DARLING RIVER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C11E 092C14E
BC MAP:
LATITUDE: 48 44 21 N
LONGITUDE: 125 04 22 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample S-103 on Michigan Creek about 500 metres north of the boundary of Pacific Rim National Park.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5400533
EASTING: 347606

COMMODITIES: Gold Magnetite

MINERALS
SIGNIFICANT: Gold Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
COMMENTS: Angular flakes of gold found in pans during heavy concentrate sampling.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Paleozoic-Mesozoic			Westcoast Complex
Jurassic			Island Plutonic Suite

LITHOLOGY: Till
Gravel
Unconsolidated Sediment/Sedimentary
Diorite
Granite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	4.7800	Grams per tonne

COMMENTS: Heavy concentrate sample.
REFERENCE: Assessment Report 17564.

CAPSULE GEOLOGY

The Michigan Creek placer showing is located approximately 9 kilometres southeast of Bamfield, immediately north of Pacific Rim National Park.

The area is underlain by metamorphic rocks of the Paleozoic and/or Mesozoic Westcoast Complex and granite of the Early to Middle Jurassic Island Plutonic Suite. The bedrock is overlain by massive to coarsely-bedded bouldery glacial till.

Small amounts of placer gold have been found in Michigan Creek and a nearby tributary of the Darling River. Michigan Creek is underlain by sheared diorite and possibly granite and metasediments. The tributary is underlain by granitic rocks and both creeks have large volumes of glacial till in their drainage basins.

Abundant magnetite sand and one or two grains of gold were found per pan during heavy concentrate sampling. The gold grains were thin, angular subrounded flakes up to 0.55 millimetres in diameter. This would indicate a local source but the source was not discovered.

Sample S-101 assayed 4.78 grams per tonne gold (Assessment Report 17564).

BIBLIOGRAPHY

EMPR ASS RPT *17564
EMPR FIELDWORK 1989, pp. 503-510
EMPR OF 1988-24; RGS 24, 1990
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1990/11/19 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1991/01/22 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 136**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHERYL**, RIA, SPEARS, WHYMP, WHYMPER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 56 10 N
LONGITUDE: 124 11 24 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of outcrop (OC4) on Cheryl claim (Assessment Report 18598).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5421036
EASTING: 412850

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Magnetite
ASSOCIATED: Quartz
ALTERATION: Silica Limonite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Hydrothermal
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The vein is 1.5 metres in length and up to 0.3 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Siliceous Chert
Greywacke
Argillite
Turbidite
Basalt
Diorite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP:
COMMENTS: Located within the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

CAPSULE GEOLOGY

The Cheryl occurrence is located 30 kilometres southwest of Nanaimo at the headwaters of Chemainus River on Mount Whymper.

The area, within the Cowichan uplift, is underlain by Mississippian to Pennsylvannian Fourth Lake Formation (Buttle Lake Group) sediments and Upper Triassic Karmutsen Formation (Vancouver Group) volcanic rocks whcih have been intruded by dioritic to granodioritic rocks of the Early to Middle Jurassic Island Plutonic Suite.

Outcrops on the claim host pyrite and chalcopyrite mineralization. Magnetite was observed in silt samples. A silicified chert and turbidite outcrop (OC4), hosts a quartz vein 1.5 metres long and up to 0.3 metres wide. Mineralization increases close to the vein but it appears that the wallrock contains more mineralization than the vein. Small shear zones with limonitic staining were also noted. A sample from this outcrop contained 5 to 10 per cent pyrite and 3 to 5 per cent chalcopyrite (Assessment Report 18598).

BIBLIOGRAPHY

EMPR ASS RPT 13333, 14792, *18598
EMPR BULL 37
EMPR FIELDWORK 1986, pp. 223-229; 1987, pp. 81-91; 1988, pp. 61-74
EMPR MP MAP 1992-2

BIBLIOGRAPHY

EMPR OF *1987-2; 1988-24; 1989-6
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 17-1968; 49-1963; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1990/11/23 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/11/23 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 137**

NATIONAL MINERAL INVENTORY:

NAME(S): **REN**, MEAD

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C08E
BC MAP:
LATITUDE: 48 28 36 N
LONGITUDE: 124 10 23 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located mainly on the Mead 101 claim (Assessment Report 2229, Map 2); and at the same location on the earlier staked claim Ren 71 (Assessment Report 549, Sheet 2).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5369946
EASTING: 413305

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrrhotite Pyrite Chalcopyrite Bornite Copper Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics
Eocene			Sooke Gabbro

LITHOLOGY: Basalt
Gabbro

HOSTROCK COMMENTS: Mineralization typically occurs in Metchosin basalts near intrusions of the Sooke Gabbro.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Ren area is underlain by Eocene Metchosin Volcanics consisting of bedded basaltic tuffs interbedded with pillow and amygdaloidal basaltic flows striking easterly and dipping 20 to 80 degrees to the north. These are sheared, altered and brecciated but show very little folding. The volcanics are cut by a series of steeply dipping gabbro dykes, possibly comagmatic and coeval with the volcanics. The largest dyke is 800 metres wide and the remainder are typically from 30 to 50 metres wide. The gabbros are also brecciated, sheared and altered.

Pyrite and pyrrhotite are the predominant sulphide minerals with minor associated chalcopyrite. Small amounts of bornite and flecks of native copper are present. Magnetite has been found concentrated in the gabbro at a few locations. The sulphides occur in highest concentrations in areas of most intense shearing, and the largest of the zones usually are found close to gabbro or mafic dykes and are associated with a system of feldspathic stringers with or without free quartz. The sulphides sometimes occur in a disseminated form but mostly as cleavage films or in elongated blebs controlled by the orientation of the shear zone. None of the zones could be traced for more than 100 metre or so, and very seldom over widths greater than 5 metres.

BIBLIOGRAPHY

EMPR ASS RPT 211, *549, *2229, 4104, 4751, 6272, 7814
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR GEM 1972-241; 1973-225; 1974-165; 1977-E106
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 77-1A; 79-30

DATE CODED: 1990/11/27 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/11/27 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 138**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOHN 1**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C08E
BC MAP:
LATITUDE: 48 28 53 N
LONGITUDE: 124 08 41 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The coordinates are for the centre of the John 1 claim, the claim on which the showing is reported to occur (Assessment Report 12612, page 1). The exact location was not reported.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5370440
EASTING: 415407

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
COMMENTS: Deposit Classification is assumed to be shear related, in keeping with other occurrence types in the vicinity.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Metchosin Volcanics

LITHOLOGY: Basalt
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Crescent
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1976
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.3400	Grams per tonne
Copper	0.4000	Per cent

REFERENCE: Assessment Report 12612, page 1.

CAPSULE GEOLOGY

The John 1 area is underlain by basalt of the Eocene Metchosin Volcanics. The volcanics are cut by a series of steeply dipping dyke-like bodies of gabbro, thought to be comagmatic and coeval with the volcanics, belonging to the Sooke Gabbro intrusions. A selected rock sample taken on the John 1 claim in 1976 was reported to have assayed 0.4 per cent copper and 0.34 grams per tonne gold (Assessment Report 12612, page 1).

BIBLIOGRAPHY

EMPR ASS RPT 8208, 8860, *12612
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 77-1A; 79-30

DATE CODED: 1990/11/20
CODED BY: GJP
FIELD CHECK: N
DATE REVISED: / /
REVISED BY:
FIELD CHECK: N

MINFILE NUMBER: **092C 139**

NATIONAL MINERAL INVENTORY: 092C16 Mn3/Mn1

NAME(S): **WIDOW CREEK**, COTTONWOOD, STRIKER, WONDERLAND, SENTINEL, WONDERLAND NO.2

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 54 59 N
LONGITUDE: 124 11 55 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from National Mineral Inventory card for Cottonwood showing (092C16 Mn1).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5418854
EASTING: 412185

COMMODITIES: Rhodonite, Manganese, Gemstones

MINERALS
SIGNIFICANT: Rhodonite, Rhodochrosite
MINERALIZATION AGE: Lower Mississippian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodonts

DEPOSIT

CHARACTER:	Podiform	Stratiform	Concordant	Massive
CLASSIFICATION:	Metamorphic	Sedimentary	Epigenetic	Industrial Min.

TYPE: Q02 Rhodonite
COMMENTS: Age reference - Personal Communication, Nick Massey, 1991.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

DATING METHOD: Fossil
MATERIAL DATED: Conodonts

LITHOLOGY: Chert
Cherty Tuff

HOSTROCK COMMENTS: Manganese mineralization is hosted in the Lower Mississippian Shaw Creek Member (Personal Communication - Nick Massey, 1991).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

CAPSULE GEOLOGY

The Widow Creek showings are located near the head of Widow Creek. This occurrence comprises 2 showings, the Widow Creek and the Cottonwood, now located on the Striker property.

The area is underlain by sedimentary rocks of the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group. The manganese minerals are hosted in the Lower Mississippian Shaw Creek Member (dated by conodonts, Personal Communication - Nick Massey, 1991).

The Widow Creek showing is located on the east side of the creek at an elevation of 640 metres. The showing consists of rhodonite in a 46 to 61 centimetre wide band exposed at two places about 30 metres apart in cherty tuff.

The Cottonwood showing, discovered in 1919 and staked as the Sentinel, Wonderland and Wonderland No. 2 claims, is 800 metres west of Widow Creek at an elevation of 792 metres. Rhodonite and rhodochrosite lenses occur parallel to bedding in cherty tuffs. They occur over an area about 30 metres north-south by 15 metres east-west. The lenses are coated with oxides. Rhodochrosite in small amounts occurs in irregular masses that grade into rhodonite.

BIBLIOGRAPHY

EMPR BULL *37 p. 69
EMPR FIELDWORK 1986, pp. 223-229; 1987, pp. 81-91; 1988, pp. 61-74; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; In Commodity File - Leaming, S.F. (1966):

BIBLIOGRAPHY

Rhodonite in B.C. in The Canadian Rockhound and Danner, W. R. (1976): Gem Materials of B.C.; Sargent, H. (1939): Manganese Deposits of Cowichan Lake; In 092B 027: Turner, G.D.B. (1918): Report - Manganese Ore Deposits)
GSC MAP 17-1968; 49-1963; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 72-53; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Cowley, P. (1979): Correlation of Rhodonite Deposits on Vancouver Island and Saltspring Island, British Columbia, Unpublished B.Sc. Thesis, University of British Columbia
Sargent, H. (1956): Manganese Occurrences in British Columbia, in International Congress, Symposium on Manganese, Mexico, 1956

DATE CODED:	1990/12/04	CODED BY:	DEJ	FIELD CHECK:	N
DATE REVISED:	1991/01/04	REVISED BY:	DEJ	FIELD CHECK:	N

MINFILE NUMBER: **092C 140**

NATIONAL MINERAL INVENTORY:

NAME(S): **MURTON**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 33 08 N
LONGITUDE: 124 21 57 W
ELEVATION: 340 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the headwaters of Murton Creek, a creek which drains into the San Juan River near Port San Juan. Another area of mineralization is also reported to occur about 900 metres to the west (Assessment Report 1657, Figure 6).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5378581
EASTING: 399208

COMMODITIES: Copper Gold Lead

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Galena
ASSOCIATED: Gold
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Meta Greywacke

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Pacific Rim
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

CAPSULE GEOLOGY

The area, according to Muller, is underlain by a Metagreywacke-Schist Unit and an Argillite-Metagreywacke Unit, both of the Jurassic to Cretaceous Leech River Complex (Geological Survey of Canada Open File 821). The former unit consists of metagreywacke, meta-arkose and quartz-feldspar biotite schist; the latter consists of thinly bedded greywacke and argillite, slate, phyllite and quartz-biotite schist.

At the Murton occurrence, pyrite and chalcopyrite occur in felsic and granodiorite dykes, and in quartz veins cutting the dykes and at their contacts. Quartz veins in metagreywacke often carry abundant pyrite, chalcopyrite and occasionally galena. One sample assayed 0.63 grams per tonne gold (Assessment Report 16507).

BIBLIOGRAPHY

EMPR ASS RPT 15262, *16507
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1990/12/05 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 141**

NATIONAL MINERAL INVENTORY:

NAME(S): **EBB**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 35 55 N
LONGITUDE: 124 20 14 W
ELEVATION: 350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Middle of Ebb claim area (Assessment Report 8278).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5383700
EASTING: 401410

COMMODITIES: Copper Nickel Cobalt

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Magnetite Chalcopyrite Pentlandite Violarite
ALTERATION: Epidote Magnetite
COMMENTS: Pyrite, pyrrhotite, magnetite and chalcopyrite are reported to occur in the same area in an epidote skarn.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Magmatic Skarn

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex
Mesozoic			Pacific Rim Complex

LITHOLOGY: Gabbro
Hornblendite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell Pacific Rim

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area, according to Muller, is underlain by an east trending band of rocks known as the Chert-Argillite-Volcanic Unit, of the Mesozoic Pacific Rim Complex. In this area, the rocks are reported to consist of deformed cherts, argillites, limestone, sandstone, pyroclastics and volcanic flows. In contact with the northern boundary of this band, are metamorphic rocks of the Mesozoic and/or Paleozoic Westcoast Complex.

Gabbro and hornblendite (Westcoast Complex) are reported to contain, locally, pyrite, pyrrhotite, and chalcopyrite, along with significant amounts of cobalt and nickel mineralization. The nickel minerals pentlandite and violarite are reported.

In the same area, pyrite, pyrrhotite, magnetite and chalcopyrite are reported to occur in an epidote skarn.

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT *8278, 12885
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM 13
GSC OF 463
GSC P 72-44; 74-1A; 76-1A; 79-30

DATE CODED: 1990/12/07 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 142**

NATIONAL MINERAL INVENTORY:

NAME(S): **LIZARD**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E
BC MAP:
LATITUDE: 48 36 44 N
LONGITUDE: 124 13 52 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located along Harris Creek, about 750 metres northwest of Lizard Lake (Assessment Report 14968).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5385081
EASTING: 409257

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
ASSOCIATED: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Serpentinite
Gneiss
Intrusive Rock

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Lizard occurrence is underlain by ultramafic rocks of the Mesozoic and/or Paleozoic Westcoast Complex. Serpentinite outcrops along Harris Creek and is generally dark green and sheared, with a multitude of polished and slickensided surfaces. Magnetite is pervasive in this rock. Narrow bands of altered gneiss occur within the serpentinite, but are not common. Intermediate to mafic intrusives occur at higher elevations and contain disseminated pyrite locally.

Pyrite is locally abundant in the serpentinite and small pods of pyrite, pyrrhotite and chalcopyrite also occur. Gold values from assays were not considered anomalous.

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT *14686
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM 13
GSC OF 463
GSC P 72-44; 74-1A; 76-1A; 79-30

DATE CODED: 1990/12/09 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 143**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAT**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 35 17 N
LONGITUDE: 124 29 50 W
ELEVATION: 270 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 5 kilometres due north of Owen Point (Assessment Report 18047)

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5382746
EASTING: 389591

COMMODITIES: Gold, Mercury

MINERALS

SIGNIFICANT: Pyrite
ALTERATION: Chlorite, Clay, Zeolite, Silica
ALTERATION TYPE: Chloritic, Argillic, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Leech River Complex

LITHOLOGY: Andesite
Shale
Chert
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Pacific Rim

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Rat area is underlain by andesite/basalt flows and sills with minor cherts and shales, of the Jurassic to Cretaceous Leech River Complex. The strata is intruded by diorite related to the Mesozoic and/or Paleozoic Westcoast Complex. The shale/chert sediments and the andesitic volcanics all contain high amounts of mercury (up to 0.4 per cent).

An 18 metre long altered band of outcrop, about 1 metre wide, occurs below a layer of pyritized andesite. The altered material consists of chlorite, clay, zeolites and silica. A sample of this material assayed 0.60 grams per tonne gold (Assessment Report 18047).

BIBLIOGRAPHY

EMPR ASS RPT *18047, 19647
EMPR FIELDWORK 1988, pp. 525-527; 1989, pp. 503-510
EMPR OF RGS 24
GSC MAP 1386A
GSC MEM 13
GSC OF 463
GSC P 72-44; 74-1A; 76-1A; 79-30

DATE CODED: 1990/12/09 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 144**

NATIONAL MINERAL INVENTORY:

NAME(S): **SOGNIDORO**, MCDOUGALL, TREK, IMP, IMPERIAL

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 57 27 N
LONGITUDE: 124 04 03 W
ELEVATION: 840 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of sample 17827 taken from a jasper occurrence, just to the northeast of the northern extent of the McDougall vein located at the approximate centre of the Sognidoro claim (Assessment Report 16802).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5423280
EASTING: 421855

COMMODITIES: Gold, Silver, Copper, Magnetite, Gemstones, Lead, Zinc, Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Bornite, Galena, Sphalerite, Chalcanthite, Magnetite, Molybdenite
COMMENTS: Jasper horizons contain finely disseminated and massive magnetite lenses.
ASSOCIATED: Quartz, Carbonate
ALTERATION: Azurite, Malachite, Hematite
ALTERATION TYPE: Carbonate, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated, Massive, Stratabound
CLASSIFICATION: Hydrothermal, Epigenetic, Replacement
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au, Q05 Jasper
SHAPE: Tabular
MODIFIER: Folded, Faulted
DIMENSION: 265 x 5 Metres
STRIKE/DIP: 320/70E
TREND/PLUNGE:
COMMENTS: The vein pinches and swells for 265 metres and is up to 5.4 metres wide. The jasper occurrences are 25 and 30 metres wide and 200 and 50 metres long, respectively.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Upper Devonian	Sicker	McLaughlin Ridge	
Triassic			Unnamed/Unknown Informal Island Plutonic Suite
Jurassic			

LITHOLOGY: Chlorite Schist, Jasper, Chert, Phyllite, Argillite, Feldspar Porphyry Diabase Sill, Feldspar Porphyry Basaltic Sill, Basaltic Tuff

HOSTROCK COMMENTS: Host rock previously known as the "Sediment-Sill Unit" of the Myra Formation. Triassic gabbro is informally called Mount Hall gabbro.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	0.5000	Grams per tonne
Gold	0.7200	Grams per tonne
Copper	0.0418	Per cent
Magnetite	41.6900	Per cent

COMMENTS: Sample of jasper (17827), cut by quartz veinlets containing pyrite, and disseminated and massive magnetite.
REFERENCE: Assessment Report 16802.

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	3.7000	Grams per tonne
Gold	0.5800	Grams per tonne
Copper	0.2800	Per cent

COMMENTS: Sample 17823 from Pit A containing quartz with iron oxides, malachite, chalcanthite and up to 2 per cent chalcopyrite.
REFERENCE: Assessment Report 16802.

CAPSULE GEOLOGY

The Sognidoro showing is located approximately 27 kilometres northwest of Chemainus, south of Rheinhart Lake. A 100 metre adit occurs on the nearby Trek claims possibly from as early as 1918.

The area is underlain by metasedimentary rocks of the Mississippian to Pennsylvannian Fourth Lake Formation (Buttle Group) and volcanic rocks of the Upper Devonian McLaughlin Ridge Formation (Sicker Group). These two formations were historically referred to as the Myra Formation and contained the "Sediment-Sill Unit" of the Sicker Group. The Sediment-Sill unit has been tentatively correlated with the Fourth Lake Formation and the "sills" have been mapped separately. The sills are believed to be coeval with the Karmutsen Formation basalts and are informally named Mount Hall gabbro. These rocks have been intruded by granitic rocks of the Early to Middle Jurassic Island Plutonic Suite.

Mineralization comprises pyrite, chalcopyrite, galena, bornite, molybdenite, azurite, malachite and chalcanthite hosted within quartz veins. Pyrite, chalcopyrite, hematite and magnetite also occur within jasper horizons. Galena was observed in a quartz vein cutting a diabasic outcrop within the southerly flowing creek on the western side of the claim. Base and precious metal values are locally associated with this mineralization.

The main vein is the McDougall vein, striking 320 degrees and dipping 70 degrees east, which has been traced for 265 metres. Mineralization apparently increases in quantity toward the northern end of the vein. The vein is hosted in, and conformable with, chloritic schists. The McDougall vein may be truncated by faults at both ends with a suggested right-lateral displacement of 200 metres at the northern extent. A sample, from a pit on the vein, containing iron oxides, malachite, chalcanthite and up to 2 per cent chalcopyrite, assayed 0.58 gram per tonne gold, 3.7 grams per tonne silver, and 0.28 per cent copper (Assessment Report 16802).

Two jasper showings are located in the central claim area. These are also hosted in and conformable with the chloritic schists. The horizons are exposed over 30 and 25 metre widths and along strike for 200 metres and 50 metres respectively. The jasper appears to occur in lenses but it could be part of a continuous horizon displaced by right-lateral faulting. The jasper, brick to scarlet red with metallic grey patches, is cut by numerous quartz veinlets (up to 0.5 centimetre). Iron oxides and malachite staining occurs locally. Pyrite and chalcopyrite occur primarily in the veinlets. Finely disseminated and massive magnetite occurs within the jasper "lenses". A sample of jasper cut by quartz veinlets containing pyrite and magnetite assayed 0.72 gram per tonne gold, 0.5 gram per tonne silver, 0.0418 per cent copper and 41.69 per cent magnetite (Assessment Report 16802).

Geochemical and geophysical surveys have been done on the nearby Imp and Imperial claims. The results of these programs were discouraging and no mineralization was found.

BIBLIOGRAPHY

EMPR ASS RPT 935, 11097, 11098, 11401, 12378, 12678, 13359, 13468, 13568, 14793, 15082, *15883, 16478, *16802, 18010
EMPR BULL 37

BIBLIOGRAPHY

EMPR FIELDWORK 1978, pp. 38-40; 1986, pp. 223-229; 1987, pp. 81-91; 1988, pp. 61-74; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF *1987-2; 1988-24; 1989-6; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963; General Geology Yam Claim Group, 1967)
GSC BULL 172
GSC EC GEOL No. 3, Vol. 1
GSC MAP 17-1968; 49-1963; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 69-25; 72-44; 76-1A; 79-30
GCNL #3, 1987
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 108-109

DATE CODED:	1990/12/11	CODED BY:	DEJ	FIELD CHECK:	N
DATE REVISED:	1990/12/11	REVISED BY:	DEJ	FIELD CHECK:	N

MINFILE NUMBER: **092C 145**

NATIONAL MINERAL INVENTORY:

NAME(S): **EAGLE**, EAGLE 4, EAGLE 5

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16E
BC MAP:
LATITUDE: 48 48 39 N
LONGITUDE: 124 18 10 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main showing on Sutton Creek at the southeast corner of the Eagle 4 claim near the Gordon River to Honeymoon Bay road (Assessment Report 14925).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5407246
EASTING: 404352

COMMODITIES: Copper, Silver, Zinc

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Silver, Sphalerite
ASSOCIATED: Pyrite
ALTERATION: Silica, Carbonate
ALTERATION TYPE: Silicific'n, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear, Breccia
CLASSIFICATION: Hydrothermal
SHAPE: Irregular
MODIFIER: Faulted, Sheared
DIMENSION:
STRIKE/DIP: 130/
TREND/PLUNGE:
COMMENTS: Faults strike 110 to 150 degrees and shears strike 060 to 120 degrees.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Feldspar Porphyry, Breccia, Basalt, Tuff, Intrusive Rock, Gossan, Limestone, Volcanic Flow, Pillow Basalt, Amygdaloidal Basalt

HOSTROCK COMMENTS: Sediments of the Quatsino and Parson Bay formations (Vancouver Group) are also present in the area.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

CAPSULE GEOLOGY

The Eagle showings are located in the Sutton Creek/Gordon River area, 14 Kilometres south of Caycuse. The main showing is on Sutton Creek near the Gordon River-Honeymoon Bay road. The Eagle showings occur in the southern portion of a 3 by 1 kilometre alteration zone (Malcolm, 1971).

The area is underlain by basaltic rocks of the Karmutsen Formation, sedimentary rocks of the Quatsino and Parson Bay formations, all of the Upper Triassic Vancouver Group and by volcanic rocks of the Lower Jurassic Bonanaza Group. These are intruded by Early to Middle Jurassic Island Plutonic Suite rocks. A major fault trends parallel to Gordon River striking 110 to 150 degrees. Shearing is prevalent with shears striking 060 to 120 degrees. Faults in the area contain sulphides, quartz and calcite.

The claims are underlain by feldspar porphyry, basalt, volcanic flows, pillow and amygdaloidal basalts, breccias, tuffs, limestone and intrusive rocks.

The occurrence comprises several showings in a northwest

CAPSULE GEOLOGY

trending linear area originating at the main showing. The main showing consists of chalcopyrite, bornite and pyrite hosted in altered and brecciated feldspar porphyry in a shear zone closely associated with the main fault. Sphalerite and pyrite occur about 250 metres to the south in a similar setting. Silver was observed in fractures in volcanic rocks on the banks of Sutton Creek.

About 2 kilometres to the northwest, chalcopyrite, pyrite and sphalerite occur in a gossanous zone in tuffs ("Hematite" tuff), intrusive breccias, and feldspar porphyry associated with faulting and brecciation.

Copper anomalies outlined by geochemical and geophysical surveys in 1985 coincide with surface gossans. Assays from these showings were low in precious and base metals.

BIBLIOGRAPHY

EMPR ASS RPT 14153, *14925, 17702
EMPR BULL 37
EMPR FIELDWORK 1986, pp. 223-229; 1987, pp. 81-91; 1988, pp. 61-74
EMPR MP MAP 1992-2
EMPR OF *1987-2; 1988-24; 1989-6
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 17-1968; 49-1963
GSC MEM 13 pp. 153-203
GSC OF 463; 821; 1272
GSC P 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1990/12/20 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/12/20 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 146**

NATIONAL MINERAL INVENTORY: 092F9 Fe2

NAME(S): **REKO NORTH**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09W
BC MAP:
LATITUDE: 48 39 58 N
LONGITUDE: 124 19 17 W
ELEVATION: 760 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Zone 10, about 800 metres north of the headwaters of Renfrew Creek (Geology in B.C. 1975, page G38).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5391183
EASTING: 402707

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Limestone
Andesite
Diorite

HOSTROCK COMMENTS: In limestone band, in area underlain by andesite and intruded by diorite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area of the Reko occurrences is mapped by Muller (Geological Survey of Canada Open File 821) as primarily diorite of the Mesozoic and/or Paleozoic Westcoast Complex. An east trending band of limestone is also mapped. Volcanics of the Lower Jurassic Bonanza Group occur to the north of the Reko property.

The north part of the Reko property is underlain by grey to white crystalline limestone, and the central and south part is underlain mainly by intrusive breccia. Several bodies of limestone also occur in the central and south part. The primary fragments of the breccia are fine grained and dark grayish green in colour, resembling andesite, and some contain amygdules. This andesitic rock was successively intruded by mafic-rich and mafic-poor diorite. The breccia grades to massive, mesocratic diorite to the south, and to massive andesite at about the 600 metre level on the west side of the east ridge. A set of long, narrow, fine-grained grey dykes strike 020 degrees and transects all other rocks. Most limestone bodies have been successively intruded by dykes of andesite and leuco-diorite. It is thought that prior to diorite intrusion andesite underlay the limestone and also intruded it.

Three zones make up the Reko North occurrence. Zone 9 is a body of pure magnetite emplaced directly in limestone. It is exposed over an area of about 8 by 15 metres. Magnetite float continues uphill almost to the crest of the ridge. About 60 metres northeast of Zone 9, a vein of massive magnetite 50 centimetres wide dips 70 degrees southwest in the limestone; the exposed length is a few metres. To the southwest a 120 centimetre lens of massive magnetite dips 70 degrees east-northeast.

Zone 10, about 350 metres to the west-northwest of Zone 9, is a narrow zone of outcrops of mostly pure magnetite. Downslope it appears to finger out among andesite dykes, but mostly the walls appear to be limestone. The width appears to range from 3 to 15 metres, over a length of inferred continuity of 75 metres. A small magnetite showing occurs 200 metres upslope.

Zone 11, about 300 metres west of Zone 10, consists largely of

CAPSULE GEOLOGY

garnetite, which contains pockets and narrow bands of magnetite. The upper part has an estimated width of 45 metres and a slope length of 120 metres.
See also Reko 3 (092C 090), Reko 10 (092C 091) and Reko 38 (092C 110).

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT 5029
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1972-242; 1973-226; *1974-166-170
EMPR GEOLOGY *1975, pp. 39-42
EMPR OF *1988-28, p. 56; RGS 24
EMPR PF (Reako Explorations Ltd., Prospectus, 1972; Reako Explorations Ltd., Statement of Material Facts, 1972; Various maps and sketches, 1970's)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30
GCNL #147,#157,#196,#235, 1972; #20,#21,#26,#43,#69,#117,#143,#212, 1973; #9, 1974; #207,#223, 1975

DATE CODED: 1990/12/20 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1991/01/22 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 147**

NATIONAL MINERAL INVENTORY:

NAME(S): **HELGA**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E
BC MAP:
LATITUDE: 48 40 21 N
LONGITUDE: 124 08 28 W
ELEVATION: 270 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located west of Lens Creek, about 1.5 kilometres southwest of Dimple Lake (Assessment Report 16184).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5391678
EASTING: 415991

COMMODITIES: Iron, Magnetite, Copper

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Diorite
Limestone
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

CAPSULE GEOLOGY

The Helga occurrence area is underlain by massive volcanic rocks, dominantly basalts and andesites, of the Upper Triassic Karmutsen Formation, Vancouver Group. Overlying these are massive limestone of the Upper Triassic Quatsino Formation, Vancouver Group. The strata has been cut by several stocks and dyke/sill swarms ranging in composition from diorite to aplite and dacite, sometimes feldspar phyric. These rocks are bounded to the north, east and south by a large mass of intrusive rock of the Early to Middle Jurassic Island Plutonic Suite.

Four small fault-bound skarns were discovered in 1987 in the northeast corner of the Helga claim. The only significant occurrence of the four is comprised of a lens or bed of garnet-magnetite skarn carrying approximately 20 to 40 per cent magnetite with local blebs of chalcopyrite. This skarn is in fault contact with an altered amygdaloidal unit that is thought to be basalt. The showing disappears beneath overburden but has an estimated length of 10 metres.

Minor disseminated chalcopyrite occurrences were observed at a few localities and are generally associated with sheared, altered volcanics or hornfelsic to feldspar porphyry units.

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT 6380, 6502, 14565, 15295, *16184, 18174
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1970-291; 1971-226; 1977-E106
EMPR OF RGS 24
EMPR PF (Kowall, C.E. (1970): Summary of Follow-Up work; Apps, G.E. (1971): Report on the Red Dog Mineral Claim)
GSC MAP 1386A
GSC MEM 13

BIBLIOGRAPHY

GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1991/01/06 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 148**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER PLATE**, ST. ANTHONY , MONTE CASINO

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 59 34 N
LONGITUDE: 124 33 38 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of sample 1904 on the northeast corner of the Silver Plate claim (Assessment Report 17845).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5427826
EASTING: 385842

COMMODITIES: Silver, Gold, Copper

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Bornite, Tetrahedrite, Magnetite
ASSOCIATED: Quartz
ALTERATION: Silica, Chlorite, Epidote, Malachite, Hematite, Graphite
ALTERATION TYPE: Silicific'n, Chloritic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
SHAPE: Irregular
MODIFIER: Faulted, Sheared
DIMENSION: 10 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Vein, exposed in creek for 10 metres, is 0.50 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt, Diorite, Granite, Tuff, Greywacke, Argillite, Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	5.4800	Grams per tonne
Gold	1.8900	Grams per tonne

COMMENTS: Sample 1904 from silicified shear with quartz vein and occasional hematite in gabbro.
REFERENCE: Assessment Report 17845.

CAPSULE GEOLOGY

The St. Anthony showing is located about 25 kilometres southeast of Port Alberni, 50 kilometres west of Duncan. The Silvercross (092C 130) showing occurs just to the south.

The area is underlain by basaltic to rhyolitic tuff, breccia, flows, sills, dykes, and minor argillite and greywacke of the Lower Jurassic Bonanza Group intruded by granitic rocks of the Early to Middle Jurassic Island Plutonic Suite.

Mineralization consists of pyrite, chalcopyrite, bornite, tetrahedrite, magnetite and malachite in a quartz and epidote gangue. Pyrite occurs in the matrix of graphitic quartz veins, in association with shears in chloritized diorite, in massive sulphide stringers (up

CAPSULE GEOLOGY

to 0.2 metres wide), and in gossanous shears in basalt. Magnetite occurs with small stringers of pyrite and chalcopyrite associated with faulting. Sheared quartz veins/stringers contain blebs and disseminations of pyrite partially replaced by variable amounts of bornite and chalcopyrite with occasional wispy stringers of tetrahedrite. These veins occur in intrusive rocks related to fractures and shears along the contact areas. Pyrite and tetrahedrite, in large up to 0.5 metres wide quartz veins, are associated with the sheared contact between chloritized diorite and basalt. A calc-silicate vein, 0.2 to 0.3 metres wide, hosted in basalt, contains disseminated pyrite, chalcopyrite and malachite staining (sample #1909). A large quartz vein about 0.50 metres wide is exposed for 10 metres in the creek bed and contains fine disseminated and massive pyrite, tetrahedrite and chalcopyrite in chloritized diorite (samples 1946-1950).

The highest assay result, 1.89 grams per tonne gold and 5.48 grams per tonne silver, was from a rock chip sample (#1904) of a silicified shear containing quartz veins and occasional hematite in gabbro (Assessment Report 17845).

BIBLIOGRAPHY

EMPR ASS RPT *17845, 19286
EMPR BULL 37
EMPR FIELDWORK 1986, pp. 223-229; 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1987-2; 1988-24; 1989-6
GSC MAP 17-1968; 49-1963; 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1991/01/09 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1991/01/09 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092C 149**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROACH**, MAXI

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C09E
BC MAP:
LATITUDE: 48 44 19 N
LONGITUDE: 124 03 32 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the southeast corner of the Maxi claims (Assessment Report 8209, Figure 2).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5398940
EASTING: 422146

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Pyrrhotite
ALTERATION: Epidote Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Massive
CLASSIFICATION: Skarn
DIMENSION: 50 x 10 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Greenstone
Andesite
Limestone
Granodiorite
Basalt

HOSTROCK COMMENTS: Mineralization occurs at a limestone-greenstone contact near an intrusive body.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SKARN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1980
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.2300	Per cent

COMMENTS: From a 2.5 metre chip sample.
REFERENCE: Assessment Report 8209.

CAPSULE GEOLOGY

The area of the Roach occurrence is underlain by Lower Jurassic Bonanza Group volcanics consisting of lava, tuff and breccia of mainly basaltic to rhyolitic composition. It contains occasional interbeds and sequences of marine argillite and greywacke. A stock of the Early to Middle Jurassic Island Plutonic Suite lies to the southwest of the showings. The volcanics have been intruded by dykes and irregularly shaped bodies of granodiorite, granite porphyry and diorite porphyry. Limestone, reported to occur as lenses and roof pendants in both the volcanics and the intrusive, is probably related to the Quatsino Formation, Vancouver Group.

Mineralization consists of pyrite and chalcopyrite with epidote and garnet along and near a limestone-greenstone contact transected by an intrusive. The skarn has been trenched and is approximately 50 metres long and up to 10 metres wide. Minor disseminated pyrite and chalcopyrite was observed in the granodiorite to the west of the skarn zone. An assay of skarn material taken across 2.5 metres assayed 0.23 per cent copper and negligible gold and silver (Assessment Report 8209, page 10). A showing of pyrrhotite was also

CAPSULE GEOLOGY

reported.

BIBLIOGRAPHY

EMPR AR 1956-122; 1963-123; 1968-106
EMPR ASS RPT *8209, 9856, 15111, 19032
EMPR FIELDWORK 1989, pp. 503-510
EMPR GEM 1969-223
EMPR OF RGS 24
EMPR PF (*Seraphim, R.H. (1969): Report on the Robertson River Claims of Albeta Mines Ltd. (see Alpha-Beta - 092C 039))
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821
GSC P 72-44; 76-1A; 79-30

DATE CODED: 1990/01/10 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **092C 150**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLDEX**, BDC, NIT NAT,
NIT, TUCK, PARKER,
GRANITE 3

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C15E
BC MAP:
LATITUDE: 48 55 04 N
LONGITUDE: 124 33 22 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quartz/carbonate breccia zone located just west of the Nitinat River, west of the mouth of Vernon Creek (Assessment Report 21251).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5419483
EASTING: 385997

COMMODITIES: Gold Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Galena Sphalerite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Breccia Vein Stockwork
CLASSIFICATION: Hydrothermal Epithermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic Rock
Basalt
Intermediate Volcanic
Tuffaceous Rock
Limestone
Volcanic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1990

COMMODITY	GRADE	
Gold	31.8800	Grams per tonne

REFERENCE: Assessment Report 21251.

CAPSULE GEOLOGY

The Goldex occurrence area is underlain to the west of the Tuck Lake fault by Upper Triassic Vancouver Group, Karmutsen Formation basaltic volcanic rocks and Quatsino Formation limestone. The eastern part of the area is underlain by Lower Jurassic Bonanza Group volcanics. The Bonanza rocks are mafic to intermediate in composition and are commonly flow brecciated. These are intercalated with green tuffaceous rocks.

Breccia zones within the Bonanza and Karmutsen volcanics contain calcite and quartz veining which form weak to moderate stockworks, often with disseminated pyrite and lesser chalcopyrite and pyrrhotite.

Within the Bonanza volacanic rocks, strong north to northwest trending breccia zones exhibit strong silicification and form quartz veins ranging from less than 1 centimetre to six metres in width and continue on strike for up to 20 metres before being hidden by overburden. Locally, the most massive vein systems are vuggy with well developed quartz crystal growth lining the cavities. Massive to disseminated pyrite and pyrrhotite with lesser amounts of chalcopyrite and trace galena and sphalerite were observed in the breccia zones. A trench sample from this zone is reported to have

CAPSULE GEOLOGY

yielded 31.88 grams per tonne gold (Assessment Report 21251).
The original discovery in the area of the Goldex occurrence is reported to have been made by Wally Deans, who made several discoveries in the area for the Cowichan Copper Company. The area of the Goldex has been periodically restaked and explored by Mr. Deans over the 25 years prior to 1997. The Nit 1-4 claims were staked in 1972 and optioned to Nomad Mines Ltd. with the option terminating in 1974. Terramar Resources Corporation optioned the Goldex property but returned it before the end of 1981. In 1981, Cambridge Development Corporation, which later changed its name to Bridgewest Development Corporation, optioned the property. The option lapsed in 1985 after a reported 466 soil samples were taken and 14 kilometres of VLF electromagnetics surveying done. In 1988, the property was optioned to Goldspring Resources Ltd. who carried out re-sampling of the main showings and a limited geochemical survey. The property lapsed and C.R.C. Explorations staked the BDC 3, Tuck 3, Parker 3 and the Granite 3 claims. The BDC 3 claim covered the area of the original Goldex occurrence. In 1990, C.R.C. completed a 27 kilometre VLF-EM and magnetometer survey and mapped the property. The property was optioned to Tycoon Ventures Ltd. (possibly in 1990) and in 1993, Tycoon completed a total of 17 kilometres of induced polarization (IP) and 9.9 kilometres of magnetometer (Mag) and VLF-electromagnetic surveying. Additional line construction was completed and 608 soil samples were also taken in 1993. The claims were aquired by X Tal Minerals in 1996 and in 1997, 10 kilometres of IP and 8 kilometres of Mag and VLF geophysical surveying were completed. A further 217 soil and 108 rock samples were also taken.

BIBLIOGRAPHY

EM EXPL 2001-23-31
EMPR ASS RPT *11950, *21251, *22938, *25196
EMPR FIELDWORK 1977, p. 23; 1989, pp. 503-510
EMPR OF 1988-24; RGS 24
EMPR PF (In 092C General File - Aeromagnetic Contour Map, Nitinat Lake Area, Noranda Mines Ltd., date unknown)
GSC BULL 172
GSC EC GEOL No. 3 Vol. 1
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 72-44; 76-1A; 79-30
WWW http://www.infomine.com/
Carson, D.J.T. (1968) Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University

DATE CODED: 1998/12/17 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1998/12/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092C 151**

NATIONAL MINERAL INVENTORY:

NAME(S): **MONTECARLO**, MONTE CARLO

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092C16W
BC MAP:
LATITUDE: 48 57 33 N
LONGITUDE: 124 29 50 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quartz vein showing on road (Figure 4, Assessment Report 21494).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5423997
EASTING: 390402

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Overlap Assemblage
Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1906
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	1.0000	Per cent

COMMENTS: Sample from pile at mouth of tunnel. Trace gold and silver.
REFERENCE: Minister of Mines Annual Report 1906 page 213.

CAPSULE GEOLOGY

The Montecarlo showing occurs within basaltic volcanic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group. A 20 to 25 centimetre wide quartz vein containing significant quantities of chalcopyrite was traced in a steep road cut for about 10 metres. The vein disappeared beneath overburden.

The Monte Carlo claim was first worked in 1991 by Wellington-Young Resources Inc. The program consisted of taking soil, rock and silt sampling. Mapping was also done.

BIBLIOGRAPHY

EMPR ASS RPT 21492, *21494
EMPR BULL 37
EMPR FIELDWORK 1977, p. 23; 1986, pp. 223-229; 1987, pp. 81-91; 1989, pp. 503-510
EMPR MP MAP 1992-2
EMPR OF 1987-2; RGS 24, 1990
EMPR PF (In General File: B.C. Forest Products Road Map, Cowichan Lake Area, 1963)
GSC MAP 1386A
GSC MEM 13
GSC OF 463; 821; 1272
GSC P 69-25; 72-44; 76-1A; 79-30
CJES Vol. 15 No. 3 1978, pp. 405-423
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationships of mineral deposits to plutonic rocks, Ph.D. Thesis, Carleton University
McGugan, A. (1962): Upper Cretaceous Foraminiferal zones, Vancouver

BIBLIOGRAPHY

Island in Journal of the Alberta Society of Petroleum Geologists

DATE CODED: 1998/12/18 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1998/12/18 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092E 001**

NATIONAL MINERAL INVENTORY: 092E15 Fe1

NAME(S): **GLENGARRY (L.410)**, HEAD BAY, STORMONT (L.411), TEXAS (L.412), TAH, HUALPAI

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E
BC MAP:
LATITUDE: 49 48 27 N
LONGITUDE: 126 31 00 W
ELEVATION: 133 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Lot 410 is located 1.8 kilometres northwest of Head Bay, west of Sucwoa River.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5520187
EASTING: 678674

COMMODITIES: Iron Magnetite Copper

MINERALS

SIGNIFICANT: Magnetite Pyrite Chalcopyrite
COMMENTS: Rare pyrite and chalcopyrite are found within pods of magnetite.
ALTERATION: Garnet
COMMENTS: Garnetite.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Stratabound Massive
CLASSIFICATION: Skarn Industrial Min.
TYPE: K03 Fe skarn
SHAPE: Tabular
DIMENSION: 567 x 403 x 7 Metres STRIKE/DIP: 315/45W TREND/PLUNGE:
COMMENTS: Area of outcrop mineralization; magnetite pods range from 2 to 12 metres in width. Attitude of limestone bedding.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
ISOTOPIC AGE:	225 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Upper Triassic	Vancouver	Parson Bay	
ISOTOPIC AGE:	215 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		
Eocene			Catface Intrusions
ISOTOPIC AGE:	38 +/- 14 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		

LITHOLOGY: Magnetite Garnet Skarn
Garnetite
Limestone
Granodiorite
Porphyritic Diorite Dike

HOSTROCK COMMENTS: Skarn along intrusive contact in Quatsino Formation. All fossil and isotopic age dates are from Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact Regional
Plutonic Rocks RELATIONSHIP:
GRADE: Hornfels Zeolite
COMMENTS: Contact metamorphism of Karmutsen Formation overprints regional facies

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Indicated YEAR: 1956
QUANTITY: 327000 Tonnes

COMMODITY	GRADE
Iron	42.7000 Per cent

COMMENTS: Magnetite ore. Drill indicated reserves in 11 distinct localities.
REFERENCE: Minister of Mines Annual Report 1956, page 133.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group volcanics and sediments comprised of Karmutsen Formation basalts and the Quatsino and Parson Bay formations carbonates and clastics. Granodiorite of the Early to Middle Jurassic Island Plutonic Suite and Eocene Catface Intrusions has intruded the Vancouver Group rocks. Contact metamorphism in Karmutsen basalts has given rise to amphibolite and hornfels zones up to several thousand metres in thickness. Contact metamorphism grades into regional zeolite facies metamorphism.

At the Glengarry magnetite occurrence, the northwest striking Quatsino limestone dips about 45 degrees to the southwest. Intruding the limestones to the south and east is a large granodiorite body and associated diorite dykes. The limestone strata have been recrystallized or altered to garnetite and many of the crosscutting dykes predate the skarn event.

Mineralization outcrops over an area of 567 by 403 metres as 11 or more pods of magnetite within garnet skarn. The pods range from 2 to 12 metres wide and are parallel to bedding, following roughly the margin of the intrusive contact in a northwest direction. Chalcopyrite and pyrite are present only in small quantities. A sample of the magnetite assayed 56.8 per cent iron, 0.1 per cent sulphur, trace phosphorous and 1.6 per cent silica (Minister of Mines Annual Report 1916, page K293).

Drill indicated reserves, in eleven distinct localities, total 327,000 tonnes averaging 42.7 per cent iron (Minister of Mines Annual Report 1956, page 133). The deposit is similar and adjacent to the Rob Roy deposit (092E 015).

BIBLIOGRAPHY

EMPR AR 1902-208; 1903-193; 1906-185; 1909-278; *1916-293; 1951-198; 1952-231; *1956-131-133; 1959-A45,134-135,282; 1960-106
EMPR ASS RPT 9130, 10157, 12058, 13026, 13681, 16355
EMPR BC METAL MM00073
EMPR BULL 27; 101, pp. 57,153, Appendix 6
EMPR EXPL 1980-163; 1981-221; 1983-190; 1984-147
EMPR INDEX 4-122
EMPR MAP 65 (1989)
EMPR OF *1988-28, p. 23; 1992-1; 1992-9
EMPR PF (Surface Plan, Head Bay area, 1:15,840; Composite Plan for Head Bay Magnetite Deposit, 1951, 1:1,800)
EMR MP CORPFILE (Canadian Collieries Resources Ltd.)
EMR MP RESFILE (Head Bay)
GSC BULL 172
GSC EC GEOL *3, p. 231
GSC MAP 1027A; 1537A
GSC MEM 272, p. 56
GSC OF 463
GSC P 71-36; 72-44; 80-16
CANMET IR 47, p. 16
CIM Transactions Vol.72, p. 116
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 184
Sangster, D.F. (1964): The Contact Metasomatic Magnetite Deposits of Southwestern British Columbia, Ph.D. Thesis, University of British Columbia
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/25 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 002** NATIONAL MINERAL INVENTORY:

NAME(S): **BEANO**, BANKO, ZEB

STATUS: Past Producer Open Pit MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 49 59 32 N NORTHING: 5540046
LONGITUDE: 126 49 08 W EASTING: 656333
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of upper workings on Beano Creek, also called Bingo Creek, 2.5 kilometres northeast of Zeballo.

COMMODITIES: Gold Silver Iron Copper

MINERALS
SIGNIFICANT: Pyrrhotite Chalcopyrite
COMMENTS: Gold, silver and chalcopyrite occur in pyrrhotite lenses and disseminations.
ASSOCIATED: Quartz Calcite
COMMENTS: Quartz-calcite-pyrrhotite stringers.
ALTERATION: Actinolite
COMMENTS: Actinolite-altered limestone.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound Massive Vein
CLASSIFICATION: Skarn Replacement Hydrothermal Industrial Min.
SHAPE: Irregular
DIMENSION: 0200 x 0090 x 0010 Metres STRIKE/DIP: 315/70E TREND/PLUNGE:
COMMENTS: Attitude of hosting stratigraphy; dimensions assume continuity between zones.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

ISOTOPIC AGE: 195.0 Ma
DATING METHOD: Fossil
MATERIAL DATED: Brachiopods and other fossils

Eocene — Catface Intrusions
ISOTOPIC AGE: 38 +/- 14 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Actinolite Limestone
Andesite Tuff
Dacite Tuff

HOSTROCK COMMENTS: Bonanza brachiopods from Tatcher Creek; Catface biotite from Zeballos area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1938
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	6.8000	Grams per tonne
Gold	321.7000	Grams per tonne

COMMENTS: Massive pyrrhotite, Number 4 Cut.
REFERENCE: Minister of Mines Bulletin 27, page 138.

CAPSULE GEOLOGY

The area is underlain by northwest striking, southwest dipping tuffs and basaltic to rhyolitic flows of the Lower Jurassic Bonanza Group. The Bonanza Group conformably overlies Upper Triassic Vancouver Group volcanics and calcareous sediments. These rocks are intruded by Jurassic and Eocene granodiorites of the Island and

CAPSULE GEOLOGY

Catface Intrusions. At the Beano occurrence, Bonanza Group white dacite and andesite tuffs are interbedded with a 10 metre wide band of limestone near a small Eocene stock. The limestone has been actinolite-altered and contains pyrrhotite plus or minus chalcopyrite.

Three styles of mineralization are recognized: 1) zones of quartz-calcite-pyrrhotite stringers 2) disseminated pyrrhotite 3) lenses of massive pyrrhotite measuring to 0.3 by 1.2 metres, as en echelon replacement of limestone along fractures. There are two sets of workings. The lower one, in the Bingo/Beano Creek Canyon, at an elevation of 710 metres, has 2 short adits, ranging from 2.0 to 2.5 metres in length and 2 small open cuts, exposing an area of 25 metres. The upper showing, above the creek canyon wall at elevation 800 metres, was explored by 4 open cuts.

Samples of massive pyrrhotite in the area have assayed up to 321.7 grams per tonne gold and 6.8 grams per tonne silver over narrow widths (Bulletin 27 p.138). Between 1948 and 1949, 21 tonnes of high grade ore was shipped and 3297 grams of gold, 1400 grams of silver and 33 kilograms of copper were recovered.

BIBLIOGRAPHY

EMPR AR 1938-F42; 1947-181; 1948-157
EMPR ASS RPT 4819, 5079, 9981, 12573, 12772
EMPR BC METAL MM00068
EMPR BULL 27, p. 138
EMPR EXPL 1981-172; 1983-191
EMPR GEM 1974-171
EMPR PF (Various maps; 1972 Annual Report: New Taku Mines Ltd.)
GSC MAP 1027A; 1537A
GSC MEM 272, p. 50
GSC OF 463
GSC P 40-12, p. 38; 72-44; 80-16
GCNL #87,#172, 1983; #240, 1988
W MINER #46,Apr., 1939
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/14 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 003**

NATIONAL MINERAL INVENTORY:

NAME(S): **FRIEND**, BEANO 3-4, BANKO 9-12, ZEB 7-8

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15W
BC MAP:
LATITUDE: 49 59 21 N
LONGITUDE: 126 48 20 W
ELEVATION: 610 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of middle adit on Friend Creek, 2.6 kilometres due east of Zeballos.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5539734
EASTING: 657298

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Arsenopyrite Pyrite Pyrrhotite
ASSOCIATED: Quartz Calcite
ALTERATION: Chlorite Actinolite Silica
COMMENTS: Veins occur near a 15-metre wide chlorite-altered zone.
ALTERATION TYPE: Chloritic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic Industrial Min.
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 56 x 22 Metres STRIKE/DIP: 050/90 TREND/PLUNGE:
COMMENTS: Explored dimension and attitude of Number Two vein.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

ISOTOPIC AGE: 195 Ma
DATING METHOD: Fossil
MATERIAL DATED: Brachiopods and other fossils

Eocene — Catface Intrusions

ISOTOPIC AGE: 38 +/- 14 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Argillaceous Tuff
Limestone
Andesite
Andesite Dike
Feldspar Porphyry Dike
Hornblende Diorite Dike
Gabbro Dike
Hornblende Diorite

HOSTROCK COMMENTS: Bonanza brachiopods from Tatchu Creek; Catface biotite from Zeballos area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1953
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	90.8300	Grams per tonne

COMMENTS: Over 7.5 centimetres of the Number Two vein at the upper adit.
REFERENCE: Geological Survey of Canada Memoir 272, page 53.

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Bonanza Group volcanics which are intruded by Jurassic and Eocene granodiorite of the Island and Catface intrusions.

CAPSULE GEOLOGY

The Friend occurrence is comprised of three widely-spaced quartz veins occurring along Friend Creek in a sequence of dark green argillaceous tuff, actinolite-altered limestone and andesite of the Bonanza Group. Andesite and feldspar porphyry dykes striking northeast are common. Small hornblende diorite and gabbro dykes(?) occurring in the middle and lower showings may be related to a small hornblende diorite stock of the Eocene Catface intrusions located to the southwest. The three veins occur in a north-trending structure marked by a 15-metre wide chlorite alteration zone.

The lowermost, Number One vein, at an elevation of 265 metres is exposed over 10 metres and follows a shear, 15 to 60 centimetres wide, striking 340 degrees and dipping 70 degrees east. The vein is 3 to 10 centimetres wide and consists of quartz and calcite, with ribbons of fine arsenopyrite, but no other sulphides. The highest assay of four samples returned 6.2 grams per tonne gold over 10.0 centimetres (Geological Survey of Canada Memoir 272, page 53).

The Number Two vein, located in a shear zone at an elevation of 360 metres and 122 metres north of the Number One vein, strikes approximately 050 degrees and dips vertically. It was explored by two adits 20 and 36 metres long. The vein appears to pinch out. Two samples, from the upper adit, each over 7.5 centimetres, assayed 90.8 grams per tonne and 41.1 grams per tonne gold, respectively (Geological Survey of Canada Memoir 272, page 53).

The third vein is located at an elevation of 488 metres, 580 metres north of the Number One vein along Friend Creek. It consists of a silicified zone, 30 to 150 centimetres wide, with stringers and lenses of quartz with pyrite, arsenopyrite and pyrrhotite. Sulphides comprise up to 20 per cent of the vein. A sample from the third vein assayed 8.60 grams per tonne gold and 37.4 grams per tonne silver (Geological Survey of Canada Memoir 272, page 54).

BIBLIOGRAPHY

EMPR AR 1938-F45; 1946-179
EMPR ASS RPT 5079, 12573, 12772
EMPR BULL 27, p. 138
EMPR EXPL 1981-191
EMPR GEM 1974-171
GSC MAP 1027A; 1537A
GSC MEM *272, p. 52
GSC OF 463
GSC P 40-12, p. 37; 72-44; 80-16
CIM TRANS Vol. 72, p. 116
GCNL #87,#172, 1983; #240, 1988
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/13 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 004** NATIONAL MINERAL INVENTORY:

NAME(S): **INDEPENDENCE**, HARLOW

STATUS: Prospect MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 49 57 18 N NORTHING: 5536237
LONGITUDE: 126 40 00 W EASTING: 667371
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of adit, 3.5 kilometres north of Tahsis, 1.0 kilometre west of Tahsis River.

COMMODITIES: Gold Silver Copper Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Sphalerite
COMMENTS: Gold, silver mineralogy not known.
ASSOCIATED: Pyrite Quartz
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0150 x 0002 Metres STRIKE/DIP: 090/90 TREND/PLUNGE:
COMMENTS: Main shear zone has been exposed by drifting for 150 metres and varies in width up to 2 metres.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
ISOTOPIC AGE: 225 Ma			
DATING METHOD: Fossil			
MATERIAL DATED: Various fossils			
Upper Triassic	Vancouver	Karmutsen	
ISOTOPIC AGE: 230 Ma			
DATING METHOD: Fossil			
MATERIAL DATED: Karnian daonella			

LITHOLOGY: Altered Andesite
Andesitic Flow
Rhyolite
Limestone

HOSTROCK COMMENTS: Quatsino fossils from Union Island; Karmutsen fossils from Tahsis Inlet (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1953
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	2.4000	Grams per tonne
Gold	0.6860	Grams per tonne

COMMENTS: Average of eleven grab samples.
REFERENCE: Geological Survey of Canada Memoir 272, page 55.

CAPSULE GEOLOGY

The Independence occurrence is located in Upper Triassic Vancouver Group rocks comprised of Karmutsen Formation andesites and Quatsino Formation limestones. The mineralization occurs in two parallel steeply dipping west trending shear zones in chlorite-altered andesite.

The main shear zone varies in width from 2 metres to less than

CAPSULE GEOLOGY

30 centimetres and contains lenticular-shaped lenses of quartz, up to 60 centimetres wide, and variably mineralized with pyrite, chalcopyrite and sphalerite. Total sulphide content averages 5.0 per cent. The shear zone was explored in the late 1930's by a 152 metre long adit. Eleven grab samples from the adit averaged 0.686 grams per tonne gold and 2.4 grams per tonne silver and the maximum value obtained was 6.6 grams per tonne gold. A surface sample from an undisclosed location assayed 40.4 grams per tonne gold and 16.1 grams per tonne silver (Geological Survey of Canada Memoir 272, page 55). A 1987 grab sample from the portal area returned 18.1 grams per tonne gold (Assessment Report 16673, page 25).

The parallel North shear zone lies 200 metres north of the adit and hosts two separate 15 to 30 centimetre quartz veins. The veins are sparsely mineralized with pyrite and chalcopyrite which form selvages along vein walls. The zone is exposed for 10 metres. A sample assayed 1.2 grams per tonne gold (Assessment Report 16673, page 26).

Locally, a sample from rhyolite returned 1.8 grams per tonne gold (Assessment Report 12354, page 3).

BIBLIOGRAPHY

EMPR ASS RPT *12354, 16673
EMPR EXPL 1987-C130; 1983-190
EMPR FIELDWORK 1982, p. 291; 1983, p. 219
EMPR PF (Prospectus: North American Ventures, 1988; Plans, with assay results, #1,2 veins 1:480; #1 vein, 1:240; #2 vein and tunnel, 1:240)
GSC MAP 1027A; 1537A
GSC MEM 272, p. 55
GSC OF 463
GSC P 72-44; 80-16
GCNL #106, 1988

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/14 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 005**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOHAWK**, VIG I-II

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E
BC MAP:
LATITUDE: 49 47 25 N
LONGITUDE: 126 34 20 W
ELEVATION: 320 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Drift is located on east tributary of Tsowwin River, 5 kilometres east of Tahsis Inlet.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5518141
EASTING: 674739

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Pyrite
COMMENTS: Gold values in quartz vein.
ASSOCIATED: Quartz
COMMENTS: Disseminated pyrite is present in quartz vein.
ALTERATION: Sericite Carbonate Silica
ALTERATION TYPE: Sericitic Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Discordant Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION:
STRIKE/DIP: 035/80S
TREND/PLUNGE:
COMMENTS: Mineralized vein in shear that strikes 035 degrees and dips 50 to 80 degrees south.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

ISOTOPIC AGE: 195 Ma
DATING METHOD: Fossil
MATERIAL DATED: Various fossils

LITHOLOGY: Andesite

HOSTROCK COMMENTS: Age dates from GSC Paper 80-16. Fossils from Tatchu Creek area. Various fossils dated include bivalves, gastropods etc.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Gold	1.1000	Grams per tonne

COMMENTS: 75 centimetre channel across portal width, includes vein and alteration envelope.
REFERENCE: Assessment Report 13806, figure 6.

CAPSULE GEOLOGY

A 30 centimetre quartz vein fissure filling is hosted by Lower Jurassic Bonanza Group fragmental andesite. Slickensiding and shearing are evident. The structure strikes 035 degrees and dips 50 to 80 degrees southeast. The vein, or possibly sheeted veins, exhibit combed and banded textures. Finely disseminated pyrite is present. Gold values to 1.1 grams per tonne have been obtained in a 75 centimetre channel sample across the portal width that include the vein and its alteration envelope.

Alteration along the shear zone consists of silicification, carbonatization and sericitization.

Two adits were drifted to explore the vein. A 15 metre adit follows the vein while another of 39.5 metres attempted to intersect the vein from a lower elevation.

BIBLIOGRAPHY

EMPR ASS RPT *13806, 17139
EMPR EXPL 1985-6131
GSC MAP 1027A; 1537A
GSC MEM 272-54
GSC OF 463
GSC P 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/08 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 006** NATIONAL MINERAL INVENTORY:

NAME(S): **VIVIAN**, TAH 15,18-19

STATUS: Prospect MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 49 48 36 N NORTHING: 5520330
LONGITUDE: 126 34 26 W EASTING: 674548
ELEVATION: 213 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit is located on fork in Tsowwin River, 6.5 kilometres upstream from Tahsis Inlet.

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Gold and silver values with no visible sulphides.
ASSOCIATED: Quartz Calcite
COMMENTS: Gold values in quartz-calcite veins in shear zone.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: STRIKE/DIP: 320/80N TREND/PLUNGE:
COMMENTS: Attitude of shear zone strikes 320 degrees and dips 80 degrees northeast.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

ISOTOPIC AGE: 225 Ma
DATING METHOD: Fossil
MATERIAL DATED: Various fossils

Eocene — Catface Intrusions
ISOTOPIC AGE: 38 +/- 14 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Plagioclase Crystal Tuff
Hornblende Monzonite
Hornblende Diorite
Carbonate

HOSTROCK COMMENTS: Quatsino Formation fossils from Union Island (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	14.3900	Grams per tonne
Gold	16.8900	Grams per tonne

COMMENTS: From vein at face of adit.
REFERENCE: Assessment Report 12058.

CAPSULE GEOLOGY

The Vivian occurrence is comprised of a 5 to 10 centimetre wide quartz-calcite vein within a shear zone striking 320 degrees and dipping 80 degrees northeast. The vein is hosted by weakly altered volcanics, described as a plagioclase crystal tuff within carbonates of the Upper Triassic Vancouver Group, Quatsino Formation (Assessment Report 12058).

On the south bank of the river, an inclined shaft was sunk and

CAPSULE GEOLOGY

is now flooded. On the north bank, a sample of this material assayed 68.8 grams per tonne gold (Geological Survey of Canada Memoir 272, page 54). The extension of the vein was explored along strike over a distance of 53 metres by open cuts at 8.0 metre intervals. Results were not available.

Sixty metres to the northwest, a 15 metre adit exposed the vein in the back of the drift. At the face, it measures 20 to 30 centimetres wide and consists of quartz and calcite, with no visible sulphides. Assay results yielded a trace of gold.

Work in 1983 identified a 250 by 500 metre hornblende-diorite to hornblende-monzonite Eocene Catface (?) intrusion immediately southeast of the vein. Re-sampling of the adit gave an assay of 16.89 grams per tonne gold and 14.39 grams per tonne silver. Selected samples from the dump assayed 133.67 grams per tonne gold and 454.13 grams per tonne silver (Assessment Report 12058).

BIBLIOGRAPHY

EMPR ASS RPT 9130, 10157, *12058, 13026, 13681, 17139
EMPR EXPL 1981-219; 1983-190; 1984-147
GSC MAP 1027A; 1537A
GSC MEM 272, p. 54
GSC OF 463
GSC P 80-16
CIM TRANS Vol. 72, p. 116
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/04 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 007**

NATIONAL MINERAL INVENTORY:

NAME(S): **UBELL CREEK**, ISLE 1-2

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15W
BC MAP:
LATITUDE: 49 58 07 N
LONGITUDE: 126 45 45 W
ELEVATION: 335 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Geological Survey of Canada Memoir 272, page 56; 0.6 kilometre up Ubell Creek from Little Zeballos River, 6.0 kilometres east-southeast of Zeballos townsite.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5537540
EASTING: 660452

COMMODITIES: Gold Silver Arsenic Copper

MINERALS
SIGNIFICANT: Arsenopyrite Chalcopyrite
COMMENTS: Gold, silver associated with arsenopyrite veins in diorite.
ASSOCIATED: Quartz
COMMENTS: Minor quartz in veins.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Massive
CLASSIFICATION: Hydrothermal Epigenetic Industrial Min.
TYPE: I06 Cu±Ag quartz veins
DIMENSION: STRIKE/DIP: 360/ TREND/PLUNGE:
COMMENTS: Veins strike north.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Catface Intrusions

ISOTOPIC AGE: 38 +/- 14 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Diorite

HOSTROCK COMMENTS: Catface biotite from Zeballos area.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: VEINS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1953
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	5.5000	Grams per tonne
Gold	12.9000	Grams per tonne

COMMENTS: Best values from samples of 3 different veins.
REFERENCE: Geological Survey of Canada Memoir 272, page 56.

CAPSULE GEOLOGY

The occurrence is reported to be comprised of several parallel veins in diorite of the Eocene Catface Intrusions. The veins, quartz infilling north striking fracture zones within the diorite, host massive arsenopyrite with minor chalcopyrite. They occur at spacings of 3 to 7 metres.

Samples from three different veins assayed 12.9, 2.4 and 12.7 grams per tonne gold and 4.0, 5.5 and 4.1 grams per tonne silver, respectively (Geological Survey of Canada Memoir 272, page 56).

BIBLIOGRAPHY

EMPR ASS RPT 12306
EMPR BULL 27
EMPR EXPL 1983-191
EMPR P 1983-1
GSC MAP 1027A; 1537A
GSC MEM *272, p. 56
GSC OF 463

BIBLIOGRAPHY

GSC P 40-12; 72-44; 74-8; 80-16
CIM TRANS Vol. 72, p. 116
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/11 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 008**

NATIONAL MINERAL INVENTORY:

NAME(S): **UBELL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15W
BC MAP:
LATITUDE: 49 57 12 N
LONGITUDE: 126 45 17 W
ELEVATION: 945 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 4.8 kilometres due east of the mouth of Little Zeballos River, 7.5 kilometres east-southeast of Zeballos townsite.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5535859
EASTING: 661061

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Pyrite
COMMENTS: Gold, silver assumed associated with pyrite.
ASSOCIATED: Quartz Calcite
COMMENTS: Quartz, calcite occurs as vein fillings.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: STRIKE/DIP: 360/60E TREND/PLUNGE:
COMMENTS: Fault zones containing narrow and persistent veins range from 15 to 30 centimetres in width.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

ISOTOPIC AGE: 195 Ma
DATING METHOD: Fossil
MATERIAL DATED: Brachiopods and other fossils

Eocene — Catface Intrusions
ISOTOPIC AGE: 38 +/- 14 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Argillite

HOSTROCK COMMENTS: Bonanza brachiopods from Tatchu Creek area, Catface biotite from Zeballos area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1953
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	1.2000	Grams per tonne
Gold	0.1600	Grams per tonne

COMMENTS: Grab sample of vein material.
REFERENCE: Geological Survey of Canada Memoir 272, page 55.

CAPSULE GEOLOGY

The occurrence lies within argillites of the Lower Jurassic Bonanza Group, 3 kilometres south of the Eocene Catface Intrusions stock. Fault zones containing narrow persistent quartz-calcite veins with abundant pyrite range in width from 15 to 30 centimetres. In places pyrite impregnates the wallrock for a distance of 1.0 metre from the vein.

A grab sample of vein material assayed 0.16 grams per tonne gold and 1.2 grams per tonne silver (Geological Survey of Canada Memoir 272, page 55).

BIBLIOGRAPHY

EMPR BULL 27
GSC MAP 1027A; 1537A
GSC MEM *272, p. 55
GSC OF 463
GSC P 40-12; 72-44; 74-8; 80-16
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/11 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 009**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHANNON**, SHANNON I, LITTLE PETE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W
BC MAP:
LATITUDE: 49 39 59 N
LONGITUDE: 126 24 35 W
ELEVATION: Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located on Muchalat Inlet, 22 kilometres west of Gold River, north of Gore Island. The exact location is uncertain. 1928 and 1931 Minister of Mines, Annual Reports refer to a prospect located north of Muchalat Inlet (including the claim names "Shannon I" and "Little Pete"). Later reports equate this prospect with the Danzig/Silverado (092E 017,026) which was at some previous time also known as the Shannon, but is located south of the Muchalat Arm. The prospect north of Muchalat area received no further mention in the literature. It should be considered possible that an error in the 1928 and 1931 Annual Reports mislocated the prospect, and that this occurrence is non-existent.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5504761
EASTING: 686909

COMMODITIES: Silver, Copper, Zinc, Lead

MINERALS

SIGNIFICANT: Chalcopyrite, Sphalerite, Galena
COMMENTS: Argentiferous galena and chalcopyrite in upper part of occurrence.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Stratabound, Massive
CLASSIFICATION: Hydrothermal, Skarn, Replacement, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular
DIMENSION: 1200 Metres
STRIKE/DIP: 130/70E
TREND/PLUNGE:
COMMENTS: Vein width is 1.5 metres. Mineralization has been traced over 1200 metres by hand trenching.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zircon

ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Meta Limestone
Hornblende Feldspar Porphyry
Volcanic Rock
Granodiorite

HOSTROCK COMMENTS: Zircon from Tofino area biotite gneiss; Island Plutonic Suite biotite from Alert Bay map area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
Plutonic Rocks RELATIONSHIP:
METAMORPHIC TYPE: Regional
GRADE: Amphibolite
COMMENTS: Migmatized Sicker & Vancouver Group volcanics & sediments.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1928
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	225.9000	Grams per tonne
Lead	8.0000	Per cent
Zinc	13.0000	Per cent

COMMENTS: "Sample taken to get general values" assayed trace gold.
REFERENCE: Minister of Mines, Annual Report 1928, page C373.

CAPSULE GEOLOGY

The Muchalat Inlet area is underlain by granodiorite of the Jurassic Island Plutonic Suite and amphibolite grade metamorphic volcanic and sedimentary rocks of the Upper Paleozoic to Lower Mesozoic West Coast Complex.

The Shannon occurrence is located about 2.0 kilometres from a granodiorite batholith of the Jurassic Island Plutonic Suite. Mineralization is reported to occur both as a 1.5 metre wide vein and as replacement in limestone along a hornblende-feldspar porphyry or volcanic contact (Minister of Mines Annual Report 1928, page C373).

Mineralization strikes 130 degrees and dips 70 degrees east, and consists of over 15 to 20 per cent (estimated) sphalerite, minor galena and massive chalcopyrite. A sample assayed trace gold, 225.9 grams per tonne silver, 8 per cent lead and 13 per cent zinc (Minister of Mines Annual Report 1928, page 373). Mineralization has been traced intermittently over 1200 metres by hand trenching.

The geological description is similar to that of the Silverado and Baltic showings (092E 017 and 092E 026).

BIBLIOGRAPHY

EMPR AR 1927-345; *1928-372; 1931-168; 1933-252
GSC MAP 1537A
GSC OF 463
GSC P 72-44; 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/05/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092E 010**

NATIONAL MINERAL INVENTORY: 092E15 Cu1

NAME(S): **GEO**, STAR OF THE WEST, DC 1-4, HAKADATO, WOLVERINE, TAHSIS, YOKAMMA , JESSIE 12, MAGGIE MACK, THASIS

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E
BC MAP:
LATITUDE: 49 55 04 N
LONGITUDE: 126 40 00 W
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location of main showing is at 457 metres elevation on Ubedam Creek, 1.8 kilometres west of the village of Tahsis. See note in Capsule Geology regarding location.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5532099
EASTING: 667500

COMMODITIES: Gold, Silver, Copper, Lead, Zinc, Magnetite, Iron, Arsenic

MINERALS

SIGNIFICANT: Chalcopyrite, Galena, Sphalerite, Magnetite, Arsenopyrite, Bornite, Pyrrhotite, Pyrite
COMMENTS: Sulphides replace garnet in skarn; gold associated with arsenopyrite.
ASSOCIATED: Pyrite, Pyrrhotite
ALTERATION: Garnet, Epidote, Azurite, Pyroxene, Wollastonite
ALTERATION TYPE: Skarn, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound, Massive, Podiform, Vein
CLASSIFICATION: Skarn, Replacement, Hydrothermal, Industrial Min.
TYPE: K01 Cu skarn, K03 Fe skarn
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 53 x 5 Metres
STRIKE/DIP: 315/80E
TREND/PLUNGE:
COMMENTS: Local strike of sediments and intrusive contact is northwest.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
ISOTOPIC AGE:	225 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Lower Jurassic	Bonanza	Undefined Formation	
ISOTOPIC AGE:	195 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Brachiopods and other fossils		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		

LITHOLOGY: Limestone
Garnet Epidote Skarn
Granodiorite

HOSTROCK COMMENTS: Quatsino Fm. fossils from Union Is.;Bonanza brachiopods from Tatchu Creek; Island Plutonic Suite biotite from Alert Bay (GSC paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
GRADE: Hornfels

INVENTORY

ORE ZONE: OPENCUT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1925
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	51.4000	Grams per tonne
Gold	5.5000	Grams per tonne
Copper	16.0000	Per cent

REFERENCE: Minister of Mines Annual Report 1925, page 270.

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1962
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Gold	6.1700	Grams per tonne
Silver	13.7100	Grams per tonne
Copper	5.2000	Per cent

COMMENTS: Sample 680-tonne shipment.
REFERENCE: Minister of Mines Annual Report 1962, page 104.

CAPSULE GEOLOGY

The Geo occurrence consists of a garnet-epidote altered limestone of the Upper Triassic Vancouver Group, Quatsino Formation in contact with granodiorite rocks, presumably belonging to the Jurassic Island Plutonic Suite. Lower Jurassic Bonanza Group volcanics lie to the north of the occurrence.

Mineralization has been exposed by pits and trenches over a distance of 53 metres with a maximum width of 5.0 metres. Mineralization consists predominantly of lenses of chalcopyrite, magnetite, pyrite, pyrrhotite and local arsenopyrite (with which gold is associated), and minor galena, sphalerite, bornite and azurite. The mineralization replaces garnet-epidote skarn. Minor magnetite occurs in crosscutting shear zones.

A sample from a location described as being at elevation 137 metres, 487 metres distance from Tahsis Inlet, assayed 8.2 grams per tonne gold, 34.3 grams per tonne silver, 9.0 per cent copper, and 14.0 per cent zinc (Minister of Mines Annual Report 1923, page 247). Another sample from the Hakadato claim, at elevation 457 metres, 1.8 kilometre from Tahsis Inlet assayed 5.5 grams per tonne gold, 51.5 grams per tonne silver, and 16.0 per cent copper (Annual Report 1925, page 270). These locations are uncertain. A 680-tonne sample assayed 6.17 grams per tonne gold, 13.71 grams per tonne silver and 5.2 per cent copper (Minister of Mines Annual Report 1962, page 104).

George Cross Newsletter #102 (May 28, 1985) reports diamond drilling results that include 3.5 metres of 6.1 grams per tonne gold and 5.85 per cent copper.

The occurrence is on Poole Creek which is shown as a tributary of Ubedam Creek (Minister of Mines Annual Report 1926, page 300). Assessment Report 12354 shows Poole Creek to flow into Extravagant Creek, 2.0 kilometres north of Ubedam Creek.

BIBLIOGRAPHY

EMPR AR 1922-231; 1923-247; 1924-224; *1925-269-271; 1926-300; 1928-373; 1931-168; 1933-252; 1955-78; 1956-119; 1962-104
EMPR ASS RPT *12354
EMPR BC METAL MM00104
EMPR BULL 101, p. 153, Appendix 6
EMPR EXPL 1983-190
EMPR GEM 1970-284; 1971-232
EMPR INDEX 3-214
EMPR P 1989-3, p. 103
EMR MP CORPFILE (Rosea Copper Mines Ltd.; Belle Tahsis Mines)
GSC MAP 1027A; 1537A
GSC MEM 204, pp. 18,20; 272
GSC OF 463
GSC P 71-36; 72-44; 80-16
GCNL #2, 1980; #102, 1985
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 185
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/10 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 011** NATIONAL MINERAL INVENTORY: 092E8 Cu1

NAME(S): **INDIAN CHIEF**, MEPHISTOPHELES (L.711), BRUTUS (L.712), DEWDNEY, SCOTLET (L.582), BONTHORNE, TINNECANEM, DEWDROP, VICTOR, LESCHI, TIDEWATER

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 49 26 51 N NORTHING: 5480678
LONGITUDE: 126 18 43 W EASTING: 694833
ELEVATION: 502 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Bonthorne adit on the Scotlet claim (Lot 582), 1.2 kilometres west of Stewardson Inlet. See also Prince (092E 032).

COMMODITIES: Copper Silver Gold Magnetite Iron

MINERALS
SIGNIFICANT: Chalcopyrite Magnetite Bornite Pyrite
ASSOCIATED: Pyrite
ALTERATION: Garnet Epidote Actinolite Wollastonite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound Disseminated Podiform
CLASSIFICATION: Skarn Industrial Min.
TYPE: K01 Cu skarn K03 Fe skarn
SHAPE: Irregular
MODIFIER: Faulted

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Undefined Formation	
ISOTOPIC AGE:	220 +/- 10 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		

LITHOLOGY: Garnet Skarn
Limestone
Volcanic Rock
Granodiorite

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: INDIAN CHIEF REPORT ON: Y

CATEGORY: Combined YEAR: 1961
QUANTITY: 1900000 Tonnes

COMMODITY	GRADE	
Copper	1.5000	Per cent
Gold	0.3100	Grams per tonne
Silver	23.2000	Grams per tonne

COMMENTS: Possible and potential ore.
REFERENCE: Assessment Report 462, page 13.

CAPSULE GEOLOGY

The Indian Chief mine is a skarn deposit hosted in a roof pendant within granodiorite of the Early-Middle Jurassic Island Plutonic Suite. Host rocks are north-striking, steeply east-dipping limestone and volcanics of the Upper Triassic Vancouver Group. The limestone stratigraphically overlies the volcanics. Intricate small-scale folds are recognizable in the limestone where it has not

CAPSULE GEOLOGY

been destroyed by skarning. The volcanic rocks exhibit low grade metamorphism.

Several major northwest trending step faults, dipping steeply to the northeast, and smaller faults with a northeast trend, are recognized. Skarn mineralogy consists of garnet, epidote and actinolite. The alteration is most intense near fault zones and where limestone is in direct contact with the intrusive rocks. Skarn zones are limited to a 60-metre vertical distance from the pluton.

Mineralization consists of masses and disseminations of magnetite, bornite, chalcopyrite and pyrite. Higher copper grades occur in the fault zones and near the intrusive-limestone contacts. Magnetite occurs throughout the skarn and was reported to be of sufficient quantity to be recovered (Minister of Mines Annual Report 1920, page 20A), although production records do not show this. Production, between 1904 and 1938 was intermittent.

Combined (possible and potential ore) for the Indian Chief are 1,900,000 tonnes grading 1.5 per cent copper, 0.31 gram per tonne gold and 23.20 grams per tonne silver (Assessment Report 462, page 13).

See also Prince (092E 032).

BIBLIOGRAPHY

EMPR AR 1898-H33; 1899-791,793; 1900-923; 1901-1098; 1902-232,307; 1903-192; 1904-244; 1906-185; 1907-148; 1908-143; 1916-337; *1917-250; 1918-266; *1919-199; 1920-20A,196; 1922-229; *1923-244, 248-251; 1924-223; 1925-272; 1926-300; 1928-372; 1929-375; 1931-168; 1938-F68; 1956-119; 1962-131; 1963-101
EMPR ASS RPT 462, 463
EMPR BC METAL MM00080
EMPR BULL 101, pp. 57,153, Appendix 6
EMPR ENG INSP (Mine plans)
EMPR EXPL 1973-229
EMPR INDEX 3-201
EMPR MAP 65, 1989
EMPR OF 1988-28, p. 44; 1992-1; 1992-9
EMPR PF (M. Brewer: Jan.,June 1907; Mine plan 1:480, 1920; Underground workings, 1:480; C. Cushwa, 1923; Claim map 1:7200; Plan of workings, 1:400; Assay plan 1:240; Plan of Group, 1:3600; Elevation of Workings 1:480, 1928; Mine map 1:400; Reports by R.D. Hearn, 1929; Starr, C.C. (undated): Notes on the Tidewater Mine)
EMR MIN BULL MR 223 (1989) B.C. 90
GSC MAP 1537A
GSC OF 463
GSC P 71-36; 72-44; 80-16
GSC SUM RPT 1918 Part B, p. 37; 1920 Part A, p. 20
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 181
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/27 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 012**

NATIONAL MINERAL INVENTORY:

NAME(S): **ORMOND 3 (L.353)**, ORMOND

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 17 59 N
LONGITUDE: 126 05 50 W
ELEVATION: 243 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1.6 kilometres west of Matilda Inlet on a small unnamed lake (from Assessment Report 9658).

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5464830
EASTING: 711026

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: Lenses, stringers and disseminations of chalcopyrite.
ASSOCIATED: Pyrrhotite Pyrite
COMMENTS: Pyrite and pyrrhotite occur intimately mixed with copper sulphides.
ALTERATION: Azurite Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Massive Disseminated
CLASSIFICATION: Igneous-contact Porphyry Epigenetic
SHAPE: Tabular
MODIFIER: Fractured
DIMENSION: 0035 x 0030 Metres STRIKE/DIP: 360/70E TREND/PLUNGE:
COMMENTS: Deposit dimensions from Assessment Report 9658.

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zirconium from biotite gneiss

LITHOLOGY: Epidote Calcite Quartz Breccia
Mafic Volcanic Rock
Porphyritic Intrusive Rock

HOSTROCK COMMENTS: West Coast Complex zircon and Catface biotite from Tofino area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
Plutonic Rocks RELATIONSHIP:
METAMORPHIC TYPE: Regional
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1981
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	126.9000	Grams per tonne
Copper	6.0700	Per cent

REFERENCE: Assessment Report 9658, page 11.

CAPSULE GEOLOGY

The Ormond 3 occurrence has been explored intermittently since its discovery in 1902.

Assessment Report 9658 and Minister of Mines Annual Report for 1916 describe somewhat different styles of mineralization from apparently the same locality.

According to the Annual Report, the mineralization occurs in a garnet-epidote-calcite-quartz breccia in porphyritic igneous rock.

The Assessment Report describes the occurrence, identified from old trenches, as being hosted by massive dark green mafic volcanics with occasional felsic breccia fragments of the Paleozoic-Mesozoic West Coast Complex.

In both reports, the mineralization is described as consisting

CAPSULE GEOLOGY

of massive lenses, fracture fillings and disseminations of pyrite, pyrrhotite and chalcopyrite, with secondary azurite and malachite.
Assay results are comparable. Assessment Report 9658 reports 6.07 per cent copper and 126.9 grams per tonne silver. The Minister of Mines Annual Report cites 5.0 per cent copper and 102.8 grams per tonne silver.

BIBLIOGRAPHY

EMPR AR *1906-186; 1916-334; 1929-375; 1931-168; 1932-204; 1935-G46; 1963-126; 1966-74; 1967-74
EMPR ASS RPT 465, 2317, 3689, 4356, 4956, 8056, *9658
EMPR EXPL 1980-162
EMPR GEM 1969-216; 1972-262
EMPR PF (Parallax Resources prospectus, 1988; Various maps; Parallax Development Co.; Summary Report by T.G. Manking, 1988)
GSC MAP 1027A; 1537A
GSC MEM 272
GSC OF 463
GSC P 72-44; 80-16
GCNL #111,#146, 1988
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/16 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 013**

NATIONAL MINERAL INVENTORY:

NAME(S): **AGNES 1-2**, VI 1 & 3, SATCHIE, HESQUIAT, PACO

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W
BC MAP:
LATITUDE: 49 30 02 N
LONGITUDE: 126 22 25 W
ELEVATION: 150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of main showing on southfork of Satchie Creek, 950 metres southeast of Hesquiat Lake Island.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5486418
EASTING: 690158

COMMODITIES: Magnetite, Copper, Iron

MINERALS

SIGNIFICANT: Magnetite, Chalcopyrite, Bornite, Malachite
ALTERATION: Garnet, Epidote, Quartz, Malachite
ALTERATION TYPE: Skarn, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Stratabound, Massive
CLASSIFICATION: Skarn, Replacement, Epigenetic, Industrial Min.
SHAPE: Irregular
DIMENSION: 24 x 6 Metres
STRIKE/DIP: 360/80
TREND/PLUNGE:
COMMENTS: Attitude of lenses of magnetite; reported to dip steeply. Skarn is 24 metres wide and largest magnetite lense is 6 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	

ISOTOPIC AGE: 290 Ma
DATING METHOD: Fossil
MATERIAL DATED: Foraminifera

Jurassic — Island Plutonic Suite
ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Altered Limestone
Garnet Skarn
Greenstone
Granodiorite

HOSTROCK COMMENTS: Sicker foraminifera from McGee Creek; Biotite from Alert Bay (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
Plutonic Rocks RELATIONSHIP:
METAMORPHIC TYPE: Contact
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1962
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	1.1800	Per cent
Iron	41.0800	Per cent

COMMENTS: 1.8 metre true width, magnetite zone, Line 35+00 S; 0+75 W. Also, 0.02 per cent phosphorous and 1.35 per cent sulphur.
REFERENCE: Assessment Report 464, page 6.

CAPSULE GEOLOGY

In the Hesquiat Lake area, northwest striking limestones and volcanics previously assigned to the Quatsino and Karmutsen Formations (Geological Survey of Canada Map 53-17) have more recently been included with the Pennsylvanian to Permian Sicker Group (Geological Survey of Canada Map 1537A). These rocks are intruded by felsic granitic rocks of the Early to Middle Jurassic Island Plutonic Suite (Muchalat Batholith). A dioritic to gabbroic border phase is 500

CAPSULE GEOLOGY

metres wide.

The Agnes showing, located on the westernmost south fork of Satchie River, consists of several lenses of massive magnetite and mixed magnetite-skarn in altered limestone. The skarn is 24.0 metres wide and consists of garnet, epidote and quartz. It follows roughly the limestone-greenstone contact. Outcrops of diorite to the east, west and below the skarn limit its lateral potential.

The largest magnetite lens is 6.0 metres wide. Malachite staining is occasionally present. A grab sample assayed 39.88 per cent iron and 0.39 per cent copper. About 150 metres to the north-east, massive to scattered lenses of magnetite are exposed in an area 15 by 15 metres. A sample from this mineralization, over a true width of 5.5 metres, assayed 23.35 per cent iron, 0.08 per cent copper, 0.02 per cent sulphur and 0.03 per cent phosphorus. Minor chalcopyrite and bornite are present. A representative sample assayed 25.15 per cent iron and 0.28 per cent copper (Assessment Report 464).

A sample taken over a true width of 1.8 metres of massive magnetite assayed 41.08 per cent iron, 1.18 per cent copper, 1.35 per cent sulphur and 0.02 per cent phosphorus. A sample taken along strike returned 26.65 per cent iron, 0.45 per cent copper, 0.40 per cent sulphur and 0.06 per cent phosphorus (All assays from Assessment Reports 462, 464).

The occurrence lies north of Brown Jug (092E 016) and Thelma (092E 031) and east of Hesquiat (092E 054).

BIBLIOGRAPHY

EMPR AR 1902-209; 1903-193; 1940-27; 1961-101; 1962-131; 1967-74
EMPR ASS RPT *462, *464, 2179, 11159
EMPR EXPL 1969-216; 1972-262; 1982-138
GSC EC GEOL 3-1, p. 230
GSC MAP 1537A
GSC OF 463
GSC P 71-36; 72-44; 80-16
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F., (1964): The Contact Metasomatic Magnetite Deposits of Southwestern British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/25 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 014**

NATIONAL MINERAL INVENTORY:

NAME(S): **PACO**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W
BC MAP:
LATITUDE: 49 29 26 N
LONGITUDE: 126 24 45 W
ELEVATION: 107 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Assessment Report 464 gives the location as being 460 metres from the Hesquiat Lake shore, on the creek across the lake from the Brown Jug occurrence (092E 016).

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5485209
EASTING: 687381

COMMODITIES: Zinc

MINERALS

SIGNIFICANT: Sphalerite
ALTERATION: Garnet Limonite
COMMENTS: Iron oxide mud in tributary creek.
ALTERATION TYPE: Skarn Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Skarn Epigenetic
DIMENSION: STRIKE/DIP: 315/50E TREND/PLUNGE:
COMMENTS: Attitude of local stratigraphy is striking northwest, dipping moderately east.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	

ISOTOPIC AGE: 290 Ma
DATING METHOD: Fossil
MATERIAL DATED: Foraminifera

LITHOLOGY: Altered Limestone
Volcanic
Granodiorite

HOSTROCK COMMENTS: Age dates on foraminifera from McGee Creek area, from Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by northwest striking limestones and volcanics of the Pennsylvanian to Permian Sicker Group (Geological Survey of Canada Map 1537A). The Sicker Group rocks are intruded by granodioritic rocks of the Muchalat Batholith which is part of the Jurassic Island Intrusions.

The occurrence is reported as a skarn zone of limited surface extent in an unnamed creek. A small amount of sphalerite occurs over 0.3 by 0.6 metres. In a nearby tributary, the stream bed is coated with 2.0 centimetres of iron oxide mud (Assessment Report 464).

BIBLIOGRAPHY

EMPR AR 1962-131
EMPR ASS RPT *464
GSC MAP 53-17; 1537A
GSC OF 463
GSC P 72-44; 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/18 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 015**

NATIONAL MINERAL INVENTORY: 092E15 Fe1

NAME(S): **ROB ROY**, PRINCE CHARLIE, FIDO, RUSSELL, TAH 15,18-19,22

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E
BC MAP:
LATITUDE: 49 48 11 N
LONGITUDE: 126 30 59 W
ELEVATION: 60 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of the Russell 6 claim, located 1.8 kilometres northwest of Head Bay, west of Sucwoa River and south of the Glengarry occurrence (092E 001).

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5519693
EASTING: 678710

COMMODITIES: Iron Magnetite

MINERALS

SIGNIFICANT: Magnetite
ASSOCIATED: Pyrite Chalcopyrite
COMMENTS: Rare chalcopyrite and pyrite are found within pods of magnetite.
ALTERATION: Garnet
COMMENTS: Garnetite.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Stratabound Massive
CLASSIFICATION: Skarn Epigenetic Industrial Min.
TYPE: K03 Fe skarn
SHAPE: Tabular
DIMENSION:
STRIKE/DIP: 315/45W
TREND/PLUNGE:
COMMENTS: Attitude of local bedding.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
ISOTOPIC AGE:	225 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Upper Triassic	Vancouver	Parson Bay	
ISOTOPIC AGE:	215 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		
Eocene			Catface Intrusions
ISOTOPIC AGE:	38 +/- 14 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		

LITHOLOGY: Altered Limestone
Magnetite Garnet Skarn
Garnetite
Granodiorite
Porphyritic Greenstone Dike
Feldspar Porphyry Dike

HOSTROCK COMMENTS: Fossil and biotite material age dates from Geological Survey of Canada, Paper 80-16.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP: Plutonic Rocks
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Zeolite
Hornfels
COMMENTS: Contact metamorphism overprints regional grade.

INVENTORY

ORE ZONE: ROB ROY REPORT ON: Y

CATEGORY: Indicated YEAR: 1916
QUANTITY: 45359 Tonnes

COMMODITY	GRADE
Iron	56.8000 Per cent

COMMENTS: The grade reported is similar to that of the Glengarry occurrence (092E 001). Estimate of probable ore.
REFERENCE: Minister of Mines Annual Report 1916, page 294.

CAPSULE GEOLOGY

The area is underlain by northwest striking Upper Triassic Vancouver Group, Quatsino Formation limestone that dips moderately to the southwest. The limestone is intruded by a granodiorite stock of the Early to Middle Jurassic Island Plutonic Suite. The limestone has been recrystallized, skarned and in places, altered to garnetite. Many crosscutting porphyritic greenstone dykes predate the skarn alteration. Other feldspar porphyry dykes are related to the Eocene Catface Intrusions.

Magnetite mineralization is contained within garnet skarn with rare associated chalcopyrite and pyrite. Magnetite is often, but not always, free of garnet. Magnetite pods are parallel to bedding and roughly follow the margin of the intrusive contact in a northwest direction. Brewer reports that the grade is similar to the Glengarry (092E 001) although no assays were done and estimates that about 45,360 tonnes of probable ore grading 56.8 per cent iron are present (Minister of Mines Annual Report 1916, page 294).

BIBLIOGRAPHY

EMPR AR 1916-294; 1956-131-134
EMPR ASS RPT 9130, 10157, 12058, 13026, 13681, 16355
EMPR BULL 27
EMPR EXPL 1980-163; 1981-221; 1983-190; 1984-147
EMPR OF *1988-28
GSC EC GEOL Series *3-1, p. 235
GSC MAP 1027A; 1537A
GSC MEM 272, p. 56
GSC OF 463
GSC P 71-36; 72-44; 80-16
CIM Vol. 72, p. 116
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F., (1964): The Contact Metasomatic Magnetite Deposits of Southwestern British Columbia, Ph.D. Thesis, University of British Columbia
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/31 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 016**

NATIONAL MINERAL INVENTORY:

NAME(S): **BROWN JUG**, HESQUIAT, FRANKFORT, NIMROD, SAPPHIRE, SATCHIE, HESTERVAN, ESTEVAN, HES, LAKE, BASIN, ISLE

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 29 19 N
LONGITUDE: 126 23 20 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location is the centre of the Lake 78 claim. Exact location of old workings is not known.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5485052
EASTING: 689098

COMMODITIES: Gold, Silver, Zinc, Copper, Lead, Iron, Magnetite

MINERALS

SIGNIFICANT: Sphalerite, Chalcopyrite, Galena, Magnetite, Pyrite, Covellite, Arsenopyrite, Pyrrhotite, Cuprite, Malachite
COMMENTS: Gold and silver association not known.
ASSOCIATED: Armenite, Barite
COMMENTS: Sulphides in armenite gangue (barium mineral).
ALTERATION: Manganite, Sericite, Epidote, Malachite
COMMENTS: Sericite, epidote, manganese oxide.
ALTERATION TYPE: Propylitic, Oxidation, Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Podiform, Stratabound, Massive
CLASSIFICATION: Hydrothermal, Skarn, Epigenetic, Industrial Min.
TYPE: K03 Fe skarn
SHAPE: Tabular
DIMENSION: 0500 Metres
STRIKE/DIP: 030/55E
TREND/PLUNGE:
COMMENTS: Vein, traced over 500 metres, strikes northeast and dips 30 to 55 degrees east.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	

ISOTOPIC AGE: 290 Ma
DATING METHOD: Fossil
MATERIAL DATED: Foraminifera

LITHOLOGY: Altered Volcanic Rock, Limestone, Siliceous Grit, Biotite Quartz Tuffaceous Siltstone, Chert, Felsic Granite

HOSTROCK COMMENTS: Foraminifera from McGee Creek dated in Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Regional metamorphism is greenschist to upper greenschist facies.

INVENTORY

ORE ZONE: BROWN JUG
REPORT ON: Y

CATEGORY: Unclassified
YEAR: 1962
QUANTITY: 1000000 Tonnes

COMMODITY	GRADE
Iron	35.0000 Per cent

COMMENTS: Potential for 0.5 to 1.5 million tonnes of 30 to 40 per cent iron.
REFERENCE: Assessment Report 462, page 10.

CAPSULE GEOLOGY

In the Hesquiat Lake area, northwest striking limestones and vol-

CAPSULE GEOLOGY

canics previously assigned to the Quatsino and Karmutsen formations (Geological Survey of Canada Map 53-17) have more recently been included with the Pennsylvanian to Permian Sicker Group (Geological Survey of Canada Map 1537A). The rocks are intruded by felsic granitic rocks of the Jurassic Island Intrusions (Muchalat Batholith). A dioritic to gabbroic border phase is 500 metres wide.

At the Brown Jug occurrence magnetite lenses occur "in a highly altered skarn-like rock of volcanic origin, in close proximity to a bed of limestone" (Assessment Report 462). There was believed to be potential for 0.5 to 1.5 million tonnes of 30 to 40 per cent iron (Assessment Report 462, page 10). This occurrence lies near the Thelma/Hesquiat/Guildemar (092E 031). Earlier Ministry references and work in the 1980's focused on a polymetallic vein, hosted in sheared interbedded siliceous grit, chert and biotite-quartz rich (tuffaceous?) siltstone. Strong epidote and sericite alteration is present in the wallrock. The vein, traced over 500 metres strikes north-northeast and dips 30 to 55 degrees east. Mineralization is comprised of variable amounts of iron-rich sphalerite with minor amounts of galena, chalcopyrite, pyrite, malachite and cuprite. Arsenopyrite, covellite, pyrrhotite and manganese oxide are reported. Mineralization occurs in a gangue of armenite, a low temperature barium mineral defined in Assessment Report 14694.

Unclassified reserves for the Brown Jug are 1 million tonnes grading 35 per cent iron (Assessment Report 462, page 10).

BIBLIOGRAPHY

EMPR AR 1899-793; 1902-233; 1903-193; 1906-185,199; 1909-146; 1910-152; 1911-192; *1916-337; 1925-272; 1961-101; 1967-74
EMPR ASS RPT *462, 463, *464, 2179, 4103, 11159, *12380, *14694
EMPR GEM 1969-216; 1972-262; 1973-229; 1982-138; 1984-147; 1986-C151
EMPR OF 463
EMPR PF (Brooks, N.F. (1941): Report on Hesquiat Property)
GSC MAP 53-17; 1537A
GSC OF 463
GSC P 71-36; 72-44; 80-16
GCNL #120,#143,#155,#199, 1984
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/18 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 017**

NATIONAL MINERAL INVENTORY: 092E9 Zn1

NAME(S): **SILVERADO (L.1581)**, DANZIG, WYN, AM FR, U.P. FR. (L.1579)

STATUS: Past Producer Open Pit Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W
BC MAP:
LATITUDE: 49 37 19 N
LONGITUDE: 126 21 45 W
ELEVATION: 91 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Silverado adit on the Am Fraction is 1 kilometre southeast of the mouth of Silverado Creek on Kings Passage, Muchalat Inlet, 1.0 kilometre south of Baltic (092E 026). Production is included with the Baltic (092E 026).

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5499939
EASTING: 690489

COMMODITIES: Zinc Gold Silver Copper

MINERALS
SIGNIFICANT: Sphalerite Chalcopyrite Pyrrhotite
ASSOCIATED: Magnetite Quartz Diopside Calcite Pyroxene
COMMENTS: Chalcopyrite, pyrrhotite and magnetite in gangue of quartz-calcite and diopside.
ALTERATION: Quartz Diopside Garnet Zoisite Sphalerite
COMMENTS: Alteration envelope surrounding mineralized lenses.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound Massive Podiform Vein
CLASSIFICATION: Skarn Replacement Hydrothermal Epigenetic
TYPE: K02 Pb-Zn skarn K01 Cu skarn
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 113 x 30 x 2 Metres STRIKE/DIP: 335/75W TREND/PLUNGE:
COMMENTS: Attitude of limestone bed. Zone of sphalerite lenses (up to 2 metres in width and 8 to 30 metres long) is traceable on surface for 113 metres.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zirconium from biotite gneiss

LITHOLOGY: Limestone
Greenstone
Hornblende Hornfels
Feldspar Porphyry Dike
Granodiorite

HOSTROCK COMMENTS: Age dates from Alert Bay (intrusives) & Tofino (West Coast Complex) areas quoted in Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP: Plutonic Rocks
GRADE: Hornfels
COMMENTS: Metamorphic grade reference in GSC Paper 80-16, page 17.

INVENTORY

ORE ZONE: UNDERGROUND WORKINGS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	11.0000	Grams per tonne
Gold	0.1800	Grams per tonne
Copper	0.0400	Per cent
Zinc	10.0000	Per cent

REFERENCE: Energy, Mines & Resources Canada Corp. File: Danzig Mines Inc.

CAPSULE GEOLOGY

The Silverado occurrence is underlain by limestone and volcanic rocks of the Paleozoic-Mesozoic West Coast Complex. Granodiorite of the Muchalat Batholith of the Jurassic Island Plutonic Suite lies immediately east of the occurrence.

The Silverado adit and workings explored a zone of discontinuous lenses of sphalerite that have partly replaced a 3-metre wide bed of limestone along a greenstone contact. The contact strikes 330 to 340 degrees and dips 75 degrees west. The greenstone is a tuff or lava, recrystallized to hornblende hornfels. It is overlain by a second limestone unit that is 24.4 metres thick and has been intruded by a 5-metre wide feldspar porphyry dyke. The dyke trends north and dips 75 degrees west.

The zone of sphalerite lenses is traceable on the surface for 113 metres. As seen on the surface and in the drift, the lenses range in width from a few centimetres to 2.0 metres and in length from 8.0 to 30.0 metres. Several diagonal faults cut the lenses. A fault at the intersection of the crosscut and the drift displaces the mineralized lens 9.0 metres to the left. The direction and displacement along the fault are unknown.

The mineralized lenses consist of sphalerite with small amounts of chalcopyrite, pyrrhotite and magnetite in a gangue comprised mainly of quartz, calcite and light-green diopside. Much of the mineralization is rhythmically banded with layers of sphalerite and gangue 0.2 centimetre to 2.5 centimetres thick.

A zone of lime-silicate minerals up to 1.2 metre thick occurs on either side of the ore lenses in the south drift. In the north drift skarn extends along the west side of the ore and continues north to the face beyond the extent of the ore. The minerals in this zone include quartz, calcite, diopside, tan garnet, cream-coloured zoisite and, in small amounts, scattered grains of sphalerite. A sample submitted to the Mines Branch, Ottawa, assayed 0.18 gram per tonne gold, 11.0 grams per tonne silver, trace lead, 10.0 per cent zinc and 0.04 per cent copper (Energy, Mines and Resources Canada MP Corpfile).

A "Lower Showing" is reported to be a 1.5-metre wide vein in altered limestone at a hornblende-feldspar porphyry contact. The exposed mineralization assayed from 15 to 20 per cent zinc (Property File-Geological Plan 1:240 by J.S.S).

Production reported from Baltic (092E 026) included an undisclosed amount of ore from the Silverado occurrence (Minister of Mines Annual Report 1949, page 219). Between 1934 and 1938, 130 tonnes of ore from the Baltic and Silverado adits (Danzig property) reportedly produced 5567 grams of gold, 10,294 grams of silver and 87 kilograms of copper. "Some 27,216 tonnes of medium-grade zinc" remained in 1951 (Energy, Mines and Resources MR 223, 1989).

BIBLIOGRAPHY

EMPR AR 1934-A28; 1935-A29; 1936-A37; 1937-A40; 1938-A38;
1948-157; *1949-219-221; 1951-197; 1952-210
EMPR ASS RPT 10142
EMPR BC METAL MM00100
EMPR BULL 20-V, p. 20; 101, p. 154, Appendix 6
EMPR EXPL 1981-216
EMPR INDEX 3-193
EMPR P 1989-3, p. 103
EMPR PF (Topographic Map 1:50,000; Stevenson, J.S. (1949): 5
Geology Plans 1:480; Geology Plan 1:240; Claim Maps)
EMR MIN BULL MR 223 (1989) B.C. 91
EMR MP CORPFILE (Danzig Mines Inc.)
GSC MAP 1537A
GSC MEM *204, p. 20
GSC OF 463
GSC P 80-16
CIM Transaction Vol. 72, p. 116
GCNL #111, 1981
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with
emphasis on the Relationship of Plutonic Rocks to Mineral Deposits,
Ph.D. Thesis, Carleton University, Ottawa

BIBLIOGRAPHY

Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 182-183

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/11 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 018** NATIONAL MINERAL INVENTORY:

NAME(S): **JUNE**, JADE 1-4, JUDE, ADOLA, CU, GR, J

STATUS: Prospect MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 49 36 54 N NORTHING: 5499955
LONGITUDE: 126 04 05 W EASTING: 711782
ELEVATION: 366 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of the Main showing is 700 metres southwest of Matchlee Bay, 1.7 kilometres from the mouth of Burman River.

COMMODITIES: Gold, Silver, Copper, Lead, Zinc, Bismuth

MINERALS
SIGNIFICANT: Gold, Chalcopyrite, Galena, Sphalerite, Matildite, Pyrrhotite, Arsenopyrite, Magnetite
COMMENTS: Free gold and associated sulphides in quartz veins. Silver-bismuth sulphide is matildite.
ASSOCIATED: Quartz
ALTERATION: Quartz, Kaolinite
COMMENTS: Silicification, kaolinitization, on shear zone-vein.
ALTERATION TYPE: Silicific'n, Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Massive
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 2 Metres STRIKE/DIP: 270/80N TREND/PLUNGE:
COMMENTS: Main vein, up to 2 metres wide, strikes west and is near-vertical.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
ISOTOPIC AGE:	230 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Clydonites		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		

LITHOLOGY: Andesite, Granodiorite

HOSTROCK COMMENTS: Clydonite fossils and Rb/Sr age date from Geological Survey of Canada Paper 80-16 from Tahsis Inlet and Alert Bay map area, respectively.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional Plutonic Rocks RELATIONSHIP: GRADE: Amphibolite, Hornfels
COMMENTS: Regional metamorphic grade is zeolite.

INVENTORY
ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1946
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	226.2400	Grams per tonne
Gold	24.6800	Grams per tonne
Copper	2.9000	Per cent

COMMENTS: Average of 9 samples over 0.49 metres.
REFERENCE: Property File (Sloan, W., 1946, page 3).

CAPSULE GEOLOGY

The Muchalat Batholith of the Jurassic Island Plutonic Suite intrudes volcanics of the Upper Triassic Vancouver Group Karmutsen Formation. The volcanic rocks have been amphibole and hornfels altered near the contact, overprinting regional Zeolite facies metamorphism.

The June occurrence consists of four quartz-sulphide veins in andesite. Three sub-parallel veins strike approximately 270 degrees and dip vertically. These veins are cut by a fourth vein that strikes 312 degrees.

The main vein is a well-defined shear zone from 2 centimetres to 2 metres wide. It has been exposed in an underground drift for 36 metres and in pits 150 metres to the west. The shear zone is strongly silicified and consists of fine-grained dark quartz mineralized with pyrrhotite, chalcopyrite and small amounts of galena, magnetite, arsenopyrite and matildite. A few stringers of white, later quartz cut the shear zone.

An average assay of 9 samples, taken from the shear zone, is 24.68 grams per tonne gold, 226.24 grams per tonne silver and 2.9 per cent copper over an average width of 0.49 metres (Slocan, 1946, page 3). Higher values from grab samples are also reported (George Cross Newsletter #40, 1986).

BIBLIOGRAPHY

EMPR AR 1946-179
EMPR ASS RPT *6415, *14981
EMPR EXPL 1977-E108; 1986-C151
EMPR GEM 1971-232
EMPR PF (1:240 Mine Workings, sample locations on cuts, Claim Map, 1:6000; 1:240 Plan and Section; 1:50,000 Claim Map, 1949; Mine Plan, scale unknown; Sloan, W. (1946) untitled report)
GSC MAP 1537A
GSC OF 463
GSC P 72-44; 80-16
GCNL #40, 1986
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/15 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 019**

NATIONAL MINERAL INVENTORY:

NAME(S): **OKTWANCH**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E16W
BC MAP:
LATITUDE: 49 54 59 N
LONGITUDE: 126 17 35 W
ELEVATION: 762 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 3 kilometres west of Oktwanch River, 4 kilometres north of Muchalat River. Plotted at centre of mineralized area.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5532848
EASTING: 694323

COMMODITIES: Copper Iron Magnetite

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite Magnetite
COMMENTS: Chalcopyrite and pyrite, plus or minus, pyrrhotite lenses in skarn. Magnetite in lenses.
ALTERATION: Epidote Garnet
COMMENTS: Epidote-garnet-chalcopyrite-pyrite skarn lenses in limestone.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Massive Podiform
CLASSIFICATION: Skarn Industrial Min.
DIMENSION: 0027 x 0001 Metres STRIKE/DIP: 315/70W TREND/PLUNGE:
COMMENTS: Bedding attitude near intrusive contact. Largest magnetite lense is 27 metres long and 1 metre wide.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 230 Ma
DATING METHOD: Fossil
MATERIAL DATED: Clydonites

ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Limestone
Garnet Epidote Skarn
Pillow Lava
Granodiorite
Basalt

HOSTROCK COMMENTS: Rb/Sr age dates from Alert Bay map area. Clydonite fossils from Tahsis Inlet, as quoted by GSC Paper 80-16.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
Plutonic Rocks RELATIONSHIP:
GRADE: Amphibolite Hornfels
COMMENTS: Regional contact metamorphism by Island Intrusions of Karmutsen Fm.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group Karmutsen Formation rocks which have been intruded by granodiorite of the Muchalat Batholith of the Jurassic Island Plutonic Suite. The Karmust Formation at the Oktwanch occurrence is comprised of pillow lava, basalt and a 3 metre wide interbedded band of limestone that has been altered to garnet epidote skarn near the intrusive contact.

Mineralization occurs along the contact between volcanic rocks and the limestone. Three lenses of massive magnetite with garnet epidote skarn are present. The largest of these lenses is 27 metres long and 1 metre wide, and contains traces of chalcopyrite.

Several 30 to 37 centimetre wide pods of massive chalcopyrite-pyrite-pyrrhotite are also present in garnet epidote skarn along the contact. This mineralization occurs over a distance of 3.6 metres before being obscured by overburden. Barren exposures along strike limit the potential mineraliztion here to less than 15 metres. Assessment Report 743 also reports minor dissseminated chalcopyrite

CAPSULE GEOLOGY

with pyrite in quartz-filled interpillow spaces.

BIBLIOGRAPHY

EMPR AR 1965-233, 1966-246
EMPR ASS RPT 743
GSC MAP 1537A
GSC OF 463
GSC P 71-36; 72-44; 80-16
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/12 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 020** NATIONAL MINERAL INVENTORY:

NAME(S): **HISNET INLET**, NOOTKA, DESERTED BAY, NOOTKA MARBLE, TAHSIS INLET, MATRIX MARBLE, TLUPANA BLUE, VANCOUVER ISLAND WHITE, ISLAND WHITE, WEST COAST WHITE, NOOTKA SOUND

STATUS: Past Producer Open Pit MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E 092E10E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 49 44 59 N NORTHING: 5513781
LONGITUDE: 126 30 35 W EASTING: 679386
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Northwest end of Hisnit Inlet off Tlupana Inlet. Quarry located 16.5 metres east of shoreline of Hisnit Inlet.

COMMODITIES: Marble Limestone Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Marble
MINERALIZATION AGE: Unknown
ISOTOPIC AGE: 225 Ma DATING METHOD: Fossil MATERIAL DATED: Various fossils

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R04 Dimension stone - marble R09 Limestone
SHAPE: Regular
MODIFIER: Folded
DIMENSION: 1600 x 300 Metres STRIKE/DIP: 060/ TREND/PLUNGE:
COMMENTS: Bedding strikes 060 to 080 degrees. Limestone unit is 300 metres thick and extends for 1600 metres or more to the east.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
ISOTOPIC AGE:	225 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Eocene			Catface Intrusions
ISOTOPIC AGE:	36.6 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	K/Ar from biotite		

LITHOLOGY: Marble
Limestone
Granodiorite
Basalt Dike

HOSTROCK COMMENTS: Union Island fossil age dates and Catface K/Ar date from Geological Survey of Canada, Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1917
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	54.1800	Per cent

COMMENTS: Average of two samples.
REFERENCE: CANMET Report 452, Volume 5, pages 167-168, Samples 1424,1425.

CAPSULE GEOLOGY

A deposit of recrystallized limestone at the head of Hisnet Inlet, a northwestward extension of Tlupana Inlet, was quarried for marble by Nootka Quarries Ltd. between 1908 and 1909, but no production figures are available.

This occurrence is situated near the southeast end of a band of limestone of the Upper Triassic Quatsino Formation (Vancouver Group), extending northwest from Tlupana Inlet to Tahsis Inlet. The band

CAPSULE GEOLOGY

continues for more than 1600 metres eastward from Hisnet Inlet. The limestone in this vicinity is more than 300 metres thick. Bedding strikes 060 to 080 degrees. A 3.5-kilometre wide stock of granodiorite of the Jurassic Island Intrusions intrudes the limestone a kilometre southeast of the quarry site.

The deposit is comprised of medium to coarse grained, white to light grey limestone (marble), occasionally containing some dolomitic bands. At the quarry site the limestone is intruded by basaltic dykes that make up to 55 per cent of the rock. Two samples of limestone from the quarry averaged 54.18% CaO, 0.78% MgO, 0.68% insolubles, 0.028% Al_2O_3, 0.095% Fe_2O_3 and 0.013% sulphur (Canada Bureau of Mines Report 452, pages 167, 168, Samples 1424, 1425).

Matrix Marble & Stone plan to produce Tlupana Blue and Vancouver Island White in the area. See also Tahsis Inlet (092E 070).

BIBLIOGRAPHY

EMPR AR 1906-184; 1908-24,144; 1911-208; 1916-359
EMPR FIELDWORK 1986, pp. 329-332
EMPR INF CIRC 1988-6, pp. 23,29; 1992-18, pp. 31, 36; 2000-1, p. 11
GSC MAP 1537A
GSC OF 463, Sheet 2
GSC P 80-16, pp. 11,12
GSC SUM RPT 1920A, p. 21
CANMET RPT 452, Vol.5, pp. 163-171; 811, Part 5, pp. 138-140
WWW http://www.matrixmarble.com
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/14 REVISED BY: WV FIELD CHECK: Y

MINFILE NUMBER: **092E 021**

NATIONAL MINERAL INVENTORY:

NAME(S): **PETE** IRON KING, CONTACT, FLORES, S.FLO

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 17 38 N
LONGITUDE: 126 05 05 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located south of and adjoining Ormond 3 (092E 012) - (Minister of Mines Annual Report 1906, page 186) on Matilda Inlet.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5464216
EASTING: 711960

COMMODITIES: Copper Iron Magnetite

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Igneous-contact Epigenetic Industrial Min.
DIMENSION: 0030 x 0006 Metres STRIKE/DIP: 360/ TREND/PLUNGE:
COMMENTS: Iron showing is 30 by 6 metres in size and trends north.

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex
ISOTOPIC AGE:	245 Ma		
DATING METHOD:	Zircon		
MATERIAL DATED:	Zirconium from biotite gneiss		
Eocene			Catface Intrusions
ISOTOPIC AGE:	38 +/- 14 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		

LITHOLOGY: Basic Volcanic Rock
Granodiorite

HOSTROCK COMMENTS: West Coast Complex biotite from Tofino area; Catface biotite from Zeballos (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE: Amphibolite

CAPSULE GEOLOGY

Ministry of Mines Annual Report 1907 (page 186) reports the occurrence as a north trending zone of pyrrhotite-chalcopyrite mineralization in a basic volcanic rock. Geological Survey of Canada Map 1537A indicates the area is underlain by the Upper Paleozoic to Lower Mesozoic West Coast Complex which is intruded by granodiorite of the Eocene Catface Intrusions. Ministry of Mines Annual Report 1915 (page 287) reports an iron ore showing, 30.0 by 6.0 metres in size. Based on other occurrences in the vicinity, this is thought to be an igneous contact type deposit.

There is some ambiguity about the location of this occurrence and that of adjacent ones (092E 022; 092E 033).

Assessment reports refer to exploration activity in the general area of the occurrence.

BIBLIOGRAPHY

EMPR AR *1906-186; 1915-287; 1916-334; 1929-375; 1931-168; 1932-204; 1935-G46; 1963-126; 1966-74; 1967-74
EMPR ASS RPT 465, 2317, 3689, 4356, 8056, *9658
EMPR EXPL 1980-162
EMPR GEM 1969-216; 1972-262
EMPR PF (Parallax Resources Prospectus, 1988) (various maps)
GSC MAP 1027A; 1537A
GSC MEM 272
GSC OF 463
GSC P 71-36; 72-44; 80-16

BIBLIOGRAPHY

CIM TRANS Vol. 72-116
GCNL #111,#146, 1988
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/16 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 022**

NATIONAL MINERAL INVENTORY:

NAME(S): **COPPER KING**, CONTACT, FLORES, FLO

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 17 20 N
LONGITUDE: 126 05 05 W
ELEVATION: 183 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located south of Iron King (092E 021) on Matilda Inlet. Location given in Ministry of Mines Annual Report 1906, page 186.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5463661
EASTING: 711981

COMMODITIES: Copper Iron

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Igneous-contact Epigenetic Industrial Min.
SHAPE: Tabular
DIMENSION: 0009 Metres STRIKE/DIP: 360/ TREND/PLUNGE:
COMMENTS: The tunnels entire 9 metre length is reported to be in solid pyrrhotite.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zirconium from biotite gneiss

Eocene — Catface Intrusions
ISOTOPIC AGE: 38 +/- 14 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite
Mafic Volcanic Rock

HOSTROCK COMMENTS: Biotite gneiss from Tofino area; Catface biotite from Zeballos (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
Plutonic Rocks RELATIONSHIP:
GRADE: Amphibolite

CAPSULE GEOLOGY

The occurrence is reported to be a southern continuation of the pyrrhotite-chalcopyrite zone on Iron King (092E 021), where mafic volcanic rocks of the Paleozoic-Mesozoic West Coast Complex are intruded by granodiorite of the Eocene Catface Intrusions.

Ministry of Mines Annual Report 1907 reports that the mineralized zone occupies a ridge into which a tunnel has been driven. The whole of the tunnel's 9 metre length was reported to be in solid pyrrhotite.

There is some ambiguity about the location and style of this occurrence and that of adjacent ones (092E 021, 092E 033).

BIBLIOGRAPHY

EMPR AR *1906-186; 1915-287; 1916-334; 1929-375; 1931-168; 1932-204; 1935-G46; 1963-126; 1966-74; 1967-74
EMPR ASS RPT 465, 2317, 3689, 4356, 8056, *9658
EMPR EXPL 1980-162
EMPR GEM 1969-216; 1972-262
EMPR PF (Parallax Resources Prospectus, 1988; Various Maps in 092E 021)
GSC MAP 1027A; 1537A
GSC MEM 272
GSC OF 463
GSC P 72-44; 80-16

BIBLIOGRAPHY

CIM TRANS Vol. 72-116
GCNL #111,#146, 1988
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationship of plutonic rocks to Mineral deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/16 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 023** NATIONAL MINERAL INVENTORY: 092E15 Au1

NAME(S): **ANSWER 2 (L.483)**, ANSWER (L.482,484,499)

STATUS: Prospect MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 49 59 49 N NORTHING: 5540517
LONGITUDE: 126 50 40 W EASTING: 654486
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of adit on Answer 2 on Lot 483 is 1.5 kilometres north of Zeballos.

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Pyrite
COMMENTS: Gold, silver associated with pyrite.
ASSOCIATED: Quartz Calcite
COMMENTS: Quartz-calcite gangue.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0180 Metres STRIKE/DIP: 057/70W TREND/PLUNGE:
COMMENTS: Main vein hosted in shear zone that strikes 057 degrees, dips 70 to 80 degrees northwest. It has been explored underground over 180 metres.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

ISOTOPIC AGE: 195 Ma
DATING METHOD: Fossil
MATERIAL DATED: Gastropods

Jurassic Island Plutonic Suite
ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Massive Tuff
Diorite
Andesitic Volcanic Rock

HOSTROCK COMMENTS: Bonanza gastropods from Tatcher Creek; Island Plutonic Suite biotite from Alert Bay map area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1938
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	17.2000	Grams per tonne
Gold	41.1000	Grams per tonne

COMMENTS: Over 7.6 centimetres at portal.
REFERENCE: Bulletin 27, page 50.

CAPSULE GEOLOGY

The Answer occurrence lies near the southern limit of the Zeballos gold camp.

The area is underlain by Lower Jurassic Bonanza Group andesitic volcanic rocks which have been intruded by dykes and irregular masses of fine diorite of the Jurassic Island Plutonic Suite.

Dark green massive tuff hosts a quartz-calcite-pyrite vein up to 5 centimetres wide that follows a 5.0 to 20.0 centimetre wide shear

CAPSULE GEOLOGY

zone. The shear zone strikes 057 degrees and dips 70 to 80 degrees northwest.

A second vertical vein branches off and strikes 325 degrees. A third vein is 7.5 centimetres wide, strikes 90 degrees and dips 70 to 90 degrees north.

The main vein has been explored by underground workings for 180 metres. Samples assayed up to 41.1 grams per tonne gold and 20.6 grams per tonne silver over 3 to 7 centimetre widths (Bulletin 27, page 50).

BIBLIOGRAPHY

EMPR AR 1938-F41
EMPR BULL 27, p. 49
EMPR PF (Report by C.W. Shearing, 1939; Underground works, 1:240)
GSC MAP 1537A
GSC MEM 272
GSC OF 463
GSC P 40-12; 72-44; 80-16
CIM TRANS Vol. 72-116
W MINER 35,Jul. 1936; 46,Apr. 1939
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationship of plutonic rocks to Mineral deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/11 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 024**

NATIONAL MINERAL INVENTORY:

NAME(S): **NOMASH**, WATER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E
BC MAP:
LATITUDE: 49 58 44 N
LONGITUDE: 126 42 45 W
ELEVATION: 1219 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location of centre of Water claim is 1.5 kilometres west of headwaters of Nomash River.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5538791
EASTING: 664003

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Disseminated chalcopyrite in skarn zone.
ALTERATION: Malachite Azurite Garnet
ALTERATION TYPE: Oxidation Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Skarn Epigenetic
DIMENSION: 0005 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Mineralization over area of 3 to 5 metres.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Parson Bay	
ISOTOPIC AGE:	215 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Lower Jurassic	Bonanza	Undefined Formation	
ISOTOPIC AGE:	195 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Ammonites and other fossils		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		

LITHOLOGY: Carbonate
Argillite
Granodiorite
Volcanic Rock

HOSTROCK COMMENTS: Parson Bay fossils from Tahsis Inlet; Bonanza ammonites from Tatchu Creek (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP:

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	0.8800	Grams per tonne
Gold	0.0380	Grams per tonne
Copper	0.0610	Per cent

COMMENTS: Only sample collected. No description given.
REFERENCE: Assessment Report 10659.

CAPSULE GEOLOGY

The area is underlain by northwest trending argillites and carbonates of the Upper Triassic Vancouver Group Parson Bay Formation which is in contact with Lower Jurassic Bonanza Group volcanics. These rocks have been intruded by granodiorite of the Jurassic Island Plutonic Suite.

CAPSULE GEOLOGY

Mineralization, as described in Geological Survey of Canada Memoir 272 (page 56) is present over an area of 3.0 to 5.0 metres, about 16 metres from the intrusive contact. Sediments of the Parson Bay Formation or Bonanza Group are replaced by skarn which hosts scattered chalcopyrite. Heavy staining by azurite and malachite is present.

Assessment Report 10659 appears to cover the general area of the occurrence. A sample assayed 0.061 per cent copper, 0.8 grams per tonne silver and 0.035 grams per tonne gold (Assessment Report 10659).

BIBLIOGRAPHY

EMPR ASS RPT 10659
EMPR EXPL 1981-324
GSC MAP 1027A; 1537A
GSC MEM *272, p. 56
GSC OF 463
GSC P 72-44; 80-16
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationship of plutonic rocks to Mineral deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/11 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 025**

NATIONAL MINERAL INVENTORY:

NAME(S): **NIMPKISH COPPER**, HK 1-2, NC

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E16W
BC MAP:
LATITUDE: 49 58 05 N
LONGITUDE: 126 18 35 W
ELEVATION: 792 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of claim block is located on Tolnai Creek, 11 kilometres north-northwest of the west end of Muchalat Lake.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5538548
EASTING: 692920

COMMODITIES: Copper Iron

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite Magnetite
COMMENTS: Chalcopyrite, plus or minus bornite, plus or minus chalcocite, lenses in skarn. Magnetite lenses in limestone skarn.
ALTERATION: Garnet Hematite
ALTERATION TYPE: Skarn Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Podiform Massive Layered
CLASSIFICATION: Skarn Igneous-contact Magmatic Industrial Min.
SHAPE: Irregular
DIMENSION: STRIKE/DIP: 160/70E TREND/PLUNGE:
COMMENTS: Attitude of the fault zone localizing copper mineralization.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
ISOTOPIC AGE:	230 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Clydonite fossils		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		

LITHOLOGY: Limestone
Garnet Skarn
Magnetite Garnet Skarn
Argillite
Pillow Lava
Granodiorite

HOSTROCK COMMENTS: Karmutsen fossils from Tahsis Inlet. Intrusive isotope determination from Alert Bay map area, as quoted in GSC Paper 80-16.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact Regional RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite Hornfels
COMMENTS: Karmutsen Formation regionally metamorphosed by Island Intrusions.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1973
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	30.0300	Per cent

COMMENTS: Only assay, over 1.1 metres.
REFERENCE: Assessment Report 4102.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group Karmutsen Formation pillow lavas with minor interbedded limestone which have been intruded by granodiorite of the Jurassic Island Plutonic Suite.

Two magnetite and magnetite-garnet skarn zones occur near the limestone-intrusive contact. Magnetite-hematite mineralization occurs

CAPSULE GEOLOGY

```
at a volcanic-intrusive contact.
--------------------------------------------------------------------------
-
     Two copper showings are also recognized:
      a)  At the Allen Creek showing, a small lens of 0.3 by 3.0
          metres at a limestone-volcanic contact contains chalco-
          pyrite interstitially with garnet.
      b)  On Campbell Creek an assemblage of limestone, argillites
          and volcanics in contact with intrusive rocks, is skarned
          over 104 metres.  A strong northwest fault cuts diagonally
          across the skarn and localizes massive chalcopyrite with
          pods of chalcocite and bornite.  The fault may be parallel
          to the intrusive contact.  It strikes 160 degrees and
          dips steeply to the east.  The sulphide zone ranges in width
          from 0.35 to 1.5 metres, averaging 0.46 metres over its 7.6
          metre exposure (Assessment Report 728).  An assay of 30.03
          per cent copper was obtained over 1.1 metres (Assessment
   Report 4102)
--
         Report 4102).
```

BIBLIOGRAPHY

EMPR ASS RPT *728, 4102
EMPR GEM 1972-263
GSC MAP 1537A
GSC OF 463
GSC P 71-36; 72-44; 80-16
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with
   emphasis on the relationship of plutonic rocks to Mineral deposits,
   Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F. (1964): The Contact Metasomatic Magnetite Deposits of
   Southwestern B.C., Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/13 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 026** NATIONAL MINERAL INVENTORY: 092E9 Au1

NAME(S): **BALTIC NO. 1 (L.1582)**, WYN, DANZIG

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 49 37 52 N NORTHING: 5500965
LONGITUDE: 126 21 35 W EASTING: 690654
ELEVATION: 50 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of adit on #1 Vein (Lot 1582) is on King Passage, Muchalat Inlet 1 kilometre north of Silverado (092E 017). Production includes Silverado (092E 017).

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Pyrite Sphalerite Pyrrhotite Chalcopyrite
COMMENTS: Gold, silver associated with chalcopyrite.
ASSOCIATED: Quartz Magnetite
ALTERATION: Mica Epidote Pyrite
COMMENTS: Alteration on vein margin.
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: STRIKE/DIP: 022/70E TREND/PLUNGE:
COMMENTS: Attitude of #1 vein is 022 degrees, dipping 70 degrees east.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Undefined Formation	
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite
Felsic Volcanic Dike
Feldspar Porphyry Dike

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Paper 80-16 from Alert Bay map area.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: OPENCUT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1937
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	242.0900	Grams per tonne
Gold	238.4900	Grams per tonne

COMMENTS: 2.5 kilogram sample from open cut.
REFERENCE: Geological Survey of Canada Memoir 204, page 19.

CAPSULE GEOLOGY

The occurrence is underlain by the Muchalat Batholith of the Jurassic Island Plutonic Suite. Small inclusions of greenish volcanic rocks of the Upper Triassic Vancouver Group occur in the fine-grained gneissic granodiorite of the batholith. Felsic and feldspar porphyry dykes are present, cutting granodiorite. Epidote alteration is pervasive in all rocks.

Mineralization is believed to be related to the dykes, and occurs in nine veins.

The No.1,2 and 3 veins are linked by quartz stringers, and of this group only the No.1 vein is described. The vein is exposed in

CAPSULE GEOLOGY

the first 42 metres of the main adit. It is 10.0 to 30.0 centimetres wide and has been traced from the shore of Muchalat Inlet to an elevation of 76 metres, a distance of 305 metres. The vein strikes north-northeast and dips 70 degrees east. Locally, granodiorite wallrock exhibits mica, epidote and pyrite alteration. The vein consists of quartz, pyrite and sphalerite. Vein quartz is variably crushed and shows minor shearing. The highest values obtained from the vein came from an open cut near the shore where Geological Survey of Canada Paper 204 (page 19) reports an assay of 238.49 grams per tonne gold and 242.09 grams per tonne silver from a 2.5 kilogram sample.

Vein No.4 (the Perry Vein) includes a white weathering 25 centimetre wide felsite dyke. Mineralized quartz follows both sides of the 020 striking, 85 degree east dipping dyke. The quartz is 5.0 centimetres wide on the footwall of the dyke. Numerous quartz stringers pass upward to the hangingwall side of the dyke, to join a much wider vein of rusty, vuggy banded and crushed quartz that is exposed for 8.0 metres. This portion of the No.4 vein is 35.0 to 50.0 centimetres wide, and contains pyrite, pyrrhotite, chalcopyrite and sphalerite. Both the No.4 vein and the granodiorite wallrock exhibit epidote alteration.

Three narrow quartz veins outcrop at the shore east of the adit. The middle, No.5 vein, averages 15.0 centimetres in width and has been exposed over 12.0 metres. The vein contains smeared magnetite and pyrite, chalcopyrite, pyrrhotite and sphalerite. Vein No.6 lies in Baltic 4 claim and is rusty, 30.0 centimetres wide and exposed by two open cuts between elevations of 49.0 and 61.0 metres. Veins No.7,8 and 9 are quartz outcrops of uncertain merit.

Between 1934 and 1938, 130 tonnes of sorted ore from the Baltic and Silverado (092E 017) adits was shipped by Danzig Mines, yielding 5,567 grams gold, 10,294 grams silver and 87 kilograms of copper. The majority of the ore came from the Baltic adit, the amount that came from the Silverado adit is not known (Minister of Mines Annual Report 1949, p. 219).

BIBLIOGRAPHY

EMPR AR 1934-A28; 1935-A29; 1937-A40; 1938-A38; *1949-219
EMPR ASS RPT 10142
EMPR BC METAL MM00100
EMPR BULL 20, Pt.V, p. 20
EMPR EXPL 1981-216
EMPR INDEX 3-193
EMPR MAP 932A
EMPR PF see Silverado, (092E 017)
EMR MP CORPFILE (Danzig Mines Inc.)
GSC MAP 1537A
GSC MEM *204, p. 18
GSC OF 463
GSC P 80-16
GCNL #111, 1981
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 183

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/11 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 027**

NATIONAL MINERAL INVENTORY:

NAME(S): **LADY GRACE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09E
BC MAP:
LATITUDE: 49 39 53 N
LONGITUDE: 126 12 41 W
ELEVATION: 1 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location given as "Muchalat Inlet".

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5505088
EASTING: 701225

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

ISOTOPIC AGE: 230 Ma
DATING METHOD: Fossil
MATERIAL DATED: Clydonite fossils

Jurassic — Island Plutonic Suite

ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Andesite
Basalt
Granodiorite

HOSTROCK COMMENTS: Actual host rock is unknown. Age dates from Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1924
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	34.3000	Grams per tonne
Gold	6.8000	Grams per tonne
Copper	22.0000	Per cent

COMMENTS: Source gives other assay values with strongly variable results.
REFERENCE: Minister of Mines Annual Report 1924, page 224.

CAPSULE GEOLOGY

No geological information is available. Rocks submitted to Energy, Mines and Petroleum Resources for assaying show values in gold, silver and copper. Sample 1: 6.8 grams per tonne gold, 34.3 grams per tonne silver and 22.0 per cent copper. Sample 2: 13.7 grams per tonne gold, 75.4 grams per tonne silver and 5.0 per cent copper. Sample 3: nil gold, nil silver and 0.7 per cent copper (Minister of Mines Annual Report 1924, page 224).

Rocks in the area are composed of Upper Triassic Karmutsen volcanics of the Vancouver Group. They are characteristically porphyritic and andesitic to basaltic in composition. Also known in the area are granodiorites of the Jurassic Island Plutonic Suite.

BIBLIOGRAPHY

EMPR AR *1924-224
GSC MAP 1537A
GSC OF 463
GSC P 72-44; 80-16

BIBLIOGRAPHY

Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/15 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **ELAINE**, ZEBALLOS - OH BOY

STATUS: Past Producer Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E16W
BC MAP:
LATITUDE: 49 47 29 N
LONGITUDE: 126 30 05 W
ELEVATION: 122 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Elaine claims is located 2 kilometres south of the mouth of Sucwoa River on Tlupana Inlet. Location of the adit is not known.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5518432
EASTING: 679832

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Gold Chalcopyrite Pyrite
ASSOCIATED: Quartz
COMMENTS: Gold and silver values in quartz vein carrying chalcopyrite, pyrite.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Discordant Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

ISOTOPIC AGE: 195 Ma
DATING METHOD: Fossil
MATERIAL DATED: Various fossils

LITHOLOGY: Amygdaloidal Basalt

HOSTROCK COMMENTS: Tatchu Creek area fossil age from Geological Survey of Canada, Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Oh Boy showing consists of a gold-chalcopyrite-pyrite bearing quartz vein in a fissure zone within amygdaloidal basalt, assumed to belong to the Lower Jurassic Bonanza Group.

A 36.6 metre adit was collared 9 metres above the vein in 1934. Minister of Mines, Annual Report, Index #3 records 1939 production of 4.5 tonnes yielding 240 grams gold, 103 grams silver and 3 kilograms copper.

BIBLIOGRAPHY

EMPR AR *1939-41
EMPR ASS RPT 11221
EMPR BC METAL MM00118
EMPR EXPL 1982-138
EMPR INDEX 3-219
GSC MAP 1537A
GSC OF 463
GSC P 80-16
CIM TRANS Vol. 72-116
GCNL 162,1983

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/08 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 029** NATIONAL MINERAL INVENTORY:

NAME(S): **VIOLET**, HESQUIAT 17

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W
BC MAP:
LATITUDE: 49 30 54 N
LONGITUDE: 126 23 35 W
ELEVATION: 256 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of open cut is reported as the Violet showing in Minister of Mines Annual Report 1902 and Assessment Report 464. Location is on the west side of Hesquiat Lake.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5487974
EASTING: 688695

COMMODITIES: Magnetite Iron

MINERALS
SIGNIFICANT: Magnetite
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound Podiform Massive
CLASSIFICATION: Skarn Epigenetic Industrial Min.
SHAPE: Tabular
DIMENSION: 0021 x 0009 Metres STRIKE/DIP: 315/50E TREND/PLUNGE:
COMMENTS: Attitude of local stratigraphy to which mineralization is confined, mineralized zone exposed over 21 metres and is up to 9.0 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 290 Ma
DATING METHOD: Fossil
MATERIAL DATED: Foraminifera

ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Limestone
Greenstone
Garnetite
Garnet Limestone
Felsic Granite
Diorite
Gabbro

HOSTROCK COMMENTS: Age dates on foraminifera from McGee Creek area; biotite from Alert Bay (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1962
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Iron	54.3100	Per cent

COMMENTS: Selected sample.
REFERENCE: Assessment Report 462.

CAPSULE GEOLOGY

In the Hesquiat Lake area, northwest striking limestones and volcanics previously assigned to the Quatsino and Karmutsen Formations (Geological Survey of Canada Map 53-17) have more recently been included with the Pennsylvanian to Permian Sicker Group (Geological Survey of Canada Map 1537A). The rocks are intruded by

CAPSULE GEOLOGY

felsic granitic rocks of the Early to Middle Jurassic Island Plutonic Suite, Muchalat batholith. A dioritic to gabbroic border phase is 500 metres wide.

Mineralization at the Violet occurrence is developed along a northwest striking contact between limestone and greenstone, near an intrusive contact. The mineralization consists of massive magnetite streaked and spotted with garnet and replacing garnetized grey limestone. The mineralization has been exposed by hand trenching over 21.0 metres and ranges in width from a few centimetres to 9.0 metres. The lensy nature of the mineralization has been attributed to crossfaulting (Assessment Report 464). Unmineralized but skarned limestone continues uphill to 092E 030 (Paco 11 and Paco 12).

A sample collected in 1902 assayed 59.8 per cent iron, 11.0 per cent silica and 0.55 per cent sulphur (Minister of Mines Annual Report 1902, page 210). A selected sample from the mineralized zone assayed 54.31 per cent iron (Assessment Report 462).

BIBLIOGRAPHY

EMPR AR 1902-209-210; 1916-291; 1962-131
EMPR ASS RPT 462, *464
GSC EC GEOL 3, p. 230
GSC MAP 53-17. p. 2; 1537A
GSC OF 463
GSC P 71-36; 72-44; 80-16
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationship of plutonic rocks to Mineral deposits, Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F. (1964): The Contact Metasomatic Magnetite Deposits of Southwestern B.C., Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/18 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 030**

NATIONAL MINERAL INVENTORY:

NAME(S): **PACO 11-12**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W
BC MAP:
LATITUDE: 49 31 05 N
LONGITUDE: 126 23 45 W
ELEVATION: 96 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of trenches is reported in Minister of Mines Annual Report 1902 and Assessment Report 464. Location is on the west side of Hesquiat Lake.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5488307
EASTING: 688482

COMMODITIES: Iron, Magnetite, Copper

MINERALS
SIGNIFICANT: Magnetite
COMMENTS: Copper mineral not identified.
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound, Massive, Podiform
CLASSIFICATION: Skarn, Replacement, Epigenetic, Industrial Min.
SHAPE: Tabular
DIMENSION:
STRIKE/DIP: 315/50E
TREND/PLUNGE:
COMMENTS: Attitude of local stratigraphy to which mineralization is confined.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	

ISOTOPIC AGE: 290 Ma
DATING METHOD: Fossil
MATERIAL DATED: Foraminifera

Jurassic — Island Plutonic Suite
ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Limestone
Garnetite
Greenstone
Granodiorite

HOSTROCK COMMENTS: Age dates on foraminifera from McGee Creek area; biotite from Alert Bay (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
GRADE: Hornfels

INVENTORY

ORE ZONE: LENS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1962
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0300	Per cent
Iron	56.1100	Per cent

COMMENTS: Selected sample.
REFERENCE: Assessment Report 464.

CAPSULE GEOLOGY

Mineralization at the Paco 11-12 occurrence lies along a northwest striking contact between limestones and volcanic rocks of the Pennsylvanian to Permian Sicker Group (GSC Map 1537A). The Sicker Group rocks are intruded by granodiorite of the Jurassic Island Plutonic Suite. Mineralization consists of massive magnetite which is streaked and spotted with garnet in a garnet-altered grey limestone.

Two lenses of magnetite have been exposed by hand trenching.

CAPSULE GEOLOGY

The lenses are 30 metres apart and the largest is 1.5 by 0.6 metres. A selected sample assayed 56.11 per cent iron, 0.03 per cent copper, 0.05 per cent sulphur and 0.01 per cent phosphorus (Assessment Report 464). Another sample assayed 51.61 per cent iron (Assessment Report 462). Unmineralized skarned limestone is on strike with, and continues to 092E 029 (Violet).

BIBLIOGRAPHY

EMPR AR 1902-209; 1916-291; 1962-131
EMPR ASS RPT 462; *464
GSC EC GEOL 3, p. 230
GSC P 71-36; 72-44; 80-16
GSC MAP 53-17, p. 2; 1537A
GSC OF 463
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationship of plutonic rocks to Mineral deposits, Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F. (1964): The Contact Metasomatic Magnetite Deposits of Southwestern B.C., Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/18 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 031**

NATIONAL MINERAL INVENTORY:

NAME(S): **THELMA**, HESQUIAT, GUILDEMAR, GUILDEMAI, GULDERMAR, BROWN JUG

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 29 29 N
LONGITUDE: 126 23 25 W
ELEVATION: 145 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is given as 800 metres north of Brown Jug occurrence (093E 016) in Assessment Report 464, on the east side of Hesquiat Lake.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5485357
EASTING: 688987

COMMODITIES: Magnetite, Copper, Iron, Gold, Silver

MINERALS

SIGNIFICANT: Magnetite
COMMENTS: Gold, silver, copper from production figures.
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Stratabound, Disseminated, Massive
CLASSIFICATION: Skarn, Replacement, Epigenetic, Industrial Min.
TYPE: K03 Fe skarn
SHAPE: Tabular
DIMENSION: 0152 Metres
STRIKE/DIP: 045/30S
TREND/PLUNGE:
COMMENTS: Attitude reported does not conform to general attitude of sediments in this area. Lenses of massive magnetite distributed over strike length of 152 metres.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	

ISOTOPIC AGE: 290 Ma
DATING METHOD: Fossil
MATERIAL DATED: Foraminifera

Jurassic — Island Plutonic Suite
ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Limestone
Tuff
Granodiorite

HOSTROCK COMMENTS: Age dates from Alert Bay map area; Sicker foraminifera from McGee Creek (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP: Plutonic Rocks
GRADE: Hornfels

INVENTORY

ORE ZONE: THELMA
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1962
QUANTITY: 500000 Tonnes

COMMODITY	GRADE	
Iron	40.0000	Per cent

COMMENTS: Potential tonnage ranges to 1.5 million tonnes of 30 per cent iron.
REFERENCE: Assessment Report 462, page 9.

CAPSULE GEOLOGY

The Hesquiat Lake area is underlain by limestone and volcanics of the Pennsylvanian to Permian Sicker Group (Geological Survey of Canada Map 1537A). These rocks are intruded by the Muchalat Batholith granodiorite of the Jurassic Island Plutonic Suite.

Magnetite is reported to occur in a skarn zone within a sequence of tuff and limestone. The skarn zone strikes southwest and has been

CAPSULE GEOLOGY

traced over 300 metres. Magnetite occurs as disseminations, small patches and masses up to 0.5 metres thick, apparently dipping at a low angle to the southeast.

The zone of disseminated magnetite encompasses an area of 70.0 metres long and up to 8.0 metres thick, possibly containing 20.0 per cent magnetite (Assessment Report 464, page 9).

Lenses of massive magnetite distributed over a strike length of 152 metres may constitute a volume of no more than 0.5 million tonnes of "medium grade" (Assessment Report 464). The estimated potential tonnage ranges from 500,000 tonnes of 40.0 per cent iron to 1.5 million tonnes of 30.0 per cent iron (Assessment Report 462, page 9).

Exploration work in the area has been closely linked to that of Brown Jug (092E 016) and Agnes (092E 013). Much of the assessment work is common to all occurrences.

Some early references to the Brown Jug (092E 016) magnetite occurrence appear to describe this location.

BIBLIOGRAPHY

EMPR AR 1898-1133; 1899-793; 1902-233; 1903-193; 1940-27; 1961-101;
EMPR ASS RPT *462, 464, 4103
EMPR GEM 1969-216
GSC MAP 53-17; 1537A
GSC OF 463
GSC P 71-36; 72-44; 80-16
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F., (1964): The Contact Metasomatic Magnetite Deposits of Southwestern British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/25 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 032**

NATIONAL MINERAL INVENTORY: 092E8 Cu2

NAME(S): **PRINCE (L.572-579)**, BLACKBIRD

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 27 29 N
LONGITUDE: 126 19 35 W
ELEVATION: 731 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of workings at Lots 576-577 boundary is 3.5 kilometres west of Sidney Inlet - Stewardson Inlet junction. The occurrence adjoins Indian Chief (092E 011).

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5481814
EASTING: 693744

COMMODITIES: Magnetite, Iron, Copper

MINERALS

SIGNIFICANT: Magnetite Bornite
COMMENTS: Copper mineral assumed to be similar to Indian Chief (092E 011).
ALTERATION: Garnet Epidote Actinolite
COMMENTS: Assumed to be similar to Indian Chief (092E 011).
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Stratabound, Massive
CLASSIFICATION: Skarn, Replacement, Epigenetic, Industrial Min.
SHAPE: Tabular
DIMENSION: 0070 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Skarn zone has been traced on surface for 60 to 70 metres.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Undefined Formation	
ISOTOPIC AGE: 220 +/- 10 Ma			
DATING METHOD: Fossil			
MATERIAL DATED: Various fossils			
Jurassic			Island Plutonic Suite
ISOTOPIC AGE: 174 +/- 10 Ma			
DATING METHOD: Rubidium/Strontium			
MATERIAL DATED: Biotite			

LITHOLOGY: Limestone
Garnet Skarn
Volcanic Rock
Granodiorite

HOSTROCK COMMENTS: Vancouver Group (Quatsino, Karmutsen Formation?) fossils and Rb/Sr age dates from Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
GRADE: Hornfels

CAPSULE GEOLOGY

The Prince - Blackbird occurrence lies 1.5 kilometres northwest of the Indian Chief past producer (092E 011) and has a similar geological setting. A roof pendant of north striking, steeply east-dipping limestone and volcanics of the Upper Triassic Vancouver Group overlies granodiorite of the Jurassic Island Plutonic Suite. The limestone stratigraphically overlies the volcanics. Several major northwest trending faults, recognized on the Indian Chief, may extend to the occurrence.

A zone of massive magnetite, containing small amounts of copper (bornite on Indian Chief; unspecified at the Prince) occurs in a skarn zone and has been traced on surface for 60 to 70 metres.

BIBLIOGRAPHY

EMPR AR 1899-793; 1900-923; 1901-1098,1100; 1902-232,307; 1903-192; 1904-27; 1906-186; 1922-230; 1923-244; 1928-372; 1929-375; 1963-101
EMPR ASS RPT *462, 463
EMPR EXPL 1973-229

BIBLIOGRAPHY

EMPR PF (various maps, plans and reports in 092E 011 - Indian Chief-Dowdney)
GSC MAP 1537A
GSC OF 463
GSC P 71-36; 72-44; 80-16
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F., (1964): The Contact Metasomatic Magnetite Deposits of Southwestern British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/27 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 033**

NATIONAL MINERAL INVENTORY:

NAME(S): **ORMOND 6**, CONTACT, FLORES, FLO

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 18 07 N
LONGITUDE: 126 05 05 W
ELEVATION: 152 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located west of Matilda Inlet, adjoining Ormond 3 occurrence (092E 012). Location from Minister of Mines Annual Report 1916, page 335.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5465112
EASTING: 711925

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Mineralization assumed to be similar to 092E 012.
ASSOCIATED: Pyrrhotite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated Stockwork
CLASSIFICATION: Igneous-contact Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Fractured
DIMENSION:
STRIKE/DIP: 360/70E
TREND/PLUNGE:
COMMENTS: Character and classification assumed to be similar to the Ormond 3 showing (092E 012).

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex
ISOTOPIC AGE: 245 Ma			
DATING METHOD: Zircon			
MATERIAL DATED: Biotite gneiss			
Eocene			Catface Intrusions
ISOTOPIC AGE: 35 +/- 2 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Epidote Calcite Quartz Breccia
Mafic Volcanic Rock
Granodiorite

HOSTROCK COMMENTS: West Coast Complex zircon and Catface biotite from Tofino area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite

CAPSULE GEOLOGY

At the Ormond 6 occurrence, a 2 by 17 kilometre dyke-like granodiorite stock of the Eocene Catface Intrusions cuts Upper Paleozoic to Lower Mesozoic mafic volcanic rocks of the West Coast Complex. The occurrence is poorly documented. The style of mineralization and location are uncertain. Ministry of Mines Annual Report 1916, page 335, considers the Ormond 6 an extension of the Ormond 3, located 1 kilometre west, where lenses, disseminations, and fracture fillings of pyrite, pyrrhotite, and chalcopyrite occur in mafic volcanics, and in epidote-calcite-quartz breccia (see Ormond 3, 092E 012).

BIBLIOGRAPHY

EMPR AR *1906-186; 1915-287; 1916-334; 1929-375; 1931-168; 1932-204; 1935-G46; 1963-126; 1966-74; 1967-74
EMPR ASS RPT 465, 2317, 3689, 4356, 8056, *9658
EMPR EXPL 1980-162
EMPR GEM 1969-216; 1972-262
EMPR PF (Parallax Resources Prospectus, 1988; Various Maps; in

BIBLIOGRAPHY

092E 012, Ormond 3)
GSC MEM 272
GSC MAP 1027A; 1537A
GSC OF 463
GSC P 72-44; 80-16
CIM TRANS Vol. 72-116
GCNL #111,#146, 1988
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/16 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 034**

NATIONAL MINERAL INVENTORY:

NAME(S): **ORMOND 2 (L.354)**, CONTACT, LEMAY, ORMOND (L.352,353), AU

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 17 30 N
LONGITUDE: 126 04 00 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on McNeil Peninsula, east of Matilda Inlet, Millar Channel.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5464020
EASTING: 713282

COMMODITIES: Gold, Silver, Lead, Zinc, Copper, Iron, Magnetite

MINERALS

SIGNIFICANT: Chalcopyrite, Magnetite, Sphalerite, Galena
COMMENTS: Gold, silver mineralogy not known.
ALTERATION: Epidote
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound, Massive, Vein, Podiform
CLASSIFICATION: Skarn, Replacement, Hydrothermal, Industrial Min.
SHAPE: Tabular
DIMENSION: 0035 Metres
STRIKE/DIP: 340/20W
TREND/PLUNGE:
COMMENTS: Map shows strike of veins as north-northwest (Assessment Report 10446). Veins outcrop over 35 metres.

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex
Eocene			Catface Intrusions

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Biotite gneiss

ISOTOPIC AGE: 35 +/- 2 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Limestone
Garnet Limestone
Altered Volcanic Rock
Volcaniclastic
Chert
Diorite

HOSTROCK COMMENTS: West Coast zircon and Catface biotite from Tofino area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
GRADE: Amphibolite

INVENTORY

ORE ZONE: VEINS
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1987

COMMODITY	GRADE	
Silver	397.4000	Grams per tonne
Gold	334.3000	Grams per tonne
Lead	5.1700	Per cent
Zinc	2.9200	Per cent

COMMENTS: Over 15 centimetres.
REFERENCE: Parallax Resources, 1987.

INVENTORY

ORE ZONE: LENS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1916
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Iron	53.5000	Per cent

COMMENTS: Sample from lens of massive magnetite and chalcopyrite.
REFERENCE: Minister of Mines Annual Report 1916, page 336.

CAPSULE GEOLOGY

At the Ormond 2 occurrence, metamorphosed, locally foliated volcanic rocks, volcanoclastics and minor bands of garnetized limestone and chert of the Paleozoic-Mesozoic Westcoast Complex occur near diorite of the Eocene Catface Intrusions. The Minister of Mines Annual Report 1916 reports 1.0 metre wide lenses containing magnetite and chalcopyrite at irregular intervals along the volcanics-intrusive contact. An assay returned 53.5 per cent iron, nil phosphorus, trace sulphur, and 24.8 per cent silica. The presence of copper was reported but not quantified. (Minister of Mines Annual Report 1916, page 336).

On the west side of McNeil Peninsula quartz veins and veinlets outcrop over 35.0 metres in epidote-altered volcanics. Mineralization consists of chalcopyrite, sphalerite and galena. Exact mineralogy is not reported. A 15 centimetre selected grab sample (Sample #14569) assayed 600 grams per tonne gold, 332.6 grams per tonne silver, 0.02 per cent copper, 6.28 per cent lead, 4.82 per cent zinc, 8.02 per cent arsenic and 0.0165 per cent antimony. A more representative chip sample (also over 15 centimetres) assayed 334.3 grams per tonne gold, 397.4 grams per tonne silver, 5.17 per cent lead and 2.92 per cent zinc (Property File-Parallax Resources, 1987).

BIBLIOGRAPHY

EMPR AR 1906-188; 1910-249; 1916-336; 1963-126; 1967-74
EMPR ASS RPT 465, 5483, 10446, 17428
EMPR GEM 1969-216; 1972-262; 1974-170
EMPR PF (*Prospectus, Parallax Dev. Co., 1987; in Ormond 3, 092E 012)
GSC MAP 1537A
GSC OF 463
GSC P 71-36; 72-44; 80-16
GCNL #111,#146, 1988
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/09 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 035**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHARP POINT HOT SPRINGS**, HOT SPRINGS COVE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 20 59 N
LONGITUDE: 126 15 35 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is at the south end of Openit Peninsula at Sharp Point entrance of Sidney Inlet. Location described in Geological Survey of Canada, Summary Report 1913, page 80.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5469946
EASTING: 699012

COMMODITIES: Hotspring

MINERALS
SIGNIFICANT: Salts
COMMENTS: Sodium chloride is present in trace amounts. Water temperature is 51 degrees celsius.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Hydrothermal Industrial Min.
TYPE: T02 Geothermal spring
DIMENSION: STRIKE/DIP: 290/ TREND/PLUNGE:
COMMENTS: Trend of shear zone producing water.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Biotite gneiss

LITHOLOGY: Gneissic Diorite
Medium Grained Gneissic Diorite

HOSTROCK COMMENTS: Biotite gneiss from Tofino area (Geological Survey of Canada, Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite

CAPSULE GEOLOGY

The Sharp Point area is underlain by high grade metamorphic rocks of the Upper Paleozoic to Lower Mesozoic West Coast Complex. About 1.0 kilometres to the south, a 17-kilometre dyke-like body of granodiorite of the Eocene Catface Intrusions cuts across the metamorphic assemblage (Geological Survey of Canada Map 1537A).

The Sharp Point hotsprings are underlain by medium-grained, somewhat gneissic diorite, composed of andesine feldspar and hornblende with accessory magnetite and apatite. The rock is moderately altered to uralite, chlorite, a little epidote, sericite and kaolinite (Geological Survey of Canada, Summary Report 1913, page 80).

The water, at a temperature of 51 degrees celsius, flows at a rate of 0.4 million litres per day from a 15-centimetre shear zone that strikes 290 degrees. Total salinity is reported at 480 parts per million, sodium chloride content is 350 parts per million (Geological Survey of Canada, Summary Report 1913, page 80). The pH is 8.5.

BIBLIOGRAPHY

GSC MAP 1537A
GSC OF 463, 2526
GSC P 72-44; 73-18; 80-16
GSC SUM RPT *1913-80
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 181
*McDonald, J. (1991): Hotsprings of Western Canada, A Complete Guide,

BIBLIOGRAPHY

Waterwheel Press, Vancouver, pp. 3-5

DATE CODED: 1985/07/24
DATE REVISED: 1989/05/25

CODED BY: GSB
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092E 036**

NATIONAL MINERAL INVENTORY:

NAME(S): **K 19**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 21 59 N
LONGITUDE: 126 18 10 W
ELEVATION: 0 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Geological Survey of Canada, Map 53-17, is 2.5 kilometres west from Refuge Cove.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5471686
EASTING: 695820

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Biotite gneiss

LITHOLOGY: Meta Volcanic

HOSTROCK COMMENTS: Biotite gneiss from Tofino area (Geological Survey of Canada, Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite

CAPSULE GEOLOGY

The area is underlain by high grade metamorphic volcanic rocks of the Paleozoic-Mesozoic West Coast Complex (Geological Survey of Canada, Map 1537A).
The copper occurrence is reported in Geological Survey of Canada, Paper 53-17 (Map 53-17, #3).
No further details are available.

BIBLIOGRAPHY

GSC MAP 1537A
GSC P 53-17; 72-44; 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/02 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 037**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAPHAEL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 19 05 N
LONGITUDE: 126 13 59 W
ELEVATION: 1 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Geological Survey of Canada, Map 53-17, page 1.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5466497
EASTING: 701078

COMMODITIES: Copper Lead Zinc

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Exact mineralization was not reported.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Biotite gneiss

LITHOLOGY: Gneiss
Granodiorite
Quartz Diorite
Gabbro
Lava
Tuff
Breccia
Schist
Chert
Limestone

HOSTROCK COMMENTS: Age date from Tofino area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by high grade metamorphic rocks of the Upper Paleozoic to Lower Mesozoic West Coast Complex (Geological Survey of Canada Map 1537A). Quartz diorite and gneiss are reported to occur in the area.

Jeletsky (Geological Survey of Canada, Paper 53-17) indicates the area is underlain by grey to dark grey, dioritic to gabbroic and associated minor intrusions and basic to intermediate porphyritic to amygdaloidal lavas, tuffs and breccias, schists, chert and limestone.

No geological information is available on the occurrence, which is reported as a "copper-lead-zinc occurrence or prospect" (Geological Survey of Canada, Paper 53-17).

BIBLIOGRAPHY

GSC MAP 53-17, p. 1
GSC OF 463
GSC P *53-17; 72-44; 80-16
CIM TRANS VOL 72-116

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/31 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 038**

NATIONAL MINERAL INVENTORY:

NAME(S): **HIGH BOY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 27 17 N
LONGITUDE: 126 02 23 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: On the west side of Shelter Arm, near the head of Shelter Inlet (Geological Survey of Canada, Memoir 204, page 25).

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5482220
EASTING: 714530

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
COMMENTS: Gold in pyrite, in quartz veins.
ASSOCIATED: Quartz
ALTERATION: Chlorite Pyrite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
DIMENSION: 0015 Metres STRIKE/DIP: 350/58W TREND/PLUNGE:
COMMENTS: Three parallel quartz veins strike north and dip 58 degrees west. They are exposed for 15 metres along a bluff.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite
Chlorite Granodiorite

HOSTROCK COMMENTS: Age date on Alert Bay map area from Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Granulite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1920
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	6.6000	Grams per tonne

COMMENTS: Value reported as $6.50 in gold.
REFERENCE: Geological Survey of Canada, Memoir 204, page 25.

CAPSULE GEOLOGY

Shelter Inlet is underlain by high grade metamorphic rocks of the Upper Paleozoic to Lower Mesozoic West Coast Complex. These metamorphic rocks are intruded by granodiorite of the Jurassic Island Plutonic Suite.

The High Boy occurrence is reported to consist of three parallel quartz-veins exposed for 15 metres along a bluff (Geological Survey of Canada, Memoir 204, page 25). The veins strike north and dip 58 degrees west. The upper most vein is 5 to 8 centimetres wide and shows ribboned, rusty quartz. The two lower veins are separated by 45 centimetres of chloritized granodiorite and have widths of 10 and 15 centimetres, respectively.

The principal mineral is pyrite. A sample is reported to have assayed $6.50 in gold (Geological Survey of Canada, Memoir 204, page 25), equivalent to 6.6 grams per tonne.

BIBLIOGRAPHY

GSC MAP 1537A
GSC MEM *204-25
GSC OF 463
GSC P 72-44; 80-16
CIM TRANS VOL 72-116
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/05/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092E 039**

NATIONAL MINERAL INVENTORY:

NAME(S): **SYDNEY 5**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 24 29 N
LONGITUDE: 126 16 00 W
ELEVATION: 152 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Sidney Inlet, 3 kilometres north of the head of Refuge Cove.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5476412
EASTING: 698273

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Magnetite Pyrite
COMMENTS: Shear zone contains minor quartz-veining.
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0012 x 0001 Metres STRIKE/DIP: TREND/PLUNGE: 090/
COMMENTS: Shear zone is exposed for 12 metres, is 1.2 metres wide and trends east-west.

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	

ISOTOPIC AGE: 290 Ma
DATING METHOD: Fossil
MATERIAL DATED: Foraminifera

Eocene — Catface Intrusions

ISOTOPIC AGE: 36.6 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite
Diorite

HOSTROCK COMMENTS: Sicker Group foraminifera from McGee Creek area; Catface biotite from Sidney Inlet (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1968
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Copper	0.5200	Per cent

COMMENTS: Sample over 1.2 metres, also contains trace gold, 0.6 grams per tonne silver and 0.01 per cent molybdenite.
REFERENCE: Assessment Report 1529.

CAPSULE GEOLOGY

The area is underlain by Pennsylvanian to Permian Sicker Group volcanics which have been intruded by a 2.0 by 17.0 kilometre body of diorite which strikes northwest. The intrusive is part of the Eocene Catface Intrusions (Geological Survey of Canada Map 1537A).

The Sydney occurrence comprises a mineralized shear zone that averages 1.2 metres in width, trends east-west and lies about 400 metres east of the diorite intrusion. The shear zone occurs in dark green to grey, aphanitic to fine-grained andesite of the Sicker Group and is exposed for about 12 metres. It contains magnetite with minor quartz-veining, some disseminated pyrite and minor chalcopyrite. A

CAPSULE GEOLOGY

channel sample over 1.2 metres returned 0.52 per cent copper, trace gold, 0.6 grams per tonne silver, 0.01 per cent molybdenite (Assessment Report 1529).

BIBLIOGRAPHY

EMPR AR 1968-102
EMPR ASS RPT *1529, 2929
EMPR GEM 1971-231; 1972-262; 1973-228
GSC MAP 1537A
GSC OF 463
GSC P 72-44; 80-16
CIM TRANS VOL 72-116
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1989/05/29	REVISED BY:	LLD	FIELD CHECK:	N

MINFILE NUMBER: **092E 040**

NATIONAL MINERAL INVENTORY:

NAME(S): **MN 1**, VARGAS, VAR, GAS, MN1

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E01E
BC MAP:
LATITUDE: 49 12 47 N
LONGITUDE: 126 00 11 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on north coast of Vargas Island. Location is centered on diamond-drill hole 69-1. Mineralization extends along the north coast from about 0.5 kilometres east of the 92E-92F map boundary, to about 1.0 kilometre west of it. See also 092E 041.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5455464
EASTING: 718253

COMMODITIES: Iron Copper

MINERALS
SIGNIFICANT: Pyrrhotite Chalcopyrite Pyrite
COMMENTS: Pyrrhotite stringers with minor chalcopyrite.
ALTERATION: Pyrolusite
COMMENTS: Manganese staining.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Massive
CLASSIFICATION: Epigenetic Hydrothermal Industrial Min.
SHAPE: Irregular
DIMENSION: STRIKE/DIP: 115/65N TREND/PLUNGE:
COMMENTS: Attitude of sediments and flows is 115 degrees, dipping 65 degrees north.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Pacific Rim Complex

ISOTOPIC AGE: 150 Ma
DATING METHOD: Fossil
MATERIAL DATED: Radiolaria

LITHOLOGY: Arkosic Pyroxene Chlorite Greywacke
Arkosic Sandstone
Quartzite
Argillite
Tuff
Limestone
Basic Flow
Felsic Flow

HOSTROCK COMMENTS: Fossil age dates from Geological Survey of Canada Paper 80-16, page 31.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Pacific Rim Complex pelitic rocks metamorphosed to schistose rocks.

CAPSULE GEOLOGY

Vargas Island is underlain by the Pacific Rim Complex, a highly disturbed assemblage of pelitic to arenaceous sedimentary and volcanic rocks of Upper Jurassic to Lower Cretaceous age. Pelitic rocks of the Complex have been metamorphosed to schistose rocks and melanges. The complex is in fault-contact with the West Coast Complex of basic gneiss and amphibolite derived from pre-Jurassic rocks.

Locally, highly arkosic greywacke and sandstone, and quartzite, argillite, tuff and limestone are interbedded with felsic to basic flows. Greywacke is described as consisting of feldspar and pyroxene grains in a micaceous chloritic matrix. The rocks strike east-southeast and dip moderately to steeply to the north.

Mineralization occurs sporadically for 1.5 kilometres along the northern shore of Vargas Island. It consists of pyrrhotite (plus or minus traces of chalcopyrite) as small lenses and stringers. The lenses are a few centimetres wide and of limited lateral extent.

CAPSULE GEOLOGY

Minor disseminated chalcopyrite was observed between stringers.
Manganese stain was observed on cleavages in all rock types.

BIBLIOGRAPHY

EMPR ASS RPT *1969
EMPR GEM 1969-217
GSC MAP 1537A
GSC OF 463
GSC P 66-1; 72-44; 80-16
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/15 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092E 041**

NATIONAL MINERAL INVENTORY:

NAME(S): **MN 9-10**, VARGAS, VAR, GAS, VARGAS ISLAND

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E01E
BC MAP:
LATITUDE: 49 11 47 N
LONGITUDE: 126 00 11 W
ELEVATION: 15 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Geological Survey of Canada, Summary Report 1970A, page 22.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5453612
EASTING: 718327

COMMODITIES: Manganese Iron

MINERALS

SIGNIFICANT: Pyrolusite Limonite
COMMENTS: Pyrolusite assumed maganese mineral.
ALTERATION: Limonite
COMMENTS: Strong weathering to depth of 3 metres.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Layered Massive
CLASSIFICATION: Residual Industrial Min.
DIMENSION: STRIKE/DIP: 315/80E TREND/PLUNGE:
COMMENTS: Attitude from Geological Survey of Canada Paper 80-16.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous			Pacific Rim Complex

ISOTOPIC AGE: 150 Ma
DATING METHOD: Fossil
MATERIAL DATED: Radiolaria

LITHOLOGY: Cherty Ferro Tuff

HOSTROCK COMMENTS: Fossil age date from Geological Survey of Canada Paper 80-16, page 31.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP:
COMMENTS: Pacific Rim Complex pelitic rocks metamorphosed to schistose rocks.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1920
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Manganese	15.0000	Per cent

COMMENTS: Best assay less than 15 per cent manganese.
REFERENCE: Geological Survey of Canada, Summary Report 1920A, page 22.

CAPSULE GEOLOGY

Vargas Island is underlain by the Pacific Rim Complex, a highly disturbed assemblage of pelitic to arenaceous sedimentary and volcanic rocks of Upper Jurassic to Lower Cretaceous age. Pelitic rocks of the Complex have been metamorphosed to schistose rocks and melange. The Complex is in fault contact with the West Coast Complex of basic gneiss and amphibolite, derived from pre-Jurassic rocks.

Locally, highly arkosic greywacke and sandstone, and quartzite, argillite, tuff and limestone, are interbedded with felsic to basic flows.

Manganese is reported to occur associated with sheared cherty iron-rich tuffs. Abundant limonite occurs and is derived from extensive weathering of the iron rich tuffs to a depth of about 3.0 metres. Highest assays for manganese are less than 15 per cent manganese (Geological Survey of Canada, 1920A, page 22). The sediments strike northwest and dip steeply east.

BIBLIOGRAPHY

EMPR ASS RPT *1969
EMPR GEM 1969-217
EMPR PF (Sargent, H. (1956): Manganese Occurrences in British Columbia, p. 19, International Geological Congress, Symposium on Manganese held in Mexico)
GSC EC GEOL No.12, p. 119
GSC MAP 1537A
GSC OF 463
GSC P 66-1; 72-44; 80-16
GSC SUM RPT 1920A, p. 22

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/15 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 042**

NATIONAL MINERAL INVENTORY:

NAME(S): **AHOUSAT**, FLORES ISLAND

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 16 22 N
LONGITUDE: 126 04 33 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5461895
EASTING: 712697

COMMODITIES: Hotspring

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Hydrothermal Industrial Min.
TYPE: T02 Geothermal spring

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Biotite gneiss

LITHOLOGY: Gneissic Diorite
Medium Grained Gneissic Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite

CAPSULE GEOLOGY

Flores Island is underlain by high grade metamorphic rocks of the Upper Paleozoic to Lower Mesozoic West Coast Complex.
The water, at a temperature of 25 degrees celsius, is clear and tasteless and percolates from the ground at a rate of 11 litres per minute. Dissolved solids are 98 parts per million and pH is 9.45.

BIBLIOGRAPHY

GSC MAP 1537A
GSC OF *2526
GSC P 72-44; 73-18; 80-16
*McDonald, J. (1991): Hotsprings of Western Canada, A Complete Guide, Waterwheel Press, Vancouver, pp. 6-7
Falconbridge File

DATE CODED: 1985/07/24
DATE REVISED: 1997/06/05
CODED BY: GSB
REVISED BY: LDJ
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092E 043** NATIONAL MINERAL INVENTORY:

NAME(S): **ELIZA**, PORT ELIZA, RUSTAND, TIDEWATER, MONARCH, SUNRISE, SUNDOWN, PORT ELIZA GOLDMINE, HQ MINE

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E14E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 49 53 19 N NORTHING: 5528116
LONGITUDE: 127 01 30 W EASTING: 641864
ELEVATION: 60 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of the lower adit on Monarch claims is 6 kilometres south of head of Port Eliza Inlet.

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Gold Chalcopyrite
COMMENTS: Free gold.
ASSOCIATED: Quartz Pyrite Calcite
ALTERATION: Sericite Quartz
ALTERATION TYPE: Sericitic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0240 x 0001 Metres STRIKE/DIP: 315/60E TREND/PLUNGE:
COMMENTS: Strike of vein-fault system is northwest, dips steeply east, extends for 240 metres and is up to more than a metre in width.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite
Basic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	5.6000	Grams per tonne
Gold	55.7200	Grams per tonne

COMMENTS: Highest assay over 15 centimetres of vein.
REFERENCE: Assessment Report 14796.

CAPSULE GEOLOGY

The area is underlain by granodiorite of the Jurassic Island Plutonic Suite which intrude Lower Jurassic Bonanza Group volcaniclastics.

The northwest striking Port Eliza gold structure generally parallels the trend of a number of basic dykes within the intrusive host rocks. The structure consists of a quartz-calcite vein within a shear zone ranging from a few centimetres to over a metre in width. The structure extends for a known length of 240 metres. Free gold occurs with pyrite, chalcopyrite and other very finely disseminated sulphides in a quartz gouge.

The wallrock, mainly granodiorite or basic dikes, are strongly sericitized and silicified (Assessment Report 14796)

CAPSULE GEOLOGY

Best assays are 55.7 grams per tonne gold, 5.6 grams per tonne silver (Assessment Report 14796). In 1940, 12.7 tonnes of ore were shipped producing 435 grams gold, 93 grams silver and 10 kilograms copper (Geological Survey of Canada Paper 80-16, page 46).

BIBLIOGRAPHY

EMPR AR 1940-A27
EMPR ASS RPT *14796, 17724
EMPR BC METAL MM00092
EMPR EXPL 1986-C152
EMPR OF 1945
EMPR PF (Starr, C.C. (1938): Sunrise Group, 2 p.; Plan of vein showing assays, 1938)
GSC OF 463
GSC P 72-44; 80-16
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/13 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092E 044**

NATIONAL MINERAL INVENTORY:

NAME(S): **BAY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 22 29 N
LONGITUDE: 126 14 07 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the northwest corner of Flores Island, near Starling Bay.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5472789
EASTING: 700686

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Disseminated chalcopyrite localized along fracture zones.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Catface Intrusions
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 48 +/- 12 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

ISOTOPIC AGE: 174 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Diorite
Granodiorite
Porphyry Dike
Aplite Dike

HOSTROCK COMMENTS: Catface biotite from Tofino area. Island Plutonic Suite biotite from Alert Bay area (Geological Survey of Canada, Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1971
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.3000	Per cent

COMMENTS: Best of 12 samples, average was 0.07 per cent.
REFERENCE: Assessment Report 3240.

CAPSULE GEOLOGY

The area is underlain by a diorite-granodiorite complex of the Jurassic Island Plutonic Suite. This complex has been intruded by later quartz-diorite and granodiorite of the Eocene Catface Intrusions Late aplite and porphyry dykes crosscut both intrusions.

Sporadic chalcopyrite mineralization occurs in association with siliceous and sub-porphyritic phases of the younger quartz-diorite, mainly in the vicinity of Starling Bay. The mineralization is erratic and localized along several narrow fracture zones and as disseminations adjacent to these fractures.

Twelve grab samples returned values from 0.01 to 0.30 per cent copper, averaging 0.07 per cent copper (Assessment Report 3240).

BIBLIOGRAPHY

EMPR ASS RPT 3240
EMPR GEM 1971-231

BIBLIOGRAPHY

GSC OF 463
GSC P 72-44; 80-16
CIM TRANS VOL 72-116
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1988/11/02	REVISED BY:	WV	FIELD CHECK:	N

MINFILE NUMBER: **092E 045**

NATIONAL MINERAL INVENTORY:

NAME(S): **JR 2**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 19 31 N
LONGITUDE: 126 06 44 W
ELEVATION: 274 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is 1.1 kilometres northeast of Flo (092E 049) in a creek on JR 2 claim.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5467628
EASTING: 709827

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Chalcocite Copper
ASSOCIATED: Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Catface Intrusions

ISOTOPIC AGE: 48 +/- 12 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Monzonite
Quartz Diorite

HOSTROCK COMMENTS: Biotite from Tofino area (Geological Survey of Canada, Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
YEAR: 1972

COMMODITY	GRADE	
Copper	0.0800	Per cent

COMMENTS: Two samples from JR Creek.
REFERENCE: Assessment Report 3689.

CAPSULE GEOLOGY

The showing occurs in the quartz monzonitic phase of a multiphase Eocene Catface Intrusion. Other phases are quartz-diorite, granite and aplite.

Mineralization consists of chalcopyrite on several shear surfaces, and as disseminations near the shear zone, in association with mafic minerals. Pyrite, malachite, native copper and chalcocite are present in small amounts. Two samples from the occurrence assayed 0.08 per cent copper. The molybdenite content is negligible (Assessment Report 3689).

BIBLIOGRAPHY

EMPR ASS RPT 2317, 3689, 4356, 4956, 8056, 9658
EMPR EXPL 1980-162; 1981-84
EMPR GEM 1972-263; 1974-171
GSC MAP 1537A
GSC OF 463
GSC P 72-44; 80-16
CIM TRANS VOL 72-116

BIBLIOGRAPHY

GCNL #58, 1980; #116, 1981; #111,#146, 1988
N MINER Feb.19, 1981
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/08 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 046**

NATIONAL MINERAL INVENTORY:

NAME(S): **K 15**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 21 41 N
LONGITUDE: 126 17 27 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1.5 kilometres west of Refuge Cove near Sydney Inlet.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5471161
EASTING: 696707

COMMODITIES: Zinc Silver

MINERALS
SIGNIFICANT: Sphalerite
COMMENTS: Minor silver values are present.
COMMENTS: Skarn minerals unspecified.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Shear
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Irregular
MODIFIER: Sheared
DIMENSION: 6 x 1 Metres STRIKE/DIP: 045/70E TREND/PLUNGE:
COMMENTS: Mineralization occurs over 1.5 metres, within a 6 metre wide, north-east trending, steeply east dipping shear zone.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex
ISOTOPIC AGE: 245 Ma			
DATING METHOD: Zircon			
MATERIAL DATED: Biotite Gneiss			
Eocene			Catface Intrusions
ISOTOPIC AGE: 38 +/- 14 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Quartzite
Siliceous Andesite
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	0.6600	Grams per tonne
Zinc	5.0000	Per cent

COMMENTS: Sample over 1.5 metres.
REFERENCE: Assessment Report 3750.

CAPSULE GEOLOGY

The area of the K 15 occurrence is underlain by Paleozoic-Mesozoic quartzite of the Westcoast Complex, intruded by diorite of the Eocene Catface Intrusions.

The quartzite, which may be silicified andesite, contains a 6 metre wide northeast trending, steeply east dipping shear zone. Sphalerite, with unspecified skarn minerals, occur over 1.5 metres within the shear zone.

A representative sample taken over 1.5 metres assayed 5.0 per cent zinc and 0.66 grams per tonne silver. A sample of high grade mineralization assayed 10.0 per cent zinc (Assessment Report 3750).

BIBLIOGRAPHY

EMPR ASS RPT *3750
EMPR GEM 1972-261
GSC MAP 1537A
GSC OF 463
GSC P 53-17; 72-44; 80-16
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/02 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 047**

NATIONAL MINERAL INVENTORY:

NAME(S): **K 18**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 21 47 N
LONGITUDE: 126 17 45 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 2 kilometres west of Refuge Cove near Sydney Inlet.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5471333
EASTING: 696337

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: Stringers and lenses of chalcopyrite in shear zone, silver mineral not specified.
ALTERATION: Epidote
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0030 x 0008 Metres STRIKE/DIP: 315/70E TREND/PLUNGE:
COMMENTS: Mineralization traced over 30 metres occurs over a width of 6 to 10 metres in a northwest striking shear zone that dips steeply east.

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Biotite gneiss

LITHOLOGY: Epidote Andesite
Meta Volcanic

HOSTROCK COMMENTS: Biotite gneiss from Tofino area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1972
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	0.5500	Grams per tonne
Copper	0.6000	Per cent

COMMENTS: Selected sample of better looking material.
REFERENCE: Assessment Report 3750.

CAPSULE GEOLOGY

The occurrence is located on the K18 claim in epidote-altered andesite of the Upper Paleozoic to Lower Mesozoic West Coast Complex. It consists of a 6 to 10 metre wide shear zone striking northwest and dipping steeply east, traced for 30 metres. Chalcopyrite occurs within the zone as stringers and lenses up to 10 centimetres wide. A selected sample assayed 0.6 per cent copper and 0.55 grams per tonne silver (Assessment Report 3750).

BIBLIOGRAPHY

EMPR ASS RPT *3750
EMPR GEM 1972-261
GSC MAP 1537A
GSC OF 463

BIBLIOGRAPHY

GSC P 53-17; 72-44; 80-16

DATE CODED: 1985/07/24
DATE REVISED: 1988/11/02

CODED BY: GSB
REVISED BY: WV

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092E 048**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAPHAEL COAL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 16 59 N
LONGITUDE: 126 13 23 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at Raphael Point on Flores Island (from Geological Survey of Canada, Paper 53-17).

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5462633
EASTING: 701948

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Oligocene	Carmanah	Hesquiat	

ISOTOPIC AGE: 30 Ma
DATING METHOD: Fossil
MATERIAL DATED: Foraminifera & other fossils

LITHOLOGY: Brecciated Coal
Conglomerate
Siltstone
Sandstone
Shale

HOSTROCK COMMENTS: Foraminifera from Raphael Point (Geological Survey of Canada Paper 53-17).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by the Eocene-Oligocene Carmanah Group, Hesquiat Formation which is comprised of siltstone, shale, sandstone and conglomerate.

Jeletsky (Geological Survey of Canada, Paper 53-17, page 63) reports the occurrence of "numerous fragments and pebbles of coal in a zone of breccia-like rock". He interprets the fragments as possibly having been mobilized from coal seams elsewhere.

BIBLIOGRAPHY

EMPR AR *1920-195
GSC MAP 53-17; 1537A
GSC OF 463
GSC P *53-17; 72-44; 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/31 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 049**

NATIONAL MINERAL INVENTORY:

NAME(S): **FLO**, JR, SNOW, SC, FL

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08E
BC MAP:
LATITUDE: 49 19 15 N
LONGITUDE: 126 07 37 W
ELEVATION: 610 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location of "Cliff zone" is 3.6 kilometres east of Sydney Inlet on Flores Island.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5467094
EASTING: 708776

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite Magnetite
ALTERATION: Pyrite Epidote Quartz Chlorite Malachite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Syngenetic Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: 0017 x 0006 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Mineralization is localized and discontinuous over 17 by 6.5 metres.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Catface Intrusions

ISOTOPIC AGE: 48 +/- 12 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Monzonite
Granodiorite
Quartz Feldspar Porphyry

HOSTROCK COMMENTS: Biotite from Tofino area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1974
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.7000	Per cent

COMMENTS: No details given.
REFERENCE: Assessment Report 4956.

CAPSULE GEOLOGY

The Cliff showing occurs in the quartz monzonite phase of a multiphase Eocene Catface Intrusion. The other phases are granodiorite and quartz-feldspar porphyry.

Mineralization consists of chalcopyrite as narrow fracture fillings and fine disseminations. Malachite and magnetite are locally present in small amounts.

The mineralized zone is up to 6.5 metres wide and has been traced for 17 metres, but within this area it is localized and discontinous. The mineralization is surrounded by a propylitic alteration envelope.

Assay values range from 0.2 to 0.7 per cent copper (Assessment Report 4956).

BIBLIOGRAPHY

EMPR ASS RPT 2317, 3689, 4356, *4956, 8056, 9658
EMPR EXPL 1980-162; 1981-84
EMPR GEM 1972-263; 1974-171

BIBLIOGRAPHY

GSC MAP 1537A
GSC OF 463
GSC P 72-44; 80-16
CIM TRANS VOL 72-116
GCNL #58, 1980; #116, 1981; #111,#146, 1988
N MINER Feb.19, 1981
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1988/11/03	REVISED BY:	WV	FIELD CHECK:	N

MINFILE NUMBER: **092E 050**

NATIONAL MINERAL INVENTORY:

NAME(S): **VANHALL**, D.V., SHANNON

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E16E 092F13W
BC MAP:
LATITUDE: 49 54 59 N
LONGITUDE: 126 00 05 W
ELEVATION: 945 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of claims is located 5.0 kilometres south of Gold Lake. See topographic Map 92F13W (Vanhall - 092F 038 and OV - 092F 169).

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5533646
EASTING: 715257

COMMODITIES: Copper, Zinc, Iron, Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite, Sphalerite, Pyrite, Magnetite, Molybdenite, Pyrrhotite
COMMENTS: Mineralization present as fracture fillings and veinlets.
ASSOCIATED: Pyrite
ALTERATION: Silica, Chlorite, Epidote
COMMENTS: No alteration minerals are specified in reference.
ALTERATION TYPE: Silicific'n, Chloritic, Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Hydrothermal, Porphyry, Epigenetic, Industrial Min.
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Irregular
DIMENSION:
STRIKE/DIP: 090/70S
TREND/PLUNGE:
COMMENTS: Regional bedding.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 232 +/- 5 Ma
DATING METHOD: Fossil
MATERIAL DATED: Clydonites

ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Siliceous Andesite, Dacite, Basalt, Diorite Dike, Granodiorite

HOSTROCK COMMENTS: Tahsis Inlet area fossils and Alert Bay area Rb/Sr age dates from Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP: Plutonic Rocks
GRADE: Amphibolite, Hornfels
COMMENTS: Karmutsen Fm. alteration varies with distance from Island Intrusions.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group volcanic rocks of the Karmutsen Formation intruded and altered by granodiorites of the Jurassic Island Plutonic Suite.

The property appears to be underlain entirely by basaltic to dacitic volcanic rocks. Diorite dykes are common. Granitic intrusive stocks occur several kilometres to the south and east. Silicification, chloritization and epidotization are observed, and a 914 by 305 metre area contains abundant disseminated pyrite.

Scattered mineral occurrences include (Assessment Report 3953):

-5 per cent disseminated chalcopyrite-pyrite in silicified andesite over an area 2.5 by 15 metres.
-Massive chalcopyrite-sphalerite float.
-Narrow veins of magnetite, pyrite, plus or minus epidote,

CAPSULE GEOLOGY

plus or minus copper.
-Narrow veins of pyrrhotite.
-Traces of molybdenite associated with a quartz-vein.

The occurrence lies at the edge of the map area near the Vanhall (092F 038) and DV (092F 169) occurrences.

BIBLIOGRAPHY

EMPR ASS RPT 2436, *3953, 8065, 9151
EMPR EXPL 1980-175; 1981-7
EMPR GEM 1972-263
GSC OF 463
GSC P 68-50; 70-1,part A-44; 72-44; 80-16
CIM TRANS VOL 72-116
GCNL #44, 1982
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/09/12 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 051**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEACH**, ACME

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15W
BC MAP:
LATITUDE: 49 56 57 N
LONGITUDE: 126 51 00 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Warwick, 1938 property report, 3.5 kilometres due south of Zeballos.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5535195
EASTING: 654240

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Gold mineralogy not reported.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
ISOTOPIC AGE:	195 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Gastropods		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		

LITHOLOGY: Volcanic Rock
Andesite
Granodiorite

HOSTROCK COMMENTS: Bonanza gastropods from Tatchu Creek. Island Plutonic Suite biotite from Alert Bay map area.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Bonanza Group andesitic lavas and related volcaniclastic rocks.

Several small stocks of granodiorite, related to the Jurassic Island Plutonic Suite, are indicated on Geological Survey of Canada Ma 1537A.

Gold bearing, heavily mineralized quartz veins are reported to intrude Bonanza volcanics.

BIBLIOGRAPHY

EMPR PF (*Warwick, J., (1938): Property Report)
GSC MAP 1027A; *1537A
GSC P 72-44; 80-16
GSC OF 463
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/11 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 052**

NATIONAL MINERAL INVENTORY:

NAME(S): **ESP**, ESP 3.6

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15W
BC MAP:
LATITUDE: 49 56 02 N
LONGITUDE: 126 57 12 W
ELEVATION: 166 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the centre of the claim block.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5533288
EASTING: 646874

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Garnet Tremolite Epidote
COMMENTS: Garnet, tremolite and epidote in contact aureole.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated Massive
CLASSIFICATION: Hydrothermal Skarn Igneous-contact Epigenetic
SHAPE: Irregular
DIMENSION: 0122 Metres STRIKE/DIP: 310/55N TREND/PLUNGE:
COMMENTS: Strike of shear zone indicated as northwest, dipping moderately north.
Chalcopyrite reported to occur over 122 metres.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	

ISOTOPIC AGE: 195 Ma
DATING METHOD: Fossil
MATERIAL DATED: Various fossils

Eocene — Catface Intrusions
ISOTOPIC AGE: 38 +/- 14 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Limestone
Garnet Limestone
Andesitic Tuff
Andesitic Flow
Clastic Sediment/Sedimentary
Microdiorite
Syenite

HOSTROCK COMMENTS: Catface isotopic age from Zeballos. Bonanza Group fossils from Tatchu Creek area, as quoted in GSC Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP: Plutonic Rocks
GRADE: Hornfels
COMMENTS: Limestone altered to garnet near intrusive contact.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1972
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	28.1200	Per cent

COMMENTS: Value not substantiated in subsequent work.
REFERENCE: Assessment Report 4280.

CAPSULE GEOLOGY

The ESP occurrence is underlain by sediments and volcanics of the Lower Jurassic Bonanza Group, intruded by a 2.7 by 1.4 kilometre stock of the Eocene Catface Intrusions. The intrusive rocks range from microdiorite to pink syenite. Bonanza Group rocks include thin-bedded limestone, clastic sediments and andesitic tuffs and flows.

CAPSULE GEOLOGY

Prospecting in 1972 indicated massive chalcopyrite mineralization on a 335 metre long, west trending, shear zone crosscutting tuffs and sediments. Massive chalcopyrite and quartz-chalcopyrite were reported over 122 metres, and chalcopyrite was reported from garnetized limestone near the intrusive contact. A 28.12 per cent copper value was obtained (Assessment Report 4280). An area of 61 by 61 metres was reported to contain disseminated chalcopyrite in tuff, 91 metres from the shear zone. Sampling bulldozed trenches returned maximum values of 0.75 per cent copper (Assessment Report 4280). Work in 1976 could not substantiate the reported mineralization. This capsule combines the two occurrences previously listed separately (ESP - 092E 052 and ESP6 - 092E 053).

BIBLIOGRAPHY

EMPR ASS RPT *4280, *5840
EMPR EXPL 1976-E110
EMPR GEM 1973-230
GSC MAP 1027A; 1537A
GSC MEM 272
GSC OF 463
GSC P 72-44; 80-16
CIM TRANS VOL 72-116
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/14 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 053**

NATIONAL MINERAL INVENTORY:

NAME(S): **PEBBLE GOLD**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W
BC MAP:
LATITUDE: 49 37 59 N
LONGITUDE: 126 20 05 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Muchalat Inlet, between Silverado Creek and Houston River.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5501245
EASTING: 692451

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
COMMENTS: Gold-bearing pyrite and values of lead, zinc, silver and copper.
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 174.4 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite

HOSTROCK COMMENTS: Age derived from Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The region is underlain by granodiorite of the Jurassic Island Plutonic Suite.

Personal communication with Irving Ward of Pebble Gold indicates a roughly north-south trending shear zone in granodiorite, ranging in width from 10 to 30 centimetres, with quartz-infilling hosting gold-bearing pyrite and values of lead, zinc, silver and copper.

Some stripping has been done in the past by unknown operators.

BIBLIOGRAPHY

GSC MAP 1537A
GSC OF 463
GSC P 72-44; 80-16
PERS COMM (*Ward, I., (1987): Pebble Gold Corp.)
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1988/09/19 CODED BY: WV FIELD CHECK: Y
DATE REVISED: 1989/05/30 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092E 054**

NATIONAL MINERAL INVENTORY:

NAME(S): **HESQUIAT LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W
BC MAP:
LATITUDE: 49 30 19 N
LONGITUDE: 126 23 20 W
ELEVATION: 1 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from GSC Map 53-17-1, at shore of Hesquiat Lake.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5486904
EASTING: 689034

COMMODITIES: Copper Magnetite Iron

MINERALS
SIGNIFICANT: Magnetite Chalcopyrite
COMMENTS: Exact mineralogy is not reported.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound Podiform
CLASSIFICATION: Skarn Replacement Epigenetic Industrial Min.
DIMENSION: STRIKE/DIP: 315/60E TREND/PLUNGE:
COMMENTS: Local attitude of bedding is northwest, dipping moderately east.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	
ISOTOPIC AGE:	290 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Foraminifera		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		

LITHOLOGY: Limestone
Diorite
Gabbro

HOSTROCK COMMENTS: Dating of foraminifera from McGee Creek area and Island Plutonic Suite age dates from Alert Bay Map area from GSC Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP: Plutonic Rocks
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Hornfels

CAPSULE GEOLOGY

In the Hesquiat Lake area, northwest striking limestones and volcanics previously assigned to the Quatsino and Karmutsen Formations (Geological Survey of Canada Paper 53-17) have more recently been included with the Pennsylvanian to Permian Sicker Group (Geological Survey of Canada Map 1537A). These are intruded by felsic granitic rocks of the Jurassic Island Plutonic Suite (Muchalat Batholith). A dioritic to gabbroic border phase is 500 metres wide.

The occurrence is indicated on Geological Survey of Canada Map 53-17 as a copper-iron occurrence, lying along the contact between limestone and intrusive rocks. It is assumed to be a skarn-type occurrence similar to the geological setting and the tenure of other mineral occurrences in the Hesquiat Lake area.

While abundant work has been done in the area (see Brown Jug - 092E 016, Agnes - 092E 013, and Thelma - 092E 031), no work appears to be on record in the immediate vicinity of the occurrence.

BIBLIOGRAPHY

EMPR AR 1962-131
EMPR ASS RPT 462, 464
GSC MAP *53-17; 1537A
GSC OF 463
GSC P *53-17; 72-44; 80-16
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

BIBLIOGRAPHY

Sangster, D.F., (1964): The Contact Metasomatic Magnetite Deposits of Southwestern British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/10/20 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 055**

NATIONAL MINERAL INVENTORY:

NAME(S): **SYD**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 22 59 N
LONGITUDE: 126 16 10 W
ELEVATION: 215 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 600 metres from Sidney Inlet, 3 kilometres north of Refuge Cove.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5473625
EASTING: 698172

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite Bornite
COMMENTS: Disseminated mineralization occurs in mafic filled fractures.
ASSOCIATED: Biotite Hornblende
COMMENTS: Secondary biotite and hornblende infill mineralized fractures.
ALTERATION: Kaolinite
COMMENTS: Plagioclase altered to kaolinite.
ALTERATION TYPE: Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Hydrothermal
DIMENSION: 0200 Metres STRIKE/DIP: 330/70E TREND/PLUNGE:
COMMENTS: Attitude of fractures with which mineralization is associated. Surface showing extends over 200 metres.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Catface Intrusions

ISOTOPIC AGE: 48 +/- 12 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Diorite
Medium Grained Biotite Hornblende Diorite

HOSTROCK COMMENTS: Age date biotite from Tofino area (Geological Survey of Canada, Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact Plutonic Rocks RELATIONSHIP: GRADE: Zeolite
COMMENTS: Plagioclase altered to kaolinite.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.2500	Per cent

COMMENTS: One diamond-drill hole. Assay over 30 metres.
REFERENCE: Assessment Report 4402.

CAPSULE GEOLOGY

The Syd occurrence is underlain by a multiphased, 2 by 17 kilometre Eocene Catface Intrusion that consists of a leucocratic quartz-diorite phase and a biotite-hornblende diorite phase. The latter phase contains kaolinite-altered plagioclase, and less than 10 per cent quartz.

Mineralization is associated with a series of joints trending 330 degrees and dipping 70 degrees east. Secondary biotite and hornblende are concentrated along the joints. Disseminated chalcopyrite, bornite and molybdenite occur near the fractures but decrease rapidly away from them.

The occurrence consists of a surface showing extending over 200 metres. A hole drilled 300 metres to the north on a possible ex-

CAPSULE GEOLOGY

tension of the same zone intercepted 30 metres of 0.25 per cent copper (Assessment Report 4402).

The occurrence is similar to the Access showing (092E 056), located 2 kilometres south.

BIBLIOGRAPHY

EMPR AR 1968-102
EMPR ASS RPT 1529, 2929, *4402
EMPR GEM 1971-231, 1972-262, 1973-228
EMPR PF (See 092E 056)
GSC MAP 1537A
GSC OF 463
GSC P 72-44; 80-16
CIM TRANS VOL 72-116
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1988/11/02	REVISED BY:	WV	FIELD CHECK:	N

MINFILE NUMBER: **092E 056**

NATIONAL MINERAL INVENTORY:

NAME(S): **ACCESS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 22 54 N
LONGITUDE: 126 15 53 W
ELEVATION: 0 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on shore of Sidney Inlet opposite head of Refuge Cove.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5473483
EASTING: 698521

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Chalcopyrite occurs disseminated in diorite breccia.
ASSOCIATED: Biotite Hornblende
COMMENTS: Secondary biotite and hornblende concentrated along fractures.
ALTERATION: Kaolinite
COMMENTS: Plagioclase altered to kaolinite.
ALTERATION TYPE: Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Breccia Disseminated
CLASSIFICATION: Syngenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Regular
DIMENSION: STRIKE/DIP: 330/70E TREND/PLUNGE:
COMMENTS: Attitude of fractures with which mineralization is associated.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Catface Intrusions

ISOTOPIC AGE: 48 +/- 12 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Diorite Breccia
Medium Grained Biotite Hornblende Diorite
Quartz Diorite

HOSTROCK COMMENTS: Age date biotite from Tofino area (Geological Survey of Canada, Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP: Plutonic Rocks
GRADE: Zeolite
COMMENTS: Plagioclase altered to kaolinite.

CAPSULE GEOLOGY

The Access occurrence, located near the head of Refuge Cove, on the shore of Sidney Inlet, consists of disseminated chalcopyrite in a breccia of the Eocene Catface Intrusions. The breccia is part of a multi-phased intrusion consisting of a medium-grained biotite-hornblende diorite with less than 10 per cent quartz and kaolinite-altered plagioclase, and a more leucocratic quartz-diorite.

Mineralization occurs near joints trending 330 degrees and dipping 70 degrees east. Secondary biotite and hornblende are concentrated along the joints. Disseminated chalcopyrite occurs near the fractures and decreases rapidly away from them.

BIBLIOGRAPHY

EMPR AR 1968-102
EMPR ASS RPT 1529, 2929, *4402
EMPR GEM 1971-231, 1972-262, 1973-228
GSC MAP 1537A
GSC OF 463
GSC P 72-44; 80-16
CIM TRANS VOL 72-116
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits,

BIBLIOGRAPHY

Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/02 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 057**

NATIONAL MINERAL INVENTORY:

NAME(S): **SANDSTONE POINT**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E14E
BC MAP:
LATITUDE: 49 52 19 N
LONGITUDE: 127 10 05 W
ELEVATION: 0 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: On Sandstone Point, from Geological Survey of Canada, Paper 50-37.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5526002
EASTING: 631635

COMMODITIES: Dimension Stone

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Magmatic
DIMENSION: 0030 x 0015 Metres
Industrial Min.
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
ISOTOPIC AGE:	195 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Oligocene	Carmanah	Hesquiat	
ISOTOPIC AGE:	35 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Foraminifera & other fossils		
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Pegmatite
Aplite
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Several light-colored bodies of aplitic or pegmatitic rock intrude Lower Jurassic Bonanza volcanic rocks along a contact with Tertiary Carmanah Group, Hesquiat Formation sandstone. The intrusive rock is older than the sandstone.

BIBLIOGRAPHY

GSC MAP 1027A; 1537A
GSC OF 463
GSC P *50-37, p. 37; 72-44; 80-16

DATE CODED: 1985/07/24
DATE REVISED: 1988/11/16
CODED BY: GSB
REVISED BY: WV
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092E 058** NATIONAL MINERAL INVENTORY:

NAME(S): **MUCHALET INLET**

STATUS: Showing MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09E 092E09W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 49 38 29 N NORTHING: 5502388
LONGITUDE: 126 15 05 W EASTING: 698434
ELEVATION: Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: On Anderson Point and Guaquina Point, and at some intermediate spots.
Latitude and longitude taken at centre of the Points.

COMMODITIES: Limestone Marble Building Stone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Unknown
ISOTOPIC AGE: 285 Ma DATING METHOD: Fossil MATERIAL DATED: Fossils

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone R04 Dimension stone - marble
SHAPE: Tabular
DIMENSION: Metres STRIKE/DIP: 075/85W TREND/PLUNGE:
COMMENTS: Age date and attitude from Geological Survey of Canada, Paper 80-16.
Strike 45-110 degrees.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
ISOTOPIC AGE:	230 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Clydonites		
Pennsylvan.-Permian	Sicker	Undefined Formation	
ISOTOPIC AGE:	290 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Foraminifera		

LITHOLOGY: Limestone
Marble
Siliceous Carbonaceous Rock
Granodiorite
Volcanic

HOSTROCK COMMENTS: Karmutsen clydonites from Tahsis Inlet and Sicker foraminifera from McGee Creek as quoted in GSC Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Hornfels
COMMENTS: Sicker Group carbonates show regional silicification.

CAPSULE GEOLOGY

The area of Guaquina Point is underlain by volcanics and interbedded limestone of the Upper Triassic Vancouver Group Karmutsen Formation. Anderson Point, at the west side of Muchalat Inlet, is underlain by Pennsylvanian-Permian Sicker Group metasediments that include minor marble and silicified carbonaceous rocks which strike 075 degrees and dip 85 degrees west. The area has been intruded by granodiorite of the Muchalat Batholith of the Jurassic Island Intrusions.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia,
by McCammon, J.W. 1973, p. 9 (in Ministry Library))
GSC MAP 1537A
GSC OF 463, Sheet 2
GSC P 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/22 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 059** NATIONAL MINERAL INVENTORY:

NAME(S): **TAHSIS INLET**, PERRY 1-6

STATUS: Showing MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 49 52 35 N NORTHING: 5527555
LONGITUDE: 126 38 29 W EASTING: 669460
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The centre of claims is located on the east shore of Tahsis Inlet, 3.5 kilometres south of Perry River.

COMMODITIES: Limestone Marble Building Stone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Unknown
ISOTOPIC AGE: 245 Ma DATING METHOD: Zircon MATERIAL DATED: Biotite

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Syngenetic Industrial Min.
TYPE: R09 Limestone R04 Dimension stone - marble
SHAPE: Tabular
DIMENSION: Metres STRIKE/DIP: 315/45W TREND/PLUNGE:
COMMENTS: Bedding attitude from Geological Survey of Canada Paper 80-16.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

ISOTOPIC AGE: 225 Ma
DATING METHOD: Fossil
MATERIAL DATED: Various fossils

LITHOLOGY: Limestone
Marble

HOSTROCK COMMENTS: Union Island age date on Quatsino Formation from Geological Survey of Canada, Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Amphibolite

CAPSULE GEOLOGY

Geological Survey of Canada, Map 1537A indicates the area is underlain by Upper Triassic Vancouver Group, Quatsino Formation limestone which strikes 315 degrees and dips 45 degrees west.
Work in the area in 1987 focused on precious metal potential.

BIBLIOGRAPHY

EMPR ASS RPT 9130, *16426
EMPR EXPL 1987-C129
GSC MAP 1027A; *1537A
GSC MEM 272-17
GSC OF 463, Sheet 2
GSC P 80-16, pp. 11,12
CANMET RPT 452, pp. 163,171
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/16 REVISED BY: WSV FIELD CHECK: N

MINFILE NUMBER: **092E 060**

NATIONAL MINERAL INVENTORY:

NAME(S): **SIDNEY INLET**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W
BC MAP:
LATITUDE: 49 30 29 N
LONGITUDE: 126 17 05 W
ELEVATION: 1 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the east side of the north end of Sidney Inlet.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5487480
EASTING: 696563

COMMODITIES: Limestone, Marble, Building Stone

MINERALS
SIGNIFICANT: Calcite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown
ISOTOPIC AGE: 245 Ma DATING METHOD: Zircon MATERIAL DATED: Zr from biotite

DEPOSIT
CHARACTER: Stratiform, Massive
CLASSIFICATION: Sedimentary, Syngenetic, Industrial Min.
TYPE: R09 Limestone; R04 Dimension stone - marble
SHAPE: Tabular
COMMENTS: Isotopic age from Geological Survey of Canada Paper 80-16.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Biotite

LITHOLOGY: Limestone
Marble
Pelitic Rock

HOSTROCK COMMENTS: Age date is from Geological Survey of Canada, Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP:

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite

CAPSULE GEOLOGY

Geological Survey of Canada Map 1537A indicates the area is underlain by the Upper Paleozoic to Lower Mesozoic West Coast Complex. This is a belt of recrystallized or migmatized pre-Jurassic volcanic and sedimentary rocks. At the occurrence, the complex consists of partly silicified pelitic rocks, limestone and marble.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia, by McCammon, J.W. 1973, p. 9 (in Ministry Library))
GSC MAP 1537A
GSC P 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/16 REVISED BY: WSV FIELD CHECK: N

MINFILE NUMBER: **092E 061**

NATIONAL MINERAL INVENTORY:

NAME(S): **TLUPANA ARM**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E
BC MAP:
LATITUDE: 49 45 59 N
LONGITUDE: 126 31 20 W
ELEVATION: 150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located on Deserted Lake, 1.5 kilometres north of Hisnit Inlet.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5515603
EASTING: 678425

COMMODITIES: Magnesite, Limestone

MINERALS
SIGNIFICANT: Brucite
ASSOCIATED: Calcite
MINERALIZATION AGE: Unknown
ISOTOPIC AGE: 225 Ma DATING METHOD: Fossil MATERIAL DATED: Fossils, Union Island

DEPOSIT
CHARACTER: Stratiform, Disseminated
CLASSIFICATION: Replacement, Igneous-contact, Industrial Min.
SHAPE: Irregular
DIMENSION:
STRIKE/DIP: 315/60W TREND/PLUNGE:
COMMENTS: Strike is strongly variable but generally trends northwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
ISOTOPIC AGE:	225 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		

LITHOLOGY: Limy Dolomite
Limestone
Granodiorite
Dolomite
Granite

HOSTROCK COMMENTS: Isotopic and fossil age dates from Alert Bay map area and Union Island, respectively, as quoted in GSC Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Greenschist
COMMENTS: Contact metamorphism of dolomite.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

At the Tlupana Arm occurrence northwest trending, Upper Triassic Vancouver Group, Quatsino Formation limestones and dolomites are exposed for over 1.5 kilometres along Deserted Creek. The Quatsino Formation hosts granitic plugs, dykes and stocks of the Jurassic Island Plutonic Suite.

About one kilometre southeast of a limestone quarry (Hisnit Inlet - 092E 020) on Deserted Creek are hard, dolomitic bands which contain numerous scattered "spots" up to 5 millimetres in diameter. The spots contain crystals or crystalline aggregates which appear dark on fresh surface. The material is more soluable than the host rock and weathers to a white fibrous residue which is left in cavities or pits on the dolomite surface (Open File 1987-13, page 51).

Goudge (1944) interprets the material to be brucite which is a common component in contact metamorphosed dolomites and which may be fibrous with anomalous birefringence in thin section. Parks (1917) reports similiar characteristics for the Tlupana Arm mineral.

BIBLIOGRAPHY

EMPR OF *1987-13, p. 51
GSC MAP 1537A
GSC MEM 272, p. 49
GSC OF 463
GSC P 80-16
CANMET RPT #811, Vol. IV, pp. 13-140; #452, Vol. V, pp. 162-169
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/12 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 062**

NATIONAL MINERAL INVENTORY:

NAME(S): **NUMA**, NUMA 2-4

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E16W
BC MAP:
LATITUDE: 49 47 59 N
LONGITUDE: 126 20 17 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Centre of Numa claims located between Tlupana and Conuma Rivers.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5519763
EASTING: 691554

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
COMMENTS: Isolated occurrences of molybdenum on fractures, veins.
ASSOCIATED: Quartz Pyrite
COMMENTS: Slight pyrite enrichment in area of molybdenum mineralization.
ALTERATION: Chlorite Epidote K-Feldspar
COMMENTS: Alteration occurs on fractures.
ALTERATION TYPE: Propylitic Potassic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L05 Porphyry Mo (Low F- type)
SHAPE: Irregular
MODIFIER: Fractured
DIMENSION: 1000 x 0700 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Molybdenite found over area 1000 by 700 metres.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 174 +/- 10 Ma
DATING METHOD: Rubidium/Strontium
MATERIAL DATED: Biotite

LITHOLOGY: Granite
Diorite

HOSTROCK COMMENTS: Description and age from Geological Survey of Canada, Paper 80-16 for Alert Bay map area.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

CAPSULE GEOLOGY

The area of the Numa occurrence is underlain by diorite and granite of the Jurassic Island Plutonic Suite. These plutonic rocks intrude volcanics and sediments of the Upper Triassic Vancouver Group, Karmutsen Formation and the Pennsylvanian to Permian Sicker Group (Geological Survey of Canada Map 1537A).

Molybdenite is found over an area of 1000 by 700 metres in tight joints and fractures and along k-feldspar altered quartz-vein margins in intrusive rocks. Some chlorite and epidote alteration is present in fractures.

The area of mineralization is slightly pyrite enriched.

BIBLIOGRAPHY

EMPR ASS RPT 9707, 13084, *14627
EMPR EXPL 1981-96; 1984-148; 1986-C153
GSC MAP *1537A
GSC OF 463
GSC P 72-44; 80-16
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/09/09 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092E 063**

NATIONAL MINERAL INVENTORY:

NAME(S): **VIG 3-5**, ROAD, TAH 22,
GLENGARRY - STORMONT

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E
BC MAP:
LATITUDE: 49 48 06 N
LONGITUDE: 126 31 26 W
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1.8 kilometres northwest of Head Bay, west of Sucwoa River, 750 metres west of Glengarry (092E 001).

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5519521
EASTING: 678175

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
COMMENTS: Gold, silver association not known.
ASSOCIATED: Quartz Chlorite Magnetite
COMMENTS: Sulphides hosted in quartz-chlorite lenses in weakly sheared gabbro.
COMMENTS: Limestone locally altered to skarn.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: K04 Au skarn
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0038 Metres STRIKE/DIP: 315/45S TREND/PLUNGE:
COMMENTS: Mineralized zone exposed over 38 metre strike length, striking north-west, dipping shallowly.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

ISOTOPIC AGE: 225 Ma
DATING METHOD: Fossil
MATERIAL DATED: Various fossils

Eocene — Catface Intrusions

ISOTOPIC AGE: 48 +/- 12 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Gabbro
Limestone
Diorite

HOSTROCK COMMENTS: Quatsino Formation fossils from Union Island. Catface biotite from Tofino (Geological Survey of Canada, Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
GRADE: Hornfels
COMMENTS: Limestone metamorphosed to skarn locally.

INVENTORY

ORE ZONE: LENS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Gold	151.6800	Grams per tonne

COMMENTS: Sample #5733 over 20 centimetres.
REFERENCE: Property File (Prospectus: Centaur Resources, 1988).

CAPSULE GEOLOGY

The Vig occurrence lies 750 metres west of the Glengarry contact skarn occurrence (see 092E 001).

At the Vig prospect, the multiphased Head Bay stock of the Eocene Catface Intrusions ranges in composition from diorite to

CAPSULE GEOLOGY

coarse gabbro. The mafic phases contain up to 25 per cent magnetite and are in contact with Upper Triassic Vancouver Group Quatsino Formation limestone. Skarn is present locally.

At the Road Zone, a shallow dipping northwest striking system of pyrite-quartz-chlorite-chalcopyrite lenses occurs in weakly sheared magnetite-rich gabbro. It has been exposed over a strike length of 38 metres.

Assay results gave values ranging from 2.33 grams per tonne gold to 151.7 grams per tonne gold, the latter (sample #5733) over 20 centimetres (Property File - Centaur Resources, 1988).

BIBLIOGRAPHY

EMPR ASS RPT 9130, 10157, 12058, 13026, *16355, 17521
EMPR EXPL 1980-163; 1981-221; 1983-190; 1984-147; 1987-C130
EMPR OF *1988-28
EMPR PF (*Centaur Resources: Prospectus, 1988)
GSC ECON GEOL 3-1, p. 231
GSC MAP 1027A; 1537A
GSC MEM 272
GSC OF 463
GCC P 72-44; 80-16
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F., (1964): The Contact Metasomatic Magnetite Deposits of Southwestern British Columbia, Ph.D. Thesis, University of British Columbia
Falconbridge File

DATE CODED: 1988/11/16 CODED BY: WV FIELD CHECK: N
DATE REVISED: 1988/11/16 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 064**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAT**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W
BC MAP:
LATITUDE: 49 30 39 N
LONGITUDE: 126 22 25 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Satchie River, 400 metres from the mouth on Hesquiat Lake.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5487560
EASTING: 690118

COMMODITIES: Magnetite Iron

MINERALS
SIGNIFICANT: Magnetite
COMMENTS: Magnetite assumed iron mineral.
ALTERATION: Wollastonite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Skarn Epigenetic Industrial Min.
COMMENTS: No information on deposit given.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	
ISOTOPIC AGE: 290 Ma			
DATING METHOD: Fossil			
MATERIAL DATED: Foraminifera			
Jurassic			Island Plutonic Suite
ISOTOPIC AGE: 174 +/- 10 Ma			
DATING METHOD: Rubidium/Strontium			
MATERIAL DATED: Biotite			

LITHOLOGY: Limestone
Greenstone
Granodiorite

HOSTROCK COMMENTS: Age date from Alert Bay Map area (Geological Survey of Canada, Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite

CAPSULE GEOLOGY

The occurrence is indicated in Assessment Report 462 as an iron occurrence, lying approximately 1 kilometre west of Agnes (092E 013). It may coincide with the indicated "pits in manganese-bearing, wollastinite skarn" on the east boundary of Hesquiat 21 claim (Assessment Report 464, Figure 4). Here a small area of skarn along a Permian-Pennsylvanian Sicker Group limestone-greenstone contact lies near granodiorite of the Jurassic Island Plutonic Suite.

BIBLIOGRAPHY

EMPR AR 1962-131
EMPR ASS RPT *462, *464, 2179
GSC MAP 35-17; 1537A
GSC OF 463
GSC P 80-16
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationship of plutonic rocks to Mineral deposits, Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F. (1964): The Contact Metasomatic Magnetite Deposits of Southwestern B.C., Ph.D. Thesis, University of British Columbia

DATE CODED: 1988/10/21 CODED BY: WV FIELD CHECK: N
DATE REVISED: 1989/01/17 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 065**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAT EAST**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 29 29 N
LONGITUDE: 126 21 05 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: 600 metres south of the second south fork of the Satchie River.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5485455
EASTING: 691803

COMMODITIES: Magnetite Iron

MINERALS
SIGNIFICANT: Magnetite
COMMENTS: No information on deposit given. Magnetite is assumed iron mineral.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Industrial Min.
COMMENTS: Possibly skarn mineralization.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	
ISOTOPIC AGE:	290 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Foraminifera		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		

LITHOLOGY: Meta Sediment/Sedimentary
Meta Volcanic Rock
Granodiorite

HOSTROCK COMMENTS: Igneous age date from Alert Bay Map area. Sicker foraminifera from McGee Creek area (from Geological Survey of Canada, Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The occurrence is indicated in Assessment Report 462 as an iron occurrence. No details are available. Geological Survey of Canada, Map 1537A indicates the occurrence lies at the faulted contact between granodiorite of the Jurassic Island Plutonic Suite and Pennsylvanian t Permian Sicker Group metasediments and metavolcanics. The Agnes magnetite occurrence (092E 013) lies 2.7 kilometres to the northwest.

BIBLIOGRAPHY

EMPR AR 1962-131
EMPR ASS RPT *462
GSC MAP *1537A
GSC OF 463
GSC P 80-16
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationship of plutonic rocks to Mineral deposits, Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F. (1964): The Contact Metasomatic Magnetite Deposits of Southwestern B.C., Ph.D. Thesis, University of British Columbia

DATE CODED: 1988/10/21 CODED BY: WV FIELD CHECK: N
DATE REVISED: 1989/01/17 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092E 066**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAVEN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E10W
BC MAP:
LATITUDE: 49 43 20 N
LONGITUDE: 126 52 30 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for centre of Raven 1-14 claim group on Nootka Island.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5509914
EASTING: 653162

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Arsenopyrite
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Volcanogenic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	

LITHOLOGY: Volcanic Rock
Sediment/Sedimentary Rock

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 2001
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.5000	Grams per tonne

REFERENCE: Press Release, Cream Silver Ltd., August 13, 2001.

CAPSULE GEOLOGY

The Raven property encompasses 6,625 hectares and overlies a recently discovered belt of altered, Pennsylvanian to Permian Sicker group volcanic and sedimentary rocks located on Nootka Island. Silica-rich float containing massive and banded sulphides with as much as 0.5 per cent copper was discovered during a prospecting program completed in February, 2000. Regional stream sediment geochemistry shows highly anomalous gold and copper values over the area covered by the Raven property.

Cream Minerals Ltd. announced an option agreement on June 21, 2000 with Raven discoverers Michael Moore, Dr. Paul Metcalfe and Seamus Young. Cream followed up by exploring this new discovery with a Dighem airborne geophysical survey and was able to identify a series of strong magnetic anomalies.

In 2001, prospecting occurred at the headwaters of two creeks which drain a weak conductor and associated magnetic anomaly identified by the airborne geophysical survey. The geophysical anomalies are parallel to stratigraphy.

An area of arsenopyrite mineralization is exposed in subcrop at the source of one of the creeks. The mineralization contains values of gold as high as 0.5 gram per tonne and lies 1.5 kilometres along strike from an arsenic soil anomaly identified by earlier sampling (Press Release, Cream Silver Ltd., August 13, 2001). Massive sulphide mineralization was discovered as float at the source of the second creek, a further 500 metres along the strike of regional stratigraphy.

Fieldwork has confirmed the presence of sulphide mineralization over a strike length of two kilometres, associated with an airborne geophysical conductor and with stratigraphy. This mineralization is anomalous in gold. The anomaly is open in both directions along

CAPSULE GEOLOGY

strike. Stream sediment samples, taken from creeks draining a further seven kilometres of projected strike, are all anomalous in arsenic and some are anomalous in gold.

BIBLIOGRAPHY

EMPR ASS RPT 26460
GSC MAP 53-17; 1537A
GSC OF 463
GSC P 72-44; 80-16
PR REL Cream Silver Ltd., *August 13, 2001
WWW http://www.langmining.com/cream/main.htm;
http://www.infomine.com/index/properties/RAVEN_-_CREAM.html

DATE CODED: 2001/09/04 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 2001/09/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092E 067**

NATIONAL MINERAL INVENTORY:

NAME(S): **STEWARDSON**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 26 29 N
LONGITUDE: 126 16 45 W
ELEVATION: 1 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at sea level on Stewardson Inlet, 500 metres west of Driver Point. Location from Assessment Report 462, page 11.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5480084
EASTING: 697233

COMMODITIES: Magnetite Iron

MINERALS
SIGNIFICANT: Magnetite
ASSOCIATED: Amphibole Plagioclase
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound
CLASSIFICATION: Epigenetic Igneous-contact Replacement Industrial Min.
SHAPE: Tabular
DIMENSION:
STRIKE/DIP: 045/
TREND/PLUNGE:
COMMENTS: A 200 metre wide amphibolite unit strikes southwest.

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite
ISOTOPIC AGE: 174 +/- 10 Ma			
DATING METHOD: Rubidium/Strontium			
MATERIAL DATED: Biotite			
Paleozoic-Mesozoic			Westcoast Complex
ISOTOPIC AGE: 245 Ma			
DATING METHOD: Zircon			
MATERIAL DATED: Biotite gneiss			

LITHOLOGY: Amphibolite
Granite

HOSTROCK COMMENTS: West Coast Complex biotite gneiss from Tofino area. Island Plutonic Suite age date from Alert Bay Map area (GSC P 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1962
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Iron	10.9200	Per cent

COMMENTS: Selected sample.
REFERENCE: Assessment Report 462, page 11.

CAPSULE GEOLOGY

The Stewardson Inlet area is underlain by a southwest striking band of Paleozoic to Mesozoic West Coast Complex amphibolite. The amphibolite unit is approximately 200 metres wide and is in contact with granitic rocks of the Jurassic Island Plutonic Suite. It is dark green to black in colour and consists of amphibole, plagiogioclase and magnetite. A selected sample assayed 10.92 per cent iron (Assessment Report 462).

Similar magnetite mineralization occurs about 500 meters to the southeast within the banded amphibolite unit. Selected samples assayed between 9.91 and 14.33 per cent iron (Assessment Report 462).

BIBLIOGRAPHY

EMPR AR 1962-131
EMPR ASS RPT *462

BIBLIOGRAPHY

GSC MAP 1537A
GSC OF 463
GSC P 71-36; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F. (1964): The Contact Metosomatic Magnetite Deposits of Southwestern British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1988/10/27	CODED BY: WV	FIELD CHECK: N
DATE REVISED: 1989/05/27	REVISED BY: LLD	FIELD CHECK: N

MINFILE NUMBER: **092E 068**

NATIONAL MINERAL INVENTORY:

NAME(S): **STEWARDSON INLET**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E08W
BC MAP:
LATITUDE: 49 25 24 N
LONGITUDE: 126 18 05 W
ELEVATION: 1 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at sea level on Stewardson Inlet 1.7 kilometres northeast of inlet head. Location from Assessment Report 462, page 11.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5478019
EASTING: 695694

COMMODITIES: Magnetite Iron

MINERALS
SIGNIFICANT: Magnetite
ASSOCIATED: Amphibole Plagioclase
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound
CLASSIFICATION: Epigenetic Igneous-contact Replacement Industrial Min.
DIMENSION: STRIKE/DIP: 045/ TREND/PLUNGE:
COMMENTS: Amphibolite unit is 200 metres wide and strikes southwest.

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite
ISOTOPIC AGE: 174 +/- 10 Ma			
DATING METHOD: Rubidium/Strontium			
MATERIAL DATED: Biotite			
Paleozoic-Mesozoic			Westcoast Complex
ISOTOPIC AGE: 245 Ma			
DATING METHOD: Zircon			
MATERIAL DATED: Biotite gneiss			

LITHOLOGY: Amphibolite
Granodiorite

HOSTROCK COMMENTS: West Coast Complex biotite gneiss from Tofino area. Island Plutonic age date material from Alert Bay map area (GSC P 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1962
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Iron	14.6300	Per cent

COMMENTS: Selected sample.
REFERENCE: Assessment Report 462, page 11.

CAPSULE GEOLOGY

The Stewardson Inlet area is underlain by granodioritic rocks of the Jurassic Island Plutonic Suite (Geological Survey of Canada Map 1537A). Locally, a thin band of amphibolite striking southwest is in contact with the intrusive rocks. The unit is approximately 200 metres wide and is part of the Paleozoic to Mesozoic West Coast Complex. The banded amphibolite is dark green to black in colour and consists of amphibole, plagioclase and magnetite. A selected sample assayed 14.63 per cent iron (Assessment Report 462).

Similar magnetite mineralization occurs about 3.0 kilometers to the northeast (refer to Stewardson 092E 067).

BIBLIOGRAPHY

EMPR AR 1962-131
EMPR ASS RPT *462
GSC MAP 1537A

BIBLIOGRAPHY

GSC OF 463
GSC P 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks to Mineral Deposits, Ph.D. Thesis, Carleton Univrsity, Ottawa
Sangster, D.F. (1964): The Contact Metasomatic Magnetite Deposits of Southwestern British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED:	1988/10/27	CODED BY:	WV	FIELD CHECK:	N
DATE REVISED:	1989/05/27	REVISED BY:	LLD	FIELD CHECK:	N

MINFILE NUMBER: **092E 069**

NATIONAL MINERAL INVENTORY:

NAME(S): **PACO 40**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E09W
BC MAP:
LATITUDE: 49 31 05 N
LONGITUDE: 126 23 30 W
ELEVATION: 305 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location of central of 3 showings reported in Assessment Report 462, on west side of Hesquiat Lake.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5488318
EASTING: 688783

COMMODITIES: Magnetite Iron

MINERALS
SIGNIFICANT: Magnetite
COMMENTS: Magnetite is assumed iron mineral.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Epigenetic Igneous-contact Replacement Industrial Min.
SHAPE: Tabular
DIMENSION: STRIKE/DIP: 315/50E TREND/PLUNGE:
COMMENTS: Attitude of local stratigraphy is northwest striking, dipping moderately east.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Undefined Formation	
ISOTOPIC AGE:	290 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Foraminifera		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	174 +/- 10 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Biotite		

LITHOLOGY: Sediment/Sedimentary
Granite

HOSTROCK COMMENTS: Age dates on foraminifera from McGee Creek area, from Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Hornfels

CAPSULE GEOLOGY

Three iron occurrences are reported in Assessment Report 462, at the contact between granitic rocks of the Jurassic Island Plutonic Suite and unspecified Pennsylvanian to Permian Sicker Group sediments.

The occurrences are located on or near an unnamed creek on the west side of Hesquiat Lake, apparently on strike with each other and between the shore of the lake and the ridge top to the northwest.

The occurrences lie 500 metres to the north of Violet and Paco 11-12 occurrences (092E 029, 092E 030).

BIBLIOGRAPHY

EMPR ASS RPT *462, 464
GSC MAP 53-17; 1537A
GSC OF 463
GSC P 72-44; 80-16
CIM TRANS VOL 72-116
Carson, D.J.T. (1968): Metallogenic study of Vancouver Island with emphasis on the relationship of plutonic rocks to Mineral deposits, Ph.D. Thesis, Carleton University, Ottawa
Sangster, D.F. (1964): The Contact Metasomatic Magnetite Deposits of Southwestern B.C., Ph.D. Thesis, University of British Columbia

DATE CODED: 1988/10/18 CODED BY: WV FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092E 070** NATIONAL MINERAL INVENTORY:

NAME(S): **TAHSIS INLET**, GORE & MCGREGOR, MATRIX MARBLE, TLUPANA BLUE, VANCOUVER ISLAND WHITE, ISLAND WHITE, WEST COAST WHITE

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E15E
BC MAP:
LATITUDE: 49 56 59 N
LONGITUDE: 126 40 36 W
ELEVATION: 762 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location centered on surface trace of limestone band northwest of Tahsis Inlet (Geological Survey of Canada Map 1537A).

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5535628
EASTING: 666672

COMMODITIES: Marble Limestone Building Stone Dimension Stone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite Tremolite Actinolite
ALTERATION: Tremolite Actinolite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Upper Triassic
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Various fossils

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R04 Dimension stone - marble R09 Limestone
COMMENTS: Limestone strikes north-northwest, dips west.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil
MATERIAL DATED: Various fossils

LITHOLOGY: Limestone
Basaltic Flow
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Amphibolite
COMMENTS: Formed on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

A band of limestone of the Upper Triassic Quatsino Formation, up to 1.5 kilometres wide, extends north-northwest from the head of Tahsis Inlet for 10 kilometres. The limestone dips west, with underlying basaltic flows of the Upper Triassic Karmutsen Formation outcropping to the east, and overlying argillite of the Upper Triassic Parsons Bay Formation outcropping to the west.

The limestone was examined in detail at a certain point within the band for marble by Gore and McGregor around 1916. A 23-metre deep borehole encountered dark grey marble with white bands and dark greyish green, fine grained basalt. Outcrops in the vicinity displayed white to grey, fine to coarse grained limestone (marble) that became dolomitic in places. One sample of limestone contained large quantities of whitish, feathery actinolite or tremolite.

Matrix Marble Ltd. is preparing to reopen this quarry. See also Hisnet Inlet (092E 020).

BIBLIOGRAPHY

EMPR OF 1992-18, p. 139
GSC MAP 1027A; *1537A
GSC MEM 272, p. 17
GSC OF 463, Sheet 2
GSC P 80-16, pp. 11,12
CANMET RPT *452, Vol.5, pp. 163,171; 811, Part 5, p. 139
WWW http://www.matrixmarble.com
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of

BIBLIOGRAPHY

British Columbia, Vol. 1: Vancouver Island, p. 185
Falconbridge File

DATE CODED: 1988/10/03 CODED BY: WV FIELD CHECK: N
DATE REVISED: 1989/07/18 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092E 071**

NATIONAL MINERAL INVENTORY:

NAME(S): **K**, CHACHELOT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E14E
BC MAP:
LATITUDE: 49 57 59 N
LONGITUDE: 127 06 36 W
ELEVATION: 150 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location of mineralization, from Property File, is 5.0 kilometres northwest of the head of Port Eliza Inlet.

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5536606
EASTING: 635541

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
ISOTOPIC AGE:	200 Ma		
DATING METHOD:	Fossil		
MATERIAL DATED:	Mollusks		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	148 +/- 8 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Phlogopite		

LITHOLOGY: Granodiorite
Volcanic Rock

HOSTROCK COMMENTS: Mollusks from Quatsino Sound; phlogopite from Zeballos Intrusion (Geological Survey of Canada Paper 74-8, 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The K occurrence consists of disseminated chalcopyrite and pyrite in unaltered medium-grained granodiorite. Large rosettes of molybdenite occur at two locations in swarms of tight quartz vein fractures.

The granodiorite is believed to be a small stock of the Jurassic Island Plutonic Suite, intruding Lower Jurassic Bonanza Group volcanic rocks.

BIBLIOGRAPHY

EMPR PF (*Leighton, D.G., (1974): Report on the Kwois and Chachelot Prospect, for British Newfoundland Exploration Ltd. by Stokes Exploration Management Co. Ltd.)
GSC MAP 4-1974; 1537A
GSC P 74-8; 80-16

DATE CODED: 1989/05/17 CODED BY: WV FIELD CHECK: N
DATE REVISED: 1989/05/16 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092E 072**

NATIONAL MINERAL INVENTORY:

NAME(S): **DRAGON**, FALLS, NORTH,
NORGATE CREEK

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092E16W
BC MAP:
LATITUDE: 49 53 13 N
LONGITUDE: 126 18 02 W
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Dragon 1-4 claims, just north of the Muchalat River about 4 kilometres west of Muchalat Lake, 24 kilometres north-northwest from Gold River (Claim map 92E16W).

MINING DIVISION: Alberni
UTM ZONE: 09 (NAD 83)
NORTHING: 5529555
EASTING: 693902

COMMODITIES: Zinc, Lead, Copper, Gold, Silver

MINERALS
SIGNIFICANT: Galena, Sphalerite
ASSOCIATED: Pyrite
ALTERATION: Silica, Pyrite
ALTERATION TYPE: Silicific'n, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated, Massive
CLASSIFICATION: Volcanogenic, Exhalative, Syngenetic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Felsic Tuff
Felsic Chert

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

CAPSULE GEOLOGY

The Dragon property is underlain by north trending Pennsylvanian-Devonian Sicker Group stratigraphy consisting of altered felsic fragmentals interbedded with volcaniclastic sediments. Silicified and pyritized quartz-eye porphyry intrudes the sequence at lower elevations. The Sicker Group is unconformably overlain by Upper Triassic Karmutsen Formation basalts. Jurassic Island Intrusions intrude the assemblage.

Gold-bearing disseminated and massive lenses of galena-sphalerite are exposed over widths of 3 to 20 metres in silicified and pyritic felsic tuff/chert.

In 1995, with support from the Explore B.C. Program, Westmin Resources Ltd. completed geological and rock, silt and soil geochemical surveys, and 722 metres of diamond drilling in three holes. This work helped define a mineralized horizon in Sicker Group stratigraphy, two massive sulphide lenses and numerous showings along the contacts between mafic tuffs and flows, and felsic tuffs and flows. Associated alteration includes pyrite and sericite, and sodium and calcium depletion or local enrichment (Explore B.C. Program 95/96 - M97).

The North zone contains grades of up to 11.2 per cent zinc, 0.18 per cent lead and 4.3 grams per tonne gold. The Falls zone contains grades up to 3.9 per cent zinc and 2.3 grams per tonne gold. The Norgate Creek zone lies 2.5 kilometres to the south (Westmin Annual Report 1995).

In 1996, Westmin continued exploration on the Dragon, including geochemical and geophysical surveys and diamond drilling.

BIBLIOGRAPHY

EMPR ASS RPT *22962
EMPR Explore B.C. Program 95/96 - M97
EMPR INF CIRC 1993-13, p. 18; 1994-1, p. 19; 1994-19, p. 22; 1995-1,

BIBLIOGRAPHY

p. 21; 1995-9, p. 24; 1996-1, p. 24; 1997-1, p. 29
EMPR OF 1994-1; 1999-2
GSC MAP 1537A
GSC OF 463
Westmin Resources Limited 1995 Annual Report

DATE CODED: 1993/12/02 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1996/11/08 REVISED BY: VAP FIELD CHECK: N

MINFILE NUMBER: **092F 001** NATIONAL MINERAL INVENTORY: 092F3 Fe1

NAME(S): **BRYNNOR**, KENNEDY LAKE, MAGGIE LAKE, CC

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 02 59 N NORTHING: 5435839
LONGITUDE: 125 26 05 W EASTING: 322103
ELEVATION: 70 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of open pit.

COMMODITIES: Iron Magnetite Aggregate Limestone Building Stone

MINERALS
SIGNIFICANT: Magnetite
ASSOCIATED: Pyrite Pyrrhotite Calcite
COMMENTS: Trace amounts.
ALTERATION: Garnet Epidote Serpentine Chlorite Sericite
ALTERATION TYPE: Skarn Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Skarn Industrial Min.
TYPE: K03 Fe skarn T01 Tailings
SHAPE: Irregular
DIMENSION: 500 x 200 x 50 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Approximate area of magnetite zones.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Unnamed/Unknown Formation	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basic Tuff
Limestone
Andesite
Quartz Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: Pre-mineralization GRADE: Greenschist

CAPSULE GEOLOGY

The Brynnor deposit occurs within a sequence of limestone and tuff of the Upper Triassic Quatsino Formation (Vancouver Group). These are cut off to the south by a large quartz diorite stock of the Early to Middle Jurassic Island Plutonic Suite. The sequence has been intruded by Tertiary syenite porphyry and diorite dykes, and is in fault contact with andesite of the Lower Jurassic Bonanza Group.

The tuffs show partial alteration to sericite, epidote, chlorite, and serpentine in thin-section while the limestones are commonly only recrystallized. The skarn mineralization is predominantly garnet-epidote alteration of the tuffs which envelopes the pods of magnetite for thicknesses up to about ten metres. Skarn minerals are not disseminated within the magnetite or the surrounding limestone and tuff beyond the alteration envelope. However, many dioritic dykes are partially or completely altered to skarn.

Structurally, the deposit has been folded and faulted. Fault offsets are generally small and of short areal extent. The layers of limestone and tuff have been folded into a broad anticline which plunges at a low angle to the southwest. Folding and most faulting precedes the mineralizing events.

The magnetite is quite pure, containing only trace amounts of calcite, pyrite, and pyrrhotite. It appears to be the product of late stage mineralization as evidenced by the purity and cross-cutting relationships. Two large mineralized pods lie along the contact between the limestone and tuff. Small, isolated pods are found scattered within the tuffs, but are of no economic consequence. Magnetite and skarn are preferentially located where dykes cross the

CAPSULE GEOLOGY

limestone-tuff contact but no magnetite is found within the dykes.

The main magnetite body has been mined by open pit. The other body lies east-southeast of the old pit and has been outlined by diamond drilling and underground development. A fault separating the two bodies strikes north-northeast and dips 70 degrees west. In the eastern body, the massive magnetite appears to be bounded by fault slips and gouge zones. This ore body is 60 metres deeper than the open pit body.

From 1962 to 1968, the open pit produced concentrate containing an average of 63.8 per cent iron. A total of 3,011,306,260 kilograms of iron concentrates was shipped from 4,480,940 tonnes mined. Reserves for the east ore body are undocumented, however, they likely contain a grade comparable (56 per cent) to the deposit mined at the open pit.

J.J.M. Construction Limited (part of the J.J.M. Group) extracted approximately 245,000 tonnes of limestone from the dumps and shipped/trucked it to Washington state, (near Aberdeen) for a breakwater.

BIBLIOGRAPHY

EM EXPL 1998-50
EMPR AR 1902-210; 1960-108-110; *1961-104-110; *1962-A46,A51,111, 122-124; *1963-A46,A51,117-121; 1964-A52,A57,167-168; *1965-A52, A57,236-238; 1966-A48,A49,75; 1967-A50,A52,75-76; 1968-A50,A52, 103; 1969-A53; 1970-A52
EMPR ASS RPT 13612
EMPR BULL *55, pp. 52-60; 101, pp. 57,155, Appendix 6
EMPR GEM 1969-426; 1970-479
EMPR INDEX 4-120
EMPR OF *1988-28
EMPR PF (*Various Maps & Plans; Menzies, M.M. and Sherg, C.C.: Report)
EMR MP CORPFILE (Noranda Mines Limited; Brynnor Mines Limited)
GSC BULL *172, p. 68-70
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, p. 38
CANMET RPT 47, p.16
W MINER Jun. 1962, *Vol. 35, pp. 36-48
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1998/12/04 REVISED BY: KDH FIELD CHECK: N

MINFILE NUMBER: **092F 002**

NATIONAL MINERAL INVENTORY: 092F3 Fe1

NAME(S): **NO. 2**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 02 59 N
LONGITUDE: 125 29 05 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing #2, figure 2, Bulletin 55.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5435957
EASTING: 318450

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Replacement Skarn Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Unnamed/Unknown Formation	

LITHOLOGY: Limestone
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

An area of massive magnetite occurs near the contact of limestone of the Upper Triassic Quatsino Formation and andesite of the Lower Jurassic Bonanza Group.

BIBLIOGRAPHY

EMPR BULL *55, p. 60, Figure 2
GSC MAP 17-1968
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/25 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 003**

NATIONAL MINERAL INVENTORY: 092F3 Fe1

NAME(S): **NOR**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 03 34 N
LONGITUDE: 125 27 45 W
ELEVATION: 90 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing, aeromag map (Property File).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5436985
EASTING: 320109

COMMODITIES: Iron

MINERALS

SIGNIFICANT: Magnetite
ALTERATION: Pyroxene Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive
CLASSIFICATION: Replacement Skarn Industrial Min.
DIMENSION: 0010 x 0003 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Diorite
Limestone
Granodiorite
Andesite
Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Limestones of the Upper Triassic Quatsino Formation are underlain by andesites of the Triassic Karmutsen Formation, both of the Vancouver Group. These are intruded by granodiorite of the Early to Middle Jurassic Island Plutonic Suite.

On the limestone-granodiorite contact, a diorite border facies of the granodiorite is extensively altered to pyroxene and epidote. A 10 metre long by 3 metre wide lens of massive magnetite occurs in this skarn zone.

BIBLIOGRAPHY

EMPR AR 1962-122
EMPR BULL *55, p. 60, Fig. 2
EMPR PF (Aeromag Maps, 1961)
GSC MAP 17-1968
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/24 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 004**

NATIONAL MINERAL INVENTORY: 092F3 Fe1

NAME(S): **TONY**, CAP

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 04 04 N
LONGITUDE: 125 27 10 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing (Assessment Report 13612).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5437888
EASTING: 320849

COMMODITIES: Gold, Copper, Silver, Iron

MINERALS

SIGNIFICANT: Magnetite, Pyrrhotite, Arsenopyrite
ASSOCIATED: Garnet, Pyroxene
COMMENTS: Manganese minerals present.
ALTERATION: Garnet, Pyroxene
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Massive
CLASSIFICATION: Replacement, Skarn, Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite
Eocene			Tofino Intrusive Suite

LITHOLOGY: Limestone
Andesite Dike
Granodiorite
Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1986

COMMODITY	GRADE	
Silver	2.6000	Grams per tonne
Gold	3.6700	Grams per tonne
Copper	0.4700	Per cent
Iron	18.5400	Per cent

REFERENCE: Assessment Report 14704.

CAPSULE GEOLOGY

A 100 metre thick band of limestone of the Upper Triassic Quatsino Formation occurs within granodiorite of Early to Middle Jurassic Island Plutonic Suite. Altered andesite dykes of the Early to Middle Eocene Tofino Intrusive Suite (previously Catface Intrusions) intrude the contact area and form a zone containing garnet and pyroxene mineralization.

An interbanded lense of magnetite, pyrrhotite and arseno-pyrite occurs at the limestone-andesite contact. A 0.366 metre chip sample assayed 3.8 grams per tonne gold, 0.47 per cent copper, 2.6 grams per tonne silver and 18.54 per cent iron (Assessment Report 14704).

BIBLIOGRAPHY

EMPR ASS RPT *13612, *14704
EMPR BULL 55, p. 60, Fig. 2
EMPR EXPL 1986-169
EMPR PF (Aeromag Map, 1961, in 092F 003 - Nor)
GSC MAP 17-1968
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50

DATE CODED: 1985/07/24
DATE REVISED: 1988/03/24

CODED BY: GSB
REVISED BY: LDJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 005**

NATIONAL MINERAL INVENTORY: 092F3 Fe1

NAME(S): **MAGGIE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 03 23 N
LONGITUDE: 125 26 00 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: 1.2 kilometres 150 degrees east of old marble quarry, on deserted creek (Showing #5, figure 2, Bulletin 55).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5436577
EASTING: 322228

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Layered Massive Disseminated
CLASSIFICATION: Replacement Skarn Industrial Min.
SHAPE: Tabular
MODIFIER: Folded
DIMENSION: 0100 x 0001 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Band extends for 100 metres and is about 1.2 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

A band of massive magnetite about 1.2 metres wide occurs along a tuff-limestone contact for about 100 metres on the northwest limb of an anticline. The rock belongs to the Upper Triassic Quatsino Formation.

BIBLIOGRAPHY

EMPR BULL *55, p. 60, Fig. 2
GSC MAP 17-1968
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/25 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 006**

NATIONAL MINERAL INVENTORY: 092F3 Fe1

NAME(S): **H**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 03 34 N
LONGITUDE: 125 25 25 W
ELEVATION: 210 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: 1.2 kilometres south 30 degrees east of Old Marble Quarry on Deserted Creek (Showing #2, figure 2, Bulletin 55).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5436893
EASTING: 322949

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive
CLASSIFICATION: Replacement Skarn Industrial Min.
DIMENSION: 0005 x 0001 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The contact which contains lenses and pods of magnetite (up to 1.2 by 4.6 metres) trends north.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Quatsino	Island Plutonic Suite

LITHOLOGY: Limestone
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

A tongue of granodiorite of the Early to Middle Jurassic Island Plutonic Suite cuts limestone of the Upper Triassic Quatsino Formation Several lenses of magnetite replace granodiorite and limestone along the north trending contact. The largest lens is 1.2 by 4.6 metres and replaces granodiorite. A few small pods of magnetite occur in limestone about 200 metres east of the contact.

BIBLIOGRAPHY

EMPR AR 1962-122
EMPR BULL *55, p. 60, Fig. 2
GSC MAP 17-1968
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/28 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 007**

NATIONAL MINERAL INVENTORY: 092F3 Fe1

NAME(S): **ANDY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 03 19 N
LONGITUDE: 125 25 35 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: 1.2 kilometres south, 30 degrees east of Old Marble Quarry on Deserted Creek (Showing #6, figure 2, Bulletin 55).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5436437
EASTING: 322732

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Replacement Skarn Industrial Min.
DIMENSION: 0015 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: 30 centimetres wide and 15 metres long zone.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

About a 30 centimetre width of granodiorite (Early to Middle Jurassic Island Plutonic Suite) is replaced by magnetite for 15 metres along its contact with limestone of the Upper Triassic Quatsino Formation.

BIBLIOGRAPHY

EMPR BULL *55, p. 60, Fig. 2
GSC MAP 17-1968
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/28 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 008**

NATIONAL MINERAL INVENTORY:

NAME(S): **BERT**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 02 31 N
LONGITUDE: 125 26 35 W
ELEVATION: 130 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The showing is exposed in a tributary of Draw Creek, south of the Brynnor mine (092F 001). The zone is exposed from about 140 metres to below 100 metres elevation.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5434994
EASTING: 321466

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Arsenopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Shear
CLASSIFICATION: Hydrothermal Epigenetic
COMMENTS: Disseminated in a shear.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Porphyry
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Sparse disseminations of pyrite, pyrrhotite, chalcopyrite, and arsenopyrite are exposed in a creek bed that follows a zone of weak shearing. A grab sample of sulphide-rich material assayed: gold, nil; silver, nil.

Eastwood (Bulletin 55, p. 61) describes the showing as occurring in a complex of "Older Porphyry" and diorite. The "Older Porphyry" occurs locally as dykes, sheets and small stocks. It consists typically of phenocrysts of white plagioclase, 1 to 5 millimetres across, in a dense dark-brown to black groundmass. More recent geological descriptions of the area assign these rocks to the Paleozoic-Mesozoic Westcoast Complex.

BIBLIOGRAPHY

EMPR AR 1962-111-122
EMPR BULL 55
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/10/27 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 009**

NATIONAL MINERAL INVENTORY: 092F4 Cu5

NAME(S): **WHITE**, DOUGLAS, WALTON, NORMAN, CLEAR CREEK, FOREMOST, ALPHA, WINTER, STELLA MOLY, PAWNEE

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 14 51 N
LONGITUDE: 125 35 20 W
ELEVATION: 90 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Number Four adit, located 0.2 kilometres north of Tofino Creek, 1.5 kilometres north of the head of Dear Bay (Annual Report 1963, Figure 10).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5458195
EASTING: 311592

COMMODITIES: Copper, Gold, Silver, Cobalt, Nickel

MINERALS

SIGNIFICANT: Chalcopyrite, Magnetite
COMMENTS: Nickel, cobalt, gold and silver mineralogy not known.
ASSOCIATED: Quartz, Pyroxene, Epidote, Pyrite, Pyrrhotite, Bornite, Amphibole, Calcite
ALTERATION: Pyroxene, Epidote, Azurite, Malachite, Amphibole, Calcite
ALTERATION TYPE: Skarn, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Podiform, Vein
CLASSIFICATION: Skarn, Replacement, Hydrothermal
COMMENTS: Limestone strikes northwest, dips steeply northeast.

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zircon

LITHOLOGY: Limestone
Pyroxene Epidote Skarn
Greenstone
Andesite
Diorite
Feldspar Porphyry Dike

HOSTROCK COMMENTS: Age date from Tofino area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact, Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite, Granulite

INVENTORY

ORE ZONE: ADIT
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	20.5700	Grams per tonne
Gold	1.2700	Grams per tonne
Cobalt	0.0900	Per cent
Copper	5.8000	Per cent
Nickel	0.0900	Per cent

COMMENTS: Selected sample from Number Four Adit.
REFERENCE: Assessment Report 14807, page 19.

CAPSULE GEOLOGY

The Deer Bay area is underlain by the pre-Jurassic Westcoast Complex, an assemblage of greenstone, diorite, granite, granodiorite and basalt porphyry. Associated with the greenstone are lenses of

CAPSULE GEOLOGY

white to grey limestone, striking northwest and dipping steeply northeast. The greenstone has been intruded by coarse-grained, dark diorite sills.

Skarn alteration occurs in varying amounts in the greenstone, in the intrusive and at limestone contacts, where little or no limestone has been replaced. The skarn consists of epidote, pyroxene, amphibole and calcite, and occurs as massive lenses or as veins. Mineralization consists of chalcopyrite and magnetite, which occur locally with pyrite, pyrrhotite, bornite, malachite and azurite.

The White occurrence has been explored by four short adits located over about 120 metres:

---

(1) Adit Number One is 36 metres long and follows pyroxene-epidote skarn in andesite and diorite that has been cut by minor feldspar porphyry dykes. Only traces of sulphides are present, but a thin quartz vein at the face of the adit assayed 0.10 per cent nickel (sample 8503k, Assessment Report 14807).

(2) Adit Number Two, 5 metres long, is located 120 metres east northeast of adit Number One in skarn and diorite, and contains traces of sulphides.

(3) Adit Number Three is 10 metres long and lies 150 metres east-northeast of adit Number One and follows a diorite-andesite contact. Traces of sulphides are present.

(4) Adit Number Four is 3 metres long and lies 110 metres northeast of adit Number One. It exposes numerous patches, up to 3.0 metres wide, of massive chalcopyrite and pyrite with minor bornite, malachite and azurite in pyroxene-epidote skarn that is located at a diorite-andesite contact. A selected grab sample from adit Number Four mineralization assayed 5.8 per cent copper, 0.09 per cent cobalt, 0.09 per cent nickel, 1.27 grams per tonne gold and 20.57 grams per tonne silver (Assessment Report 14807, page 19).

-

BIBLIOGRAPHY

EMPR AR 1916-362; 1917-292; 1918-264; 1919-198; 1920-194,223; 1921-212; 1922-231; 1925-272; 1926-302; 1927-344; 1928-372; 1929-374; 1930-293; 1946-183; 1955-78; 1961-104; 1962-111; 1963-102, *111-116; 1966-74; 1967-75
EMPR ASS RPT 8106, 8138, *14807, 16220, 17284
EMPR BULL 55; 20 PART V
EMPR EXPL 1974-174; 1980-169; 1986-C171; 1987-C144
EMPR GEM 1969-217; 1972-265; 1973-230
EMPR OF *1988-28, pp. 61-62
EMPR PF (Geological Map, 1:300)
EMR MP CORPFILE (Taiga Mines Limited; Clear Creek Exploration Company Limited)
GSC MAP 17-1968; 1386A
GSC MEM 204-27
GSC OF 9, 61, 463
GSC P 66-1; 68-50, pp. 36, 38, 41; 72-44; 80-16
GSC SUM RPT 1920A
CJES Vol.24, No.10, 1987, pp. 2047-2064
GCNL #235, 1979; #49, 1988
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits; Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia; M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/28 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 010**

NATIONAL MINERAL INVENTORY:

NAME(S): **FOREMOST COPPER**, CLEAR CREEK, PAWNEE

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 14 44 N
LONGITUDE: 125 35 47 W
ELEVATION: 150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of showing number 3 on Figure 10, Minister of Mines Annual Report 1963, is 250 metres west of Tofino Creek, 1.5 kilometres north of Deer Bay.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5457998
EASTING: 311038

COMMODITIES: Magnetite, Iron, Copper

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite, Pyrrhotite
ALTERATION: Garnet, Pyroxene, Epidote, Amphibole, Calcite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Podiform, Disseminated
CLASSIFICATION: Skarn, Replacement, Industrial Min.
COMMENTS: Widest band of magnetite is 2.4 metres.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zircon

LITHOLOGY: Limestone
Skarn
Diorite
Greenstone
Granite
Granodiorite
Basalt Porphyry

HOSTROCK COMMENTS: Age date from Tofino area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact, Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite, Granulite
COMMENTS: Contact metamorphism is overprinted by regional metamorphism.

CAPSULE GEOLOGY

The Deer Bay area is underlain by the pre-Jurassic Westcoast Complex, an assemblage of greenstone, diorite, granite, granodiorite and basalt porphyry. Associated with the greenstone are northwest striking, steeply dipping lenses of white to grey limestone.

Skarn alteration occurs in varying amounts in the greenstone, in the intrusive and at limestone contacts. The skarn comprises garnet, epidote, pyroxene, amphibole and calcite.

At the Foremost Copper occurrence, a 1.8 metre wide band of magnetite dips 75 degrees southeast between a diorite footwall and a limestone hangingwall. Approximately 60 metres to the southwest another, 2.4 metre wide band of magnetite with chalcopyrite is present, dipping steeply below a band of limestone. A thick band of skarn in the limestone hangingwall contains chalcopyrite, and at the portal of an adit in the footwall, magnetite with minor chalcopyrite and pyrrhotite are present.

BIBLIOGRAPHY

EMPR AR *1963-115; 1967-75
EMPR ASS RPT 8106, 8138, 14807, 16220, 17284
EMPR BULL 55; 20 PART V
EMPR EXPL 1980-169; 1986-C171; 1987-C144
EMPR GEM 1969-217; 1972-265; 1973-230; 1974-174

BIBLIOGRAPHY

EMR MP CORPFILE (Taiga Mines Limited; Clear Creek Exploration Company Limited)
GSC MAP 17-1968; 1386A
GSC OF 9, 61, 463
GSC P 66-1; 68-50, pp. 36, 38, 41; 72-44; 80-16
GSC SUM RPT 1920A
CJES Vol.24, No.10, 1987, pp. 2047-2064
GCNL #235, 1979; 49, 1988
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the West Coast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/31 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 011**

NATIONAL MINERAL INVENTORY:

NAME(S): **TOFINO CREEK**, WINTER, PAWNEE, CLEAR CREEK, FOREMOST

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 14 28 N
LONGITUDE: 125 35 46 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of number 6 showing on Figure 10, Minister of Mines Annual Report 1963, is on Tofino Creek, 1 kilometre north of Deer Bay.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5457503
EASTING: 311042

COMMODITIES: Copper, Magnetite, Iron, Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite, Magnetite, Molybdenite
ALTERATION: Malachite, Garnet, Diopside, Pyroxene, Amphibole
ALTERATION TYPE: Skarn, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn, Replacement, Industrial Min.
SHAPE: Tabular

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zircon

LITHOLOGY: Limestone
Greenstone
Garnet Diopside Pyroxene Skarn
Diorite Dike
Diorite
Granodiorite
Granite
Basalt Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact, Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite, Granulite
COMMENTS: Contact metamorphism is overprinted by regional metamorphism.

CAPSULE GEOLOGY

The Deer Bay area is underlain by the pre-Jurassic Westcoast Complex, an assemblage of greenstone, limestone, diorite, granite, granodiorite and basalt porphyry.

At the Tofino Creek occurrence, greenstone along the footwall of a thin limestone band is skarn altered and contains chalcopyrite, malachite and magnetite. Approximately 120 metres to the north, gently west-dipping greenstone located at the hangingwall of the limestone, is partly altered to garnet-diopside-pyroxene-amphibole skarn and contains magnetite and chalcopyrite. Diorite (dyke?) in the greenstone is slightly altered and contains disseminated molybdenite. About 60 metres south of the first showing, minor disseminated molybdenite occurs in skarn-altered diorite and granodiorite.

BIBLIOGRAPHY

EMPR AR *1963-115; 1967-75
EMPR ASS RPT 8106, 8138, 14807, 16220, 17284
EMPR BULL 55; 20 PART V
EMPR EXPL 1980-169; 1986-C171; 1987-C144
EMPR GEM 1969-217; 1972-265; 1973-230; 1974-174
EMR MP CORPFILE (Taiga Mines Limited; Clear Creek Exploration Company Limited)

BIBLIOGRAPHY

GSC MAP 17-1968; 1386A
GSC OF 9, 61, 463
GSC P 66-1; 68-50, pp. 36, 38, 41; 72-44; 80-16
GSC SUM RPT 1920A
CJES Vol.24, No.10, 1987, pp. 2047-2064
GCNL #235 (1979); 49 (1988)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the West Coast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/31 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 012**

NATIONAL MINERAL INVENTORY:

NAME(S): **MACKTUSH**, HIGH SIERRA , COPPER,
MCMASTER, RED, BLUE,
HWMM, SIERRA , FRED,
MACTUSH, MAKTUSH, DAVE

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 07 24 N
LONGITUDE: 124 50 27 W
ELEVATION: 450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate location of mineralization (G.E. Ray 1982) is 2.0 kilometres west of Alberni Inlet, 1.5 kilometres north of Maktush Creek.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5442798
EASTING: 365693

COMMODITIES: Gold, Silver, Copper, Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Tetrahedrite
ASSOCIATED: Quartz, Pyrite
ALTERATION: Silica, Malachite
ALTERATION TYPE: Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated, Shear
CLASSIFICATION: Hydrothermal, Epigenetic, Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: Metres
STRIKE/DIP: 040/
TREND/PLUNGE:
COMMENTS: Veins strike 030 to 050 degrees.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
ISOTOPIC AGE: 230 Ma			
DATING METHOD: Fossil			
MATERIAL DATED: Ammonites			
Jurassic			Island Plutonic Suite
ISOTOPIC AGE: 167 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Granodiorite
Diorite
Quartz Diorite
Kaolin Granodiorite
Gouge
Basalt
Andesite
Porphyry Felsic Flow
Porphyry Felsic Dike

HOSTROCK COMMENTS: Ammonites from Texada Island; intrusive biotite from Kennedy River (Geological Survey of Canada Paper 68-50 and 72-44).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell, Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: MAKTUSH
REPORT ON: Y

CATEGORY: Measured
YEAR: 1988
QUANTITY: 137891 Tonnes

COMMODITY	GRADE	
Silver	78.5200	Grams per tonne
Gold	18.5200	Grams per tonne
Copper	0.7500	Per cent

REFERENCE: Northwest Prospector October/November 1988.

CAPSULE GEOLOGY

The Macktush occurrence is underlain by Upper Triassic Vancouver

CAPSULE GEOLOGY

Group, Karmutsen Formation volcanics which have been intruded by granodioritic rocks of the Early to Middle Jurassic Island Plutonic Suite. The volcanic rocks are comprised of dark green to massive, fine-grained basalt and andesite interbedded with, or intruded by, coarsely porphyritic felsic flows or dykes that strike 030 degrees and range up to 40 metres in thickness. The mafic volcanics contain disseminated pyrite and epidote veinlets. Calcite veinlets are common near faults. Locally, minor disseminated chalcopyrite is present. Areas with abundant sulphides appear lensy, are generally less than 0.6 metres wide and are of limited lateral extent.

The main intrusive body ranges in composition from granodiorite to quartz diorite and diorite. The only observed contact with the volcanics is along a 030 degree striking fault. Here the diorite contains disseminated pyrite and is epidote-altered. The fault is 0.3 metre wide and contains feldspathic gouge and an irregular, vuggy quartz vein that is up to 0.6 metres wide. No sulphides were observed in this vein.

The intrusive body is cut by numerous joints and fractures which are less than 0.6 metre wide and contain fault gouge and kaolinized granodiorite. Many of the larger faults in the intrusion contain barren calcite veins and occasional quartz veins. At least four of these quartz veins occur over an area of about 150 by 200 metres. The veins strike 030 to 080 degrees and range up to 0.8 metre in width.

The only vein sampled is exposed for 0.7 metre in a shallow open cut. The diorite host rock is intensely silicified over a 1.0 metre wide alteration envelope which encompasses the mineralized vein. The vein material consists of quartz, pyrite, chalcopyrite, rare bornite and malachite. A sample assayed 18.86 grams per tonne gold, 89.15 grams per tonne silver and 1.16 per cent copper, with anomalous values in tin, molybdenite and tungsten (Ray, 1982).

The occurrence contains measured reserves of 137,891 tonnes grading 18.52 grams per tonne gold, 78.52 grams per tonne silver and 0.75 per cent copper (Northwest Prospector, October/November 1988)

Copper-molybdenum mineralization in intrusive rock is reported along the shore of Alberni Inlet, 1.5 kilometres northeast of the veins. No details are available.

In 1998, SYMC Resources Ltd. worked on the Fred and Dave veins. The veins are easterly to northeasterly trending, steeply dipping zones of crudely banded, vuggy quartz in shears that cut discordantly across a contact between Karmutsen volcanic rock and an Island intrusion. Both contain a minor amount of fine pyrite, pyrrhotite, chalcopyrite and traces of bornite and tetrahedrite. They appear to be laterally persistent and relatively uniform in grade. The Fred vein has a minimum length of 600 metres and is reported to have an average grade of 13.7 grams per tonne gold, 60.0 grams per tonne silver and 0.9 per cent copper over a minimum surface width of 1.5 metres. The Dave vein is similar. It has been traced for 365 metres and is reported to have an estimated, grade of 12.0 grams per tonne gold, 47.0 grams per tonne silver and 0.6 per cent copper over an average surface width of 1.5 metres. Both of the veins are open along strike and relatively untested at depth. (Exploration in BC 1998, page 53.)

BIBLIOGRAPHY

EM EXPL 1998-53; 1999-25-32; 2001-23-31
EMPR AR 1944-26; 1962-27
EMPR ASS RPT 21512
EMPR PF (*Ray, G.E. (1982): A Report Concerning a Visit to the McMaster Claims, Port Alberni, May 28-29, 1982)
GSC MAP 27-1963; 49-1963; 17-1968; 1386A
GSC MEM 13, 204
GSC OF 9, 61, *463; 1272
GSC P 66-1; 68-50; 72-44; 79-30
GSC SUM RPT 1922A
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
EMPR OF 1998-10

DATE CODED: 1989/08/11 CODED BY: WV FIELD CHECK: N
DATE REVISED: 1989/08/11 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 013**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOWGLI 6**, MAIN, EMPIRE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 00 50 N
LONGITUDE: 125 29 45 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located south of the Kennedy Lake logging road.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5432001
EASTING: 317507

COMMODITIES: Gold Silver Copper Zinc Lead

MINERALS

SIGNIFICANT: Arsenopyrite Pyrite Chalcopyrite Sphalerite Galena
ASSOCIATED: Quartz
ALTERATION: Sericite
ALTERATION TYPE: Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Igneous-contact
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Tertiary Eocene	Undefined Group	Unnamed/Unknown Formation	Tofino Intrusive Suite

LITHOLOGY: Quartz Feldspar Porphyry
Hornfels

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1980

COMMODITY	GRADE	
Silver	25.0000	Grams per tonne
Gold	4.7500	Grams per tonne

REFERENCE: Assessment Report 9646.

CAPSULE GEOLOGY

An assemblage of dioritic to quartz dioritic rocks of the Paleozoic and/or Mesozoic Westcoast Complex comprise the oldest rocks in the area. Volcanic and sedimentary rocks of the Upper Triassic Vancouver Group and volcanic rocks of the Lower Jurassic Bonanza Group also occur in the area. The youngest rocks are Tertiary volcanics and coeval quartz diorite to quartz monzonite of the Early to Middle Eocene Tofino Intrusive Suite (previously Catface Intrusions, Personal Communication - N. Massey, May 1990). Quartz diorite and granodiorite of the Early to Middle Jurassic Island Intrusions have also disrupted area strata.

Arsenopyrite, pyrite, chalcopyrite, sphalerite and galena are found in a one metre wide southwest trending zone at the contact of Tertiary quartz feldspar porphyry and hornfelsed Tertiary volcanic rocks. Abundant sericite gouge, minor brecciation and irregularly shaped vuggy quartz pods accompany the sulphides.

A grab sample of arsenopyrite assayed 4.75 grams per tonne gold and 25 grams per tonne silver. A channel sample across the one metre wide zone contained 1.02 grams per tonne gold and 60.9 grams per tonne silver (Assessment Report 9646). Sulphide mineralization is also reported to occur 300 metres to the north and 400 metres to the east of the "Main" showing with samples of the eastern showing assaying high in gold and silver.

BIBLIOGRAPHY

EMPR AR 1962-111-122
EMPR ASS RPT *9646, 15570, *15643
EMPR BULL 55
EMPR EXPL 1981-81; 1986-C139,C140
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Prospectus: Aintree Resources Ltd., July 13, 1987 (located in Pym 2 file, 092F 020))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
PERS COMM (N. Massey, May 1990)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/10/31 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 014**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOWGLI 4**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 04 54 N
LONGITUDE: 125 27 10 W
ELEVATION: 260 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Reported to be in granodiorite on the Mowgli 4 claim (Assessment Report 9646). Exact location not given.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5439432
EASTING: 320899

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Tofino Intrusive Suite

LITHOLOGY: Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	7.0000	Grams per tonne

REFERENCE: Assessment Report 9646.

CAPSULE GEOLOGY

The area is underlain by Karmutsen Formation basalts and Quatsino Formation limestones both of the Upper Triassic Vancouver Group. These rocks are intruded by small quartz diorite to leucoquartz monzonite stocks of the Early to Middle Eocene Tofino Intrusive Suite, and by mafic to intermediate Tertiary dykes.

A narrow rusty fracture in granodiorite contains pyrite and a trace of malachite. A sample of this material assayed 7 grams per tonne gold (Assessment Report 9646). Small fractures and shears in the area were reported to assay anomalous in gold and/or base metals.

BIBLIOGRAPHY

EMPR AR 1962-111-122
EMPR ASS RPT *9646
EMPR BULL 55
EMPR EXPL 1981-81
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/11/02
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 015**

NATIONAL MINERAL INVENTORY: 092F4 Cu2

NAME(S): **HETTY GREEN (L.1105)**, BOUNCE, ROTSCHILDS, LIDA, VELVET, CANYON, CLEAR CREEK, WINTER, FOREMOST COPPER, DOUGLAS, WHITE, COPPER KING, FOREMOST, PAWNEE 2-3, CLARA

STATUS: Past Producer Underground
MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 14 38 N
NORTHING: 5457804
LONGITUDE: 125 35 34 W
EASTING: 311295
ELEVATION: 650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of 120 level portal is 10 metres east of Tofino Creek, 1.0 kilometres north of the head of Deer Bay (Annual Report 1963, Figure 10).

COMMODITIES: Copper, Magnetite, Iron, Molybdenum, Tungsten, Silver, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Magnetite, Molybdenite, Powellite, Pyrite, Pyrrhotite
COMMENTS: Silver and gold mineralogy not known.
ALTERATION: Garnet, Epidote, Pyroxene, Amphibole, Calcite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Massive, Disseminated
CLASSIFICATION: Skarn, Replacement, Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zircon

LITHOLOGY: Limestone, Skarn, Diorite, Greenstone, Granite, Granodiorite, Basalt Porphyry, Diorite Sill

HOSTROCK COMMENTS: Age date from Tofino area (Geological Survey of Canada Paper 80-16).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Amphibolite, Granulite
COMMENTS: Regional metamorphism overprints contact metamorphism.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Molybdenum	0.5110	Per cent

COMMENTS: Sample taken over 20.0 metres.
REFERENCE: Assessment Report 8138, page 4.

CAPSULE GEOLOGY

The Deer Bay area is underlain by the pre-Jurassic Westcoast Complex, an assemblage of greenstone, quartz diorite, granodiorite and basalt porphyry. Associated with the greenstone are lenses of white to grey limestone, striking northwest and dipping steeply northeast. The greenstone has been intruded by coarse-grained, dark

CAPSULE GEOLOGY

diorite sills.

Skarn alteration occurs in varying amounts in the greenstone and at intrusive-limestone contacts, but little or no limestone has been replaced. Skarn consists of frequently coarse garnet, epidote, pyroxene, amphibole and calcite, and occurs as massive lenses or in disseminated form. Mineralization consists of chalcopyrite, magnetite, pyrite, and pyrrhotite, with minor amounts of bornite, molybdenite and powellite. All these minerals can be found together in varying proportions as small pods within the skarn. Magnetite and molybdenum minerals are mutually exclusive. A chip sample taken over 20 metres, assayed 0.511 per cent molybdenite (Assessment Report 8138, page 4).

The Hetty Green mine has been developed along two levels, the 120 and the 210 foot levels. The 120 level portal lies 10 metres east of Tofino Creek and exposes a 20 metre long, 5 metre wide skarn lens. The 210 level portal and the adjacent 10 by 5 metre open cut, are located 75 metres east of the lower level adit, and may be the source of 194 tonnes of selected ore that was shipped in 1905. This material contained 62 grams of gold, 5,225 grams of silver and 13,326 kilograms of copper (National Mineral Inventory Card 92F/4 Cu 2).

Forty metres west of Tofino Creek, a limestone band dips irregularly into the hillside. Along the foot wall, greenstone and, locally, diorite are intensely mineralized with magnetite. An adit exposes the limestone hanging wall, where abundant chalcopyrite and pyrrhotite are present at the greenstone contact. A skarn-altered band higher up in the hanging wall contains some disseminated molybdenite. About 30 metres to the north veinlets of molybdenite are present.

BIBLIOGRAPHY

EMPR AR 1898-1133; 1899-788, 792; 1900-924; 1901-1098; 1902-232; 1905-26, 212; 1906-188; 1907-148; 1909-147; 1910-152; 1911-192; 1913-280; 1916-333, 363; 1928-371; 1946-183; 1955-78; 1961-104; 1962-111; 1963-102, *111-116; 1966-74; 1967-75
EMPR ASS RPT 8106, *8138, *14807, 16220, 17284
EMPR BULL 55; 20 PART V
EMPR EXPL 1972-265; 1973-230; 1974-174; 1980-169; 1986-C171; 1987-C144
EMPR GEM 1969-217
EMPR OF *1988-28; 1991-17
EMPR PF (Surface Geology Map, 1:300, date and author not known; Prospectus for Stag Explorations Limited dated Dec.13 1988)
EMR MP CORPFILE (Taiga Mines Limited; Clear Creek Exploration Company Limited)
GSC ECON GEOL RPT #3, Vol.1
GSC MAP 17-1968; 1386A
GSC OF 9, 61, 463
GSC P 66-1; 68-50, pp. 36, 38, 41; 72-44; 80-16
GSC SUM RPT 1920A
CJES Vol.24, No.10, 1987, pp. 2047-2064
GCNL #235 (1979); 49 (1988)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the West Coast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/28 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 016**

NATIONAL MINERAL INVENTORY:

NAME(S): **HORSE HUMP**, FOREMOST 8, CENTRAL COPPER, PAWNEE, CLEAR CREEK

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 14 28 N
LONGITUDE: 125 35 17 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of showing number 11 in Annual Report 1963, Figure 10, is 0.5 kilometres east of Tofino Creek, 0.5 kilometres north of Deer Bay.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5457483
EASTING: 311628

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Chalcopyrite				
ASSOCIATED:	Garnet	Epidote	Pyroxene	Amphibole	Calcite
ALTERATION:	Garnet	Epidote	Pyroxene	Amphibole	Calcite

ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound, Massive
CLASSIFICATION: Skarn, Replacement

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zircon

LITHOLOGY: Limestone
Skarn
Greenstone
Diorite
Granite
Granodiorite
Basalt Porphyry

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:
COMMENTS: Regional metamorphism overprints contact metamorphism.

CAPSULE GEOLOGY

The Deer Bay area is underlain by the pre-Jurassic Westcoast Complex, an assemblage of greenstone, diorite, granite, granodiorite and basalt porphyry. Associated with the greenstone are lenses of white to grey limestone, striking northwest and dipping steeply northeast.

Skarn alteration occurs in varying amounts in the greenstone, in the intrusive and at limestone contacts. The skarn assemblage consists of garnet, epidote, pyroxene, amphibole and calcite.

The Horse Hump occurrence is comprised of a 50 centimetre wide lens of massive chalcopyrite which occurs in the hanging wall of a thin limestone band. Massive chalcopyrite, 15 to 25 centimetres wide, is also exposed approximately 180 metres to the southwest, possibly in the same limestone horizon. The mineralization occurs in the hanging wall of the limestone where this unit is folded into an open, northeast plunging anticline.

BIBLIOGRAPHY

EMPR AR *1963-111-116
EMPR ASS RPT 8106, 8138, 14807, 16220, 17284, 18751
EMPR BULL 55; 20 PART V
EMPR EXPL 1980-169; 1986-C171; 1987-C144
EMPR GEM 1969-217; 1972-265; 1973-230; 1974-174
EMR MP CORPFILE (Taiga Mines Limited; Clear Creek Exploration Company

BIBLIOGRAPHY

Limited)
GSC MAP 17-1968; 1386A
GSC OF 9, 61, 463
GSC P 66-1; 68-50, pp. 36, 38, 41; 72-44; 80-16
GSC SUM RPT 1920A
GCNL #235 (1979);# 49 (1988)
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Isachsen, C., (1984): Geology, Geochemistry and Geochronology of the West Coast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/01 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 017**

NATIONAL MINERAL INVENTORY:

NAME(S): **DRAW**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 04 19 N
LONGITUDE: 125 24 35 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 4.0 kilometres east of Kennedy Lake (Assessment Report 9646).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5438250
EASTING: 324008

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Epidote Chlorite
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Tofino Intrusive Suite

LITHOLOGY: Biotite Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Pyrite and chalcopyrite, along with manganese, epidote and chlorite, occur biotite granodiorite of the Early to Middle Eocene Tofino Intrusive Suite (previously Catface Intrusions) (Assessment Report 9646, Fig. 3). No further geological information is available.

BIBLIOGRAPHY

EMPR AR 1962-111-122
EMPR ASS RPT *9646
EMPR BULL 55
EMPR EXPL 1981-81
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/11/03 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 018**

NATIONAL MINERAL INVENTORY:

NAME(S): **CENTRAL MOLY**, PAWNEE, FOREMOST, WINTER, CLEAR CREEK

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 14 15 N
LONGITUDE: 125 35 07 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing number 15 in Figure 10, Annual Report 1963, is located 300 metres east of Tofino Creek and 300 metres north of Onad Creek.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5457075
EASTING: 311816

COMMODITIES: Molybdenum, Copper, Magnetite

MINERALS
SIGNIFICANT: Molybdenite, Chalcopyrite, Magnetite
ASSOCIATED: Quartz
ALTERATION: Garnet, Pyroxene, Epidote, Amphibole, Calcite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork, Vein, Disseminated
CLASSIFICATION: Porphyry, Hydrothermal, Epigenetic, Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zircon

LITHOLOGY: Porphyritic Andesite
Diorite
Granite
Granodiorite
Greenstone
Basalt Porphyry

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:
COMMENTS: Regional metamorphism overprints contact metamorphism.

CAPSULE GEOLOGY

The Deer Bay area is underlain by the pre-Jurassic Westcoast Complex, an assemblage of greenstone, diorite, granite, granodiorite and basalt porphyry.

Skarn alteration occurs in varying amounts in greenstone and intrusive rocks. The skarn consists of garnet, epidote, pyroxene, amphibole and calcite.

At the Central Moly occurrence, molybdenite occurs in quartz-epidote-calcite veinlets in porphyritic andesite. Skarn-altered porphyritic andesite and intrusive rocks also contain sparsely disseminated molybdenite and occasional chalcopyrite.

A 1.5 to 3.0 metre wide quartz vein, traced over 15 metres, is located 100 metres to the west and contains pockets and disseminations of magnetite.

BIBLIOGRAPHY

EMPR AR *1963-111-116
EMPR ASS RPT 8106, *8138, 14807, 16220, 17284, 18751
EMPR BULL 55; 20 PART V
EMPR EXPL 1980-169; 1986-C171; 1987-C144
EMPR GEM 1969-217; 1972-265; 1973-230; 1974-174
EMR MP CORPFILE (Taiga Mines Limited; Clear Creek Exploration Company Limited)
GSC MAP 17-1968; 1386A
GSC OF 9, 61, 463

BIBLIOGRAPHY

GSC P 66-1; 68-50, pp. 36, 38, 41; 72-44; 80-16
GSC SUM RPT 1920A
GCNL #235 (1979);# 49 (1988)
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Isachsen, C., (1984): Geology, Geochemistry and Geochronology of the West Coast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/01 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 019**

NATIONAL MINERAL INVENTORY:

NAME(S): **DOM**, DAWLEY

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 02 19 N
LONGITUDE: 125 28 38 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located immediately north of the Mount Dawley summit (Assessment Report 17400).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5434704
EASTING: 318958

COMMODITIES: Gold

MINERALS

SIGNIFICANT:	Limonite			
ALTERATION:	Clay	Sericite	Chlorite	Limonite
ALTERATION TYPE:	Argillic	Sericitic	Chloritic	Oxidation
MINERALIZATION AGE:	Unknown			

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Irregular
MODIFIER: Sheared
DIMENSION: 0003 Metres STRIKE/DIP: 020/70E TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Tofino Intrusive Suite

LITHOLOGY: Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	1.3400	Grams per tonne

REFERENCE: Assessment Report 17400.

CAPSULE GEOLOGY

An assemblage of dioritic to quartz dioritic rocks of the pre-Westcoast Complex are the oldest rocks in the area. Volcanic and sedimentary rocks of the Upper Triassic Vancouver Group and volcanic rocks of the Lower Jurassic Bonanza Group also occur in the area. The youngest rocks are Tertiary volcanics and coeval quartz diorite to quartz monzonite of the Early to Middle Eocene Tofino Intrusive Suite (previously Catface Intrusions, Personal Communication - N. Massey, May 1990). Quartz diorite and granodiorite of the Early to Middle Jurassic Island Intrusions have also disrupted strata in the area.

A shear zone from 2 to 3 metres in width strikes 020 degrees and dips 070 degrees east through Tertiary quartz diorite. The zone is characterized by brecciation and several lenses of argillic gouge (clay). Sericitic, chloritic and limonitic alteration also occur. Sulphide mineralization is not observed but samples have assayed as high as 1.34 grams per tonne gold (Assessment Report 17400).

BIBLIOGRAPHY

EMPR AR 1962-111-122
EMPR ASS RPT 13103, 15570, *17400
EMPR BULL 55
EMPR EXPL 1984-158; 1988-C84
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Prospectus: Aintree Resources Ltd., July 13, 1987 (located

BIBLIOGRAPHY

in Pym 2 file, 092F 020))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
PERS COMM (N. Massey, May 1990)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/11/03 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 020**

NATIONAL MINERAL INVENTORY:

NAME(S): **PYM 2**, SWITCHBACK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 01 57 N
LONGITUDE: 125 30 28 W
ELEVATION: 480 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Salmonberry Mountain south of Kennedy Lake (Assessment Report 15570).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5434098
EASTING: 316702

COMMODITIES: Gold

MINERALS

SIGNIFICANT:	Pyrite				
ALTERATION:	Chlorite	Clay	Sericite	Limonite	
ALTERATION TYPE:	Chloritic		Argillic	Sericitic	Oxidation
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER:	Shear	Disseminated	Discordant	
CLASSIFICATION:	Hydrothermal	Epigenetic		
SHAPE:	Bladed			
MODIFIER:	Sheared	Fractured		
DIMENSION:	0025	Metres	STRIKE/DIP:	TREND/PLUNGE:

COMMENTS: The shear/fault zone is up to 25 metres where exposed and has two general attitudes: 160 degree strike, 70 degree east dip; and 010 degree strike, 70 degree east dip.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Tofino Intrusive Suite

LITHOLOGY: Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1988

COMMODITY	GRADE	
Gold	1.1000	Grams per tonne

COMMENTS: Over a drill interval of 0.9 metres.
REFERENCE: Assessment Report 17402.

CAPSULE GEOLOGY

An assemblage of dioritic to quartz dioritic rocks of the Paleozoic and/or Mesozoic Westcoast Complex comprise the oldest rocks in the area. Volcanic and sedimentary rocks of the Upper Triassic Vancouver Group and volcanic rocks of the Lower Jurassic Bonanza Group also occur in the area. The youngest rocks are Tertiary volcanics and coeval quartz diorite to quartz monzonite of the Early to Middle Eocene Tofino Intrusive Suite (previously Catface Intrusions, Personal Communication - N. Massey, May 1990). Quartz diorite and granodiorite of the Early to Middle Jurassic Island Intrusions have also disrupted area strata.

A major fault/shear zone, called the "Switch Back Shear Zone" (Assessment Report 15570), occurs on the north side of Salmonberry Mountain. The shear zone cuts a quartz diorite phase of the Tertiary intrusions and is 25 metres wide where exposed. The zone has two general attitudes a 160 degree strike with 70 degree east dip and a 010 degree strike with 70 east degree dip. The zone is characterized by intense brecciation and shearing with associated clay gouge. Fracture surfaces exhibit clay and limonitic alteration.

The zone was tested by three drill holes in the 1987 to 1988 field season. The intrusive hosted up to 2 per cent pyrite and small mafic, dacite and quartz feldspar porphyry dykes near major shears.

CAPSULE GEOLOGY

An alteration suite of chlorite, clay and sericite plus or minus quartz was observed. The best value obtained from drill core samples was 1.1 grams per tonne gold over 0.9 metres (Assessment Report 17402).

BIBLIOGRAPHY

EMPR AR 1962-111-122
EMPR ASS RPT *15570, *17402
EMPR BULL 55
EMPR EXPL 1988-C139, C140; 1988-C84; 2002-29-40
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Prospectus: Aintree Resources Ltd., July 13, 1987)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
PERS COMM (N. Massey, May 1990)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/11/07 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 021**

NATIONAL MINERAL INVENTORY:

NAME(S): **M-6**, OWL

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 00 48 N
LONGITUDE: 125 30 49 W
ELEVATION: 320 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located south of Kennedy Lake (Assessment Report 15575).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5431982
EASTING: 316205

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Arsenopyrite
ASSOCIATED: Quartz
ALTERATION: Sericite Quartz Limonite
ALTERATION TYPE: Sericitic Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Discordant
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0005 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Tofino Intrusive Suite

LITHOLOGY: Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1986
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	2.7000	Grams per tonne

COMMENTS: Chipped across 5.0 metres.
REFERENCE: Assessment Report 14772.

CAPSULE GEOLOGY

The area is underlain by quartz diorite to quartz monzonite of the Early to Middle Eocene Tofino Intrusive Suite (previously Catface Intrusions, Personal Communication - N. Massey, May 1990). These intrude Quatsino Formation limestones of the Upper Triassic Vancouver Group to the west and Tertiary intermediate to felsic volcanics to the south. A regional fault/shear zone, called the "Switch Back Shear Zone" (Assessment Report 15570), cuts the intrusive and is reported to have two general attitudes: a 160 degree strike with 70 degree east dip and a 010 degree strike with 70 degree east dip.

The M-6 showing is a 4.7 metre wide mineralized section of the shear. The zone contains sericite, quartz, limonite and up to 15 per cent arsenopyrite within silicified quartz diorite. A chip sample taken across 5 metres contained 2.7 grams per tonne gold (Assessment Report 14772).

BIBLIOGRAPHY

EMPR AR 1962-111-122
EMPR ASS RPT *14772, *15575, 17402
EMPR BULL 55
EMPR EXPL 1986-C169,C170; 1987-C124
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/11/07 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 022**

NATIONAL MINERAL INVENTORY: 092F4 Cu3

NAME(S): **JUMBO**, PAWNEE, COPPER CREEK, FOREMOST

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 14 03 N
LONGITUDE: 125 35 11 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of mineralization is on Onad Creek, 0.5 kilometres east of Deer Bay (Annual Report 1963, Figure 10).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5456707
EASTING: 311723

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Molybdenite Powellite
COMMENTS: Skarn minerals not known.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Stratabound Stockwork Disseminated
CLASSIFICATION: Skarn Replacement Porphyry
DIMENSION: 0030 Metres STRIKE/DIP: 055/ TREND/PLUNGE:
COMMENTS: The zone is approximately 20 metres wide and individual lenses can be traced for up to 30 metres.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Limestone
Skarn
Greenstone
Diorite
Granite
Granodiorite
Basalt Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.0400	Per cent
Molybdenum	0.0800	Per cent

COMMENTS: Average of mineralized intercepts from 8.5 to 30.1 metres.
REFERENCE: Property File - Stag Explorations, Prospectus, Dec. 1988.

CAPSULE GEOLOGY

The Deer Bay area is underlain by the pre-Jurassic Westcoast Complex, an assemblage of greenstone, limestone, diorite, granite, granodiorite and basalt porphyry.

At the Jumbo occurrence, northwest striking ribbons of limestone occur within intensely skarn-altered Westcoast Complex rocks. Pockets and veins of massive chalcopyrite and bornite occur along the limestone contacts. Minor chalcopyrite also occurs with disseminated molybdenite and powellite in skarn altered rocks above the limestone ribbons.

The overall width of the zone is approximately 20 metres; individual mineralized lenses can be traced for up to 30 metres. The vertically dipping zone strikes 055 degrees west and disappears beneath overburden in both directions. Mineralized intercepts in a drill hole, from 8.5 to 30.1 metres, averaged 0.08 per cent molybdenite and 0.04 per cent copper (Prospectus: Stag Explorations Limited, Dec.7, 1988).

BIBLIOGRAPHY

EMPR AR 1898-1133; 1899-787, 792; 1902-233; 1916-332, 362; 1955-78; 1961-104; 1962-111; 1963-102, *111-116; 1966-74; 1967-75
EMPR ASS RPT 8106, 8138, 14807, 16220, 17284, 18751
EMPR BULL 55; 20, Part V
EMPR EXPL 1972-265; 1973-230; 1974-174; 1980-169; 1986-C171; 1987-C144
EMPR GEM 1969-217
EMPR PF (*Prospectus: Stag Explorations Ltd., Dec.7, 1988)
EMR MP CORPFILE (Taiga Mines Limited; Clear Creek Exploration Company Limited)
GSC MAP 17-1968; 1386A
GSC OF 9, 61, 463
GSC P 66-1; 68-50, pp. 36, 38, 41; 72-44; 80-16
GSC SUM RPT 1920A
CJES Vol.24, No.10, Oct. 1987, pp. 2047-2064
GCNL #235 (1979); #49 (1988)
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Isachsen, C., (1984): Geology, Geochemistry and Geochronology of the West Coast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/31 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 023**

NATIONAL MINERAL INVENTORY: 092F4 Cu6

NAME(S): **TOFINO**, CLARA

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 12 26 N
LONGITUDE: 125 35 38 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: East of Tofino Inlet, due east of Woman Island (Minister of Mines Annual Report 1963).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5453731
EASTING: 311074

COMMODITIES: Copper Silver Molybdenum

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Molybdenite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 0067 x 0009 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Vein.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Greenstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1963
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	6.8000	Grams per tonne
Copper	0.0400	Per cent

REFERENCE: Minister of Mines Annual Report 1963, page 116.

CAPSULE GEOLOGY

The area is underlain by rocks of the pre-Jurassic Westcoast Complex. The complex is a heterogeneous assemblage of hornblende-plagioclase gneiss, amphibolite, agmatite, basic migmatite, quartz diorite or tonalite and minor metasedimentary and metavolcanic rocks of greenschist metamorphic grade. The complex is genetically related to the Early to Middle Jurassic Island Intrusions and is considered to have been derived from Sicker and Vancouver Group rocks.

East of Tofino Inlet, due east of Woman Island, a large composite quartz vein is exposed at about 30 metres elevation. In it, narrow bands of greenstone in it dip 040 degrees to the west-southwest. The overall attitude of the vein may parallel these bands. The exposed length is 67 metres and is 9 metres wide. Pyrite and lesser chalcopyrite are disseminated throughout and a few specks of molybdenite were observed. Two pieces of quartz showing the most sulphides assayed 6.8 grams per tonne silver, 0.04 per cent copper and nil gold (Minister of Mines Annual Report 1963, page 116).

BIBLIOGRAPHY

EMPR AR *1963-116
EMPR ASS RPT 16220
EMPR EXPL 1987-C144
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064

BIBLIOGRAPHY

Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/11/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 024**

NATIONAL MINERAL INVENTORY:

NAME(S): **GIBSON JENNY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 10 38 N
LONGITUDE: 125 35 36 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.5 kilometres to the west of the head of Clayoquot Arm, Kennedy Lake (Assessment Report 13725).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5450395
EASTING: 311000

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Sericite
ALTERATION TYPE: Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic Igneous-contact

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	
Paleozoic-Mesozoic			Westcoast Complex
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by the contact of the Mesozoic and/or Paleozoic Westcoast Complex and granodiorite of the Early to Middle Jurassic Island Plutonic Suite (Tofino Inlet Pluton). The Westcoast Complex rocks are of andesitic composition and were likely derived from Paleozoic Sicker Group volcanics. The volcanics are located to the north and east of the contact and the intrusives to the south and west.

The contact zone is characterized by considerable northwest-trending sericitic shearing mineralized with disseminated pyrite. Samples of quartz vein material from the shear zone contained pyrite and chalcopyrite but when assayed did not contain significant gold.

BIBLIOGRAPHY

EMPR ASS RPT 10590, 11635, *13725
EMPR EXPL 1981-322; 1983-203; 1985-C147
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1989/11/18
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 025**

NATIONAL MINERAL INVENTORY: 092F4 Cu4

NAME(S): **CROW**, LADY S, TWO SISTERS, STAR, CLEAR CREEK, FOREMOST, LATCHBROOK, CRAIGELLACHIE, LIDA, CANYON, PAWNEE, VELVET, COPPER CREEK

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 14 09 N
LONGITUDE: 125 34 37 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main Crow showings are located on Onad Creek, 1.2 kilometres east of Deer Bay (Annual Report 1963, Figure 10).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5456869
EASTING: 312417

COMMODITIES: Magnetite, Iron, Copper

MINERALS

SIGNIFICANT: Magnetite, Chalcopyrite, Pyrite, Pyrrhotite
ASSOCIATED: Garnet, Epidote, Pyroxene, Amphibole, Calcite
ALTERATION: Malachite, Garnet, Epidote, Pyroxene, Amphibole, Calcite
ALTERATION TYPE: Oxidation, Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive
CLASSIFICATION: Skarn, Replacement, Industrial Min.
SHAPE: Tabular
DIMENSION: 0009 x 0005 Metres
STRIKE/DIP: 315/
TREND/PLUNGE:
COMMENTS: Sediments strike northwest. Dimensions are of largest showing in Onad Creek.

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zircon

LITHOLOGY: Limestone, Greenstone, Diorite, Granite, Granodiorite, Basalt Porphyry

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Paper 80-16.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Amphibolite, Granulite
COMMENTS: Regional metamorphism overprints contact metamorphism.

CAPSULE GEOLOGY

The Deer Bay area is underlain by the pre-Jurassic Westcoast Complex, an assemblage of greenstone, diorite, granite, granodiorite and basalt porphyry. Associated with the greenstone are lenses of white to grey limestone, striking northwest and dipping steeply northeast.

Skarn alteration occurs in varying amounts in greenstone, intrusive and at limestone contacts. It consists of garnet, epidote, pyroxene, amphibole and calcite.

At the main Crow occurrence, an open cut has been driven on 1.5 metres of massive magnetite, containing minor chalcopyrite and pyrite, along the north contact of a vertically dipping greenstone dyke in limestone. At an elevation 12 metres below the open cut, an adit cuts only greenstone and limestone, but about 4.5 tonnes of magnetite is stockpiled at the portal. A second adit, 15 metres lower, has been driven in barren limestone, greenstone and diorite.

Approximately 300 metres to the west, a small open cut exposes

CAPSULE GEOLOGY

two 1.5 metre bands of massive magnetite, striking southwest through diorite and granodiorite.

About 200 metres east of the main Crow opencut are four magnetite occurrences in limestone, greenstone and skarn, spread out over an area of approximately 150 metres. At the first, a 3.0 metre adit exposes 0.9 to 1.8 metres of magnetite in limestone and skarn. At the second occurrence, a small open cut exposes 0.3 metres of magnetite, with minor chalcopyrite and malachite in skarn. The third occurrence consists of nearly massive pyrrhotite-bearing magnetite, exposed over 9.0 by 4.5 metres in a (Onad?) creek. The last occurrence comprises 0.6 metres of massive magnetite in greenstone near a tongue of limestone.

BIBLIOGRAPHY

EMPR AR 1899-788; 1902-233; 1903-193; 1916-332, 362; 1928-371; 1930-294; 1931-168; 1955-78; 1961-104; 1962-111; *1963-102, *111-116; 1966-74; 1967-75
EMPR ASS RPT 8106, 8138, 14807, 16220, 17284, 18751
EMPR BULL 55; 20 PART V
EMPR EXPL 1980-169; 1986-C171; 1987-C144
EMPR GEM 1969-217; 1972-265; 1973-230; 1974-174
EMR MP CORPFILE (Taiga Mines Limited; Clear Creek Exploration Company Limited)
GSC MAP 17-1968; 1386A
GSC OF 9, 61, 463
GSC P 66-1; 68-50, pp. 36, 38, 41; 72-44; 80-16
GSC SUM RPT 1920A
CJES Vol.24, No.10, 1987, pp. 2047-2064
GCNL #235 (1979);# 49 (1988)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the West Coast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/21 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 026**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANGORA 3**, SAM

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 05 47 N
LONGITUDE: 125 34 17 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the southeast corner of Clayoquot Arm (Assessment Report 12910). One showing occurs on Road BR-3021 and another occurs a few hundred metres to the east side of the above coordinates.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5441355
EASTING: 312294

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Arsenopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION: 0002 x 0001 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Exposed area of quartz veining.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Andesite
Basalt
Basalt Breccia
Chert
Granitic Rock

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1983
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.2700	Per cent

REFERENCE: Assessment Report 12261.

CAPSULE GEOLOGY

The Angora 3 showing is located at the southeast corner of Clayoquot Arm. The area is underlain primarily by volcanic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group. A small outcropping of granitic rock was located a few hundred metres to the northwest of the occurrence and is likely related to the Early to Middle Jurassic Island Plutonic Suite (Tofino Inlet Pluton).

Narrow north striking, vertically dipping quartz veins occur in an area of andesites, basalt flows, basalt breccias and chert. The extent of the quartz veining is limited by the surrounding over-burden, the exposed area measures 2 by 1.5 metres. The quartz contains pyrite, arsenopyrite, and fine blebs of chalcopyrite. An analysis of two samples indicates a lack of gold and silver (Assessment Report 12910).

Another small copper showing associated with minor quartz veins is reported to occur to the west on Road BR-304. A rock sample taken along this road assayed 0.27 per cent copper (Assessment Report 12261).

BIBLIOGRAPHY

EMPR ASS RPT *12261, *12910, 14246
EMPR BULL 55

BIBLIOGRAPHY

EMPR EXPL 1984-160,161; 1985-C146
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED:	1989/11/22	CODED BY:	GJP	FIELD CHECK:	N
DATE REVISED:	1989/11/22	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092F 027**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANGORA**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 06 48 N
LONGITUDE: 125 33 01 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the southeast end Clayoquot Arm. One area of mineralization is located at these coordinates; another area is reported to occur approximately 500 metres to the southwest.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5443187
EASTING: 313899

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Sheared Fractured

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by massive basalt of the Upper Triassic Karmutsen Formation, Vancouver Group. These rocks are moderately sheared and fractured; quartz and carbonate veinlets are locally common and may contain pyrite plus/or minus chalcopyrite.

BIBLIOGRAPHY

EMPR ASS RPT 12261, *14246
EMPR BULL 55
EMPR EXPL 1984-160; 1985-C146
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/11/22
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **AU NORTH**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 08 55 N
LONGITUDE: 125 23 52 W
ELEVATION: 340 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.5 kilometres east of Kennedy River, 4.0 kilometres from its origin in Kennedy Lake (Assessment Report 12725).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5446745
EASTING: 325150

COMMODITIES: Gold, Zinc, Copper, Silver

MINERALS
SIGNIFICANT: Sphalerite, Chalcopyrite, Pyrite, Pyrrhotite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
DIMENSION:
STRIKE/DIP:
TREND/PLUNGE: 090/
COMMENTS: Veins trend east-west and dip about 65 degrees.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Granodiorite
Volcanic
Basalt
Andesite Dike
Hornfels

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Hornfels

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1983

COMMODITY	GRADE	
Silver	19.8900	Grams per tonne
Gold	15.8400	Grams per tonne

COMMENTS: Across 33 centimetres.
REFERENCE: Assessment Report 12725.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group, Karmutsen Formation volcanics which are intruded by and in fault contact with granodiorite of the Early to Middle Jurassic Island Plutonic Suite. The volcanics are massive, fine grained and greenish. They contain zones of up to 8 per cent disseminated pyrite and pyrrhotite near the granodiorite intrusion, where they have been hornfelsed to a flinty, hard, biotitic, dark grey rock. Andesite dykes, mainly porphyritic containing feldspar phenocrysts, are commonly observed within the granodiorite. The dykes are thought to cut the volcanics as well but have not been recognized because of their similar appearance.

Three east-west trending quartz veins dipping at about 65 degrees occur in granodiorite. They contain massive pyrite and pyrrhotite, and traces of sphalerite and chalcopyrite. The best samples were taken from the northern-most vein where it is exposed in a small creek bed. One sample taken across 33 centimetres assayed 15.84 grams per tonne gold and 19.89 grams per tonne silver (Assessment Report 12725).

BIBLIOGRAPHY

EMPR ASS RPT 7392, 8242, *12725
EMPR BULL 55
EMPR EXPL 1979-129; 1980-169; 1983-198
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/11/24 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 029**

NATIONAL MINERAL INVENTORY: 092F4 Ni1

NAME(S): **TOFINO NICKEL**, SUPER 1, DEER BAY, NICKEL 1

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 13 07 N
LONGITUDE: 125 37 45 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.0 kilometre northwest of Similar Island in Deer Bay at the head of Tofino Inlet.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5455085
EASTING: 308549

COMMODITIES: Nickel, Copper, Platinum, Palladium, Gold, Silver, Molybdenum

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Pyrrhotite, Violarite, Millerite, Pentlandite, Telluride, Molybdenite, Magnetite
COMMENTS: The telluride is a palladium antimono-telluride, possibly merenskyite.
ASSOCIATED: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Layered
CLASSIFICATION: Syngenetic, Magmatic
TYPE: M01 Flood Basalt-Associated Ni-Cu
DIMENSION: 30 x 10 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Possibly of magmatic origin, dimension of outcrop.

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	
Paleozoic-Mesozoic			Westcoast Complex
Jurassic			Island Plutonic Suite

LITHOLOGY: Amphibolite, Quartz Feldspar Gneiss, Meta Basalt, Quartz Diorite, Hornblende Gabbro

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP: Post-mineralization
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	1.1000	Grams per tonne
Copper	18.6000	Per cent
Nickel	15.0000	Per cent
Palladium	18.7000	Grams per tonne
Platinum	6.9000	Grams per tonne

COMMENTS: Another sample assayed 48.0 grams per tonne silver (Minister of Mines Annual Report 1963, page 116).
REFERENCE: Assessment Report 17284.

CAPSULE GEOLOGY

The rocks hosting the Tofino Nickel showings are quartz-feldspar gneiss of the Paleozoic and/or Mesozoic Westcoast Complex. The protolith is determined to be interbedded sandstones and mafic tuffs, likely derived from Paleozoic Sicker Group rocks; with metamorphism coeval with Early to Middle Jurassic Island Plutonic Suite. In many outcrops the gneisses contain numerous thin dark grey-green foliated amphibolitic bands thought to be metamorphic equivalents of mafic and ultramafic Karmutsen dykes and sills as well as some relatively unaltered pyroxenites and peridotites. A hornblende gabbro intrudes

CAPSULE GEOLOGY

the gneisses about 400 metres southwest of the showing. To the north and east, metabasalts bound the quartz-feldspar gneiss. Contained in the metabasalts are limestone/marble layers, possibly related to the Buttle Lake Group (Azure Lake Formation). All units are truncated to the south by diorite of the Island Plutonic Suite.

The host rocks are variably foliated and show warping due to regional deformation. Associated joints and the foliation trend 125 to 145 degrees with subvertical dips (after Muller, J.E., 1980; LeCouteur P.C., 1985; Lambert, E., 1988).

The Tofino Nickel prospect occurs in an elongate southeast trending outcrop, some 10 by 30 metres in area, composed of several bands of amphibolite (metamorphosed ultramafic dykes or sills) interlayered with quartz-feldspar gneiss. Mineralization within the amphibolites occur as a variety of sulphides that form 1 to 5 per cent of the rock as disseminations or 15 to 50 per cent as massive pods, laminations and dense disseminations. The relative abundances are: pyrite, 75-95 per cent; chalcopyrite, 2-5 per cent; violarite, 2-3 per cent; millerite, 2-5 per cent; pentlandite, less than 1 per cent and pyrrhotite, trace (LeCouteur, P.C., 1985). Other accessory minerals include magnetite and molybdenite. A petrographic study identified a palladium antimono-telluride, possibly merenskyite. Microscopic analysis indicates that the violarite is secondary after pentlandite. No platinum minerals were found but it is probably associated with the nickel or copper sulphides and possibly with the palladium mineral (LeCouteur, P.C., 1985).

A sample of this material contained 18.6 per cent copper, 15 per cent nickel, 1.1 grams per tonne gold, 6.9 grams per tonne platinum and 18.7 grams per tonne palladium (Assessment Report 17284). One sample gave a high assay of 48.0 grams per tonne silver (Minister of Mines Annual Report 1963, page 116). The palladium to platinum ratio is approximately 5 to 1.

Initial exploration in the area was for copper-iron skarns along Tofino Creek, beginning in 1898 with prospecting and development continuing through to the present. Sun West Minerals Limited staked the Foremost claims in 1962 and subsequent work discovered the nickel showings in 1963 on the northwest shore of Deer Bay. The majority of the exploration, however, was directed at the skarn mineralization. From 1983 until 1987, Cominco Limited optioned the claims covering the nickel showings and did extensive geological mapping, rock and soil geochemical and geophysical surveys, trenching and detailed petrographic analysis. Most recently, Stag Explorations Ltd. has continued the geochemical, geological and geophysical exploration and evaluation of the nickel-platinum group metals at these showings. A geology and rock chip sampling program was conducted by Arnex Resources Ltd. at the main showing area in 1997. A magnetometer survey and additional rock chip sampling was carried out in 2000 by Arnex.

BIBLIOGRAPHY

EM GEOFILE 2000-2, 2000-5
EMPR AR 1898-1133; 1899-792; 1905-212; 1910-152; 1916-232,233,362; 1917-292; 1918-264; 1919-198; 1921-212,213; 1922-231; 1926-302; 1927-344; 1928-371,372; 1930-293,294; 1955-78; 1961-104; 1962-111; *1963-111-116; 1966-74; 1967-75
EMPR ASS RPT *13121, *14182, 14315, *15155, *15447, *17284
EMPR EXPL 1984-161; 1985-C147; 1986-C170; 1987-C144; 1988-C84
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1972-265; 1973-230,231; 1974-174,175
EMPR OF 1988-28, p. 61
EMPR PF (Prospectus: Stag Explorations Ltd., Dec.7, 1988 (in 092F 022 file); Executive Summary of the Deer Bay (Tofino Nickel) Property, Arnex Resources Ltd., March 2001)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 143
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

MINFILE NUMBER: **092F 030**

NATIONAL MINERAL INVENTORY:

NAME(S): **O.K.(L.348)**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 08 25 N
LONGITUDE: 125 30 30 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located between Kennedy Lake and Clayoquot Arm. The development work is reported to be confined to O.K. 3, Crown Grant Lot 348. O.K. 1 is Crown Grant Lot 350, O.K. 2 is Crown Grant Lot 349 and O.K. 4 is Crown Grant Lot 335.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5446080
EASTING: 317058

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Vein
CLASSIFICATION: Skarn
SHAPE: Tabular
DIMENSION: 0060 x 0003 Metres
STRIKE/DIP: 160/50E
TREND/PLUNGE:
COMMENTS: Skarn zone.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Eocene			Tofino Intrusive Suite

LITHOLOGY: Diorite
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Plutonic Rocks Wrangell

INVENTORY

ORE ZONE: UNDERGROUND WORKINGS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1910
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	27.4000	Grams per tonne
Copper	4.7000	Per cent

COMMENTS: Character and width of sample not reported.
REFERENCE: Unsigned 1910 Report.

CAPSULE GEOLOGY

The area is underlain by east-northeast dipping rocks of the Upper Triassic Vancouver Group consisting of a north trending elongate sequence of Quatsino Formation limestones underlain by Karmutsen Formation volcanics. The limestone is encompassed by the Karmutsen rocks on the south and west and by plutonic rocks of the Early to Middle Eocene Tofino Intrusive Suite (previously Catface Intrusions) on the north and east.

Skarn mineralization is reported to occur in dioritic rock near its contact with limestone. The zone strikes 160 degrees with a dip of 50 degrees and is up to 60 metres long and 3 metres wide. It is characterized by masses of chalcopyrite and associated pyrite, pyrrhotite and magnetite. A 32 metre tunnel had been completed by 1918 and a sample taken from the workings assayed 4.7 per cent copper and 27.4 grams per tonne silver (Minister of Mines Annual Report 1918, page 263). Samples taken from the underground workings were reported to grade lower than surface samples.

Another report describes the prospect as consisting of 5 distinct veins about 10 centimetres wide and exposed on the surface for "several hundred feet". Each of the veins are reported to lie alongside a diorite dyke also having a width of about 10 centimetres.

CAPSULE GEOLOGY

The rock type in which the dykes and veins occur was not reported. One sample contained 4.3 grams per tonne gold and 15 per cent copper (Unsigned 1910 Report).

BIBLIOGRAPHY

EMPR AR 1903-192; *1918-262; 1919-198; *1928-370
EMPR BULL 55
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Unsigned Report (1910): The O.K. Copper Group)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p.38; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/11/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 031** NATIONAL MINERAL INVENTORY:

NAME(S): **LEORA**, JEAN (L.1684), DONALD (L.1685), JACK (L.1686), LOST CANYON, SYLVANITE, VIVA I, VIVA II

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 08 01 N NORTHING: 5445111
LONGITUDE: 125 24 45 W EASTING: 324024
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate location of drifts at the boundary of Lot 1684 and 1685 is 0.4 kilometres east of Kennedy River.

COMMODITIES: Gold Silver Zinc Cadmium Tungsten Copper

MINERALS
SIGNIFICANT: Sphalerite Pyrite Chalcopyrite
COMMENTS: Gold, silver associated with sphalerite. Cadmium and tungsten mineralogy not known.
ASSOCIATED: Quartz Calcite Chalcopyrite Pyrite
COMMENTS: Alteration minerals not known.
ALTERATION TYPE: Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein Stockwork Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: STRIKE/DIP: 110/65N TREND/PLUNGE:
COMMENTS: Leora fault strikes 90 to 130 degrees, dips 55 to 75 degrees north.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

ISOTOPIC AGE: 230 Ma
DATING METHOD: Fossil
MATERIAL DATED: Ammonites

LITHOLOGY: Basaltic Andesite
Dacite Dike
Volcanic Breccia

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Paper 68-50.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	10.2900	Grams per tonne
Gold	6.3800	Grams per tonne
Cadmium	0.2000	Per cent
Tungsten	0.0160	Per cent
Zinc	2.0000	Per cent

COMMENTS: Sample R4699; zinc is greater than 2.0 per cent.
REFERENCE: Assessment Report 15956.

CAPSULE GEOLOGY

The Leora occurrence is underlain by basaltic andesite of the Upper Triassic Vancouver Group, Karmutsen Formation which has been intruded by a dacite dyke, believed to be Tertiary in age (Assessment Report 15956, Figure 4). The Karmutsen rocks have undergone regional greenschist facies metamorphism. The dacite dyke contains fragments of Karmutsen rocks, and fine-grained disseminated pyrite,

CAPSULE GEOLOGY

particularly near the dyke margins. Volcanic breccia containing bleached andesite fragments occurs 400 metres southeast of the Number Two adit, and is also interpreted to be of Tertiary age.

Two structures cut the volcanic rocks, the Boulder Creek fault and the Leora fault. The Boulder Creek fault trends 135 degrees and dips vertically, and is accompanied by argillic alteration, bleaching and fracturing of the host rock. The Leora fault, with which the known mineralization is associated, strikes 090 to 130 degrees and dips 55 to 75 degrees north. This structure is accompanied by crackle breccia and gouge, with at least five narrow quartz-calcite veins and several weak crosscutting veins. The veins carry pyrite, chalcopyrite and sphalerite.

Most of the development has taken place on the Number Two level, where values up to 132.50 grams per tonne gold were obtained, and where a 19 metre section averaged 5.14 grams per tonne gold (Assessment Report 15956, page 10). Sample #R4699 from the Number Two level dump assayed 10.29 grams per tonne silver, 6.38 grams per tonne gold, 0.016 per cent tungsten, greater than 2.0 per cent zinc, and 0.2 per cent cadmium (Assessment Report 15956).

Intermittent production between 1902 and 1915 produced 383 tonnes of ore containing 8771 grams of gold and 2831 grams of silver.

BIBLIOGRAPHY

EMPR AR 1902-232; 1903-192; 1909-147,274; 1910-152,245; 1912-195; 1913-278; 1914-375; 1915-287; 1916-329; 1919-197; 1927-343; 1932-204; 1933-251; 1935-F46
EMPR ASS RPT 5711, 7665, 12557, 15842, *15956
EMPR BULL 1, p. 134
EMPR EXPL 1979-129; 1983-200; 1987-C142
EMPR GEM 1975-E96
EMPR OF 1991-17
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 34
GSC OF 9; 61; 463
GSC P 66-1; 68-50, p.48; 72-44
GCNL #103, #108, 1985
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/13 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 032** NATIONAL MINERAL INVENTORY:

NAME(S): **ROSE MARIE**, ROSE (L.1489), MAMIE (L.1486), MAGGIE (L.1487), SADIE (L.1488)

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 09 16 N NORTHING: 5447441
LONGITUDE: 125 25 07 W EASTING: 323652
ELEVATION: 232 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Made up of four Crown Grants. The elevation is for the adit and the coordinates are the centre of claim group.

COMMODITIES: Gold Silver Zinc Copper

MINERALS
SIGNIFICANT: Pyrite Sphalerite Chalcopyrite Arsenopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: STRIKE/DIP: 070/60N TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Porphyry Diabase
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

CAPSULE GEOLOGY

Upper Triassic basalts and andesites of the Karmutsen Formation, Vancouver Group are intruded by quartz diorite to granodiorite of the Jurassic Island Intrusions and Tertiary dacitic dykes. The rocks are cut by northwest trending faults which typically show intense shearing and local sericitization, silicification and pyritization over widths of 0.5 to 2 metres.

A banded quartz vein strikes 070 degrees and dips about 60 degrees northwest through porphyritic diabase or green andesite. The vein varies in width from 38 to 60 centimetres. The quartz is variably reported to be mineralized with pyrite and one or more other sulphides from among sphalerite, chalcopyrite, arsenopyrite, pyrrhotite and galena.

Over 100 metres of drifting on the vein took place from 1899 to 1900. Nine tonnes of ore treated on site in a 4-stamp mill produced 902 grams of gold and 1,928 grams of silver (Mineral Policy data).

BIBLIOGRAPHY

EMPR AR *1899-787, *1912-195, *1913-278, *1916-328, 1918-261, 1925-272
EMPR BULL *1, 1932, p.134; 55
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (Report on Kennedy Lake Properties, compiled by P. Eastwood)
GSC MAP 17-1968, 1386A
GSC MEM *204, p. 27
GSC OF 463
GSC P 68-50, p. 38; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 033**

NATIONAL MINERAL INVENTORY:

NAME(S): **TOMMY K**, KENNEDY LAKE GOLD

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 09 59 N
LONGITUDE: 125 23 50 W
ELEVATION: 110 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5448719
EASTING: 325253

COMMODITIES: Gold, Silver, Copper, Lead, Zinc

MINERALS

SIGNIFICANT: Pyrrhotite, Pyrite, Chalcopyrite, Arsenopyrite, Sphalerite, Galena
ASSOCIATED: Quartz, Calcite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins; I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 1400 x 200 Metres
STRIKE/DIP: 065/80N
TREND/PLUNGE:
COMMENTS: Zone containing veins. Adit vein strikes 55 to 75 degrees and dips steeply north.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite, Andesitic Breccia, Granite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1980

COMMODITY	GRADE	
Silver	154.0000	Grams per tonne
Gold	66.9000	Grams per tonne
Copper	4.1900	Per cent

COMMENTS: A 0.15-metre sample.
REFERENCE: Assessment Report 9606.

CAPSULE GEOLOGY

Upper Triassic andesites and andesitic breccia and tuffs of the Karmutsen Formation, Vancouver Group are intruded by granodiorite of the Early to Middle Jurassic Island Intrusions and Tertiary dacitic dykes. The rocks are cut by northwest trending faults which typically show intense shearing and local sericitization, silicification and pyritization over widths of 0.5 to 2 metres.

A 1400 by 200 metre zone of narrow planar quartz veinlets trends northeast through andesitic breccias and flows near the contact with granitic intrusives. The veinlets dip steeply and vary from 0.1 to 10 centimetres thick. Individual veins comprise coarsely crystalline quartz, about 10 per cent calcite and up to 2 per cent sulphides, which include pyrrhotite, pyrite, chalcopyrite, arsenopyrite, sphalerite and galena. The veins are locally silicified.

The Adit vein strikes 55 to 75 degrees for 70 metres, dips north and is up to 0.8 metres thick. A 15 centimetre sample of a vein (possibly the old Hidden Treasure vein), about 150 metres east of the adit, assayed 66.9 grams per tonne gold, 154 grams per tonne silver and 4.19 per cent copper (Assessment Report 9606). A 5-metre sample from a nearby trench assayed 4.2 grams per tonne gold (Assessment

CAPSULE GEOLOGY

Report 12767).
The deposit was worked in 1934 and produced 31 grams of gold, 62 grams of silver and 11 kilograms of copper from a total of 4 tonnes mined (Mineral Policy data).

BIBLIOGRAPHY

EMPR AR 1934-A28; *1935-F48; 1939-42
EMPR ASS RPT 9606, 11940, *12767, *14279, *16474, *16729
EMPR BC METAL MM00111
EMPR BULL 20, part V, p. 26; 55
EMPR EXPL 1981-71; 1984-159-160; 1985-145; 1987-C141; 1988-C84
EMPR INDEX 3-216
EMPR PF (Report by P. Eastwood (see 092F 032, Rose Marie);
*Henneberry, R.T. (1987): Economic Potential of the Kennedy River Gold Camp, Vancouver Island, British Columbia (located in 92F 044, Bear file))
GSC MAP 17-1968, 1386A
GSC MEM 204, p. 28
GSC OF 463
GSC P 68-50, p. 38
GCNL #111, 1985; #131,1988
N MINER Nov.17, 1986
WIN Jan., 1987
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 143

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1989/01/23	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092F 034**

NATIONAL MINERAL INVENTORY:

NAME(S): **LUCKY**, RED ROVER, TOQUART, TOQ

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 03 41 N
LONGITUDE: 125 18 29 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: About 250 metres to the northwest of Ellswick Lake (Assessment Report 15685, Figure 3).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5436846
EASTING: 331397

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT:	Pyrite	Chalcopyrite	Gold	Galena
ASSOCIATED:	Quartz	Calcite		
ALTERATION:	Clay	Chlorite	Epidote	Calcite
ALTERATION TYPE:	Argillic		Propylitic	Carbonate
MINERALIZATION AGE:	Unknown			

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Faulted Sheared
DIMENSION: 0115 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Vein, traced on surface for 115 metres, generally strikes north and dips steeply east.

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Quartz Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Gold	220.6600	Grams per tonne

COMMENTS: A 31 centimetre seciton fo quartz containing visible gold and 0.5 per cent pyrite.
REFERENCE: Assessment Report 18491.

CAPSULE GEOLOGY

The area is underlain by metavolcanic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group. These consist of massive mafic flows that may be amygdaloidal, fine grained or brecciated. Dykes and/or sills of granodiorite, feldspar porphyry and quartz feldspar porphyry outcrop in the area and likely belong to the Early to Middle Jurassic Island Intrusions.

The Red Rover vein (also known as the Lucky vein) is a fault controlled gold bearing structure. It generally strikes north and dips steeply to the east; at one point it becomes vertical to steep westerly dipping. The vein pinches and swells along strike attaining a maximum width of about one third of a metre. It has been traced along surface for at least 115 metres.

The hangingwall and footwall are composed of sheared brecciated mafic flows, fine-grained flows and one dyke/sill of quartz feldspar porphyry. The vein cuts all these rock types. Altered wallrock consists of clays, chlorite, epidote and locally calcite. Pyrite occurs as disseminations in the wallrock.

CAPSULE GEOLOGY

The vein is composed mainly of quartz, often drusy, and locally calcite pods. Some cross-cutting veinlets are composed of calcite only. The vein is mineralized with small amounts of pyrite and chalcopyrite as well as galena and visible gold. A 31 centimetre drill section consisting of quartz with visible gold and 0.5 per cent pyrite assayed 220.66 grams per tonne gold (Assessment Report 18491).

BIBLIOGRAPHY

EMPR AR 1905-211; 1906-189; 1935-F54
EMPR ASS RPT 10626, 12318, 14188, *15685, *18491
EMPR EXPL 1982-144; 1984-159; 1985-C144; 1987-C142
GSC MAP 17-1968; 1386A
GSC MEM *204, p. 30
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1996/11/13 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 035**

NATIONAL MINERAL INVENTORY:

NAME(S): **IRON MOUNTAIN (L.1490)**, CHIEFTAN (L.1491)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 08 26 N
LONGITUDE: 125 27 35 W
ELEVATION: 550 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the Iron Mountain (L.1490) and Chieftan (L.1491) Crown Grants, located on the east-southeast flank of Mount Maitland, just north of the head of Kennedy Lake. Coordinates given for centre of claims.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5445994
EASTING: 320604

COMMODITIES: Iron Gold

MINERALS
SIGNIFICANT: Magnetite
ASSOCIATED: Quartz
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Vein
CLASSIFICATION: Skarn Hydrothermal Industrial Min.
DIMENSION: 0006 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Exposure of magnetite.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Eocene			Tofino Intrusive Suite

LITHOLOGY: Limestone
Quartz Diorite
Quartz Monzonite
Granodiorite

HOSTROCK COMMENTS: Skarn deposit located at contact of granitic rock and limestone.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional Plutonic Rocks RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: MAIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1916
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Iron	30.1000	Per cent

COMMENTS: Average sample of main showing.
REFERENCE: Minister of Mines Annual Report 1916, page 290.

CAPSULE GEOLOGY

The area is underlain by Karmutsen Formation basalts, Quatsino Formation limestone and Parson Bay Formation calcareous siltstone, all of the Upper Triassic Vancouver Group. These in turn are overlain by Lower Jurassic Bonanza Group flows, tuffs and breccias ranging from basalt to rhyodacite in composition. Quartz diorite to quartz monzonite of the Early to Middle Eocene Tofino Intrusive Suite (previously Catface Intrusions) and quartz diorite and granodiorite of the Early to Middle Jurassic Island Intrusions also disrupt area strata.

An iron skarn deposit, consisting of an exposure of magnetite about 6 metres wide, is exposed in a steep creek bank at the base of a limestone bluff where it is in contact with "granitic" rock. Outcroppings of magnetite occur at several points on the sides of steep ravines farther up the creek. An average sample of the main showing contained 30.10 per cent iron, 0.31 per cent sulphur, a trace of phosphorous and 51.5 per cent silica (Minister of Mines Annual Report 1916).

The mineral claims were originally staked because of the occurr-

CAPSULE GEOLOGY

ence of gold-bearing quartz veins at an elevation of 730 metres.

BIBLIOGRAPHY

EMPR AR 1909-147, 1914-374, *1916-290,524
EMPR BULL *3, 1917, p.23; 55
EMPR FIELDWORK 1988, pp. 61-74
GSC BULL 172
GSC EC GEOL *#3, Vol.1, p. 229
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p.38; 71-36; 72-44
CANMET RPT *#47, p. 16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/11 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 036** NATIONAL MINERAL INVENTORY:

NAME(S): **WANDERER**, L. GRANT

STATUS: Showing MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 07 23 N NORTHING: 5444097
LONGITUDE: 125 28 48 W EASTING: 319062
ELEVATION: 91 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: In a small gulch about 400 metres from the west shore of the east arm of Kennedy Lake.

COMMODITIES: Gold Silver Lead Copper

MINERALS
SIGNIFICANT: Pyrite Galena Tetrahedrite Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: 0100 x 0060 Metres STRIKE/DIP: 140/72N TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Diorite

HOSTROCK COMMENTS: Vein occurs in andesite and is thought to be genetically related to a nearby dioritic stock.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1918
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	27.4300	Grams per tonne
Gold	10.9700	Grams per tonne

COMMENTS: A 15.0 centimetre sample. A selected sample assayed 15 per cent copper.
REFERENCE: Minister of Mines Annual Report 1918, page 262.

CAPSULE GEOLOGY

The Wanderer occurrence is situated in a small gulch about 400 metres from the west shore of the east arm of Kennedy Lake, about 3.2 kilometres from the mouth of Kennedy River.

The area is underlain by Karmutsen Formation basalt and andesite, and Quatsino Formation limestone, both of the Upper Triassic Vancouver Group. These are overlain by Lower Jurassic Bonanza Group flows, tuffs and breccias ranging from basalt to rhyodacite in composition. Small quartz diorite to quartz monzonite stocks of the Early to Middle Eocene Tofino Intrusive Suite (previously Catface Intrusions) occur in the area.

A quartz vein is mineralized sparingly with small grains of pyrite, galena, tetrahedrite and in some places visible gold. The vein is 5 to 15 centimetres wide and has been traced along strike for "several hundred feet", and vertically for at least 60 metres. The vein strikes at 140 degrees and dips 72 degrees north through Karmutsen andesite. The vein is thought to be genetically related to a dioritic stock that occurs nearby.

Development work, done prior to 1923, consists of 2 short drifts about 3 metres in length, open-cuts and stripping. A sample across

CAPSULE GEOLOGY

15 centimetres assayed 10.97 grams per tonne gold and 27.43 grams per tonne silver. A selected sample assayed 63.77 grams per tonne gold, 27.43 grams per tonne silver and 15 per cent copper (Minister of Mines Annual Report 1918).

BIBLIOGRAPHY

EMPR AR *1918-262, *1919-197, *1920-223, *1921-213, *1923-245
EMPR BULL 55
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
GSC SUM RPT *1920A, p. 19
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/07 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 037**

NATIONAL MINERAL INVENTORY: 092F2 Au2,Cu1

NAME(S): **SPECOGNA COPPER**, WO 4, TORCHY, WATERFALL

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E 092F01W
BC MAP:
LATITUDE: 49 07 04 N
LONGITUDE: 124 30 23 W
ELEVATION: 1080 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing on the north side of Nanaimo River (Assessment Report 12832).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5441641
EASTING: 390081

COMMODITIES: Copper, Silver, Zinc, Gold

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Bornite, Sphalerite
ASSOCIATED: Quartz, Calcite, Chlorite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Massive, Disseminated, Shear
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Sheared
DIMENSION: 0060 x 0015 Metres
STRIKE/DIP: 175/80E
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Devonian	Sicker	McLaughlin Ridge	
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Pillow Basalt
Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1981

COMMODITY	GRADE	
Silver	481.0000	Grams per tonne
Gold	0.9000	Grams per tonne
Copper	15.8000	Per cent
Zinc	2.0200	Per cent

COMMENTS: A 1.1. metre drill intersection assayed considerably lower.
REFERENCE: Assessment Report 10302.

CAPSULE GEOLOGY

The Specogna Copper showing is located on the north side of the Nanaimo River.

A major northwest trending fault separates volcanics of the Upper Devonian McLaughlin Ridge Formation (Myra Formation), Sicker Group with basalts of the Upper Triassic Karmutsen Formation, Vancouver Group. The basalts are overlain by sandstone and conglomerate of the Cretaceous Nanaimo Group. The rocks are cut by feldspar porphyry of the Tertiary Mount Washington Intrusive Suite (Labour Lake Pluton), previously Catface Intrusions (Personal Communication - Nick Massey, May 1990).

Chalcopyrite, pyrite, bornite and sphalerite occur in lenses, pods and stringers in sheared and altered Karmutsen pillow basalts. The mineralized shear zone measures 60 by 15 metres, strikes 175 degrees and dips 80 degrees east. Quartz, calcite and chlorite are the main gangue minerals. A grab sample assayed 15.8 per cent copper, 481 grams per tonne silver, 2.02 per cent zinc and 0.9 grams per tonne gold (Assessment Report 10302). A 1.1 metre drill intersection assayed 2.14 per cent copper, 9.6 grams per tonne silver

CAPSULE GEOLOGY

and 2.5 grams per tonne gold (Assessment Report 10996).

BIBLIOGRAPHY

EMPR ASS RPT 8687, *10302, *10996, 12128, *12832, 13236, 15939, 16719
EMPR BULL 37
EMPR EXPL 1980-164-165; 1982-140; 1984-150
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 19-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
N MINER Dec. 24, 1981
PERS COMM (N. Massey, May 1990)
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 038**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROCK**, BACON, BACON LAKE, MJ

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E
BC MAP:
LATITUDE: 49 58 33 N
LONGITUDE: 125 37 07 W
ELEVATION: 609 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 500 metres northwest of Bacon Lake, just west of the north end of Upper Campbell Lake. This and the Willy prospect (092F 056) comprise the Bacon Lake occurrences.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5539230
EASTING: 312249

COMMODITIES: Iron, Copper, Cobalt, Silver, Zinc

MINERALS

SIGNIFICANT: Magnetite, Erythrite, Pyrite, Chalcopyrite, Pyrrhotite
ALTERATION: Hematite, Garnet, Epidote, Malachite
ALTERATION TYPE: Oxidation, Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated
CLASSIFICATION: Hydrothermal, Skarn, Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesitic Tuff
Limestone
Calcareous Sediment/Sedimentary
Granodiorite

HOSTROCK COMMENTS: Host rock may be Karmutsen or Bananza volcanics. Granodiorite intrudes strata.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
Plutonic Rocks

INVENTORY

ORE ZONE: ROCK
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1961
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Iron	53.5700	Per cent

COMMENTS: A 4.4 metre section.
REFERENCE: McDougall, 1961.

CAPSULE GEOLOGY

The area of the Rock showing is underlain by Karmutsen Formation volcanics overlain by Quatsino Formation limestone, both of the Upper Triassic Vancouver Group. These in turn are overlain by volcanics of the Lower Jurassic Bonanza Group. Plutonic rocks of the Early to Middle Jurassic Island Plutonic Suite intrude these rocks and vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

In 1961, three diamond drill holes were drilled in order to test a magnetic anomaly (McDougall, 1961). Hole #1 cut 6.4 metres of magnetite which assayed about 20 per cent iron. Hole #2 cut 9 metres of similarly low grade magnetite. Hole #3 intersected 4.4 metres of low grade iron and another 4.4 metres containing 53.57 per cent iron. A 1.2 metre drill interval contained 36.80 per cent iron and 37.71 grams per tonne silver. Typically silver is found only in trace amounts. The rocks are mainly andesitic tuffs, possibly of the Bonanza Group or Karmutsen Formation. Associated mineralization includes epidote, garnet, pyrite, hematite and abundant cobalt bloom (erythrite).

CAPSULE GEOLOGY

About 500 metres to the southeast of this deposit, andesite interbedded with limestone and calcareous sediments, is intruded by granodiorite. The volcanics have been silicified and in part altered to skarn along the contact, with disseminated and vein magnetite occurring in several places. In two locations the limestone has been completely turned to skarn and contains semi-massive to patchy magnetite with associated pyrite and lessor chalcopyrite and malachite. A sample of granodiorite containing these minerals plus hematite, pyrrhotite and actinolite assayed 0.25 per cent copper, 5.25 per cent zinc and 0.023 grams per tonne gold (Assessment Report 18946)

BIBLIOGRAPHY

EMPR ASS RPT 16321, 17395, *18946
EMPR BULL 3, 1917
EMPR EXPL 1987-C154; 1988-C92
EMPR P 1989-3
EMPR PF (Hings, D.L. (1951): Report on Preliminary Magnetic Survey of of the East Bacon Lake Area, B.C. Iron Ore Development Co. Ltd.; Bacon Lake Property drill logs, B.C. Iron Ore Development Co. Ltd., Jan.3, 1952; McDougall, J.J. (1961): *Preliminary Report on the Bacon Lake and Willy Iron Prospects; McDougall, J.J. (1961): *Report on Bacon Lake Magnetite (including drill logs on the Rock deposit); Magnetic Suvey map (1 inch=100 feet), Noranda, 1962)
GSC BULL 172
GSC EC GEOL #3, Vol.1, pp. 78-79
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44
GSC SUM RPT 1930, Part A
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1990/02/28 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 039**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAPLE LEAF**, MOSCENA, MOCENA, MOS, WARN BAY

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 16 16 N
LONGITUDE: 125 43 54 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1.0 kilometre north of the head of Warn Bay (Minister of Mines Annual Report 1946, page 190, Figure 19).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5461185
EASTING: 301297

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Gold Chalcopyrite Pyrite Arsenopyrite Sphalerite Galena
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 137/90
TREND/PLUNGE:
COMMENTS: Near vertical dip.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Quartz Diorite
Andesite
Breccia
Andesite Dike
Andesite Porphyry Dike

HOSTROCK COMMENTS: Veins occur mainly in plutonic rock.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
YEAR: 1940

COMMODITY	GRADE	
Gold	15.0900	Grams per tonne

COMMENTS: From a 10 centimetre channel sample of shaft vein. Also 6.86 grams per tonne silver.
REFERENCE: Minister of Mines Annual Report 1946, page 190.

CAPSULE GEOLOGY

The region is underlain by Paleozoic Sicker Group sedimentary and volcanic rocks. These are overlain by Upper Triassic Vancouver Group rocks consisting of Karmutsen Formation volcanics and Quatsino Formation limestone. Stocks of the Early to Middle Jurassic Island Intrusions consisting of granodiorite to quartz diorite intrude the strata. An assemblage of rocks belonging to the pre-Jurassic Westcoast Complex also occurs in the area. The assemblage consists of gneiss, amphibolite, agmatite, and quartz diorite or tonalite. This complex is considered to be derived from Sicker and Vancouver group rocks which were migmatized in early Jurassic time. The source of the Island Intrusions is thought to have been mobilized granitoid rocks of the Westcoast Complex.

The Maple Leaf deposit occurs in an area of Westcoast diorites with pendants of Sicker rocks cut by andesite and andesite porphyry dykes. Four or more veins striking 135 to 140 degrees, with near vertical dip, follow fractures that cut quartz diorite, fresh

CAPSULE GEOLOGY

andesite, or a breccia with clasts of volcanics and sediments in a quartz diorite matrix. The vein/shears are marked by straight, narrow, rock-walled, remarkably persistent parallel gullies.

The veins, where mineralized, are sheeted but massive and contain varying amounts of sulphides in bands parallel to the walls. The vein consists of quartz, carbonates, pyrite, chalcopyrite, arsenopyrite, sphalerite and galena. Free gold was also observed.

The Shaft vein has been exposed intermittently for a length of 120 metres and is terminated to the northwest by a bluff. Work on this vein includes a 4.6 metre adit, a 7.6 metre vertical shaft and several open-cuts. A channel sample taken from this vein assayed 15.09 grams per tonne gold and 6.86 grams per tonne silver across a 10 centimetre width (Minister of Mines Annual Report 1946).

The "E" vein is exposed in a gully for about 275 metres by a series of open-cuts. A crosscut and drift have been driven for a total length of 60 metres. The best channel sample collected contained 73.71 grams per tonne gold and nil silver across a 21.6 centimetre width (Minister of Mines Annual Report 1946).

The "H" vein is exposed intermittently in a series of open-cuts extending along the base of a small bluff for over 50 metres. A channel sample assayed 16.11 grams per tonne gold over a 10 centimetre width (Minister of Mines Annual Report 1946).

A small vein is exposed in an open-cut about 9 metres north of the crosscut at 73 metres elevation. Small stringers were exposed in an area from 55 to 77 metres north of the Shaft vein shaft.

From 3 tonnes mined in 1940, 124 grams of gold and 2 kilograms of copper were produced (Mineral Policy data).

BIBLIOGRAPHY

EMPR AR 1940-27; 1942-66; *1946-188-191
EMPR ASS RPT 115, 12026, 15551, 17589
EMPR EXPL 1984-162, 1987-C146, 1988-C85
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (Starr, C.C. (1941): Report of Preliminary Examination of the Maple Leaf Group, 5 p.; Reports: Lynutt, W.C., 1946; Campbell, C.M., 1950)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 040** NATIONAL MINERAL INVENTORY: 092F4 Au1

NAME(S): **GOLD FLAKE**, TRANQUIL GOLD, MAY, EDMAR, TOFINO

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 14 46 N NORTHING: 5458279
LONGITUDE: 125 40 58 W EASTING: 304754
ELEVATION: 762 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of adit is 1.5 kilometres west of Tranquil Creek, 3.5 kilometres north of Tranquil Inlet (Annual Report 1946, page 187).

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: 0025 Metres STRIKE/DIP: 070/51N TREND/PLUNGE:
COMMENTS: Attitude of parallel andesite dyke. Vein has been traced for 25 metres.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zircon

Jurassic — Island Plutonic Suite
ISOTOPIC AGE: 167 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Greenstone
Quartz Diorite
Andesite Dike

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Papers 80-16 and 72-44.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Granulite

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1947
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	442.6800	Grams per tonne

COMMENTS: Highest assay; year uncertain.
REFERENCE: Property File (Map, Gold Flake Working).

CAPSULE GEOLOGY

The Gold Flake occurrence lies 0.8 kilometres southwest of and on strike with Fandora (see 092F 041). The occurrence lies within greenstone of the pre-Jurassic Westcoast Complex near a contact with a quartz diorite intrusion of the Early to Middle Jurassic Island Plutonic Suite (Tofino Batholith).

The occurrence is comprised of a quartz carbonate vein which parallels an andesite dyke that strikes approximately 070 degrees and dips between 49 to 53 degrees north. The vein is 5.7 to 7.5 centimetres wide and has been traced for about 25 metres. Details about the mineralogy are not given but the mineralization is thought to be similar to the Fandora.

CAPSULE GEOLOGY

Gold assays range from 5.49 to 442.68 grams per tonne (1:240 scale, Map of the Gold Flake Working). In 1940, 45 tonnes of ore was shipped from this property and produced 809 grams of gold.

BIBLIOGRAPHY

EMPR AR 1940-27; *1946-183, 186, 187; 1947-182; 1949-221; 1957-69; 1958-59; 1963-109; 1964-166
EMPR PF (Map of the Gold Flake Working, 1:240 scale; Various maps and reports, see Fandora - 092F 041)
GSC MAP 17-1968; 1386A
GSC OF 9, 61, 463
GSC P 66-1; 68-50; 72-44; 80-16
GSC SUM RPT 1920A
WWW http://www.infomine.com/
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Isachsen, C., (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/03 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 041** NATIONAL MINERAL INVENTORY: 092F4 Au1

NAME(S): **FANDORA (L.1902)**, BELL, FUSILIER, MARY , TOFINO, CRAIG, EDMAR, EM, GOLD FLAKE

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 14 57 N NORTHING: 5458607
LONGITUDE: 125 40 41 W EASTING: 305110
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of 1500 level adit on Lot 1902 is 1 kilometre west of Tranquil Creek, 4 kilometres north of Tranquil Inlet (from Campbell, C.M., 1950).

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS
SIGNIFICANT: Gold Chalcopyrite Galena Sphalerite Arsenopyrite
ASSOCIATED: Quartz Calcite Pyrite
ALTERATION: Carbonate Quartz Sericite Arsenopyrite Limonite
ALTERATION TYPE: Sericitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: l06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0900 x 0200 x 0001 Metres STRIKE/DIP: 075/67N TREND/PLUNGE:
COMMENTS: Vein strikes 070 to 080 degrees, dips 60 to 75 degrees north.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zircon

Jurassic — Island Plutonic Suite
ISOTOPIC AGE: 167 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite Dike
Andesitic Tuff
Andesitic Breccia
Quartz Diorite
Greenstone
Basalt Dike
Feldspar Porphyry Dike

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Papers 80-16 and 72-44.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Granulite

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Combined YEAR: 1950
QUANTITY: 181434 Tonnes

COMMODITY	GRADE	
Gold	12.7400	Grams per tonne

COMMENTS: Probable and possible reserves contained in 10 shoots. Gold grade is uncut.
REFERENCE: Property File - Campbell, C.M. (1950).

CAPSULE GEOLOGY

The area of the Fandora occurrence is underlain by andesitic tuff and breccia of the pre-Jurassic Westcoast Complex. Quartz

CAPSULE GEOLOGY

diorite stocks of the Tofino Batholith, which form part of the Early to Middle Jurassic Island Plutonic Suite, lie about 1 kilometre to the south and 2 kilometres to the east.

The volcanic rocks have been altered to greenstone, and are cut by numerous feldspar porphyry dykes and sills, and andesitic to basaltic dykes. Steeply dipping fractures cut the altered rock and strike east-northeast to east-southeast.

An andesite porphyry dyke that is 3.0 to 6.1 metres wide strikes 070 to 080 degrees and dips 60 to 75 degrees north. This dyke hosts two parallel quartz vein-shear zones that have been traced along strike for more than 900 metres, and vertically for over 200 metres. The veins are 1.2 to 1.5 metres apart and range up to 0.45 metres in width. In places the veins are narrower and, as a result of post-vein movement, pass into gouge and crushed rock.

Wall rocks along the shear zones contain thin quartz stringers and exhibit carbonate, sericite and pyrite alteration. Occasional fine needles of arsenopyrite are present.

The veins are comprised of quartz, calcite and altered wall rock fragments and appear banded, with thin partings of oxidized material or fine grained chalcopyrite, pyrite, galena, arsenopyrite and sphalerite. Fine free gold is present.

A sample from one of the veins at the 1700 level development, averaging 0.3 metres in width, assayed 32.68 grams per tonne gold (George Cross News Letter #201, 1983). Systematic sampling of the 2100 level development yielded uncut assays consisting of 11.21 grams per tonne gold over an average width of 1.53 metres along 30.5 metres strike length, and 16.49 grams per tonne gold over 1.27 metres along 63.4 metres. Uncut assays from the 1900 level development averaged 12.34 grams per tonne over a mining width of 1.66 metres, along a strike length of 228.0 metres. Assays from the 1700 and 1500 level adits gave similar results (Campbell, 1950).

Combined (probable and possible) reserves contained in 10 shoots are 181,434 tonnes grading 12.74 grams per tonne gold (Property File - Campbell, C.M. (1950)).

The deposit produced 972 tonnes of ore between 1960 and 1964, containing 45,660 grams of gold and 8,367 grams of silver, and small quantities of copper, lead and zinc.

Other veins in greenstone are reported about 425 metres north and northwest from the Fandora workings, but no details are given (Minister of Mines Annual Report 1946, page 188).

Doublestar Resources Ltd. plan bulk sampling (250 kilograms) and rehabilitation of 4 adits in 1999. A resource is estimated at 180,000 tonnes grading 10.3 grams per tonne gold (Information Circular 2000-1, page 9).

BIBLIOGRAPHY

EM EXPL 1999-25-32
EM INF CIRC 2000-1, p. 9
EMPR AR 1940-27; *1946-183, 186, 187; 1947-182; 1949-221; 1957-69; 1958-59; 1963-109; 1964-166
EMPR BULL 55; 20 PART V
EMPR OF 1992-1
EMPR P 1988-4, pp. 38, 43
EMPR PF (*Campbell, C.M., (1950): Report on Tofino Gold Mine; Topographic Map, area unknown; Privateer Mine Limited, (1947): Open Cut Assay Detail, Number 'A' Vein, 1:240 and 1:1200 scales; Privateer Mine Limited, (1947): Longitudinal Projection and Plan, 'A' Vein, 1:1200 scale; Northwest Wall and Southeast Wall of Crosscut, 1:12 scale; Plan showing workings, 1:500 scale; Geology, Number 1,2,3 and 4 adits, 1:300 scale; Geology, location unknown, 1:300 scale; Geological Plans, Fandora Mine, June 1953, 1:240 scale; Location Map, 1:31,600 scale; Various correspondence, reports and report drafts; Doublestar Resources Ltd., Annual Report, December 1999)
EMR MIN BULL MR 223 B.C. 94
GSC MAP 17-1968; 1386A
GSC OF 9, 61, 463
GSC P 66-1; 68-50; 72-44; 80-16
GSC SUM RPT 1920A
CANMET IR # 2137
GCNL # 163, 1981; # 201, 1983; # 9, 197, 1984; #203 (Oct.22), 1998; #25 (Feb.5), 1999
IPDM Mar./Apr., Nov./Dec., 1984
WWW http://www.infomine.com/index/properties/FANDORA.html
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Isachsen, C., (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver

BIBLIOGRAPHY

Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24
DATE REVISED: 1989/08/03

CODED BY: GSB
REVISED BY: WV

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 042**

NATIONAL MINERAL INVENTORY:

NAME(S): **YANKEE BOY**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 13 26 N
LONGITUDE: 125 39 35 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.5 kilometres northeast from the head of Tranquil Inlet (Minister of Mines Annual Report 1940, page 184, Figure 16).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5455750
EASTING: 306345

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	
Paleozoic-Mesozoic			Westcoast Complex
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Diorite
Granodiorite
Volcanic Rock

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Bulk Sample

YEAR: 1940

COMMODITY	GRADE	
Silver	196.8000	Grams per tonne
Gold	426.1700	Grams per tonne
Copper	0.5000	Per cent

COMMENTS: 0.35 tonnes.
REFERENCE: Minister of Mines Annual Report 1940, page 42.

CAPSULE GEOLOGY

The Tofino Inlet Pluton, of the Early to Middle Jurassic Island Plutonic Suite or the Mesozoic and/or Paleozoic Westcoast Complex, intrudes Paleozoic Sicker Group rocks. The plutonic rocks consist of quartz diorite and granodiorite. The Sicker rocks include volcanic breccias, tuffs, greenstone, greenschist and dykes and sills of andesite porphyry. The plutonic and volcanic rocks are transected by northeast trending faults.

The Yankee Boy showing occurs in an area underlain principally by quartz diorite. Precious metal bearing quartz veins were worked in 1940 and 1941. In 1940, 0.35 tonnes of ore was shipped and assayed 426.17 grams per tonne gold, 196.80 grams per tonne silver and 0.50 per cent copper (Minister of Mines Annual Report 1940, page 42). In 1941, 0.43 tonnes of ore was shipped and assayed 121.20 grams per tonne gold, 52.80 grams per tonne silver and 0.20 per cent copper (Minister of Mines Annual Report 1941, page 44).

Reports indicate that the workings were subsequently buried when logging roads were constructed in the Tranquil creek area in the early 1960's and mid 1970's. Rock samples taken in the area of the old workings in 1986 assayed as high as 0.75 grams per tonne gold

CAPSULE GEOLOGY

(Assessment Report 12034). These samples were taken from 2 to 5 centimetre wide quartz veins in pyritized chloritically altered granitic country rock. Several pits were blasted in 1988 revealing a 20 to 45 centimetre wide northwest striking quartz vein containing approximately 5 per cent pyrite and minor chalcopyrite (Assessment Report 17764).

BIBLIOGRAPHY

EMPR AR *1940-27,42; *1941-44; *1946-184
EMPR ASS RPT *12034, *13441, *17764
EMPR EXPL 1983-203, 1984-162, 1988-C85
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968;1386A
GSC OF 463
GSC P 68-50; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1989/11/15	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092F 043**

NATIONAL MINERAL INVENTORY: 092F4 Cu1

NAME(S): **AMERICAN WONDER (L.386)**, B.C. WONDER, DUCHESS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 14 19 N
LONGITUDE: 125 38 25 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 3.0 kilometres north of Deer Bay, Tofino Inlet on Crown Grant 386.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5457337
EASTING: 307818

COMMODITIES: Copper, Silver, Iron, Sulphur

MINERALS

SIGNIFICANT: Chalcopyrite, Magnetite, Pyrrhotite, Pyrite
ALTERATION: Garnet, Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Skarn, Replacement, Industrial Min.
DIMENSION: 0023 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Individual lenses have been exposed for 15 to 23 metres along strike.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Granodiorite
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DUMP

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1916

COMMODITY	GRADE	
Silver	61.7000	Grams per tonne
Copper	8.6000	Per cent
Iron	16.2000	Per cent
Sulphur	11.2000	Per cent

COMMENTS: Grab sample from dump.
REFERENCE: Minister of Mines, Annual Report 1916-331.

CAPSULE GEOLOGY

Diorite to granodiorite of the Early to Middle Jurassic Island Plutonic Suite or the Paleozoic and/or Mesozoic Westcoast Complex intrude calcareous sediments and limestone which are correlative with rocks of the Upper Pennsylvanian to Lower Permian Buttle Lake Group.

The deposit is a garnet-epidote skarn between a limestone and a granodiorite intrusion. The contact trends approximately northwest-southeast with the intrusive to the south and the limestone to the north. Associated with the limestone are thin layers of argillite and/or volcanics.

Lens shaped bodies of disseminated magnetite, chalcopyrite, pyrrhotite and pyrite, with garnet and epidote are reported to occur within limestone. Individual lenses have been exposed for 15 to 23 metres along strike. The width of the lenses and the total length of mineralization are not known. A grab sample from a dump assayed 8.6 per cent copper, 61.7 grams per tonne silver and 16.2 per cent iron (Minister of Mines Annual Report, 1916-331).

BIBLIOGRAPHY

EMPR AR 1899-606,789,792; 1900-994; 1906-188; 1914-375-376; *1916-

BIBLIOGRAPHY

330-332; 1931-167
EMPR ASS RPT 16354
EMPR FIELDWORK 1988, pp. 61-74
EMPR OF *1988-28, p. 62
EMPR PF (Letter by G.E.P. Eastwood)
GSC BULL 172
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
GCNL #133, #186, 1984
PERS COMM: N. Massey
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/01/13 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 044**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEAR**, GRIZZLY BEAR (L.300), CINNAMON BEAR (L.294), BLACK BEAR (L.293)

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 10 19 N
LONGITUDE: 125 25 00 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit (Assessment Report 11940).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5449382
EASTING: 323856

COMMODITIES: Gold, Silver, Zinc, Copper

MINERALS

SIGNIFICANT: Pyrite, Arsenopyrite, Pyrrhotite, Sphalerite, Gold, Chalcopyrite
ASSOCIATED: Quartz, Feldspar, Calcite
ALTERATION: Quartz, Chlorite, Clay
ALTERATION TYPE: Silicific'n, Chloritic, Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Bladed
MODIFIER: Sheared
DIMENSION:
STRIKE/DIP: 085/50N
TREND/PLUNGE:
COMMENTS: Attitude of the footwall vein in the Subway adit.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Diorite
Andesite
Andesite Breccia
Granodiorite
Volcanic Rock

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: BEAR
REPORT ON: Y

CATEGORY: Combined
YEAR: 1989
QUANTITY: 160000 Tonnes

COMMODITY	GRADE
Gold	17.4000 Grams per tonne

COMMENTS: Probable and possible reserves including reserves from the adjacent Shack vein (094F 045) and Elite vein (092F 051) occurrences.
REFERENCE: George Cross News Letter No.38, 1989.

CAPSULE GEOLOGY

Karmutsen Formation volcanics of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Intrusions consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcaniclastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.

The Bear shear zone is an east trending 30 metre wide hanging wall splay fault which forms the contact between andesite and quartz diorite. Within the shear zone the volcanics are intensely brecciated and locally silicified. Clay and chlorite form the alteration assemblage within the shear zone halo in quartz diorite. Chloritization and silicification mark the intrusive within the shear itself.

The Subway adit, driven into quartz diorite on the Cinnamon Bear

CAPSULE GEOLOGY

Crown grant (Lot 294), follows the 85 degree striking, 50 degree northwest dipping Footwall quartz vein along the footwall of the shear zone. The vein, pinching and swelling from 50 to 300 centimetres in width, contains pyrite, arsenopyrite, pyrrhotite, sphalerite and gold. A 70-centimetre chip sample across the vein assayed 17.5 grams per tonne gold and 10.3 grams per tonne silver (Assessment Report 11940). Four hanging wall splays occur over a strike length of 27 metres which averaged 10.66 grams per tonne gold over a 1 metre width (Henneberry, 1987).

The Black vein occurs on the hanging wall of the Bear shear zone, 75 metres west of the adit. The vein is up to 3 metres wide and locally contains massive pyrrhotite and black sphalerite with lesser chalcopyrite and pyrite. Wallrock alteration within the quartz diorite host consists of a 50 to 100 centimetre halo of chlorite and argillic bleaching. A 4.37 tonne bulk sample assayed 9.6 grams per tonne gold (Henneberry, 1987).

A zone of quartz veinlets and stringers (Stockwork showing) outcrops 250 metres east of the adit.

Probable and possible reserves are estimated at 160,000 tonnes grading 17.4 grams per tonne gold. This includes reserves from the adjacent Shack vein (092F 045) and Elite vein (092F 051) occurrences (George Cross News Letter No.38, 1989).

BIBLIOGRAPHY

EMPR AR 1902-232; 1903-192; 1909-148; *1913-279; 1916-329
EMPR ASS RPT 5112, 11940
EMPR BULL 55
EMPR EXPL 1986-A71; 1988-B63
EMPR FIELDWORK 1988, pp. 61-74
EMPR MAP 65 (1989)
EMPR Mineral Potential Map 1992-1
EMPR OF 1992-1
EMPR PF (*Henneberry, R.T. (1987): Economic Potential of the Kennedy River Gold Camp, Vancouver Island, British Columbia; Article on the Bear property, The Westerly News, Ucluelet, B.C., September 30, 1987; *Prospectus: International Coast Minerals Corporation, Nov.7, 1987; News Releases, International Coast Minerals Corporation: Aug.26, Nov.10, Dec.10, 1987; March 3, 30, June 20, Aug.10, 1988; Palka, J. (1989): Executive Summary of the Kennedy River Gold Camp, International Coast Minerals Corporation)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
GCNL #65,#66,#154,#158,#183,#203,#228, 1988; #38, 1989
N MINER April 11, Nov.21, Dec.19, 1988
WWW http://www.infomine.com/index/properties/KENNEDY_RIVER.html
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 143

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/01/05 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 045** NATIONAL MINERAL INVENTORY:

NAME(S): **SHACK**, CAPTAIN HOOK, GIANT BEAR

STATUS: Developed Prospect MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 10 04 N NORTHING: 5448928
LONGITUDE: 125 25 14 W EASTING: 323557
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: One kilometre west of Kennedy River (Press Release June 20, 1988).
Also see the Bear (092F 044) occurrence.

COMMODITIES: Gold Silver Copper Zinc

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Sphalerite
ASSOCIATED: Quartz
ALTERATION: Silica Kaolinite Pyrite
ALTERATION TYPE: Silicific'n Argillic Pyrite
MINERALIZATION AGE: Tertiary

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Faulted Sheared
DIMENSION: 0160 x 0122 Metres STRIKE/DIP: 053/63N TREND/PLUNGE:
COMMENTS: Vein extends for 160 metres along strike and has been tested to a depth of 122 metres.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Basalt
Tuff
Volcaniclastic
Limestone
Quartz Diorite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: Pre-mineralization GRADE: Greenschist

INVENTORY

ORE ZONE: SHACK REPORT ON: Y

CATEGORY: Combined YEAR: 1988
QUANTITY: 37920 Tonnes

COMMODITY	GRADE
Gold	19.2000 Grams per tonne

COMMENTS: From 37,920 to 42,015 tonnes probably or possible ore grading from 19.20 to 24.03 grams per tonne gold.
REFERENCE: Assessment Report 18693.

CAPSULE GEOLOGY

Karmutsen Formation volcanics and Quatsino Formation limestones of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Intrusions consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcaniclastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.

The Shack vein is emplaced along a northeast trending fault which is probably a splay of the Mine Fault. The vein, hosted by andesite, averages 40 centimetres in width and extends for 160 metres along strike (053 degrees), dipping 60 to 67 degrees to the northwest.

Diamond drill intersects of the vein from 1988 contain 2 to 3

CAPSULE GEOLOGY

per cent pyrite, pyrrhotite, chalcopyrite and sphalerite. The wall-rocks are silicified, kaolinized and pyritized. The eight diamond drill holes that tested the vein gave a weighted average of 15.57 grams per tonne gold and 89.14 grams per tonne silver across an estimated true width of 44 centimetres (Assessment Report 18693).

A preliminary ore reserve estimate for the Shack vein has been calculated based on surface sampling and diamond drilling. The deposit contains from 37,920 to 42,015 metric tonnes of probable or possible ore grading from 19.20 to 24.03 grams per tonne gold (Assessment Report 18693). The vein has been tested to a depth of 122 metres where it remains open. It also remains open along strike at both ends.

BIBLIOGRAPHY

EMPR ASS RPT 15395, *18693
EMPR BULL 55
EMPR EXPL 1987-C143
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Henneberry, R.T. (1987): Economic Potential of the Kennedy River Gold Camp, Vancouver Island, British Columbia; New Releases, International Coast Minerals Corp.: Nov.10, 1987, *June 20, 1988 (see 92F 044, Bear file for these reports))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
GCNL *#38, 1989
N MINER Dec.19, 1988
WWW http://www.infomine.com/index/properties/KENNEDY_RIVER.html
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 143

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/11/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 046**

NATIONAL MINERAL INVENTORY:

NAME(S): **OLYMPIC**, TITANIC, JULIUS CREEK, BASELINE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 10 59 N
LONGITUDE: 125 24 45 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Olympic showing on Figure 4 (Assessment Report 15935).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5450607
EASTING: 324199

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite Limonite Sericite Silica
ALTERATION TYPE: Silicific'n Chloritic Oxidation
MINERALIZATION AGE: Tertiary

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 107/75N
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP: Pre-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	49.3700	Grams per tonne
Gold	3.3500	Grams per tonne

COMMENTS: 8 centimetre sample.
REFERENCE: Assessment Report 15935.

CAPSULE GEOLOGY

Karmutsen Formation volcanics of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Intrusions consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcaniclastics. West-northwest trending fault shear zones of Tertiary age cut the rocks.

Two showings occur along the Julius Creek shear zone. The Olympic showing, a 5 to 40 centimetre wide quartz vein striking 107 degrees and dipping 75 degrees north, contains pyrite and chalcopyrite. Wallrock alteration of the Karmutsen andesites consists of chlorite, limonite, sericite and silicification. An 8 centimetre chip sample assayed 3.35 grams per tonne gold and 49.37 grams per tonne silver (Assessment Report 15935).

The Baseline showing, located 200 metres east-southeast of the Olympic, is a quartz vein mineralized with pyrite and chalcopyrite. The vein is 10 to 50 centimetres wide and outcrops sporadically for 30 metres.

BIBLIOGRAPHY

EMPR AR 1913-279
EMPR ASS RPT *15935
EMPR BULL 55

BIBLIOGRAPHY

EMPR PF (*Henneberry, R.T. (1987): Economic Potential of the Kennedy River Gold Camp, Vancouver Island, British Columbia (located in 92F 044, Bear file))
EMPR 1987-C143
GSC MAP 17-1968, 1386A
GSC OF 463
GSC P 68-50
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 143

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1989/11/30	REVISED BY:	LDJ	FIELD CHECK:	N

MINFILE NUMBER: **092F 047**

NATIONAL MINERAL INVENTORY:

NAME(S): **JO JO**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 09 47 N
LONGITUDE: 125 24 03 W
ELEVATION: 175 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: On the east side of Kennedy River between the Tommy K (092F 033) and Rose Marie (092F 032) occurrences (GSC Memoir 204). According to the Assessment Report 12739, Figure 2, the Jo Jo is located at Northing 5447100, Easting 323250.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5448357
EASTING: 324978

COMMODITIES: Copper Zinc Lead

MINERALS
SIGNIFICANT: Pyrrhotite Pyrite Chalcopyrite Sphalerite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION:
STRIKE/DIP: 040/
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Volcanic
Sediment/Sedimentary
Granodiorite

HOSTROCK COMMENTS: Vein occurs in volcanics, sediments and intrusives.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Upper Triassic andesites and andesitic breccia and tuffs of the Karmutsen Formation, Vancouver Group are intruded by quartz diorite to granodiorite of the Early to Middle Jurassic Island Plutonic Suite and Tertiary dacitic dykes. The rocks are cut by northwest trending faults which typically show intense shearing and local sericitization, silicification and pyritization over widths of 0.5 to 2 metres.

A quartz vein, about 60 centimetres wide, strikes 040 degrees through volcanics, sediments and granodiorite; one report gives a 065 degree strike. The quartz is mineralized with pyrrhotite, pyrite, and lesser amounts of chalcopyrite, sphalerite, and traces of galena. The vein has been traced on surface for "several hundred feet". A sample across some of the best looking ore contained only small percentages of zinc and copper; gold and silver were absent (Minister of Mines Annual Report 1927). The vein shares some characteristics with the VRL-10 vein (092F 480).

BIBLIOGRAPHY

EMPR AR *1927-343
EMPR BULL *1, p. 133; 55
GSC MAP 17-1968; 1386A
GSC MEM *204, p. 28
GSC OF 463
GSC P 68-50, p. 38

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 048**

NATIONAL MINERAL INVENTORY:

NAME(S): **GRANT**, DOME, TOMMY

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 09 54 N
LONGITUDE: 125 23 10 W
ELEVATION: 360 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Dome vein is located north of Kennedy Lake, just east of Kennedy River on the Tommy claim previously the Grant Group (see 092F 033, Tommy K).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5448539
EASTING: 326058

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Mineralogy not reported; chalcopyrite assumed to be present.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 095/
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite Breccia
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1923
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	41.1400	Grams per tonne
Gold	11.6600	Grams per tonne

COMMENTS: Taken across 46 centimetres of the vein currently called the Dome vein.
REFERENCE: Minister of Mines Annual Report 1923, page 245.

CAPSULE GEOLOGY

Upper Triassic andesites and andesitic breccia and tuffs of the Karmutsen Formation, Vancouver Group are intruded by granodiorite of the Early to Middle Jurassic Island Intrusions and Tertiary dacitic dykes. The rocks are cut by northwest trending faults which typically show intense shearing and local sericitization, silicification and pyritization over widths of 0.5 to 2 metres.

The Dome vein is hosted in well brecciated andesitic volcanics, within a wide shear zone which appears to be a splay off the Canoe Creek fault. The vein strike is approximately 095 degrees. The ore mineralogy is not reported.

One sample taken across 46 centimetres assayed 11.66 grams per tonne gold, 41.14 grams per tonne silver and a trace of copper. Another sample contained 44.57 grams per tonne gold, 24.00 grams per tonne silver and 1.6 per cent copper (Minister of Mines Annual Report 1923).

See also the Tommy K (092F 033) for further information.

BIBLIOGRAPHY

EMPR AR 1901-1098; *1923-245
EMPR ASS RPT 9606, 12767, 14279, 16474, 16729
EMPR BULL 20, part V, p. 26; 55
EMPR EXPL 1981-71; 1984-159-160; 1985-145; 1987-C141; 1988-C84

BIBLIOGRAPHY

EMPR PF (*Henneberry, R.T. (1987): Economic Potential of the Kennedy
River Gold Camp, Vancouver Island, British Columbia (located
in 92F 044, Bear file))
GSC MAP 17-1968, 1386A
GSC OF 463

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/03 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 049**

NATIONAL MINERAL INVENTORY:

NAME(S): **RUTH**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 10 09 N
LONGITUDE: 125 24 25 W
ELEVATION: 180 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 550 metres southeast of the Bear Group (Crown Grant Lots 293,294 and 300). The Bear Group is rpeorted as occurring 800 metres west of Kennedy River (Minister of Mines Annual Report 1916).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5449051
EASTING: 324554

COMMODITIES: Silver Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0030 Metres STRIKE/DIP: 055/75S TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Porphyry
Diabase
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Plutonic Rocks Wrangell

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1913
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	96.0000	Grams per tonne
Copper	1.9000	Per cent

COMMENTS: Sample from vein also contained trace gold.
REFERENCE: Minister of Mines Annual Report, 1913-279.

CAPSULE GEOLOGY

Karmutsen Formation volcanics and Quatsino Formation limestones of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Plutonic Suite consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcaniclastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.

A 0.5 metre wide quartz vein, exposed for 30 metres on surface, contains pyrite and chalcopyrite. The 55 degree striking, 75 degree southeast dipping vein occurs in porphyry. A small diabase dyke accompanies the vein on the hangingwall and limestone outcrops within 3 metres. A sample assayed 1.9 per cent copper, 96 grams per tonne silver and trace gold (Minister of Mines Annual Report 1913).

BIBLIOGRAPHY

EMPR AR *1913-29; 1916-330
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/02/07 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 050**

NATIONAL MINERAL INVENTORY:

NAME(S): **BESSIE B**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 09 54 N
LONGITUDE: 125 25 05 W
ELEVATION: 50 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Four kilometres from Kennedy Lake, 400 metres west of Kennedy River (Minister of Mines Annual Report 1913, page 278).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5448613
EASTING: 323730

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
COMMENTS: Mineralogy is unknown, pyrite is assumed.
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
COMMENTS: Veins dip steeply northwest.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Diabase
Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Karmutsen Formation volcanics of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Plutonic Suite consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcaniclastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.

Steep northwest dipping quartz veins, with gold values, occur in a diabase dyke hosted in porphyry, with a 70 degree strike.

BIBLIOGRAPHY

EMPR AR *1913-278; 1916-329
EMPR BULL 55
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/07 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 051**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLUE BIRD**, BLASTER, ELITE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 11 01 N
LONGITUDE: 125 25 08 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located from Assessment Report 15949, the author of which believes that the "Blaster" showings (including the Elite vein) are the same as the old "Blue Bird" showings mentioned in Minister of Mines Annual Report 1923 (see also 092F 044 - Bear).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5450684
EASTING: 323735

COMMODITIES: Gold, Silver, Copper, Zinc

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Arsenopyrite, Chalcopyrite, Sphalerite
ASSOCIATED: Quartz
ALTERATION: Chlorite, Silica, Limonite
ALTERATION TYPE: Chloritic, Silicific'n, Oxidation
MINERALIZATION AGE: Tertiary

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Basalt
Tuff
Volcaniclastic

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP: Pre-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: ELITE VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	80.9100	Grams per tonne
Gold	53.6900	Grams per tonne

COMMENTS: Taken across 70 centimetres.
REFERENCE: Henneberry, R.T. (1987): Economic Potential of Kennedy R. Gold Camp.

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1923
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	2.0600	Grams per tonne
Silver	34.3000	Grams per tonne
Copper	0.7000	Per cent

COMMENTS: Mineralized vein of the Blue Bird showings.
REFERENCE: Minister of Mines Annual Report 1923, page 246.

CAPSULE GEOLOGY

Karmutsen Formation volcanics of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Intrusions consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcaniclastics. West-northwest trending fault/shear zones of Tertiary age cut the

CAPSULE GEOLOGY

rocks.
Quartz veins, mineralized with chalcopyrite, pyrite and arsenopyrite, occur in a shear zone which is up to 12 metres wide. The shear zone lies within the volcanics. A grab sample of a mineralized vein of the Blue Bird showings assayed 2.06 grams per tonne gold, 34.3 grams per tonne silver and 0.7 per cent copper (Minister of Mines Annual Report, 1923).

The Elite vein is reported to occur at this location striking 060 degrees and dipping 60 degrees to the northeast. The 35 to 75 centimetre wide quartz-sulphide vein has been traced semi-continuosly for 50 metres. The Elite vein appears to occur in a hanging wall splay of the Julius Creek shear zone. Massive to weakly brecciated andesitic volcanics host the vein. Pervasive chlorite with lesser silicification, limonite and bleaching form a halo of 40 centimetres adjacent the vein. Some pyrite was noted within the halo. Mineralization, occurring primarily as pods, seams and fracture coatings, consists predominantly of pyrite and pyrrhotite. Arsenopyrite and sphalerite are also observed. Of ten samples taken the best assay obtained was 53.69 grams per tonne gold and 80.91 grams per tonne silver across 60 centimetres. The lowest assay was 2.95 grams per tonne gold and 12.34 grams per tonne silver across 70 centimetres (Henneberry, 1987).

BIBLIOGRAPHY

EMPR AR *1923-246
EMPR ASS RPT *15949
EMPR BULL 55
EMPR EXPL 1987-C140
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Henneberry, R.T. (1987): Economic Potential of the Kennedy River Gold Camp, Vancouver Island, British Columbia; New Releases, International Coast Minerals Corp.: Nov.10, 1987, *June 20, 1988 (see 92F 044, Bear file for these reports))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
GCNL *#38, 1989
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 143

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/11/27 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 052**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLD QUEEN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 10 47 N
LONGITUDE: 125 24 20 W
ELEVATION: 70 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Vein location, figure 4, Assessment Report 15935.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5450221
EASTING: 324693

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION: 300 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: One-metre wide vein hosted in 300 metre shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP: Pre-mineralization
GRADE: Greenschist

CAPSULE GEOLOGY

Karmutsen Formation volcanics of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Intrusions consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcaniclastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.

A 300-metre shear zone contains a 1-metre wide quartz vein with pyrite within the volcanics. A value of 48 grams per tonne gold was reported (Assessment Report 15935).

BIBLIOGRAPHY

EMPR AR *1927-344
EMPR ASS RPT *15935
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 143

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/01/05 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 053** NATIONAL MINERAL INVENTORY:

NAME(S): **PROSPER**, BES, PAKEHA, ISOB

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 23 36 N NORTHING: 5474801
LONGITUDE: 125 44 35 W EASTING: 300962
ELEVATION: 110 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located a few hundred metres east of Bedwell River, just north of Ursus Creek (Assessment Report 17620).

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Galena Sphalerite Gold
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite Silica
ALTERATION TYPE: Oxidation Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: STRIKE/DIP: 065/63N TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: PROSPER REPORT ON: Y

CATEGORY: Inferred YEAR: 1988
QUANTITY: 7250 Tonnes

COMMODITY	GRADE	
Gold	32.5700	Grams per tonne

COMMENTS: Possible ore reserve.
REFERENCE: Assessment Report 17620.

ORE ZONE: PROSPER REPORT ON: Y

CATEGORY: Indicated YEAR: 1988
QUANTITY: 900 Tonnes

COMMODITY	GRADE	
Gold	26.7400	Grams per tonne

COMMENTS: Probable mineral reserves.
REFERENCE: Assessment Report 17620.

CAPSULE GEOLOGY

The Prosper occurrence is underlain by volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. These consist of fine grained andesites and black or dark green basalts. Large areas to the immediate west of the head of Bedwell Sound and a few kilometres to the north are underlain by rock of the Early to Middle Jurassic Island Intrusions. These plutonic rocks vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite. Lenses of recrystallized limestone also occur in the region.

The Prosper vein occurs in a shear zone that ranges from about 0.3 to 1 metre in width, strikes generally at 065 degrees and dips between 56 and 68 degrees to the northwest. The vein ranges from 15 to 70 centimetres in width but is typically 25 to 35 centimetres

CAPSULE GEOLOGY

wide. The vein can vary from a solid vein of quartz, to parallel footwall and hangingwall branches, to zones of silicified breccia. The vein is mineralized with pyrite, chalcopyrite, galena, sphalerite, visible gold and malachite. A weighted average of assays from 11 samples taken on the vein gave 16.59 grams per tonne gold and 34.63 grams per tonne silver over an average width of 39 centimetres (Assessment Report 17620).

The vein has been explored intermittently since the beginning of the century and is currently exposed by two adits and two surface trenches. The lower adit, at an elevation of 110 metres, is reported to be 128 metres in length. The upper adit, at an elevation of 158 metres, follows the vein for 35 metres and then branches for 3 metres as the vein splits. A raise begun at a point 80 metres from the portal of the lower adit intersects the bottom of a winze in the upper adit.

Bralorne Mines Ltd. held an option on the property and in 1942 and 1950, produced 90 tonnes of ore from the upper adit, 6,687 grams of gold, 6,283 grams of silver and 37 kilograms of copper were recovered (Mineral Policy data).

The vein has been calculated to contain probable reserves of 900 tonnes grading 26.74 grams per tonne gold and possible reserves of 7250 tonnes containing 32.57 grams per tonne gold (Assessment Report 17620).

The Isob vein occurs about 40 metres north of the Prosper vein, striking from 055 to 060 degrees and dipping moderately to the northwest. It consists of quartz, with minor calcite, containing chalcopyrite, pyrite, galena and visible gold. The observed part of the vein is from 30 to 40 centimetres wide. The assays of 5 samples taken on the vein gave a weighted average of 10.87 grams per tonne gold and 53.83 grams per tonne silver over an average vein width of 37 centimetres (Assessment Report 17620).

The Isob vein is exposed by a 5 metre long adit and two surface cuts over a strike length of 130 metres and a vertical distance of 65 metres.

BIBLIOGRAPHY

EMPR AR 1946-183; 1947-181
EMPR ASS RPT 2997, 3629, 7439, 13571, 14067, *17620
EMPR BC METAL MM00096
EMPR BULL *8, pp. 22-26; 13
EMPR EXPL 1975-E97, 1976-E113, 1977-E111, 1978-E128, 1979-130, 1980-171, 1985-C145, 1988-C85
EMPR GEM 1973-232
EMPR PF (Assay Plan of the Upper Tunnel, Prosper Mine, Scale 1:120, March 14, 1942; Prosper Mine, Vertical Projection, Scale 1:120, March 14, 1942; Cross-section of the workings, Feb., 1942; *Preliminary Report on the Prosper Vein by J.S. Stevenson, B.C. Department of Mines, May 4, 1972; Prospectus: Regarding the Development of an Underground Mining, Milling and Cyanide Leaching Project at the Prosper Mine, by Krueckl Consulting Services Ltd., April 10, 1986, for Tamara Resources Inc.; Tamara Options the Prosper Mine on Vancouver Island, Article by S. Stone in the May/June 1986 issue of Prospector(?); *Prospectus: Intercontinental Ventures Ltd., Jan.6, 1988)
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50, p. 38; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
GCNL #40,#221, 1986; #32,#74, 1987
Times Colonist, The New Islander, Nov. 16, 1997, p. 7
V STOCWATCH APRIL 14, 1987

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/26 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 054**

NATIONAL MINERAL INVENTORY:

NAME(S): **SEATTLE (L.700)**, NEW YORK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 23 55 N
LONGITUDE: 125 45 43 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 500 metres west of Bedwell River, about 4.5 kilometres from the river's mouth in Bedwell Sound. Centre of Lot 700.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5475437
EASTING: 299613

COMMODITIES: Gold Copper Zinc Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Sphalerite
ALTERATION: Garnet Epidote Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Andesite
Basalt
Quartz Diorite Dike
Aplite Dike

HOSTROCK COMMENTS: Lenses of limestone occur with Karmutsen volcanics near Island Plutonic Suite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1939
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	3.4300	Grams per tonne

COMMENTS: Sample of recrystallized limestone from surface cut. Also contained 3.43 grams per tonne silver.
REFERENCE: Bulletin 8, page 27.

CAPSULE GEOLOGY

The area is underlain mainly by volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. In the Bedwell River area these consist of fine-grained andesites and black or dark green basalts. Lenses of recrystallized limestone also occur locally. Large areas to the immediate west of the head of Bedwell Sound and a few kilometres to the north are underlain by rock of the Early to Middle Jurassic Island Plutonic Suite. These plutonic rocks on vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

The rocks underlying the Seattle occurrence are volcanics and recrystallized limestone which lie south of a tongue of Island Intrusion rock. Aplite and quartz diorite dykes, associated with the intrusive, are found in the volcanic rocks.

The old workings, from the early part of the century, examined skarn mineralization consisting of garnet, epidote, magnetite, pyrite, and chalcopyrite that has replaced limestone and probably some volcanic rock. One exposures is about 2.4 metres wide and rich in chalcopyrite. The workings consist of two adits, a shaft and some surface cuts. A sample of recrystallized limestone from a 1.5 metre surface cut made in 1939 contained magnetite, pyrite, chalcopyrite

CAPSULE GEOLOGY

and some sphalerite. The sample assayed 3.43 grams per tonne gold and 3.43 grams per tonne silver (Bulletin 8).

BIBLIOGRAPHY

EMPR AR 1898-1133; *1899-789; 1902-232; 1903-192; 1907-221; 1908-142; 1909-146; 1928-372; 1929-375
EMPR BC METAL MM00098
EMPR BULL *8, pp. 26,27; 13, p. 13
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (Sketch of Seattle group showing position of tunnels and open cuts)
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16
N MINER April 24, 1995
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Victoria Daily Colonist Newspaper Jan. 10, 1901

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 055**

NATIONAL MINERAL INVENTORY:

NAME(S): **SONGBIRD**, SONGBIRD MAIN, LILY, OKAY

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E
BC MAP:
LATITUDE: 49 12 11 N
LONGITUDE: 124 13 22 W
ELEVATION: 365 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Songbird main zone (Lily zone), on the northeastern slopes of Okay Mountain, 14.5 kilometres west from the village of Wellington (Assessment Report 17837).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5450748
EASTING: 410928

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0100 x 0016 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Mineralized zone is 6 to 16 metres wide with a strike length greater than 100 metres.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Meta Argillite
Argillite
Andesite
Dacitic Andesitic Tuff
Quartz Sericite Schist

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
YEAR: 1978

COMMODITY	GRADE	
Silver	47.6000	Grams per tonne
Gold	6.6000	Grams per tonne

COMMENTS: Sample across a true width of 9.1 metres.
REFERENCE: Assessment Report 17837.

CAPSULE GEOLOGY

The area is underlain by Paleozoic Sicker Group volcanic rocks and sediments in fault contact with Upper Triassic Karmutsen Formation (Vancouver Group) andesites. Cretaceous sediments of the Nanaimo Group unconformably overlie these rocks.

In this area the Paleozoic Sicker Group is comprised of the Upper Devonian McLaughlin Ridge Formation represented by a lower phyllite unit, a dacitic to andesitic tuff unit and an upper quartz-sericite schist unit. The phyllite unit is predominantly a meta-argillite sequence which is locally cherty and becomes graphitic near faults. Overlying and interbedded with this is a pyritic dacitic to andesitic tuff sequence. Overlying both units is a quartz-sericite schist commonly containing thin bands of chert and local lenses of pyrite. In fault contact with the Sicker rocks are massive dark green andesites of the Karmutsen Formation. Local porphyritic and

CAPSULE GEOLOGY

cherty andesite are observed. Nanaimo Group sediments consisting of fossiliferous sandstone with local conglomerate lie unconformably on Sicker rocks.

A steeply west dipping, brecciated and quartz flooded mineralized zone (Songbird Main zone or Lily zone) lies along the faulted contact between Karmutsen Formation andesite on the west and Sicker Group argillite on the east. The zone ranges from 6 to 16 metres in width. A brecciated core zone consists of an orange-brown weathering cherty argillite which has been flooded with quartz-carbonate stringers and veinlets. Minor disseminated pyrite and chalcopyrite are evident. The zone has been exposed by a series of trenches that suggest a strike length in excess of 100 metres. Trench samples assayed up to 6.6 grams per tonne gold and 47.6 grams per tonne silver over a true width of 9.1 metres (Assessment Report 17837). Drilling investigated approximately 200 metres of strike length and although the fault zone was found to be present, the mineralized zone is much narrower and of a lower grade than surface sampling indicates.

BIBLIOGRAPHY

EMPR ASS RPT 7641, 11926, 15810, 17384, *17837
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR PF (Rpt. by H. Laanela (1965))
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50
GCNL #246, 1979; #10, 1984
IPDM Mar/Apr 1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/09 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 056**

NATIONAL MINERAL INVENTORY:

NAME(S): **GALENA**, BAT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 24 25 N
LONGITUDE: 125 45 15 W
ELEVATION: 90 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: A few hundred metres west of Bedwell River, about 5.5 kilometres from the mouth in Bedwell Sound (Bulletin 8, Figure 1).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5476343
EASTING: 300211

COMMODITIES: Copper Iron

MINERALS
SIGNIFICANT: Chalcopyrite Magnetite
ALTERATION: Diopside Magnetite Chlorite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Skarn Replacement Industrial Min.
DIMENSION:
STRIKE/DIP: 025/75W
TREND/PLUNGE:
COMMENTS: Attitude of footwall joint.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Diabase
Basalt
Andesite
Granitic Dike

HOSTROCK COMMENTS: Volcanics are deposit host; granitic dykes cut volcanics in vicinity.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1916
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	3.1000	Per cent

COMMENTS: Silver assayed 6.86 grams per tonne and gold assayed a trace.
REFERENCE: Minister of Mines Annual Report 1916, page 334.

CAPSULE GEOLOGY

The area is underlain mainly by volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. In the Bedwell River area these consist of fine grained andesites and black or dark green basalts. Lenses of recrystallized limestone also occur locally. Large areas to the immediate west of the head of Bedwell Sound and a few kilometres to the north are underlain by rock of the Early to Middle Jurassic Island Plutonic Suite. These plutonic rocks vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

The Galena showing is reported to occur in altered volcanic rock that early reports called diabase. Granitic dykes are reported to occur in the vicinity. A strong joint, striking about 025 degrees and dipping 75 degrees west, forms the footwall of the mineralized zone. A set of joints, striking about due north and dipping steeply, intersects the footwall joint and the mineralization extends a short distance to the north along them. The western boundary of the mineralization is irregular, varying from about 5 to 38 centimetres.

The mineralized material consists of altered volcanic rock more or less replaced by magnetite and chalcopyrite. A section studied microscopically consisted largely of diopside with masses of these

CAPSULE GEOLOGY

metallic minerals. This ore is also cut by chlorite veinlets. One sample contained 6.86 grams per tonne silver, 3.1 per cent copper and a trace of gold (Minister of Mines Annual Report 1916, page 334).

A short 3 metre shaft and a 12 metre open cut exposed the deposit around the turn of the century.

BIBLIOGRAPHY

EMPR AR *1899-790; 1900-923; *1916-334
EMPR ASS RPT 2997, 3629, 7439, 13571, 14067, 17620
EMPR BULL *8, p. 35,36; 13, p. 30
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50, p. 38; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/02 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 057**

NATIONAL MINERAL INVENTORY:

NAME(S): **NOBLE**, NUB, NOBLE B

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 26 07 N
LONGITUDE: 125 44 04 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located between 200 and 525 metres elevation near Noble Creek.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5479440
EASTING: 301756

COMMODITIES: Gold, Silver, Zinc, Lead, Copper

MINERALS

SIGNIFICANT: Pyrrhotite, Chalcopyrite, Marcasite, Galena, Sphalerite, Pyrite, Gold
ASSOCIATED: Quartz, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Andesite
Quartz Diorite Dike

HOSTROCK COMMENTS: Quartz veins occur in volcanics and quartz diorite dyke.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Bulk Sample

YEAR: 1942

COMMODITY	GRADE	
Silver	17.1400	Grams per tonne
Gold	91.8900	Grams per tonne
Lead	0.8000	Per cent
Zinc	1.9000	Per cent

COMMENTS: 2.25 tonne shipment.
REFERENCE: Minister of Mines Annual Report 1942, page A37.

CAPSULE GEOLOGY

The area is underlain by andesitic and basaltic volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. Thin members, which may be altered tuffs also occur. The volcanics are intruded by quartz diorite dykes. These dykes are associated with the Early to Middle Jurassic Island Plutonic Suite which, in this region, make up a large portion of the surface geology.

A system of veins occurs adjacent to Noble Creek between 200 and and 270 metres elevation and northeast of the creek from about 365 to 525 metres elevation. Most of the veins are in volcanics occupying joints along which there has been some shearing. One vein occurs in 5 metre wide quartz diorite dyke. The veins exposed near the creek, the dyke, and a wider vein found northeast of the creek strike from 025 to 040 degrees. Most of veins and the dyke dip from 65 to 75 degrees to the southeast, one vein dips 80 degrees to the north and the wider vein dips vertically. The veins exposed at the higher elevations to the northeast of the creek strike from due north to 020 degrees and dip eastward from 60 to 70 degrees.

The veins generally pinch and swell along strike and rarely exceed 23 centimetres in width. However, mineralized shears found to the northeast of the creek reach widths of 60 centimetres or more.

CAPSULE GEOLOGY

The veins or lenses consist of quartz and carbonate which host moderate percentages of sulphides. The sulphides include pyrrhotite, chalcopyrite, marcasite, galena, some sphalerite and probably pyrite. Free gold has been reported. Samples of these veins taken by Bancroft in 1939 generally assayed between 4 and 67 grams per tonne gold and between 3 and 41 grams per tonne silver (Bulletin 8, page 38). The sample with the greatest width assayed 10.38 grams per tonne gold and 6.86 grams per tonne silver across 48 centimetres.

A test shipment totalling 2.25 tonnes of ore was made in 1942. This ore contained 91.89 grams per tonne gold, 17.14 grams per tonne silver, 1.9 per cent zinc, 0.8 per cent lead and a trace of copper (Minister of Mines Annual Report 1942, page A31).

BIBLIOGRAPHY

EMPR AR 1940-73; 1942-81; 1946-183; 1947-181
EMPR ASS RPT 4101, *4354, *4951, 4962, *5419
EMPR BULL *8, p. 36-38; 13
EMPR EXPL 1975-E97
EMPR GEM 1972-267, 1973-232, 1974-176
EMPR PF (Starr, C.C. (1940): Report on the Noble B Group of Mining Claims; Sketch showing Noble B Group plan of "assays", 1940; Sketch showing plan of Noble B Mining Claims showing veins, 1940)
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50, p. 38; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 058**

NATIONAL MINERAL INVENTORY:

NAME(S): **O.K.**, CUB

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 26 49 N
LONGITUDE: 125 43 09 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about one kilometre north of Bedwell River, about 10 kilometres from Bedwell Sound (Assessment Report 11110).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5480697
EASTING: 302910

COMMODITIES: Gold Silver Zinc Lead

MINERALS
SIGNIFICANT: Sphalerite Pyrite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0430 Metres STRIKE/DIP: 100/37N TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1982
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	92.2300	Grams per tonne
Gold	6.1000	Grams per tonne

COMMENTS: From a 37 centimetre chip sample.
REFERENCE: Assessment Report 11110.

CAPSULE GEOLOGY

The area is underlain by quartz diorite of the Early to Middle Jurassic Island Plutonic Suite. Contact with volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group) occurs just south of the occurrence. These plutonic rocks vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

The O.K. (Cub) vein varies in width from several centimetres to over 45 centimetres and may split or occur with nearby parallel veins. The vein, striking 100 degrees and dipping between 30 and 45 degrees to the north, is traceable along strike for 430 metres. The vein is not visible for much of this length but the sharply defined hangingwall is evident. The quartz vein is locally mineralized with sphalerite, pyrite and galena. The wallrock is sheared and altered and contains a little pyrite. A 37 centimetre sample assayed 6.10 grams per tonne gold and 92.23 grams per tonne silver (Assessment Report 11110).

BIBLIOGRAPHY

EMPR ASS RPT 4101, 4354, 4951, 4962, 5419, 5881, 5520, *11110
EMPR BULL *8, pp. 39,40; 13; 20, pp. 24-28
EMPR EXPL 1982-145
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50, p. 38; 72-44; 79-30; 80-16

BIBLIOGRAPHY

Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/06 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 059**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAY**, TEXADA ISLAND

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09E
BC MAP:
LATITUDE: 49 33 58 N
LONGITUDE: 124 12 07 W
ELEVATION: 183 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trench, 3.75 kilometres north from the summit of Mount Shepherd in the southern half of Texada Island, just east of a secondary road that joins a main road which bisects the island (Assessment Report 16013).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5491085
EASTING: 413088

COMMODITIES: Zinc, Lead, Copper, Silver

MINERALS

SIGNIFICANT: Sphalerite, Galena, Chalcopyrite
ASSOCIATED: Quartz, Pyrite, Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Undefined Formation	
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Limestone
Marble
Altered Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock

YEAR: 1986

COMMODITY	GRADE	
Silver	5.4000	Grams per tonne
Copper	0.0900	Per cent
Lead	0.1800	Per cent
Zinc	0.9900	Per cent

COMMENTS: Zinc assayed greater than 0.99 per cent.
REFERENCE: Assessment Report 16013.

CAPSULE GEOLOGY

Upper Triassic volcanics of the Karmutsen Formation (Vancouver Group), are underlain by altered tuffs of the Paleozoic Sicker Group. The unconformable contact parallels a north-northwest trending band of recrystallized limestone of the Upper Pennsylvanian to Lower Permian Buttle Lake Group.

The May occurrence comprises quartz veining at or near the contact of limestone with altered tuffs of the Sicker Group. Mineralization consists of small amounts of sphalerite, galena, chalcopyrite, pyrite and magnetite. A rock sample assayed greater than 0.99 per cent zinc, 0.18 per cent lead, 0.09 per cent copper and 5.4 grams per tonne silver (Assessment Report 16013).

BIBLIOGRAPHY

EMPR ASS RPT *16013
EMPR EXPL 1987-C152
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50

DATE CODED: 1985/07/24
DATE REVISED: 1990/02/14

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 060** NATIONAL MINERAL INVENTORY: 092F5 Au3

NAME(S): **MUSKETEER**, MUSKETEER 1-4 (L.1921-1924), SHAMROCK, SHAMROCK 1-2 (L.1925-1926), B FRACTION (L.1928), CORONA, BONUS, ROB, TRAIL

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 25 44 N NORTHING: 5478642
LONGITUDE: 125 42 03 W EASTING: 304167
ELEVATION: 290 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of 1000 level portal on Sam Craig Creek, 2 kilometres south of Bedwell River.

COMMODITIES: Gold Silver Lead Copper Zinc

MINERALS
SIGNIFICANT: Gold Galena Chalcopyrite Sphalerite Pyrite
COMMENTS: Silver mineralogy not known.
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epithermal Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0225 Metres STRIKE/DIP: 080/55N TREND/PLUNGE:
COMMENTS: Musketeer vein strikes 080 degrees, dips 55 degrees north.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 166 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Diorite
Andesite Dike

HOSTROCK COMMENTS: Age date from Burman River area (GSC Map 1386A); Jurassic quartz diorite is part of the Bedwell River Batholith.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: MUSKETEER REPORT ON: Y

CATEGORY: Unclassified YEAR: 1942
QUANTITY: 18034 Tonnes

COMMODITY	GRADE	
Gold	11.3200	Grams per tonne

REFERENCE: Northern Miner - November 28, 1974.

ORE ZONE: TRAIL VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1959
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	39.4000	Grams per tonne

COMMENTS: Sample over 51.5 metres strike length on 850 level.
REFERENCE: Bedwell River Gold Mines, 1959.

CAPSULE GEOLOGY

The Musketeer occurrence is located in Strathcona Park, along the Bedwell River. The area is underlain by quartz diorite of the Bedwell River batholith which is part of the Early to Middle Jurassic Island Plutonic Suite. Locally, fine-grained quartz diorite may represent a later phase of the intrusive. Andesite dykes, some of which are strongly altered, cut the intrusive rocks. Andesitic flows

CAPSULE GEOLOGY

of the Upper Triassic Vancouver Group, Karmutsen Formation, lie 1.5 kilometres to the west.

Five veins are recognized within a 260 metre area. The veins follow shears that occupy two orientation sets. One set strikes 010 to 030 degrees and dips 85 degrees west to 75 degrees east and the second set strikes 045 to 090 degrees with dips ranging from 45 to 75 degrees north.

The Musketeer vein, hosted in the second set of shears, strikes 80 degrees, dips 50 degrees north and is 225 metres long. It cuts and slightly off-sets the Trail vein, the Rob vein, the Musketeer #1 vein and the Bonus vein, which all belong to the first set of shears.

The veins consist mainly of well-crystallized quartz and white carbonate, with varying amounts of fine free gold, pyrite, sphalerite, galena and chalcopyrite. Pyrite and sphalerite are locally coarse. Vein widths range from less than 1.0 centimetre to 30.0 centimetres, with wider sections occurring at splays in the veins. The sulphides occur as ribbons where the veins are banded, or as irregular masses elsewhere.

Assays from the 700 level of the Trail vein range up to 166.65 grams per tonne gold and 106.30 grams per tonne silver over 25.4 centimetres (sample No.25, Bulletin 13, page 45). A sample over a strike length of 51.5 metres on the 850 level averaged 39.43 grams per tonne gold over 25.4 centimetres (Bedwell River Gold Mines, 1959). Samples from the Musketeer vein assayed between 4.8 grams per tonne gold over 17.8 centimetres and 169.7 grams per tonne gold over 11.4 centimetres (Bulletin 13, page 40).

In 1942, reserves of 18,034 tonnes, grading 11.32 grams per tonne gold were reported (Northern Miner, November 28, 1974). Production from the Trail and Musketeer veins in 1942, 1961, 1962, 1963, 1974 and 1975 totalled 9,623 tonnes of 9.87 grams per tonne gold, 5.61 grams per tonne silver, 1.15 per cent lead and 0.005 per cent copper.

BIBLIOGRAPHY

EMPR AR 1899-790; 1900-923; 1902-232; 1903-192; 1939-42; 1940-73; 1941-70; 1942-66; 1946-183; 1958-59; 1961-102; 1962-105; 1963-102
EMPR ASS RPT 16450
EMPR BC METAL MM00091
EMPR BULL *8, p. 41; *13, p. 31; 20 PART V
EMPR EXPL 1987-C145
EMPR GEM 1973-232; 1974-175
EMPR PF (McClay, S.J.O.(1974): Letter to Gold Commissioner dated June 18, 1974; Bedwell River Gold Mines, (1959): Plan and Vertical Section, 1:360 scale)
EMR MP CORPFILE (Musketeer Mines Limited; Pioneer Gold Mines of British Columbia Limited; Anglo-Huronian Limited; Bedwell River Gold Mines Limited; New Musketeer Gold Mines Limited; Honda Mining Company Limited)
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 9; 61; 463
GSC P 66-1; 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
GCNL Nov. 28, 1974
Times Colonist, The New Islander, Nov. 16, 1997, p. 7

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/17 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 061**

NATIONAL MINERAL INVENTORY: 092F5 Au4

NAME(S): **BUCCANEER**, RUFF, CRAIG, WEST, DICTATOR, MAY 1-8, JUNE 1-6, DEL 1-3

STATUS: Past Producer Underground
MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 25 30 N
NORTHING: 5478158
LONGITUDE: 125 40 50 W
EASTING: 305622
ELEVATION: 582 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of 1600 level portal on Craig vein, 400 metres west of Blaney Creek and 1.3 kilometres south of Bedwell River.

COMMODITIES: Gold Silver Lead Copper Zinc

MINERALS

SIGNIFICANT: Gold Chalcopyrite Galena Sphalerite
COMMENTS: Silver mineralogy not specified.
ASSOCIATED: Quartz Calcite Ankerite Chlorite Pyrite
ALTERATION: Ankerite Chlorite Malachite Covellite Chalcocite Limonite Anglesite
ALTERATION TYPE: Oxidation Leaching
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epithermal Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: 0250 Metres STRIKE/DIP: 025/75E TREND/PLUNGE:
COMMENTS: Craig vein strikes 025 degrees and dips 75 degrees east.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 166 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Diorite
Andesite Dike

HOSTROCK COMMENTS: Age date from Burman River area (GSC Map 1386A); Jurassic quartz diorite is part of the Bedwell River Batholith.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: WEST VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1939
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	99.4400	Grams per tonne
Gold	538.3500	Grams per tonne

COMMENTS: Sample 1.
REFERENCE: Bulletin 13, page 59.

ORE ZONE: CRAIG VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1939
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	75.4400	Grams per tonne
Gold	316.1500	Grams per tonne

COMMENTS: Sample 32.
REFERENCE: Bulletin 13, page 57.

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1939
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	19.5500	Grams per tonne

COMMENTS: Average over 0.91 metres along 134.1 metres strike length. Vein not specified.
REFERENCE: Bucccaneer Mines Limited, 1939: Assay Plan and Profile map.

CAPSULE GEOLOGY

The Buccaneer occurrence is located in Strathcona Park on the Bedwell River. The area is underlain by quartz diorite of the Bedwell River batholith which is part of the Early to Middle Jurassic Island Plutonic Suite. Andesitic flows of the Upper Triassic Vancouver Group, Karmutsen Formation lie 2.4 kilometres to the west.

The occurrence comprises the West vein and the Craig vein which are 200 metres apart and follow altered andesite dykes for much of their length. The veins and dykes follow branching fractures that strike approximately 025 degrees and dip steeply east. The dykes range in width from 0.05 metres to 7.6 metres, averaging 2.4 metres. The veins may be within the dykes or they may follow either side of the contact of the dyke and quartz diorite.

The veins are 0.05 to 0.51 metres wide, locally anastomosing to 1.2 metres. Vein material consists of well crystallized quartz, calcite, minor chlorite, and wallrock fragments that are sometimes altered to ankerite. Sulphide content is usually less than 1.0 per cent and includes scattered grains of chalcopyrite, pyrite, galena, and sphalerite. Locally, malachite, covellite, chalcocite, limonite and anglesite are present as alteration products. Fine-grained free gold is irregularly distributed in the gangue or with the sulphides.

The Craig vein has been traced underground for over 250 metres at two levels and is up to 0.51 centimetres wide, averaging about 0.14 metres. Assays range up to 316.15 grams per tonne gold and 75.44 grams per tonne silver (sample number 32, Bulletin 13, page 57).

The West vein has been traced on surface for 275 metres, and underground for about 145 metres. Common vein widths are about 0.19 metres. Samples assayed from trace to 538.35 grams per tonne gold and 99.44 grams per tonne silver (sample number 1, Bulletin 13, page 59).

Results of 1939 surface sampling along a strike length of 134.1 metres indicates a weighted average value of 19.55 grams per tonne gold over 0.91 metres (Buccaneer Mines Limited, 1939 Assay Plan). It is not clear whether this information is from the Craig or the West vein.

Production in 1941, 1942, 1947, 1958 and 1959 totalled 4987 tonnes containing 121,581 grams of gold, 39,128 grams of silver, 3206 kilograms of lead and 315 kilograms of copper.

BIBLIOGRAPHY

EMPR AR 1940-73; 1941-71; 1942-66; 1946-182; 1947-181; 1958-A43; 1959-A45; 1961-102; 1962-105; 1963-102
EMPR ASS RPT 16450
EMPR BC METAL MM00071
EMPR BULL *8, p. 53; *13, p. 47; 20, PART V, pp. 22-25
EMPR EXPL 1987-C145
EMPR GEM 1973-232; 1974-175
EMPR PF (Buccaneer Mines Limited, (1939): Assay Plan and Profile Map, 1: 360 scale; McClay, S.J.O., (1974): Letter to Gold Commissioner dated June 18, 1974, see 092F 060 - Musketeer)
EMR MP CORPFILE (Buccaneer Mines Limited; Bralorne Resources Limited; Bedwell River Gold Mines Limited)
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 9; 61; 463
GSC P 66-1; 68-50; 72-44
CIM Transactions Vol. 45, 1942
GCNL Nov. 26, 1974
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Times Colonist, The New Islander, Nov. 16, 1997, p. 7

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/17 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 062** NATIONAL MINERAL INVENTORY:

NAME(S): **YOU (L.1646)**, EX (L.1644), TEN (L.1645), EIGHT (L.1647)

STATUS: Prospect Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 26 51 N NORTHING: 5480454
LONGITUDE: 125 36 00 W EASTING: 311549
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the western slope of Big Interior Mountain (Bulletin 8).

COMMODITIES: Gold Silver Zinc Lead Copper

MINERALS
SIGNIFICANT: Pyrite Sphalerite Galena Chalcopyrite Arsenopyrite Bornite Tetrahedrite Gold Pyrrhotite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0003 Metres STRIKE/DIP: 060/85S TREND/PLUNGE:
COMMENTS: Attidue of eastern half of vein.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Diorite
Andesite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1961
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	28.1100	Grams per tonne

COMMENTS: An average for the shoot across 46 centimetres.
REFERENCE: Cohen, H.C. (1961): Report on the You Group.

CAPSULE GEOLOGY

The area is underlain by a batholith, composed primarily of quartz diorite, of the Early to Middle Jurassic Island Plutonic Suite. The known ore deposits in the region appear to be localized along the contact or margins of the quartz diorite.

The You deposit is a vein type fissure filling in a sheared andesitic dyke intruded into a faulted section of the quartz diorite. The vein strikes 060 degrees and dips in its eastern half at about 85 degrees to the south; in its western half the vein dips steeply to the north. The vein varies in width from 7 to 60 centimetres but averages about 15 to 24 centimetres. The vein has been examined by a main drift for 103 metres and by a small stope 64 metres from the portal. Another adit about 2 metres long and 37 metres lower in elevation was also completed. The total length of the vein is 170 metres.

In the southerly exposures of the vein, the dyke is not present and may have either pinched out or diverged. In the main tunnel the vein follows the contact of the dyke and the quartz diorite. The vein is in the central portion of the dyke and the veins widest portion occurs here. The dyke measures from 0.3 to 3 metres in width.

The vein consists of quartz and some carbonate irregularly

CAPSULE GEOLOGY

mineralized with sulphides. The sulphides occur as bands in parts of the vein, and locally in some unbanded parts they form high percentages of the total vein. However, most of the vein contains little sulphide mineralization. The sulphides include pyrite with lesser amounts of sphalerite and galena and minor amounts of chalcopyrite, bornite and arsenopyrite. The presence of free gold and tetrahedrite have been reported and microscopic studies of the ore have shown pyrrhotite to be present as well. Only pyrite appears in the wall rock.

One sample of well mineralized vein about 20 centimetres in width assayed 145.37 grams per tonne gold and 178.29 grams per ton silver. Another sample also well mineralized assayed 40.45 grams per tonne gold and 30.86 grams per tonne silver across 29 centimetres (Bulletin 8). An average value of the shoot was calculated at 28.11 grams per tonne gold over a width of 46 centimetres (Cohen, 1961).

BIBLIOGRAPHY

EMPR AR 1913-281; 1915-287; 1916-363; 1917-292; *1921-210; 1922-231; 1929-375; 1930-294; 1932-204; 1933-251; *1960-106
EMPR BULL 1, p. 134; *8 pp. 55-60; 13; 20-Part V, pp. 24-28
EMPR PF (*Clevland, C.E. (1940): Report on You Group, Bralorne Mines Ltd.; *Report on the You Group by Ridgeway R. Wilson and Associates, 1944; Mine Plan, scale 1:240, January 1945; Assay Plans, Tanar Gold Mines Ltd., 1959; *Cohen, H.C. (1961): Report on the You Group M.C., R.C. Clough Engineering Ltd. for Tanar Gold Mines Ltd.)
EMR MP CORPFILE (Calmac Mines Ltd.)
GSC MAP 17-1968; 1386A
GSC MEM *204, p. 26
GSC OF 463
GSC P 68-50, p. 38; 72-44; 79-30; 80-16
GCNL #193, 1985
N MINER Sept. 23, 1985
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Times Colonist, Islander, April 12, 1998, p. 9

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/14 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 063**

NATIONAL MINERAL INVENTORY:

NAME(S): **CASINO**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 27 45 N
LONGITUDE: 125 35 18 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Four showings on the northwestern slopes of Big Interior Mountain, from 975 to 1450 metres.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5482092
EASTING: 312452

COMMODITIES: Gold Silver Zinc Copper Lead

MINERALS
SIGNIFICANT: Pyrite Sphalerite Chalcopyrite Galena Covellite Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: STRIKE/DIP: 040/35E TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Diorite
Andesite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1939
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	139.2000	Grams per tonne

COMMENTS: From a 25 centimetre sample from the third zone.
REFERENCE: Bulletin 8, page 63.

CAPSULE GEOLOGY

Four showings occur in quartz diorite of the Early to Middle Jurassic Island Plutonic Suite. Much of the rock is porphyritic and cut by dykes. The showings are on the steep, often precipitous, northwestern slopes of Big Interior Mountain.

At approximately 975 metres surface cuts and stripping have been done across a narrow draw exposing mineralized quartz veins. The main vein pinches and swells from 10 to 75 centimetres, strikes 040 degrees and dips about 35 degrees to the southeast. The vein contains pyrite, sphalerite, minor of chalcopyrite, and a coating of covellite occurs on the sphalerite.

Three samples were taken over a section of 76.2 centimetres normal to the footwall. The first sample, 8.9 centimetres in width, containing quartz and sulphides at the footwall, assayed 111.09 grams per tonne gold and 68.57 grams per tonne silver. The second, overlying the first, was made up of 35.6 centimetres of wallrock cut by veinlets of quartz and sulphides and contained 17.14 grams per tonne gold and a trace of silver. The third sample, overlying the second, consisted of 31.7 centimetres of a decomposed layer containing some quartz and sulphides and assayed 20.57 grams per tonne gold and a trace of silver (Bulletin 8).

The second showing is about 500 metres to the south where a cut exposes a 10 centimetre vein. South of this, on a westerly facing bluff, a narrow shear zone occurs. This zone is marked by a rusty stain, 25 to 76 centimetres wide, extending for about 30 metres

CAPSULE GEOLOGY

between 1160 and 1180 metres elevation. A narrow fissure contains gouge, some pyrite, sphalerite and a little galena. It strikes due east and dips about 35 degrees north.

The third zone is about 300 metres southwest from the second and occurs intermittently for 120 metres on the northeastern side of a draw which runs west of north. Shears and branching fractures cut the quartz diorite and in the southern half of the exposure follow and cut through andesitic dyke rock. The major shearing strikes west of north and dips 35 to 55 degrees northeast. Sulphides are developed with quartz in the fissures and as disseminations in the wallrock. Some of the quartz is heavily mineralized with pyrite, sphalerite and chalcopyrite. Covellite is found as coatings on sphalerite and microscopic studies have detected the presence of gold. One 25 centimetre sample assayed 139.20 grams per tonne gold (Bulletin 8, page 63).

A short distance to the southeast, a rusty shear is exposed on steep bluffs from 1430 to 1450 metres elevation. This shearing strikes from about 070 to 090 degrees and dips from 35 to 55 degrees north. Lenses of quartz, with pyrite, arsenopyrite, chalcopyrite, and some sphalerite are developed in the sheared quartz diorite. A 25 centimetre sample of quartz with sulphides contained 2.74 grams per tonne gold (Bulletin 8, page 64).

BIBLIOGRAPHY

EMPR BULL *8, pp. 60-64; 13, 69 ; 20, pp. 24-28
1998-8-F, pp. 1-60
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50, p. 38; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/13 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 064**

NATIONAL MINERAL INVENTORY: 092F5 Cu1

NAME(S): **BIG I 1-4 (L.1640-1643)**, PTARMIGAN (L.1231-1234), BIG INTERIOR, GREAT CENTRAL

STATUS: Prospect Underground
MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 27 34 N
NORTHING: 5481702
LONGITUDE: 125 34 05 W
EASTING: 313909
ELEVATION: 1001 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Several showings on Big Interior Mountain at various elevations (Bulletin 8).

COMMODITIES: Copper Gold Silver Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Pyrite Pyrrhotite
ASSOCIATED: Quartz
ALTERATION: Malachite Garnet Epidote Magnetite Quartz
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive Disseminated
CLASSIFICATION: Skarn Porphyry

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	
Paleozoic	Sicker	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Basalt
Quartz Diorite
Skarn

HOSTROCK COMMENTS: Mineralization occurs in the above groups and the intrusion. The Sicker Group in this area may be as young as Miss. or Penn.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: Located in the Buttle Lake uplift.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1940
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	102.8600	Grams per tonne
Gold	4.8000	Grams per tonne
Copper	11.1000	Per cent

REFERENCE: EMPR Bulletin 13, page 75.

CAPSULE GEOLOGY

The deposit occurs on Big Interior Mountain at the southern end of the Buttle Lake Uplift. The stratigraphy of the uplift has recently been mapped by Juras (1987) and the nomenclature revised. New revisions have since taken place and the uplift is now described as consisting of the Upper Pennsylvanian to Lower Permian Buttle Lake Group (formerly the upper part of the Sicker Group) and the Devonian to possibly Mississippian or Pennsylvanian Sicker Group (Nick Massey, personal communication, 1990).

The Buttle Lake Group consists of: (1) the Lower Permian (?) Henshaw Formation composed of conglomerate, epiclastic deposits and vitric tuffs; and (2) the Lower Permian to Pennsylvanian Azure Lake Formation (formerly Buttle Lake Formation) consisting of crinoidal limestone and minor chert.

The Sicker Group consists of: (1) the Mississippian or Pennsylvanian(?) Flower Ridge Formation largely comprising coarse mafic pyroclastic deposits; (2) the Lower Mississippian (?) Thelwood

CAPSULE GEOLOGY

Formation, a bedded sequence of siliceous tuffaceous sediments, subaqueous pyroclastic deposits and mafic sills; (3) the Upper Devonian Myra Formation consisting of basaltic to rhyolitic flows and volcaniclastic rocks, lesser epiclastic sediments, argillites and cherts, and massive sulphide mineralization; and (4) the Upper Devonian or older Price Formation comprising feldspar-pyroxene porphyritic andesite flows, flow breccias and minor pyroclastic deposits.

The Myra Formation may be correlative with the McLaughlin Ridge Formation in the Cowichan uplift area; the Price Formation may correlate with the lower part of the McLaughlin Ridge Formation and/or the Nitinat Formation.

The area of the occurrence was originally mapped as Sicker Group rocks with areas of Buttle Lake limestone (Azure Lake Formation) and the stratigraphy has not been further refined to date (Open File 463). The rocks underlying the area consist of cherty volcanics, impure tuffs, and small bodies of intrusive basalt. The contact of a mainly quartz diorite batholith (unofficially the Bedwell River batholith) of the Early to Middle Jurassic Island Plutonic Suite cuts through the area.

Great rusty cliffs of quartz diorite, extending for about 600 metres west and northwest, form the northern wall of a cirque. Slabs of altered andesite or basalt form a veneer on the cliff face locally. A smaller mass of quartz diorite is found nearby due west of the southern boundary of the first. The cliffs contain minute fractures and tiny scattered grains of pyrite, pyrrhotite and some chalcopyrite and malachite. A large chip sample taken over 40 metres contained nil gold and silver and a trace of copper (Bulletin 13). At the 1380 metre elevation level an adit was tunnelled. In front of the portal a dyke of hornblende-feldspar-porphyry, 3 metres wide, strikes 040 degrees, dips 85 degrees northwest and contains pyrrhotite and chalcopyrite in minute fractures. Assays showed nil gold and silver and trace copper from the adit.

Upslope to the west of the cirque at the contact of basalt and limestone an area of skarn mineralization consisting of irregular masses of sulphide from 2 to 50 centimetres exists. These masses consist of chalcopyrite, garnet and some quartz. A selected sample of this material contained 4.8 grams per tonne gold, 102.86 grams per tonne silver and 11.1 per cent copper (Bulletin 13). At some points, notably near the mountain crest, garnet, epidote, amphibole, magnetite, molybdenite, malachite and other silicates replace basalt and limestone. At several points along the batholith-limestone contact rich copper mineralization was observed.

The prospect was discovered in 1899 by Joe Drinkwater. The claims were purchased for $250,000 in 1912 by a small group of investors, chaired by R.R.B. Fielding, the 9th Earl of Denbigh from England. Road building and development continued until 1914, when it stopped due to the war and establishment of Strathcona Provincial Park. Between 1959 and 1964, over 3,200 metres of diamond drilling in 32 holes was completed on this deposit.

BIBLIOGRAPHY

EMPR AR 1903-192; 1905-211; *1906-194; 1910-151; 1911-191; 1912-193; 1913-280; 1914-375; 1915-288; *1916-314; 1917-291; 1918-260; 1919-199; 1920-193; 1921-206; 1926-296; 1928-372; 1929-374; 1931-166; 1929-374,375; 1930-294
EMPR BULL 8 p. 5; *13; pp.61-79; 20-Part V, pp. 24-28
EMR MP CORPFILE (Kopan Development Ltd.; The Big I Mines Ltd.)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, pp. 38,45; 71-36; 72-44; 79-30; 80-16
PERS COMM: Nick Massey, Feb.,1990
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Carvalho, I.G. (1979): Geology of the Western Mines District, Vancouver Island, British Columbia, Ph.D. Thesis, University of Western Ontario
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
Times Colonist, The New Islander, Nov. 16, 1997, p. 7; Islander, April 12, 1998, pp. 8-9
Yole, R.W. (1965): A Faunal and Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D.

BIBLIOGRAPHY

Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 065**

NATIONAL MINERAL INVENTORY:

NAME(S): **X 1-2**, BUTTLE LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12E
BC MAP:
LATITUDE: 49 32 35 N
LONGITUDE: 125 33 59 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 2 kilometres south of Buttle Lake, adjacent to the west bank of Thelwood Creek (Assessment Report 17641).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5490992
EASTING: 314347

COMMODITIES: Zinc Copper Lead

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Sphalerite Chalcopyrite Galena
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Podiform
CLASSIFICATION: Volcanogenic Syngenetic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	Myra	

LITHOLOGY: Rhyolite
Brecciated Tuff
Tuff
Argillite
Andesite
Volcanic Greywacke
Chert

HOSTROCK COMMENTS: Probably the Myra Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.3500	Per cent
Zinc	0.3300	Per cent

COMMENTS: Silver assayed 14.74 grams per tonne.
REFERENCE: Assessment Report 17641.

CAPSULE GEOLOGY

The prospect occurs within the southern part of a belt of rocks known as the Buttle Lake Uplift. The belt is bounded on the east by Upper Triassic Karmutsen Formation volcanics (Vancouver Group) and on the west by the Early to Middle Jurassic Island Intrusions.

The geology of the uplift has recently undergone revision and the stratigraphy has been re-assigned to several new formations of a redefined Sicker Group and the new Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, personal communication, 1990). See the Cream occurrence (092F 220) for a summary of this revised interpretation.

The area of the occurrence was originally mapped as Upper Paleozoic Sicker Group volcanics which belong mainly the old unrevised Myra Formation of Muller (Geological Survey of Canada Paper 79-30). The rocks underlying the property generally consists of felsic to intermediate flows, tuffs and agglomerates which are overlain to the east by Buttle Lake Group, Azure Lake Formation limestone, lesser chert and argillite. Granitic to dioritic dykes, related to the Island Intrusions are numerous and mafic dykes are also present.

Four diamond drill holes were completed in 1988 on ground

CAPSULE GEOLOGY

believed to be underlain by the same stratigraphic package as that which hosts Westmin's H-W deposit (092F 330). The drill holes intersected mainly andesite, rhyolite, and tuffaceous volcanics, with interbedded layers of volcanic greywacke, argillite and minor chert.

Mineralization encountered in the drill holes consists of three types:

(1) disseminated pyrite, usually in argillaceous units, but also in other units;
(2) other disseminated sulphides, usually pyrrhotite, sphalerite, chalcopyrite, and galena with pyrite in tuffs;
(3) massive sulphide clasts, mostly sphalerite, chalcopyrite and pyrrhotite, in breccia tuff.

Overall, the assay results were considered low. The best intersection came from Hole No. 4 where disseminated sulphides in rhyolite assayed 14.74 grams per tonne silver, 0.35 per cent copper and 0.33 per cent zinc (Assessment Report 17641).

BIBLIOGRAPHY

EMPR AR 1966-245; 1967-78; 1968-106
EMPR ASS RPT 826, 1563, 1564, 1884, 2254, 2647, 3241, 3242, 3243, 3910, 3911, 3912, 16747, 17003, *17641
EMPR BULL 8; 13; 20-Part V, pp. 24-28
EMPR EXPL 1988-C85,C92
EMPR GEM 1969-219; 1970-286; 1971-245; 1972-267
EMPR OF 1999-2
EMPR PF (Prospectus: Cream Silver Mines Ltd., Feb.16, 1967; A Mineralographic Report on the Cream Silver Deposit by Rod Olson, 1968(?); Report on the Cream Silver Property by R.H.D. Phillip of Agilis Exploration Services Ltd.; Cream Silver Mines correspondence containing reserve figures, 1973; Report on the Examination of Cream Silver Mines Ltd., Cream Property by K.E. Northcote, Sept.6, 1975)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44; 79-30; 80-16
GCNL #43,#61, 1987; #14,#77,#150,#172, 1988
N MINER Jan.26, Sept.12,1988
NW PROSP Jan 1987; Aug/Sept, Oct/Nov, 1988; July/Aug, 1989
PERS COMM: Nick Massey, Feb., 1990
V STOCKWATCH Jan.18, 1988
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Carvalho, I.G. (1979): Geology of the Western Mines District, Vancouver Island, British Columbia, Ph.D. Thesis, University of Western Ontario
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
Yole, R.W. (1965): A Faunal and Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/22 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 066**

NATIONAL MINERAL INVENTORY:

NAME(S): **TROPHY (L.1853-1858)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 23 34 N
LONGITUDE: 125 36 09 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Coordinates are for the centre of the Trophy claim group, Crown Grant Lots 1853 to 1858. It is not known which of these lots cover the occurrence which is located near the headwaters of the northern branch of Ursus Creek (Bulletin 8).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5474378
EASTING: 311158

COMMODITIES: Gold Lead Zinc Copper

MINERALS
SIGNIFICANT: Pyrite Gold Galena Sphalerite Chalcopyrite
ASSOCIATED: Quartz Sericite
COMMENTS: Sericitic gouge bands with quartz vein fine-grained sulphides.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0050 x 0020 Metres
STRIKE/DIP: 070/80S
TREND/PLUNGE:
COMMENTS: Vein has been traced for 50 metres in length and 20 metres vertically.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1939
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	10.2900	Grams per tonne

COMMENTS: From a 24 centimetre chip sample.
REFERENCE: Bulletin 8, page 66.

CAPSULE GEOLOGY

The area is underlain by granitic rock of the Early to Middle Jurassic Island Plutonic Suite. These plutonic rocks vary in composition from gabbro to quartz monzonite but are mainly grano-diorite and quartz diorite. In the area of the Trophy occurrence quartz diorite is the dominant variety.

The Trophy vein, striking 070 degrees and dipping 80 degrees southeast, has been traced on both sides of a canyon for a horizontal distance of about 50 metres and a vertical distance of about 20 metres. The width of the vein varies from 15 to 40 centimetres.

The vein consists principally of quartz containing a small percentage of sulphides irregularly distributed. Gouge occurs along the walls of the vein and between plates of quartz giving the vein a banded appearance. The gouge bands are parallel to the wall and contain abundant sericite. Sulphide minerals occur as fine grains in the gouge bands and as small aggregates within the quartz. The sulphides consist of pyrite and lesser amounts of galena, sphalerite, and chalcopyrite. Free gold in small angular grains is commonly observed in the white quartz. A 24 centimetre sample taken across the vein assayed 10.29 grams per tonne gold (Bulletin 8, page 66).

In 1939, or shortly after, an adit was reported to have been driven in a southerly direction, from the western side of the canyon, to crosscut the vein; some drifting was done on the vein.

BIBLIOGRAPHY

EMPR BULL *8, p. 64-66; 13, p.1
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/01 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 067**

NATIONAL MINERAL INVENTORY: 092F5 Cu1

NAME(S): **THUNDERBIRD**, CAMP CREEK, MAIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 22 29 N
LONGITUDE: 125 36 43 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trench 1 (Assessment Report 16450).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5472394
EASTING: 310403

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Galena
ASSOCIATED: Quartz
ALTERATION: Quartz Sericite Pyrite
ALTERATION TYPE: Silicific'n Sericitic Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Regular
MODIFIER: Sheared
DIMENSION: 0012 x 0011 Metres STRIKE/DIP: 095/83N TREND/PLUNGE:
COMMENTS: Altered zone.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY
ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.9800	Grams per tonne

COMMENTS: Averages of 12 samples.
REFERENCE: Assessment Report 16450.

CAPSULE GEOLOGY

A major fault cuts volcanic rocks of the Upper Triassic Karmutsen Formation (Vancouver Group) and granodiorite to quartz diorite of the Early to Middle Jurassic Island Plutonic Suite. The volcanics are fine-grained to aphanitic, dark green andesite. The intrusive contact is marked by a medium to fine-grained dark, mafic-rich diorite, which is cut by many dykes of leucocratic granodiorite.

The main direction of shearing is about 112 degrees. Shear features such as gouge filled fractures, rehealed brecciation and zones of shattered rock are abundant throughout the area. A zone of mineralized quartz stockwork occurs adjacent to a strong shear zone.

The Main or Camp Creek showing, examined by Trench #1, occurs in granodiorite within 100 metres to the north of the intrusive/volcanic contact. The main fault along Ursus Creek is 100 metres further to the north of the showing.

Camp Creek is a northwest flowing creek that joins Thunderbird Creek just before its confluence with Ursus Creek. The main shearing in Camp Creek varies from 87 to 101 degrees with steep (83 degrees) dips to the north. Several northeast trending, southeast dipping quartz veins, with widths to 11 centimetres, occur in strongly silicified, sericitized and pyritized granodiorite. Mineralization consists of disseminated pyrite and chalcopyrite. The altered zone measures 12 metres long and 11 meters wide.

CAPSULE GEOLOGY

Twelve grab samples from Trench #1 averaged 0.92 grams per tonne gold, with values up to 1.62 grams per tonne gold, 35.9 grams per tonne silver and 1.4 per cent copper (Assessement Report 16450).

About 200 metres west of the Camp Creek showing, west of Thunderbird Creek, are quartz veins with pyrite, minor galena and has been referred to as the Thunderbird Group.

BIBLIOGRAPHY

EMPR ASS RPT 9378, *12623, *16450
EMPR BULL *8, p. 67-68; 13
EMPR EXPL 1980-171; 1984-162,163; 1987-C145
EMPR PF (Prospectus: Pacific Sentinel Gold Corp., August 31, 1987;
Filing Statement: Pacific Sentinel Gold Corp., May 9, 1988)
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16
GCNL #67, 1984; #11,#13,#104,#227, 1988; #4,#31, 1989
V STOCKWATCH Jan.18, 1988
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/08 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 068** NATIONAL MINERAL INVENTORY:

NAME(S): **DELLA (L.591)**

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 27 02 N NORTHING: 5480651
LONGITUDE: 125 32 32 W EASTING: 315748
ELEVATION: 914 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located just southeast of Big Interior Mountain, about 20 kilometres northeast of Bedwell Sound (Bulletin 13).

COMMODITIES: Gold Copper Silver Lead Zinc

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Galena Sphalerite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic Igneous-contact
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0900 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	
Mesozoic			Island Plutonic Suite

LITHOLOGY: Andesite
Granite
Tuff

HOSTROCK COMMENTS: Assumed to be Sicker Group rocks as defined by Juras (1987). The mineralization is related to granitic masses.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks
COMMENTS: Located in the Buttle Lake uplift.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1940
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	5.4900	Grams per tonne

COMMENTS: From a 56 centimetre chip sample.
REFERENCE: Bulletin 13, page 85.

CAPSULE GEOLOGY

The prospect occurs at the southern end of the Buttle Lake Uplift, southeast of Big Interior Mountain. The geology of the uplift is presently undergoing revision and assignment of host rocks to their proper group or formation may not be possible (see 092F 330 for revised uplift stratigraphy).

The area is underlain by andesite, siliceous and tuffaceous sediments of the Devonian to possibly Mississippian or Pennsylvanian Sicker Group and granitic rock of the Early to Middle Jurassic Island Plutonic Suite. A batholithic contact occurs more than 1.5 kilometres from the workings.

Shafts have been sunk and open cuts made on nearly all the outcroppings of the deposit. The workings show that the mineralization occurs in fractures or contacts between bodies of granite and andesite. A well defined fissure, averaging about 1.2 metres in width, strikes north across a low ridge and dips about 68 degrees west. Quartz vein material fills the fissure and ranges from a few centimetres up to about 40 centimetres. The vein has been traced on surface for over 900 metres. It is mineralized with pyrite, chalcopyrite, galena and sphalerite. Narrower fissures filled with quartz and similar in nature to the main vein also occur.

CAPSULE GEOLOGY

Samples of fissure-filled material assayed as high as 44.57 grams per tonne gold over 30 centimetres. A more typical assay value would be 5.49 grams per tonne gold which was obtained from a 56 centimetre wide sample (Bulletin 13). Silver values are generally below 34 grams per tonne, but samples have been found to contain up to 147.43 grams per tonne (Hemsworth, 1938). Five tonnes of ore was shipped from the property in 1906, from 1,337 grams of gold was produced (Mineral Policy data).

Joe Drinkwater discovered the prospect in 1899 and, with Alvin Engvik, worked it until 1915.

BIBLIOGRAPHY

EMPR AR 1906-197; 1915-287; *1916-317; 1917-453; 1918-252; 1933-250; 1964-156
EMPR BC METAL MM00072
EMPR BULL 8; *13; pp.79-86; 20-Part V, pp. 24-28
EMPR PF (*Report on Della Mine by F.J. Hemsworth, 1938)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
Times Colonist Islander, April 12, 1998, pp. 8-9

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 069** NATIONAL MINERAL INVENTORY: 092F5 Au5

NAME(S): **SHERWOOD**, PATULLO 1-2 (L.1830,1844), BLACK BEAR, HAMBER, PLUTO, HART, PM

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 27 52 N NORTHING: 5482147
LONGITUDE: 125 31 22 W EASTING: 317209
ELEVATION: 1342 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of number 1 adit is on Lot 1830, 1 kilometres east of Drinkwater Creek and 0.5 kilometres west of Love Lake (from Gayer, 1944).

COMMODITIES: Gold Silver Zinc Lead Copper

MINERALS
SIGNIFICANT: Sphalerite Galena Covellite Chalcopyrite
COMMENTS: Silver associated with galena; gold mineralization.
ASSOCIATED: Quartz Pyrrhotite Marcasite
ALTERATION: Limonite Malachite Marcasite Anglesite Covellite Clay
ALTERATION TYPE: Oxidation Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal Epithermal
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0001 Metres STRIKE/DIP: 070/70N TREND/PLUNGE:
COMMENTS: Vein strikes 070 to 080 degrees and dips 65 to 72 degrees north.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	
Pennsylvan.-Permian	Buttle Lake	Azure Lake	
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 167 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Cherty Argillite
Cherty Tuff
Granodiorite
Andesite Dike
Basalt Dike
Quartz Diorite Dike
Clay Gouge

HOSTROCK COMMENTS: Intrusive age date from Kennedy Lake (Geological Survey of Canada Paper 72-44).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: SHERWOOD REPORT ON: Y

CATEGORY: Combined YEAR: 1944
QUANTITY: 25247 Tonnes

COMMODITY	GRADE	
Gold	17.1500	Grams per tonne

COMMENTS: Probable and possible ore.
REFERENCE: Property File - McDougall, M.E., 1944.

CAPSULE GEOLOGY

The Sherwood occurrence, located at the southern end of the Buttle Lake uplift, is underlain by cherty argillite and tuff of the Paleozoic Sicker Group. The sediments and volcanics are overlain by limestone of the Permian to Pennsylvanian Azure Lake Formation, Buttle Lake Group. A large granodiorite stock of the Jurassic Island

CAPSULE GEOLOGY

Plutonic Suite is located approximately 2 to 4 kilometres east. See H-W (092F 330) for a discussion of the recent stratagraphic and nomenclature revisions in the uplift.

Andesite and basalt dykes in the area are related to volcanic activity that postdates the limestone. Locally, the quartz diorite dykes and stocks are related to the Early to Middle Jurassic Island Plutonic Suite. Hybrid rocks are common, and there is evidence of granitization in the area southwest of Love Lake. A regional, northwest trending fault extends from Bedwell Lake through Love Lake, and is located 0.5 kilometres east of the occurrence.

The Sherwood vein occupies a 070 to 080 degree striking shear zone that dips 65 to 72 degrees north. Strong open fractures bisect the shear zone at 090 to 120 degrees. The shear zone is up to 2.0 metres wide and contains intensely altered gouge, and lenses of quartz that range up to 0.76 metres in width. Several parallel quartz veins are present, separated by wall rock or clay gouge. Abundant, narrow quartz veins branch off the main structure.

Primary vein material consists of quartz, sphalerite, galena, covellite, chalcopyrite and pyrrhotite. Much of the vein has been reduced to rusty, crumbly and often porous material. Studies indicate the primary sulphide mineralogy is altered to malachite, marcasite, anglesite, covellite, and possibly other secondary minerals. Silver values are associated primarily with galena. The gold mineralogy is not known.

The vein has been exposed at three levels over an area of 212 metres. Samples from the Number 1 level returned assays of up to 328.50 grams per tonne gold over 24.1 centimetres and up to 462.92 grams per tonne silver over 40.6 centimetres (Bulletin 13, pages 92-93).

In 1942, 20 tonnes of ore were shipped, producing 1866 grams of gold, 3110 grams of silver, and values in lead and copper. The property was operated by Cangold Mining and Exploration Company Limited in 1946. The deposit is reported to contain 450,000 tonnes of inferred ore (Times-Colonist, December 27 1987). No grades are reported. A more conservative estimate of 25,247 tonnes of probable and possible ore, grading 17.15 grams per tonne gold is given by McDougall (1944).

BIBLIOGRAPHY

EMPR AR 1941-71; 1942-28, 67; 1945-115; 1946-191
EMPR BULL 8, *13, pp. 86-95 , 20 PART V
EMPR P 1988-1, p. 81; 1987-1, p. 223
EMPR PF (Eastwood, G.E.P. (1980): Letter to E.J. Bowles, Chief Gold Commissioner, dated February 6 1980; Claim Map, 1:50,000 scale; Photograph; Gayer, R. (1944): Composite Map; McDougall, M.E., (1944): Report on the Sherwood Group of Mineral Claims)
EMR MIN BULL MR 223 B.C. 96
EMR MP CORPFILE (Pioneer Gold Mines of British Columbia Limited; Cangold Mining and Exploration Company Limited; Casamiro Resource Corporation)
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 9, 61, 463
GSC P 66-1; 68-50; 72-44; 79-30
PERS COMM: Nick Massey, May 1990 (with respect to changes in nomenclature)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
Times Colonist Dec. 27, 1987
Yole, R.W. (1965): A Faunal Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/10 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 070**

NATIONAL MINERAL INVENTORY: 092F5 Au6

NAME(S): **PDQ**

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 27 47 N
LONGITUDE: 125 30 20 W
ELEVATION: 1440 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of number 1 vein is 450 metres southeast of Love Lake, 2 kilometres north of Drinkwater Creek (from Gayer, 1944).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5481951
EASTING: 318451

COMMODITIES: Gold Silver Copper Zinc Lead

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Galena
COMMENTS: Gold and silver mineralogy not known.
ASSOCIATED: Quartz Carbonate Pyrite Arsenopyrite Stibnite Pyrrhotite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: 0200 Metres STRIKE/DIP: 025/70 TREND/PLUNGE:
COMMENTS: Veins strike 20 to 30 degrees, dip 60 to 85 degrees north.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	
Jurassic			Island Plutonic Suite

ISOTOPIC AGE: 167 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite Flow
Andesite Dike
Quartz Diorite Dike
Granodiorite
Gouge

HOSTROCK COMMENTS: Intrusive age date from Kennedy Lake area (Geological Survey of Canada Paper 72-44).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: NO. 2 VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1941
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	144.0200	Grams per tonne
Gold	32.2300	Grams per tonne
Lead	1.4000	Per cent

REFERENCE: Bulletin 13, page 97.

ORE ZONE: NO. 1 VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1941
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	89.1500	Grams per tonne
Gold	63.0900	Grams per tonne

REFERENCE: Bulletin 13, page 97.

CAPSULE GEOLOGY

The PDQ occurrence is located at the southern end of the Buttle Lake uplift in an area underlain by volcanic rocks of the Paleozoic Sicker Group. See H-W (092F 330) for a discussion of the stratagraphic and nomenclature revisions for the uplift.

The volcanics have been intruded by andesite and quartz diorite dykes that may be related to a large granodiorite batholith of the Early to Middle Jurassic Island Plutonic Suite, located about 4 kilometres to the southwest. The occurrence comprises two parallel quartz veins.

The Number 1 vein strikes 020 degrees and dips 70 to 85 degrees west. The vein has been traced intermittently for over 200 metres, cutting andesite flows, quartz diorite and andesite dykes. Part of the vein traces a fault zone that is also occupied by a quartz diorite dyke. The fault zone is 10 to 50 centimetres wide, and the vein occupies about one half of this width in altered wall rock fragments and gouge. Vein materials consist of quartz, carbonate, pyrite, chalcopyrite, sphalerite and galena. Greenish and yellow oxidation suggests the alteration of arsenic and antimony-bearing sulphides. A 45.7 centimetre sample taken across the vein assayed 63.09 grams per tonne gold and 89.15 grams per tonne silver (Bulletin 13, page 97).

The Number 2 vein is located 250 metres east of the Number 1 vein and is hosted by similar rocks. This vein strikes 020 to 030 degrees and dips 60 to 70 degrees northwest, and has been traced for 100 metres. The vein is 20 to 61 centimetres wide and contains rusty quartz, wall rock fragments and lenses of pyrrhotite, pyrite, chalcopyrite, sphalerite and galena which are concentrated along the vein walls. A sample taken across 38.1 centimetres of the Number 2 vein assayed 32.23 grams per tonne gold, 144.02 grams per tonne silver and 1.4 per cent lead (Bulletin 13, page 97).

BIBLIOGRAPHY

EMPR AR 1941-71
EMPR BULL 8, *13 pp.86-97 , 20 PART V
EMPR P 1988-1, p. 81; 1987-1, p. 223
EMPR PF (Gayer, R. (1944): Composite Map, see 092F 069 (Sherwood))
EMR MP CORPFILE (Pioneer Gold Mines of British Columbia Limited)
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 9, 61, 463
GSC P 66-1; 68-50; 72-44; 79-30
PERS COMM: Nick Massey, May 1990 (with respect to changes in nomenclature)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
Yole, R.W. (1965): A Faunal Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/10 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 071** NATIONAL MINERAL INVENTORY: 092F12 Zn1

NAME(S): **LYNX (MYRA FALLS)**, MYRA FALLS (LYNX), LYNX MINE,
WEST G, G, S,
SOUTH WALL, LYNX WEST, RIDGE WEST,
MARSHALL

STATUS: Past Producer Open Pit Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 34 03 N NORTHING: 5493805
LONGITUDE: 125 36 18 W EASTING: 311648
ELEVATION: 427 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Lynx portal is located on the boundary of Lots 1659 and 1660, 0.5 kilometre north of Myra Creek, 3 kilometres west of Buttle Lake (from Wright Engineers in Property File, 092F 072 (Myra deposit)). See also H-W (092F 330), Myra (092F 072) and Price (092F 073). The Lynx also includes Myra production (1972-1985); see H-W for Lynx production after 1985.

COMMODITIES: Copper Zinc Lead Gold Silver
Cadmium

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Galena Pyrite Tennantite
Bornite Stromeyerite Digenite Covellite
ASSOCIATED: Quartz Sericite Chlorite Talc Pyrrhotite
Barite
ALTERATION: Sericite Quartz Pyrite
ALTERATION TYPE: Sericitic Silicific'n Pyrite
MINERALIZATION AGE: Upper Devonian
ISOTOPIC AGE: 370 Ma DATING METHOD: Rubidium/Strontium MATERIAL DATED: Whole rocks

DEPOSIT

CHARACTER: Massive Stratiform
CLASSIFICATION: Volcanogenic Syngenetic Exhalative
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 2500 x 700 x 12 Metres STRIKE/DIP: 315/65W TREND/PLUNGE:
COMMENTS: Age date on the Myra Formation from Juras 1987, page 109. The four ore zones comprising the Lynx deposit occur over an area 2.5 by 0.7 kilometres. Lenses are up to 12 metres thick and 244 metres long.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	Myra	
ISOTOPIC AGE:	370 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Whole rock		
Upper Devonian	Sicker	Price	
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	166 +/- 8 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		
Tertiary			Mount Washington Intrus. Suite
ISOTOPIC AGE:	39 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		

LITHOLOGY: Quartz Feldspar Rhyolite Tuff
Chert
Dacite Flow Breccia
Tuff
Andesite Flow
Rhyolite
Pillow Basalt
Pyroclastic
Felsic Rhyolite
Granitic Dike

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Paper 72-44 and Juras, 1987. Sicker Group is possibly as young as Pennsylvanian.

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

TERRANE: Wrangell — Plutonic Rocks
METAMORPHIC TYPE: Regional — RELATIONSHIP: — GRADE: Greenschist
COMMENTS: Located in the Buttle Lake uplift.

INVENTORY

ORE ZONE: MARSHALL — REPORT ON: Y

CATEGORY: Combined — YEAR: 1999
QUANTITY: 320000 Tonnes

COMMODITY	GRADE	
Zinc	7.6000	Per cent
Copper	0.7000	Per cent
Lead	0.7000	Per cent
Gold	2.5000	Grams per tonne
Silver	105.6000	Grams per tonne

REFERENCE: Northern Miner, June 28, 1999.

ORE ZONE: LYNX — REPORT ON: Y

CATEGORY: Combined — YEAR: 1993
QUANTITY: 315300 Tonnes

COMMODITY	GRADE	
Silver	94.0000	Grams per tonne
Gold	3.0000	Grams per tonne
Copper	1.7000	Per cent
Lead	1.1000	Per cent
Zinc	10.0000	Per cent

COMMENTS: Proven and probable geological reserves.
REFERENCE: George Cross News Letter No.30 (February 12), 1993.

CAPSULE GEOLOGY

The Myra Falls Operation includes the Lynx (092F 071), Myra (092F 072), Price (092F 073) and H-W (092F 330) deposits and associated zones. The Lynx volcanogenic massive sulphide deposit occurs within the southern part of the Buttle Lake uplift. This discreet belt of northwest striking Upper Paleozoic rocks is bounded on the east by Upper Triassic Karmutsen Formation volcanics (Vancouver Group) and on the west by the Early to Middle Jurassic Island Plutonic Suite. The geology of the uplift has recently been reinterpreted and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and the new Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, Personal Communication, 1990).

The Buttle Lake Group consists of: (1) the Lower Permian(?) Henshaw Formation composed of conglomerate, epiclastic deposits and vitric tuffs; and (2) the Lower Permian to Pennsylvanian Azure Lake Formation (formerly Buttle Lake Formation) consisting of crinoidal limestone and minor chert.

The Sicker Group consists of: (1) the Mississippian(?) or Pennsylvanian(?) Flower Ridge Formation largely comprising coarse mafic pyroclastic deposits; (2) the Lower Mississippian(?) Thelwood Formation, a bedded sequence of siliceous tuffaceous sediments, subaqueous pyroclastic deposits and mafic sills; (3) the Upper Devonian Myra Formation consisting of basaltic to rhyolitic flows and volcaniclastic rocks, lesser epiclastic sediments, argillites and cherts, and massive sulphide mineralization; and (4) the Upper Devonian or older Price Formation comprising feldspar-pyroxene porphyritic andesite flows, flow breccias and minor pyroclastic deposits.

The Buttle Lake uplift stratigraphy indicates deposition in a rift basin in an island arc environment. It has been intruded by granitic dykes related mainly to the Island Plutonic Suite. A 1-kilometre wide stock of Tertiary intrusives lies about 1 kilometre to the east. This stock (formerly called Catface Intrusions) is related to the new Mount Washington Intrusive Suite of Late Eocene to Early Oligocene age (Nick Massey, Personal Communication, May 1990).

The major occurrences in the Buttle Lake area lie along a northwest striking, 65 degree southwest to steeply northeast dipping zone that is approximately 6 kilometres long. The rocks have been metamorphosed to the lower greenschist facies, and have been deformed along northwest trending subhorizontal open folds. Several regional, west-northwest to north trending faults occur with maximum lateral displacements of about 850 metres. The faults are considered to be post-Mesozoic, and are probably related to Late Cretaceous uplift. The contact between the Myra Formation and the overlying Thelwood Formation is marked by a 2 to 40 metre wide zone of strong schistosity that may represent an Upper Paleozoic low angle fault.

The Myra Formation, dated at 370 million years (Juras, 1987),

CAPSULE GEOLOGY

contains intermediate to felsic volcanics, volcaniclastics, minor argillite and is host to the massive sulphide horizons. The Lynx, Myra (092F 072) and Price (092F 073) deposits lie at the same stratigraphic level as the Myra Formation (the "Mine Sequence" of Juras). The H-W deposit (092F 330) lies below them at the base of the Myra Formation. Westmin Resources' Myra Falls Operations has developed these deposits as four mines. In 1990, the Lynx and H-W mines fed a 4000-tonne per day mill, the Myra mine is depleted and the Price deposit has yet to be used as a source of mill feed.

The major ore zones of the Lynx mine are the G, S, South Wall and the West G zones, all of which are located within an area of 2.5 by 0.7 kilometre.

The massive sulphide horizon lies within a zone of quartz-feldspar rhyolite tuff and minor chert. This tuff is underlain by dacite flow breccia and tuff. The breccia includes clasts of H-W mineralization, andesite flows, the rhyolitic H-W horizon, and the Price Formation. Rocks in the feeder zone below the massive sulphide horizon have undergone sericitization and silicification. Pyrite alteration is evident from disseminated pyrite and pyrite stringer zones.

Overlying the massive sulphide horizon are pillow basalts, mixed pyroclastics and tuffs, felsic rhyolite and flow breccia, all of which are overlain by the Thelwood Formation.

The lenses of massive sulphides occur in a gangue of quartz, sericite, chlorite and talc, and comprise chalcopyrite, galena, sphalerite, pyrite and pockets of barite. Minor tennantite, bornite, pyrrhotite, digenite, covellite and stromeyerite are present. The lenses are up to 12 metres thick and 244 metres long, pinching out along strike.

A significant new discovery of massive sulphides (Gap zone) located underground between the H-W and Lynx mines is believed to be in upper H-W mine stratigraphy. See H-W (092F 331) for further information.

The Lynx occurrence was mined by open pit methods from 1966 to 1976, then by underground mining techniques to the present. Between 1967 and 1988 (inclusive), combined milled production of the Lynx/Myra/H-W Mines totalled 9,162,835 tonnes containing 15,205,759 grams of gold, 615,419,293 grams of silver, 153,750 tonnes of copper, 56,670 tonnes of lead, 525,606 tonnes of zinc and 1,348 tonnes of cadmium (Mineral Policy data).

According to Westmin Resources Annual Report for 1988, up to the end of 1988, the Lynx mine contributed 53.8 per cent, or 4,933,790 tonnes, of a total of 9,170,609 tonnes milled at the Myra Falls Operations. The overall grade of the total ore milled was 2.16 grams per tonne gold, 81.0 grams per tonne silver, 1.83 per cent copper, 0.78 per cent lead and 6.58 per cent zinc. During 1988, the Lynx mine contributed only 9.5 per cent of all ore processed at the mill, the bulk coming from the H-W mine (Westmin Resources Limited Annual Report 1988, page 8).

Proven and probable geological reserves at the Myra Falls operations as of January 1, 1993 are:

Name	Tonnes	Grades				
		Gold g/t	Silver g/t	Copper %	Lead %	Zinc %
H-W Mine	8,955,100	2.2	39.6	1.7	0.4	4.3
Lynx Mine	315,300	3.0	94.0	1.7	1.1	10.0
Price Mine	185,000	1.5	66.4	1.4	1.3	10.4
Gap Zone	634,400	3.2	151.5	1.8	1.1	13.3
Battle Zone	2,013,700	1.1	24.2	2.6	0.5	12.7
Extension (W37) Zone	231,100	1.2	60.4	1.7	0.4	3.8
Trumpeter Zone	61,200	3.2	68.9	6.3	0.3	4.6
6 Level	120,500	1.3	91.4	0.4	0.9	6.0
Total	12,516,100	2.1	45.6	1.9	0.5	6.3

Compiled from George Cross News Letter No. 30 (February 12), 1993.

Westmin plans to drill the Marshall zone (discovered in 1993) from 10 level in the Lynx mine and it has started to drive an 800-metre crosscut to provide access. The company completed the first 400 metres in 1997. It will complete the remainder and start drilling in 1998. Elsewhere on 10 level, the company completed five diamond-drill holes (aggregate depth of 3505 metres), looking for detrital sulphide in fine-grained sediment in a local palaeotopographic depression between the H-W and Ridge zones. The holes intersected sulphide; however the results were erratic and grades inconsistent.

Resources in the Marshall zone, situated on the H-W horizon, stand at 320,000 tonnes averaging 7.6 per cent zinc, 0.7 per cent copper, 0.7 per cent lead, 2.5 grams per tonne gold and 105.6 grams

CAPSULE GEOLOGY

per tonne silver. The zone remains open to the east, west and to the north (Northern Miner, June 28, 1999).

BIBLIOGRAPHY

EM EXPL 2000-25-32; 2001-23-31; 2002-29-40
EMPR AR 1918-268; 1919-220; 1920-207; 1921-222; 1922-241; 1923-254,388; 1925-283; 1927-349; 1928-378; 1929-384-385; 1930-301; 1952-211; 1961-103; 1962-107-110; 1963-105; *1964-157-166; 1965-234; 1966-77; 1967-A52,77,78; 1968-A52,105; 1969-A53; 1970-A52; 1971-A52; 1972-A52; 1973-A52; 1974-A118; 1975-A92; 1976-A102; 1977-114; 1978-126; 1979-129
EMPR ASS RPT 459, 533, 607, 5184, 7089, 7090
EMPR BC METAL MM00011
EMPR BULL 40
EMPR ENG INSP Annual Report 1989, 1990
EMPR EXPL 1978-E130; 1979-133; 1996-A9,F5; 1997-56; 1998-5,48
EMPR GEM 1969-218,426; 1970-284,479; 1971-26,252; 1972-22,271; 1973-24,235; 1974-25,181
EMPR INFO CIRC 1997-1, p. 8; 1998-1, p. 9
EMPR IR 1984-2, pp.99,100; 1984-3, pp.105,106; 1984-4, p.20; 1984-5, pp.113,114; 1986-1, pp.109,110
EMPR MAP 65 (1989)
EMPR MIN STATS 1995, pp.47,48; 1987, pp.35,37; 1990, pp.25,29,32; 1980-1994, pp.20,24
EMPR MINING Vol.1 1975-1980, pp.1-2,53,58,62,65,68,72; 1981-1985, pp.2,30; 1986-1987, pp.44-45; 1988, pp.41-42
EMPR OF 1992-1; 1998-10; 1999-2
EMPR P 1987-1, p. 223; 1988-1, p. 81; 1989-1, p. 75; 1991-4, pp. 102,104,105,111,112
EMPR PF (Granby Consolidated Mining, Smelting and Power Company Limited (1952): Lynx and Paw Groups, 1:3600; Photographs; Western Mines (1961): Geology and Drill Holes, 1:480, Sections 1:240 DH W5-10, DH W11, DH W8-W9, DH W7, DH W1; Various Correspondence and Letter Reports in Lynx (092F 072); Jeffery, W.G.(1963): Preliminary Map, 92F12; Various maps and reports in 092F 072 (Paramount) and 092F 073 (Price); Jeffery, W.G. (1964): An Assessment of the Economic Mineral Potential within a Part of Strathcona Provincial Park; *Jeffery, W.G. (1970): Buttle Lake; Geological Map, 1:31,680; Property Ownership, 1:50,000; Western Mines Limited (1974): Expanded Composite Showing Underground Development, Plan (1), Lynx Mine, 1: 1200; Western Mines, Geology 12 Level, 1:1200; Various Correspondence on Strathcona Park; Eastwood, G.E.P. (c.1975): Mineral Resource Considerations Raised by Proposed Changes to Strathcona Park - Conclusions and Recommendations; *Westmin Resources Limited Annual Report 1988 (in Debbie (092F 079) file; Pearson, C.A. (1992): New Ore Discoveries at Myra Falls Operations, Buttle Lake, Vancouver Island, BC, CIM District 6 Meeting, October 1-3, 1992, Campbell River, BC in H-W, 092F 330; GSA Field Trip 1985, Westmin Resources' Massive Sulphide Deposits, Vancouver Island, Trip 1; Geology notes from CIM 1981)
EMR MP CORPFILE (Western Mines Limited)
EMR RES FILE (Paramount; Myra; Claw; Lynx)
GSC MAP 196A; 2-1965; 17-1968; 1386A
GSC OF 9; 61; 463; *2167, pp. 145-161
GSC P 66-1; 68-50; *71-36; 72-44; 79-30
GSC SUM RPT 1930 Part A, p. 56
CIM BULL Dec. 1980, pp.71-90
CIM Vol.73, No.824, p. 86; Vol.80, No.899, p. 134; Transactions Vol. 83, pp. 115-130
CMH 1976-77, p. 331; 1989-90, p. 470
CMJ Oct. 1981; Nov. 1985, Sep. 1986
GCNL #92, 1970; #214, 1971; Feb.7, #76, 1973; #35,#95,#160,#222, 1974; #87,#95,#204,#205,#220, 1975; #41,#91,#105,#218,#220,#246, 1976; #39,May 16,#87,#221, 1977; #43,#150,#217, 1978; #33,#88,#92, #144,#186,#198,#231,#242,#246, 1979; #19,#32,#34,#54,#55,#68,#90, #101,#108,#128,#154,#159, 1980; #152, 1982; #101,#151,#153, 1983; #41,#103, 1984; #149, 1985; #42, 1986; #85, 1987; #88(May7), #91(May10),#99(May23),#102(May28),#104(May30), 1991; #24(Feb.4),#35(Feb.19), 1992; #30(Feb.12), 1993
MIN REV Fall 1998, pp. 32-33
MINING IN CANADA Mar. 1967, p. 16
N MINER MAG August 1989
N MINER Apr.26, 1973; Apr.25, 1974; May 5, Jun.2, 1977; Mar.2, Apr.20, May 4, Aug.10, 1978; Feb.15, 1979; Feb.21, Apr.3, 1980; Apr.23, May 21, Oct.29, Nov.12,26, 1981; Apr.15,29, Nov.4, 1982; Jan.20, Feb. 17, Apr.7,21, Aug.11, Oct.20, 1983; Mar.29, May 31, Dec.27, 1984; Feb.28, Apr.25, 1985; Aug.30, 1984; Sept.30, 1985; Mar.17, May 12, Jun.16, Sep.1, Nov.24, 1986; Jun.1, 1987; Aug.21, 1989; May 13, 20, 1991; June 28, 1999

BIBLIOGRAPHY

NW PROSP Dec. 1986; Jan. 1987
PERS COMM Hampton, R.O., Dec. 16, 1974; Massey, N., May 1990
W MINER Oct. 1963, pp.64-65; Aug. 1965, pp.37-42; Oct. 1970; May 1977 p. 62; Apr. 1978, p.122; Mar. 1979, p.46; Mar. 1980, p.60; Jun., Dec. 1981; Apr. 1982; Mar., *May 1983; Apr., Dec. 1984
WIN May 1987
WWW http://www.boliden.ca; http://www.infomine.com/
Boliden Westmin Ltd., 1998 Myra Falls Exploration Forum, July 23-25, 1998
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Carvalho, I.G. (1979): Geology of the Western Mines District, Vancouver Island, British Columbia, Ph.D. Thesis, University of Western Ontario
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 164
*Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
*Pearson, C.A. (1993): Mining Zinc-Rich Massive Sulphide Deposits on Vancouver Island, British Columbia, International Symposium - World Zinc 1993, pages 75-84
Province Feb.19, Apr.15, Nov.15,27, Dec.17, 1974
Times Colonist Aug.28, Dec.19, 1974
Vancouver Sun Apr.19, May 14,15, Aug.15, Nov.7, Dec.16, 1974
Yole, R.W. (1965): A Faunal and Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 072** NATIONAL MINERAL INVENTORY: 092F12 Zn2

NAME(S): **MYRA (MYRA FALLS)**, MYRA FALLS (MYRA), MYRA MINE, MYRA FALLS, PAW, PARAMOUNT

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 34 07 N NORTHING: 5493900
LONGITUDE: 125 35 36 W EASTING: 312496
ELEVATION: 533 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of decline on the boundary of Lots 1670 and 1671, 200 metres south of Myra Creek and 2.5 kilometres south of Buttle Lake (Property File - Wright Engineers 1963). See also H-W (092F 330), Lynx (092F 071), and Price (092F 073). Production (1972-1985) for the Myra Mine is documented with Lynx (092F 071).

COMMODITIES: Copper Zinc Lead Gold Silver Cadmium

MINERALS
SIGNIFICANT: Chalcopyrite Sphalerite Galena Pyrite Tetrahedrite Tennantite Bornite Stromeyerite Digenite Covellite
ASSOCIATED: Quartz Sericite Chlorite Talc Pyrrhotite
ALTERATION: Sericite Quartz Pyrite Barite
ALTERATION TYPE: Sericitic Silicific'n Pyrite
MINERALIZATION AGE: Upper Devonian
ISOTOPIC AGE: 370 Ma DATING METHOD: Rubidium/Strontium MATERIAL DATED: Whole rock

DEPOSIT
CHARACTER: Massive Stratiform
CLASSIFICATION: Volcanogenic Syngenetic Exhalative
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Tabular
MODIFIER: Faulted
COMMENTS: Age date on the Myra Formation from Juras 1987, page 109.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	Myra	
ISOTOPIC AGE:	370 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Whole rock		
Upper Devonian	Sicker	Price	
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	166 +/- 8 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		
Tertiary			Mount Washington Intrus. Suite
ISOTOPIC AGE:	39 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		

LITHOLOGY: Quartz Feldspar Rhyolite Tuff
Chert
Dacite Flow Breccia
Tuff
Andesite Flow
Rhyolite
Pillow Basalt
Pyroclastic
Felsic Rhyolite
Granitic Dike

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Paper 72-44 and Juras, 1987. Sicker Group is possibly as young as Pennsylvanian.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located within the Buttle Lake uplift.

CAPSULE GEOLOGY

The Myra Falls Operation includes the Lynx (092F 071), Myra

CAPSULE GEOLOGY

(092F 072), Price (092F 073) and H-W (092F 330) deposits and associated zones. The Myra (Paramount) volcanogenic massive sulphide deposit occurs within the southern part of the Buttle Lake uplift. This discrete belt of northwest striking Upper Paleozoic rocks is bounded on the east by Upper Triassic Karmutsen Formation volcanics (Vancouver Group) and on the west by the Early to Middle Jurassic Island Plutonic Suite. The geology of the uplift has recently been reinterpreted and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and the new Buttle Lake Group (formerly the upper part of the Sicker Group) (Juras, 1987; Massey, Personal Communication, 1990).

The Buttle Lake Group consists of: (1) the Lower Permian(?) Henshaw Formation composed of conglomerate, epiclastic deposits and vitric tuffs; and (2) the Lower Permian to Pennsylvanian Azure Lake Formation (formerly Buttle Lake Formation) consisting of crinoidal limestone and minor chert.

The Sicker Group consists of: (1) the Mississippian(?) or Pennsylvanian(?) Flower Ridge Formation largely comprising coarse mafic pyroclastic deposits; (2) the Lower Mississippian(?) Thelwood Formation, a bedded sequence of siliceous tuffaceous sediments, subaqueous pyroclastic deposits and mafic sills; (3) the Upper Devonian Myra Formation consisting of basaltic to rhyolitic flows and volcaniclastic rocks, lesser epiclastic sediments, argillites and cherts, and massive sulphide mineralization; and (4) the Upper Devonian or older Price Formation comprising feldspar-pyroxene porphyritic andesite flows, flow breccias and minor pyroclastic deposits.

The Buttle Lake uplift stratigraphy indicates deposition in a rift basin in an island arc environment. It has been intruded by granitic dykes related mainly to the Island Plutonic Suite. A 1 kilometre wide stock of Tertiary intrusives lies about 1.5 kilometres north-northeast of the deposit. This stock (formerly called Catface Intrusions) is probably related to the Mount Washington Intrusive Suite of Late Eocene to Early Oligocene age (Nick Massey, Personal Communication, May 1990).

The major occurrences in the Buttle Lake area lie along a northwest striking, 65 degree southwest to steeply northeast dipping zone that is approximately 6 kilometres long. The rocks have been metamorphosed to the lower greenschist facies, and have been deformed along northwest trending subhorizontal open folds. Several regional west-northwest to north trending faults occur with maximum lateral displacements of 850 metres. The faults are considered to be post-Mesozoic, and are probably related to Late Cretaceous uplift. The contact between the Myra Formation and the overlying Thelwood Formation is marked by a 2 to 40 metre wide zone of strong schistosity that may represent an Upper Paleozoic low angle fault.

The Myra Formation, dated at 370 million years (Juras, 1987, page 109) contains all of the massive sulphide horizons of the camp. The Myra, Lynx (092F 071) and Price (092F 073) deposits lie at the same stratigraphic level (the "Mine Sequence" of Juras). The H-W deposit (092F 330) lies below them at the base of the Myra Formation. Westmin Resources' Myra Falls Operations has developed these deposits as four mines. In 1990, the Lynx and H-W mines fed a 4000-tonne per day mill; the Myra mine is depleted and the Price deposit has yet to be used as a source of mill feed.

The massive sulphide horizon lies within a zone of quartz-feldspar rhyolite tuff and minor chert. The tuff is underlain by dacite flow breccia and tuff, breccia that includes clasts of H-W mineralization, andesite flows, the rhyolitic H-W horizon, and the Price Formation. Rocks in the feeder zone below the massive sulphide horizon have undergone sericitization and silicification. Pyrite alteration is evident from disseminated pyrite and pyrite stringer zones.

Overlying the massive sulphide horizon are pillow basalts, mixed pyroclastics and tuffs, felsic rhyolite and flow breccia, all of which are overlain by the Thelwood Formation.

The lenses of massive sulphides occur in a gangue of quartz, sericite, chlorite and talc, and comprise chalcopyrite, galena, sphalerite, pyrite and pockets of barite. Minor tennantite, bornite, tetrahedrite, pyrrhotite, digenite, covellite and stromeyerite are present.

The Myra mine started production in 1972. Pre-production reserves in 1972 were 478,000 tonnes averaging 3.43 grams per tonne gold, 198.88 grams per tonne silver, 0.9 per cent copper, 1.7 per cent lead and 8.8 per cent zinc. These reserves included a high-grade zone of 95,072 tonnes containing 7.89 grams per tonne gold, 812.67 grams per tonne silver, 1.2 per cent copper, 1.3 per cent lead and 8.1 per cent zinc. Mineable reserves were depleted in 1985.

According to Westmin Resources Annual Report for 1988, by the

CAPSULE GEOLOGY

end of its life, the Myra mine had contributed 11.4 per cent, or 1,045,450 tonnes, of a January 1, 1989 total of 9,170,609 tonnes milled at the Myra Falls Operations. The overall grade of the total ore milled was 2.16 grams per tonne gold, 81.0 grams per tonne silver, 1.83 per cent copper, 0.78 per cent lead and 6.58 per cent zinc (Westmin Resources Limited Annual Report for 1988, page 8). Production data is included with Lynx (092F 071).

Production statistics of the Myra mine have been combined with those of the Lynx and H-W mines. Reported production for the Myra mine from 1972 to 1985 (combined with the Lynx (092F 071) and including the H-W (092F 330) is 2,287,937 tonnes mined. To the end of 1988; the combined milled production of the Myra Falls Operations totalled 9,162,835 tonnes containing 15,205,759 grams of gold, 615,419,293 grams of silver, 153,750 tonnes of copper, 56,670 tonnes of lead, 525,606 tonnes of zinc and 1,348 tonnes of cadmium.

BIBLIOGRAPHY

EM EXPL 2001-23-31; 2002-29-40
EMPR AR 1918-268; 1919-220; 1920-207; 1921-222; 1922-241; 1923-254,388; 1925-283; 1927-349; 1928-378; 1929-384-385; 1930-301; 1952-211; 1961-103; 1962-107-110; 1963-105; *1964-157-166; 1965-234; 1966-77; 1967-77,78; 1968-105; 1973-A52; 1974-A118; 1975-A92; 1976-A102; 1977-114; 1978-126; 1979-129
EMPR ASS RPT 459, 533, 607, 5184, 7089, 7090
EMPR BC METAL MM00011
EMPR BULL 40
EMPR EXPL 1978-E130; 1979-133
EMPR GEM 1969-218; 1970-284; 1971-252; 1972-271; 1973-24,235; 1974-25,181
EMPR IR 1984-2, pp.99,100; 1984-3, pp.105,106; 1984-4, p.20; 1984-5, pp.113,114; 1986-1, pp.109,110
EMPR MAP 65 (1989)
EMPR MINING Vol. 1, 1975-1980, pp.1-2,53,58,62,65,68,72; 1981-1985, pp.2,30; 1986-1987, p.44; 1988, p.41
EMPR OF 1999-2
EMPR P 1987-1, p. 223; 1988-1, p. 81; 1989-1, p. 75; 1991-4, pp. 102,104,105,111,112
EMPR PF (Various Maps and Reports in 092F 071 (see Lynx) and 092F 073 (Price); Various Correspondence and Letter Reports; Western Mines Limited (1973, 1974, 1981, 1985): Annual Reports; (1975): Notice To Shareholders dated Oct. 17; (1961): Geology, Drill Holes and Trenches, 1:240; Sections at DH No.W102 and at Trench 'C' and DH No.W101, 1:240; Section at Trench 'B', 1:240; Diamond Drill Holes, 1:480; Myra Falls Operation, Western Mines Limited; Myra Falls Longitudinal Plan 1: 1200; Paramount Prospect (1959): Plan, Drilling and Assays, 1:240; Sections A, B and C, 1:240; Granby Consolidated Mining, Smelting and Power Company Limited: Working Plan East Paw Claim, 1:480; DD Hole No.11 & 12, 1:480; Claim Map, 1:3600; Paramount Mining Company, Open Cuts and Drill Holes, South Side of Myra Creek, 1:480; Plan of Paw Property Showing Drill Holes, Adit and Mineralized Shoots, 1:480; Claim Maps, 1:50,000, 1:12,000; *Wright Engineers (1963): General Plan Land Requirements, 1:12,000; Jeffery, W.G. (1964): An Assessment of the Economic Mineral Potential within a Part of Strathcona Provincial Park; Various Correspondence on Strathcona Park; Eastwood, G.E.P., (c.1975): Mineral Resource Considerations Raised by Proposed Changes to Strathcona Park - Conclusions and Recommendations; *Westmin Resources Limited Annual Report for 1988 (in Debbie (092F 079) file); Pearson, C.A. (1992): New Ore Discoveries at Myra Falls Operations, Buttle Lake, Vancouver Island, BC, CIM District 6 Meeting, October 1-3, 1992, Campbell River, BC in H-W, 092F 330)
EMR MP CORPFILE (Western Mines Limited)
EMR RES FILE (Paramount; Myra; Claw; Lynx)
GSC MAP 196A; 2-1965; 17-1968; 1386A
GSC OF 9; 61; 463; *2167, pp. 145-161
GSC P 66-1; 68-50; *71-36; 72-44; 79-30
GSC SUM RPT 1930 Part A, p. 56
CIM BULL Dec. 1980, pp.71-90
CIM Vol.73, No.824, p. 86; Vol.80, No.899, p. 134; Transactions Vol. 83, pp. 115-130
CMH 1976-77, p. 331; 1989-90, p. 470
CMJ Oct. 1981; Nov. 1985, Sep. 1986
GCNL #92, 1970; #214, 1971; Feb.7, #76, 1973; #35, #95,#160,#222, 1974; #87,#95,#204,#205,#220, 1975; #41,#91,#105,#218,#220,#246, 1976; #39,May 16,#87,#221, 1977; #43,#150,#217, 1978; #33,#88,#92, #144,#186,#198,#231,#242,#246, 1979; #19,#32,#34,#54,#55,#68,#90, #101,#108,#128,#154,#159, 1980; #152, 1982; #101,#151,#153, 1983; #41,#103, 1984; #149, 1985; #42, 1986; #85, 1987
MIN REV Fall 1998, pp. 32-33

BIBLIOGRAPHY

MINING IN CANADA Mar. 1967, p. 16
N MINER Apr.26, 1973; Apr.25, 1974; May 5, Jun.2, 1977; Mar.2, Apr.20, May 4, Aug.10, 1978; Feb.15, 1979; Feb.21, Apr.3, 1980; Apr.23, May 21, Oct.29, Nov.12,26, 1981; Apr.15,29, Nov.4, 1982; Jan.20, Feb. 17, Apr.7,21, Aug.11, Oct.20, 1983; Mar.29, May 31, Dec.27, 1984; Feb.28, Apr.25, 1985 ; Aug.30, 1984; Sept.30, 1985; Mar.17, May 12, Jun.16, Sep.1, Nov.24, 1986; Jun.1, 1987; Aug.21, 1989; June 28, 1999
NW PROSP Dec. 1986; Jan. 1987
PERS COMM Hampton, R.O., Dec. 16, 1974; Pearson, Cliff, May 1990; Massey, N., May 1990
W MINER Oct. 1963, pp.64-65; Aug. 1965 pp.37-42; Oct. 1970; May 1977 p.62; Apr. 1978, p.122; Mar. 1979, p.46; Mar. 1980, p.60; Jun., Dec. 1981; Apr. 1982; Mar., *May 1983; Apr., Dec. 1984
WIN May, 1987
WWW http://www.boliden.ca; http://www.infomine.com/
Boliden Westmin Ltd., 1998 Myra Falls Exploration Forum, July 23-25, 1998
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Carvalho, I.G. (11979): Geology of the Western Mines District, Vancouver Island, British Columbia, Ph.D. Thesis, University of Western Ontario
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 164
*Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
*Pearson, C.A. (1993): Mining Zinc-Rich Massive Sulphide Deposits on Vancouver Island, British Columbia, International Symposium - World Zinc 1993, pages 75-84
Province Feb.19, Apr.15, Nov.15,27, Dec.17, 1974
Times Colonist Aug.28, Dec.19, 1974
Vancouver Sun Apr.19, May 14,15, Aug.15, Nov.7, Dec.16, 1974
Yole, R.W. (1965): A Faunal and Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/07 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 073** NATIONAL MINERAL INVENTORY: 092F12 Zn3

NAME(S): **PRICE (MYRA FALLS)**, MYRA FALLS (PRICE) , PRICE (L. 1972), TRUMPETER, THELWOOD VALLEY , TRUMPETER WEST

STATUS: Developed Prospect MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 33 24 N NORTHING: 5492511
LONGITUDE: 125 34 08 W EASTING: 314218
ELEVATION: 488 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Middle Price adit on Lot 1972 (from Wright Engineering in Property File, 092F 072), 1 kilometre west of Thelwood Creek and 1 kilometre west of the south end of Buttle Lake. See also H-W (092F 330), Lynx (092F 071) and Myra (092F 072).

COMMODITIES: Copper, Zinc, Lead, Gold, Silver, Cadmium

MINERALS

SIGNIFICANT: Chalcopyrite, Sphalerite, Galena, Pyrite, Tennantite, Bornite, Stromeyerite, Digenite, Covellite
ASSOCIATED: Quartz, Sericite, Chlorite, Talc, Pyrrhotite, Barite
ALTERATION: Sericite, Quartz, Pyrite
ALTERATION TYPE: Sericitic, Silicific'n, Pyrite
MINERALIZATION AGE: Upper Devonian
ISOTOPIC AGE: 370 Ma DATING METHOD: Rubidium/Strontium MATERIAL DATED: Whole rock

DEPOSIT

CHARACTER: Massive, Stratiform
CLASSIFICATION: Volcanogenic, Syngenetic, Exhalative
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 502 Metres STRIKE/DIP: 315/65W TREND/PLUNGE:
COMMENTS: Age date on the Myra Formation from Juras 1987, page 109. The Upper Price zone has been traced for 502 metres.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	Myra	
ISOTOPIC AGE:	370 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Whole rock		
Upper Devonian	Sicker	Price	
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	166 +/- 8 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		
Tertiary			Mount Washington Intrus. Suite
ISOTOPIC AGE:	39 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		

LITHOLOGY: Quartz Feldspar Rhyolite Tuff, Chert, Dacite Flow Breccia, Tuff, Andesite Flow, Rhyolite, Pillow Basalt, Pyroclastic, Felsic Rhyolite, Granitic Dike

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Paper 72-44 and Juras, 1987. Sicker Group is possibly as young as Pennsylvanian.

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Buttle Lake uplift.

INVENTORY

ORE ZONE: TRUMPETER REPORT ON: Y

CATEGORY: Combined YEAR: 1995
QUANTITY: 227935 Tonnes

COMMODITY	GRADE	
Silver	66.7000	Grams per tonne
Gold	3.1000	Grams per tonne
Copper	4.1000	Per cent
Lead	0.3000	Per cent
Zinc	4.4000	Per cent

COMMENTS: Proven and probable geological reserves.
REFERENCE: Assessment Report 24617.

ORE ZONE: PRICE REPORT ON: Y

CATEGORY: Combined YEAR: 1993
QUANTITY: 185000 Tonnes

COMMODITY	GRADE	
Silver	66.4000	Grams per tonne
Gold	1.5000	Grams per tonne
Copper	1.4000	Per cent
Lead	1.3000	Per cent
Zinc	10.4000	Per cent

COMMENTS: Proven and probable geological reserves.
REFERENCE: George Cross News Letter No.30 (February 12), 1993.

CAPSULE GEOLOGY

The Myra Falls Operation includes the Lynx (092F 071), Myra (092F 072), Price (092F 073) and H-W (092F 330) deposits and associated zones. The Price volcanogenic massive sulphide deposit occurs within the southern part of the Buttle Lake uplift. This discrete belt of northwest striking Upper Paleozoic rocks is bounded on the east by Upper Triassic Karmutsen Formation volcanics (Vancouver Group) and on the west by the Early to Middle Jurassic Island Plutonic Suite. The geology of the uplift has recently been reinterpreted and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and the new Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, Personal Communication, 1990).

The new Buttle Lake Group consists of: (1) the Lower Permian(?) Henshaw Formation composed of conglomerate, epiclastic deposits and vitric tuffs; and (2) the Lower Permian to Pennsylvanian Azure Lake Formation (formerly Buttle Lake Formation) consisting of crinoidal limestone and minor chert.

The Sicker Group consists of: (1) the Mississippian(?) or Pennsylvanian(?) Flower Ridge Formation largely comprising coarse mafic pyroclastic deposits; (2) the Lower Mississippian(?) Thelwood Formation, a bedded sequence of siliceous tuffaceous sediments, subaqueous pyroclastic deposits and mafic sills; (3) the Upper Devonian Myra Formation consisting of basaltic to rhyolitic flows and volcaniclastic rocks, lesser epiclastic sediments, argillites and cherts, and massive sulphide mineralization; and (4) the Upper Devonian or older Price Formation comprising feldspar-pyroxene porphyritic andesite flows, flow breccias and minor pyroclastic deposits.

The Buttle Lake uplift stratigraphy indicates deposition in a rift basin in an island arc environment. It has been intruded by granitic dykes related mainly to the Island Plutonic Suite. A 1 kilometre wide stock of Tertiary intrusives lies about 1.5 kilometres north of the deposit. This stock (formerly called Catface Intrusions) is probably related to the Mount Washington Intrusive Suite of Late Eocene to Early Oligocene age (Nick Massey, Personal Communication, May 1990).

The major occurrences in the Buttle Lake area lie along a northwest striking, 65 degrees southwest to steeply northeast dipping zone that is approximately 6 kilometres long. The rocks have been metamorphosed to lower greenschist facies, and have been deformed along northwest trending subhorizontal open folds. Several regional west-northwest to north trending faults occur with maximum lateral displacements of 850 metres. The faults are considered to be post-Mesozoic, and are probably related to Late Cretaceous uplift. The contact between the Myra Formation and the overlying Thelwood Formation is marked by a 2 to 40 metre wide zone of strong schistosity that may represent an Upper Paleozoic low angle fault.

The Myra Formation, dated at 370 million years (Juras, 1987), comprises intermediate to felsic volcanics, volcaniclastics, minor argillite and is host to the massive sulphide horizons. The Price, Lynx (092F 071) and Myra (092F 072) deposits lie at the same stratigraphic level of the Myra Formation (the "Mine Sequence" of

CAPSULE GEOLOGY

Juras). The H-W deposit (092F 330) lies below them at the base of the Myra Formation. The Myra Falls Operations of Westmin Resources has developed these deposits into four mines. In 1990, the Lynx and H-W mines fed a 4000-tonne per day mill, the Myra mine is depleted and the Price deposit has yet to be used as a source of mill feed.

The major ore zone of the Price deposit, termed the Upper Price Zone, has been traced for about 502 metres. Lower, lesser mineralized zones are also present.

The massive sulphide horizon lies within a zone of quartz-feldspar rhyolite tuff and minor chert. The tuff is underlain by dacite flow breccia and tuff, breccia that includes clasts of H-W mineralization, andesite flows, the rhyolitic H-W horizon, and the Price Formation. Rocks in the feeder zone below the lower massive sulphide horizon have undergone sericitization and silicification. Pyrite alteration is evident from disseminated pyrite and pyrite stringer zones.

Overlying the massive sulphide horizon are pillow basalts, mixed pyroclastics and tuffs, felsic rhyolite and flow breccia. These are overlain by the Thelwood Formation.

The lenses of massive sulphides occur in a gangue of quartz, sericite, chlorite, calcite and talc and comprise banded chalcopyrite, galena, sphalerite, pyrite and pockets of barite. Minor tennantite, bornite, pyrrhotite, digenite, covellite and stromeyerite are present. Significant amounts of gold, silver and cadmium are associated with the sulphides. The lenses pinch out along strike.

Proven and probable geological reserves at the Myra Falls operations as of January 1, 1993 are:

Name	Tonnes	Grades				
		Gold g/t	Silver g/t	Copper %	Lead %	Zinc %
H-W Mine	8,955,100	2.2	39.6	1.7	0.4	4.3
Lynx Mine	315,300	3.0	94.0	1.7	1.1	10.0
Price Mine	185,000	1.5	66.4	1.4	1.3	10.4
Gap Zone	634,400	3.2	151.5	1.8	1.1	13.3
Battle Zone	2,013,700	1.1	24.2	2.6	0.5	12.7
Extension (W37) Zone	231,100	1.2	60.4	1.7	0.4	3.8
Trumpeter Zone	61,200	3.2	68.9	6.3	0.3	4.6
6 Level	120,500	1.3	91.4	0.4	0.9	6.0
Total	12,516,100	2.1	45.6	1.9	0.5	6.3

Compiled from George Cross News Letter No. 30 (February 12), 1993.

The Trumpeter zone (H-W horizon) was discovered in early 1992, through surface drilling in Thelwood valley. The drill program leading to discovery was conceived as a test of the postulated fault offset position of 42 and 43 Blocks, across the Myra-Price fault. Drilling in Thelwood valley had been suspended for some 10 years and it took an extensive public information and government approval process to re-establish the program. This program encompassed a number of initiatives to ensure protection of the environment.

The Trumpeter zone, a copper-rich pyritic massive sulphide lens, is believed to be the faulted-off continuation of H-W 42 Block. The zone lies at the same elevation as the H-W mine workings (see H-W, 092F 330), but approximately 1500 metres towards the southeast.

Drilling in 1994 and early 1995 on the Trumpeter zone successfully tested the mine west strike extension of the zone. Three stratigraphically distinct mineralized intervals were found within the H-W horizon in this area (Upper zone, 43 Block and Trumpeter Upper/Lower). The Upper zone mineralization consists of 1 to 5 metre wide intervals along the hangingwall of the H-W horizon and contains 3-15 per cent stringer and disseminated sphalerite and pyrite in rhyolite lapilli tuff deposits. Mineralization in 43 Block is a transported ore type consisting of up to 30 per cent massive sulphide clasts (pyrite, sphalerite, chalcopyrite) in a coarse rhyolite-dominant clastic deposit. The zone, up to 8 metres thick, occurs in mid-H-W horizon stratigraphy, west of the original Trumpeter discovery drillholes. Trumpeter Upper/Lower represents typical massive sulphide mineralization along the base of the H-W horizon (on top of the Footwall Andesite unit). The intersections, from 0.5 to 8.5 metres thick, vary from chalcopyrite-rich (up to 30 per cent) to mixed chalcopyrite (7-20 per cent) - sphalerite (5-10 per cent) - pyrite assemblages. The Upper/Lower designation refers to repetition due to faulting. Results of this new drilling has increased proven and probable geological reserves for the Trumpeter zone to 227,935 tonnes grading 3.1 grams per tonne gold, 66.7 grams per tonne silver, 4.1 per cent copper, 0.3 per cent lead and 4.4 per cent zinc (Assessment Report 24617).

CAPSULE GEOLOGY

In 1997, the company stepped out approximately 1000 metres to the northeast of the Trumpeter zone and drilled two holes from the surface, on Myra Ridge, (total depth of 2242 metres) looking for evidence of the postulated Trumpeter graben in an area previously considered to be too far from the main trend to warrant exploration. Both holes intersected rhyolite breccia and sediment consistend with the presence of a graben. In addition, one hole returned 4.5 metres of semimassive sulphide intermixed with rhyolite, and 1.2 metres of sub-economic massive sulphide. The discovery intercepts for the new Trumpeter West zone are below the main haulage level for the H-W shaft but they are shallow enough that the zone could be mined through the shaft.

BIBLIOGRAPHY

EM EXPL 1998-47-55; 1999-25-32; 2000-25-32; 2001-23-31; 2002-29-40
EMPR AR 1918-268; 1919-220; 1920-207; 1921-222; 1922-241; 1923-254,388; 1925-283; 1927-349; 1928-378; 1929-384,385; 1930-301; 1952-211; 1961-103; 1962-107-110; 1963-105; *1964-157-166; 1965-234; 1966-77; 1967-77,78; 1968-105
EMPR ASS RPT 459, 533, 607, 5184, 7089, 7090, *24617
EMPR BULL 40
EMPR EXPL 1978-E130; 1979-133; 1996-A9,F6; 1997-56
EMPR GEM 1969-218; 1970-284; 1971-252; 1972-271; 1973-235; 1974-181
EMPR INF CIRC 1998-1, p. 9
EMPR MAP 65 (1989)
EMPR MINING Vol. 1, 1975-1980, p.1; 1981-1985, p.2; 1986-1987, p.44; 1988, p.41
EMPR OF 1998-10; 1999-2
EMPR P 1987-1, p. 223; 1988-1, p. 81; 1989-1, p. 75; 1991-4, pp.102,104,105,111,112
EMPR PF (J.C. Sproule and Associates (1963): Buttle Lake Area Photogeological Study; Yole, R.W. (1966): Report on Fossil Collections from Buttle Lake Area, Vancouver Island; Various Maps, Notes, Correspondence, Reports and Photograph; *Jeffery, W.G. (1970): Buttle Lake; Geological Map, 1:31,680; Various Maps, Plans and Reports; Jeffery, W.G. (1964): An Assessment of the Economic Mineral Potential within a Part of Strathcona Provincial Park; Various Correspondence on Strathcona Park; Eastwood, G.E.P. (c.1975): Mineral Resource Considerations Raised by Proposed Changes to Strathcona Park - Conclusions and Recommendations; Eastwood, G.E.P. (1976): Fieldnotes; *Westmin Resources Limited Annual Report for 1988 (in Debbie (092F 079) file); Pearson, C.A. (1992): New Ore Discoveries at Myra Falls Operations, Buttle Lake, Vancouver Island, BC, CIM District 6 Meeting, October 1-3, 1992, Campbell River, BC in H-W, 092F 330)
EMR MP CORPFILE (Western Mines Limited)
EMR RES FILE (Paramount; Myra; Claw; Lynx)
GSC MAP 196A; 2-1965; 17-1968; 1386A
GSC OF 9; 61; 463; *2167, pp. 145-161
GSC P 66-1; 68-50; *71-36; 72-44; 79-30
GSC SUM RPT 1930A, p. 56
CIM BULL Dec. 1980, pp.71-90
CIM Vol.73,No.824, p. 86; Vol.80, No.899, p. 134; Transactions Vol. 83, pp. 115-130
CMH 1976-77, p. 331; 1989-90, p. 470
CMJ Oct. 1981; Nov. 1985, Sep. 1986
GCNL #92, 1970; #214, 1971; Feb.7, 1973, #76, 1973; #35,#95,#160, #222, 1974; #87,#95,#204,#205,#220, 1975; #41,#91,#105,#218,#220, #245, 1976; #39,May 16,#87,#221, 1977; #43,#150,#217, 1978; #33, #88,#92,#144,#186,#198,#231,#242,#246, 1979; #19,#32,#34,#54,#55, #68,#90,#101,#108,#128,#154,#159, 1980; #152, 1982; #101,#151, #153, 1983; #41,#103, 1984; #149, 1985; #42, 1986; #85, 1987; *#30(Feb.12), 1993
MIN REV Fall 1998, pp. 32-33
MINING IN CANADA Mar. 1967, p. 16
N MINER Apr.26, 1973; Apr.25, 1974; May 5, Jun.2, 1977; Mar.2, Apr.20, May 4, Aug.10, 1978; Feb.15, 1979; Feb.21, Apr.3, 1980; Apr.23, May 21, Oct.29, Nov.12, 6, 1981; Apr.15,29, Nov.4, 1982; Jan.20, Feb. 17, Apr.7,21, Aug.11, Oct.20, 1983; Mar.29, May 31, Dec.27, 1984; Feb.28, Apr.25, 1985 ; Aug.30, 1984; Sept.30, 1985; Mar.17, May 12, Jun.16, Sep.1, Nov.24, 1986; Jun.1, 1987; Aug.21, 1989; June 28, 1999
NW PROSP Dec. 1986; Jan. 1987
PERS COMM Hampton, R.O., Dec. 16, 1974; Massey, N., May 1990
W MINER Oct. 1963, pp.64-65; Aug. 1965 pp.37-42; Oct. 1970; May 1977 p.62; Apr. 1978, p.122; Mar. 1979, p.46; Mar. 1980, p.60; Jun., Dec. 1981; Apr. 1982; Mar., *May, 1983; Apr., Dec. 1984
WIN May 1987
WWW http://www.boliden.ca; http://www.infomine.com/

BIBLIOGRAPHY

Boliden Westmin Ltd., 1998 Myra Falls Exploration Forum, July 23-25, 1998

Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

Carvalho, I.G. (1979): Geology of the Western Mines District, Vancouver Island, British Columbia, Ph.D. Thesis, University of Western Ontario

Hudson, R. (1997): A Field Guide to Gold, Gemstone and Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 164

*Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia

*Pearson, C.A. (1993): Mining Zinc-Rich Massive Sulphide Deposits on Vancouver Island, British Columbia, International Symposium - World Zinc 1993, pages 75-84

Province Feb.19, Apr.15, Nov.15,27, Dec.17, 1974

Times Colonist Aug.28, Dec.19, 1974

Vancouver Sun Apr.19, May 14,15, Aug.15, Nov.7, Dec.16, 1974

Yole, R.W. (1965): A Faunal and Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/07 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 074**

NATIONAL MINERAL INVENTORY:

NAME(S): **PHILLIPS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12E
BC MAP:
LATITUDE: 49 36 12 N
LONGITUDE: 125 39 56 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: On the summit between Myra and Phillips creeks (Geological Survey of Canada Summary Report 1930, Part A).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5497942
EASTING: 307411

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Vein
CLASSIFICATION: Unknown
COMMENTS: Assumed to be a skarn type deposit.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Granodiorite

HOSTROCK COMMENTS: The Azure Lake Formation is the new name for Buttle Lake limestone in the Buttle Lake Uplift only (N. Massey, pers. comm., Feb. 1990).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

On the summit between Myra and Phillips creeks, east of a body of Early to Middle Jurassic Island Plutonic Suite granodiorite, irregular remnants of Permian to Pennsylvanian Buttle Lake Group limestone (Azure Lake Formation) contains small lenses and veins of chalcopyrite and pyrite. The showing is assumed to be skarn related.

The interpretation of the geology of the Buttle Lake Uplift, in which this showing occurs, is presently undergoing revision. Please refer to occurrence 092F 120 for a summary of this revision.

BIBLIOGRAPHY

GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44; 79-30; 80-16
GSC SUM RPT *1930, Part A, p.77
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 075** NATIONAL MINERAL INVENTORY: 092F13 Fe1

NAME(S): **IRON HILL**, ARGONAUT, ARGONAUT (GARNET)

STATUS: Past Producer Open Pit MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 51 44 N NORTHING: 5526421
LONGITUDE: 125 32 45 W EASTING: 317037
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Open pit. The old iron mine is a potential producer of garnet, presently in the Mineral Development Review Process.

COMMODITIES: Iron Limestone Garnet Magnetite

MINERALS
SIGNIFICANT: Magnetite
ASSOCIATED: Garnet Pyrite Epidote Calcite Chalcopyrite
ALTERATION: Garnet Epidote Calcite
COMMENTS: Epidote, calcite and pyrite are present only in small amounts.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Skarn Replacement Industrial Min.
TYPE: K03 Fe skarn
SHAPE: Irregular
DIMENSION: 400 x 150 x 120 Metres STRIKE/DIP: 090/15N TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Pillow Basalt
Limestone
Garnetite

HOSTROCK COMMENTS: Basin-shaped assemblage of magnetite-limestone-volcanic-skarn rocks enclosed in granodiorite (Sangster, 1962).

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact Regional RELATIONSHIP: Pre-mineralization Syn-mineralization GRADE: Hornfels Greenschist

INVENTORY

ORE ZONE: IRON HILL REPORT ON: Y

CATEGORY: Inferred YEAR: 1962
QUANTITY: 1447870 Tonnes

COMMODITY	GRADE	
Iron	60.0000	Per cent

REFERENCE: Property File - A.P. Fawley, 1962.

CAPSULE GEOLOGY

The Argonaut mine is a massive magnetite-magnetite/garnetite skarn situated on Iron Hill, just east of upper Quinsam Lake. The skarn is near the contact of limestone of the Upper Triassic Quatsino Formation and an overlying basic volcanic unit of the Upper Triassic Karmutsen Formation, both of the Vancouver Group. The Vancouver Group rocks are intruded by a granodiorite stock of the Early to Middle Jurassic Quinsam intrusions (Island Intrusions). Although the limestone is completely recrystallized, there has been no alteration and the original bedding has been preserved. The basic volcanic package is a sequence of pillow basalts which have been weakly metamorphosed. Locally, the basalts have been hornfelsed near the contact with the granodiorite.

The deposit has been deformed into a west dipping, overturned syncline whose north limb is overturned onto the south limb. The axial plane strikes generally east-west, dips north-northwest, and is irregularly curved along strike. Skarn is best developed and

CAPSULE GEOLOGY

thickest in the hinge portion of the syncline.

Limestone outcrops on surface as an oval shaped body enclosed in skarn and greenstone, trending west-northwest along the synclinal axis for 320 metres, with a width of up to 110 metres. The unit is comprised mostly of massive to thin bedded, medium grained, white to light grey limestone with some thin dark grey beds. The limestone is high calcium in composition, with small grains of pyrite the only visible impurity. A grab sample of chips from blocks of limestone in a dump assayed 98.88 per cent CaCO3, 1.29 per cent acid insolubles, 0.09 per cent total iron and 0.07 per cent total sulphur (Minister of Mines Annual Report 1952, p.224). The Argonaut Co. Ltd. reported a limestone analysis of 54.8 per cent CaO, trace MgO, 0.14 per cent R2O3, 0.6 per cent Fe2O3, 0.06 per cent P2O5 and 0.04 per cent sulphur (Geological Survey of Canada Bulletin 172, p.51).

Skarn mineralization occurs along the contact between limestone and the pillowed basalts and consists of massive garnetite and magnetite with minor amounts of epidote, calcite, and pyrite. The margin of the skarn and host rocks is sharp and irregular. Skarn mineralization rarely occurs outside of the main body and then only as small irregular pods. The skarn mineral assemblage varies from pure, coarsely crystalline massive magnetite at its core to a mixed, crystalline magnetite/garnetite near the margin and a boundary phase of pure crystalline garnetite. In the main body of the skarn, bedding replacement features are present indicating that hydrothermal fluid migration took place preferentially along bedding planes of the limestone. Skarn has preferentially replaced the basalt with respect to the limestone.

From 1951 to 1957, 3,657,168 tonnes of ore were mined, from which 1,990,288,655 kilograms of concentrate was shipped. The dimension of the ore body measured about 400 by 150 by 120 metres, with a strike of 90 degrees and dip of 15 degrees north.

The tailings and waste pile contain fine-grained magnetite and garnet and a proposal is presently underway to recover these for industrial purposes (D. Hora, personal communication, 1990).

BIBLIOGRAPHY

EMPR AR 1916-296-297; 1918-270; 1948-158; 1949-226; 1951-198,199; *1952-40,45,221-228; 1953-43,48,170, 1954-48,52,166; 1955-A46,A50, 78-79; 1956-A48,A52,10,119; 1957-A43,A48,69
EMPR ASS RPT 7193
EMPR BC METAL MM00237
EMPR BULL 3 (1917); 40, p. 84; *101, pp. 13,57,80,83,158, Appendix 6
EMPR EXPL 1977-E114
EMPR INDEX 3-201; 4-119
EMPR OF 1988-28
EMPR PF (*Sangster, D.F., Britton, J.W., *Fawley, A.P., (1962): Reports; *Various Plans and Sections, 1948-1956)
EMR MP CORPFILE (Quinsam Lake, Coast Iron Co. Ltd.; Argonaut Mining Co.)
GSC BULL *172, pp. 54-56, Fig. 8
GSC EC GEOL Series 3 Vol. 1, pp. 73-78
GSC MAP 2-1965; 17-1968
GSC OF 463
GSC P 68-50, p. 39
GSC SUM RPT 1930, Part A, p. 73
ECON GEOL Vol. 79, pp. 869-882
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 161

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/29 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 076**

NATIONAL MINERAL INVENTORY: 092F14 Fe1

NAME(S): **IRON RIVER**, QUINSAM RIVER, WOLF

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W
BC MAP:
LATITUDE: 49 55 19 N
LONGITUDE: 125 26 15 W
ELEVATION: 275 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: West zone.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5532801
EASTING: 325038

COMMODITIES: Magnetite, Iron, Copper, Silver, Gold

MINERALS

SIGNIFICANT: Magnetite, Chalcopyrite, Pyrite
ASSOCIATED: Pyrite, Calcite, Sulphur
ALTERATION: Calcite, Garnet, Epidote, Actinolite, Hematite, Diopside, Pyrite, Pyroxene
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive
CLASSIFICATION: Skarn, Industrial Min.
TYPE: K03 Fe skarn, K01 Cu skarn
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 80 x 50 x 30 Metres
STRIKE/DIP:
TREND/PLUNGE: 045/30E
COMMENTS: West zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Amygdaloidal Basalt
Basalt
Limestone
Skarn
Garnetite
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
METAMORPHIC TYPE: Contact, Regional
RELATIONSHIP: Syn-mineralization
GRADE: Amphibolite

INVENTORY

ORE ZONE: EAST
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1974
QUANTITY: 1450000 Tonnes

COMMODITY	GRADE	
Copper	0.3490	Per cent
Iron	26.4600	Per cent

COMMENTS: Metallurgical testing has shown that a copper concentrate contains 1.4 - 1.7 grams per tonne gold and 2.4 - 3.4 grams per tonne silver.
REFERENCE: WWW http://www.info-mine.com/mining/properties/Wolf.html.

ORE ZONE: WEST
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1974
QUANTITY: 3175000 Tonnes

COMMODITY	GRADE	
Copper	0.5170	Per cent
Iron	38.4800	Per cent

COMMENTS: Metallurgical testing has shown that a copper concentrate contains 1.4 - 1.7 grams per tonne gold, and 2.4 - 3.4 grams per tonne silver.
REFERENCE: WWW http://www.info-mine.com/mining/properties/Wolf.html.

CAPSULE GEOLOGY

At Iron River, massive and amygdaloidal basalt of the Upper Triassic Karmutsen Formation are overlain by limestone of the Upper Triassic Quatsino Formation, both of the Vancouver Group. These are intruded by quartz diorite of the Early to Middle Jurassic Island Plutonic Suite. Overlying these rocks are sandstone, conglomerate, shale and coal of the Upper Cretaceous Comox Formation (Nanaimo Group).

Magnetite and chalcopyrite mineralization is concentrated at the north end of a northeast trending skarn zone adjacent to the quartz diorite. Normal faults offset the ore into east and west orebodies. Skarn mineralization consists of garnet, diopside, calcite, epidote, pyrite, actinolite and hematite.

The West zone plunges northeast at about 30 degrees and persists to a maximum depth of 50 metres. Surface exposure covers an area of about 80 by 30 metres. A grab sample from a pyrite lense with magnetite and chalcopyrite adjacent to a shear assayed 9.85 per cent copper, 750 grams per tonne silver and 47.8 per cent iron (Assessment Report 13574).

The East zone lies east of the Iron River, about 200 metres east of the West zone. It appears to strike northeast and dip 45 degrees northwest.

Probable ore reserves for the two zones are reported as 816,000 tonnes grading 64 per cent iron and an estimated 0.01 per cent copper (Property File - A.P. Fawley, 1962). Drilling by Texada Iron Mines Ltd. in 1965 and 1966 delineated a total of 3.5 million tonnes of iron ore; grade and ore type were not specified (Open File 1992-1). The two zones may have a proven resource of 4.7 million tonnes (3.2 million tonnes of 0.517 per cent copper, 38.48 per cent iron and 1.45 million tonnes of 0.349 per cent copper and 26.46 per cent iron. Metallurgical testing has shown that a copper concentrate contains 1.4 - 1.7 grams per tonne gold and 2.4 - 3.4 grams per tonne silver (WWW http://www.info-mine.mining/properties/Wolf.html).

BIBLIOGRAPHY

EMPR AR 1951-199; 1952-228; 1954-166; *1956-131,132; 1965-233; 1966-70
EMPR ASS RPT 5300, 13574, 24089, 24440
EMPR BULL 101, p. 158
EMPR EXPL 1985-158
EMPR GEM 1971-252; 1974-182-183
EMPR MAP 65 (1989)
EMPR OF 1988-28; 1992-1; 1992-9
EMPR PF (in 092F 075 (Iron Hill) - *Fawley, A.P. (1962): Report; McCullough, T. (1974): Map)
EMR MP CORPFILE (Quinsam Lake, Argonaut Mining Co.; Canadian Collieries Resources Ltd.; Texada Mines Ltd.)
EMR MP RESFILE (Iron River)
GSC ECON GEOL *3, Vol.1 (1926), pp. 71-73
GSC MAP 2-1965; 17-1968; 196A
GSC OF 463
GSC P 68-50, p. 39
CANMET IR 61-44
CANMET RPT 47, pp. 20-21
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 160

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/30 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 077** NATIONAL MINERAL INVENTORY: 092F4 Au2

NAME(S): **KALAPPA (L.1299)**, GOLDEN GATE (L.1302), JACK OF CLUBS (L.1301), SHINNICK (L.1300), DEFIANCE, JIM, MW

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 11 35 N NORTHING: 5452841
LONGITUDE: 125 51 18 W EASTING: 291999
ELEVATION: 60 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of adit #1 on Shinnick claim (Lot 1300), 200 metres east of Lemmens Inlet on east Meares Island (Assessment Report 13556, Fig.4).

COMMODITIES: Gold Silver Lead Zinc Copper Bismuth

MINERALS
SIGNIFICANT: Arsenopyrite Pyrite Pyrrhotite Chalcopyrite Sphalerite Galena Electrum Bismuth
COMMENTS: Unidentified silver minerals are present.
ASSOCIATED: Quartz Carbonate
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Vein Disseminated Massive
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: 1 Metres STRIKE/DIP: 155/90 TREND/PLUNGE:
COMMENTS: Vein structures strike 140 to 170 degrees, dips steeply northeast and are up to 1 metre wide.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

ISOTOPIC AGE: 245 Ma
DATING METHOD: Zircon
MATERIAL DATED: Zircon

Tertiary — Tofino Intrusive Suite
DATING METHOD: Potassium/Argon

LITHOLOGY: Amphibolite
Migmatite
Hornblende Plagioclase Gneiss
Quartz Diorite
Granodiorite
Quartz Feldspar Porphyry Dike
Breccia

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Paper 80-16 and 72-44.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Granulite

INVENTORY

ORE ZONE: ADIT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	24.2800	Grams per tonne

COMMENTS: Number 3 adit sample taken over an average width of 0.42 metres and along a strike length of 6.0 metres.
REFERENCE: Assessment Report 13556, page 22.

CAPSULE GEOLOGY

The Kalappa occurrence is underlain by amphibolite, agmatite, hornblende-plagioclase gneiss and quartz diorite of the Mesozoic-

CAPSULE GEOLOGY

Paleozoic Westcoast Complex. A northwest elongated quartz diorite stock of the Early to Middle Eocene Tofino Intrusive Suite (formerly Catface Intrusions) lies 2.0 kilometres to the west on the west side of Meares Island. Granodiorite of the Early to Middle Jurassic Island Intrusions lies 3.0 kilometres east of the occurrence.

The Westcoast Complex has been intruded by a 180 by 200 metres wide explosive breccia that contains fragments of the host rocks, metavolcanics, hornfels, dacite and quartz. The breccia contains disseminated arsenopyrite and a stockwork of vuggy quartz veinlets. Float samples of the breccia assayed up to 1.99 grams per tonne gold and 11.49 grams per tonne silver (Assessment Report 13556, page 28).

Five sulphide-bearing structures, striking 140 to 170 degrees and dipping steeply northeast, are present. These structures, up to 1 metre wide, consist of siliceous breccia, composite veins or sheared veins and gouge, and contain disseminated to massive pyrite and pyrrhotite, with local arsenopyrite, chalcopyrite, sphalerite and galena. Electrum is associated with chalcopyrite and arsenopyrite, and galena carries native bismuth, unidentified silver minerals and gold. Minor disseminated sulphides are present in the Westcoast Complex host rocks near the structures.

Samples from the Number 3 adit, driven on one of the vein-structures, contained up to 24.28 grams per tonne gold over an average width of 0.42 metres along a strike length of 6.0 metres (Assessment Report 13556, page 22). Samples of selected massive sulphide material assayed up to 43.62 grams per tonne gold and 195.11 grams per tonne silver over 0.4 metres (Assessment Report 13556, page 26, sample number 7063).

In 1913 and 1914, 1372 tonnes of ore were mined producing 17,697 grams of gold, 110,229 grams of silver and 27,380 kilograms of copper.

BIBLIOGRAPHY

EMPR AR 1900-924; 1901-1098; 1902-233; 1903-193; 1906-188,199; 1907-148; 1909-147; 1911-192; 1912-194; 1913-277, 281; 1914-374; 1915-287; 1916-362; 1917-291, 453; 1928-370; 1912-194
EMPR ASS RPT *2108, 8193, 8194, *13556
EMPR BULL 55; 20, PART V
EMPR EXPL 1980-C170; 1985-C148
EMPR GEM 1969-217
GSC ECON GEOL RPT #3, Vol.1
GSC MAP 17-1968; 1386A
GSC OF 9; 61; 463
GSC P 66-1; 68-50; 72-44
GSC SUM RPT 1920A, p. 20
CJES Vol.24, No.10, 1987, pp. 2047-2064
PERS COMM: Nick Massey, May 1990
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/29 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 078**

NATIONAL MINERAL INVENTORY:

NAME(S): **REGINA (L.55G)**, JENNY, TASHA, DEBBIE, CHINA

STATUS: Prospect Underground
MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 09 09 N
NORTHING: 5445744
LONGITUDE: 124 39 55 W
EASTING: 378572
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of adits.

COMMODITIES: Gold Silver Copper Zinc Lead

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Galena Pyrite
ASSOCIATED: Quartz Jasper
ALTERATION: Quartz Carbonate Sericite Chlorite Pyrite
ALTERATION TYPE: Sericitic Chloritic Carbonate Silicific'n Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Layered Shear
CLASSIFICATION: Epigenetic Exhalative
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 050/20S
TREND/PLUNGE:
COMMENTS: Quartz filled shear.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Devonian	Sicker	Nitinat	

LITHOLOGY: Andesite
Basalt
Dacite
Lapilli Tuff
Bedded Chert

HOSTROCK COMMENTS: Located near faulted contact of the Duck Lake and Nitinat formations.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: Located within the Cowichan uplift.

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Gold	1.4100	Grams per tonne
Copper	2.0000	Per cent

COMMENTS: From 2 different 1-metre sample intervals.
REFERENCE: Assessment Report 16144.

CAPSULE GEOLOGY

The mineralization occurs at the northwest edge of a 10 kilometre belt of Paleozoic Sicker Group rocks known as the Cowichan uplift. The belt was best described by Muller (1980) as a complex anticlinal uplift. Volcanic and sedimentary rocks of the Devonian Duck Lake and Nitinat formations underlie the area. The occurrence is located near the fault contact between these formations.

Work done on a crown grant in the 1890's consisted of at least 8 adits driven into green andesite to explore the tight quartz-sulphide lenses and veins found within. Locally, the andesite is highly silicified and pyritized. Westmin Resources Limited conducted a drill program in 1987 immediately adjacent to the crown grants and found that the area was underlain by basaltic flows, volcaniclastic rocks and less extensively by massive crystalline dacitic flows and lapilli tuffs. Intercalated with the basalts are narrow magnetite bearing tuffaceous units with associated sedimentary chert. Mineralized

CAPSULE GEOLOGY

quartz veins are found within the basalts.
One adit sunk on a tight shear partly filled by quartz, strikes 050 degrees and dips 20 degrees southeast.
Quartz-chalcopyrite-galena veins up to 5 centimetres and quartz stringers up to 13 centimetres are observed. One grab sample returned 22.6 grams per tonne gold and 480.0 grams per tonne silver. One 60 centimetre sample assayed 0.69 gram per tonne gold and 27.43 grams per tonne silver.
Mineralization in the drill core consists of quartz veins containing massive pyrite and chalcopyrite with specks of sphalerite. A 1-metre interval returned a value of 1.41 grams per tonne gold. Another 1-metre sample returned a value of 2 per cent copper (Assessment Report 16144).

BIBLIOGRAPHY

EMPR AR 1898-1197; 1930-291; *1944-A143-A161
EMPR ASS RPT 6153, 7984, 8289, 9986, 13758, 13759, 14483, 14876, *16144
EMPR BULL 1, p. 132; 37
EMPR EXPL 1976-111; 1980-167; 1985-133; 1986-161; 2002-29-40
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6; 1999-2
EMPR P 1991-4, p. 102
EMPR PF (Sketch map of area claims and Regina workings (date unknown); Stevenson, J.S., (1936): Maps and Reports; 092F General File - Laanela, H. (1965): Gunnex Report, Occurrence #7; Nexus Resources Corp. Statement of Material Facts July 1987 in 092F 331; Angle Resources Ltd. Statement of Material Facts Dec. 1987)
EMPR SPEC RPT 5, 1936
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50 p.38; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
CJES Vol. 14, pp. 2565-2577
GCNL #62, 1985
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 138

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/03 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 079**

NATIONAL MINERAL INVENTORY:

NAME(S): **DEBBIE**, YELLOW, MINERAL CREEK,
LINDA, VICTORIA, VANCOUVER ISLAND GOLD MINE,
SAM, LUCY, ALBERNI CONSOLIDATED,
MAC, DUNSMUIR, BELCHER,
WATERFALL

STATUS: Past Producer Underground
MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 10 39 N
NORTHING: 5448516
LONGITUDE: 124 39 40 W
EASTING: 378937
ELEVATION: 825 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Vancouver Island Gold mine zone (Mac Vein).

COMMODITIES: Gold Silver Copper Zinc

MINERALS

SIGNIFICANT: Pyrite Arsenopyrite Sphalerite Chalcopyrite Gold
ASSOCIATED: Quartz Calcite
ALTERATION: Quartz Ankerite Sericite Pyrite Arsenopyrite Clay
ALTERATION TYPE: Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I01 Au-quartz veins G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
I06 Cu±Ag quartz veins
SHAPE: Regular
MODIFIER: Faulted
DIMENSION: 600 x 50 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Mineral Creek zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Devonian	Sicker	Duck Lake	

LITHOLOGY: Basaltic Flow
Basalt
Bedded Volcanic Rock
Tuff
Cherty Tuff
Chert

HOSTROCK COMMENTS: Rocks of the Upper Devonian McLaughlin Ridge Formation (Sicker Group) are also present. Mineralization cuts all rock types.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: MAIN REPORT ON: Y

CATEGORY: Combined YEAR: 1990
QUANTITY: 471956 Tonnes

COMMODITY	GRADE	
Gold	6.2300	Grams per tonne

COMMENTS: Indicated and inferred geological reserves in 3 zones.
REFERENCE: Westmin Resources Ltd. 1990 Annual Report.

CAPSULE GEOLOGY

The Debbie area is underlain by andesitic to basaltic flows, pillowed basalts, tuff, agglomerates, cherty tuffs and chert of the Paleozoic Sicker Group. These comprise the Devonian Nitinat, Duck Lake and McLaughlin Ridge formations. The north-northeast striking Mineral Creek fault cuts the subparallel striking stratigraphy. Four mappable units include intermediate to mafic volcanics, bedded

CAPSULE GEOLOGY

volcaniclastics, mylonite and foliated volcanics. The Yellow and adjoining Debbie properties contain two main gold zones known as the Mineral Creek and Linda zones. The Mineral Creek zone occurs within the immediate hanging wall of the east dipping Mineral Creek fault and has a 600 metre strike length. The width ranges from 46 to 61 metres. The Mineral Creek zone is 150 metres north and on strike with the old Vancouver Island Gold mine and extends onto the Yellow claims. Two styles of mineralization are present in the Mineral Creek zone: 1) gold occurs in a wide zone of cataclasis and pervasive ankerite-quartz-sericite-pyrite alteration with minor arsenopyrite in bedded volcaniclastic and aphyric basalt flow rocks adjacent to the fault and 2) gold in quartz veins with minor pyrite and arsenopyrite cutting both the alteration zone and its immediate hanging wall aphyric basalt host. The veins are considered to be possibly Tertiary in age.

Inferred reserves (geological mineral inventory or volume of mineralized rock) for the Mineral Creek zone are estimated at 99,443 tonnes grading 3.017 grams per tonne gold, and for the extension onto the Yellow claim an additional 73,960 tonnes at 3.67 grams per tonne gold are inferred (Northern Miner - December 18, 1989).

The Linda zone (Yellow), located 200 metres east of the Mineral Creek fault, is a set of quartz-clay-ankerite/calcite-minor pyrite and arsenopyrite veins with native gold. The veins, which are haloed by narrow ankerite-sericite-pyrite selvages, occur within a 600-metre northeast strike and 230 metre width. The Linda zone includes the various veins described under the old Vancouver Island Gold mine which produced 365 tonnes of ore yielding 9425 grams of gold, 1679 grams of silver and 88 kilograms of copper from 1898 to 1936. mineralized rock) for the Linda zone are estimated at 41,164 tonnes grading 9.153 grams per tonne gold (Northern Miner - December 18, 1989).

A 2-kilometre exploration tunnel was completed in March 1989. The tunnel was constructed to allow access to the Mineral Creek and Linda zones and for use as a drilling platform. The highest assay as a result of 1988 drilling in the tunnel on the Mineral Creek zone was 19.78 grams per tonne gold (Assessment Report 18936). Anomalous gold values were found to be associated with quartz veins in argillaceous cherts and visible gold was observed.

The three main gold-bearing quartz veins that were developed from the old workings are, from west to east, the Mac (called the Dunsmuir to the north), the Belcher and the Waterfall. The veins follow well-developed shear zones on the east side of Mineral Creek. They are lens-shaped and consist of two generations of quartz. Pyrite, arsenopyrite and minor sphalerite are disseminated in the veins and free gold has also been reported.

The Mac vein, the main working, was traced for 75 metres by several opencuts and two adits. The vein averages 0.14 metre in width, ranging from 0.07 to 0.45 metre. The vein strikes northeast in the south part and north in the north part, dipping between 40 to 55 degrees. Sixty three samples taken over the length of the vein averaged 126.5 grams per tonne gold over 15 centimetres (Assessment Report 14483).

The Belcher vein is exposed in several opencuts and one adit over 290 metres. It strikes north, dips 40 to 45 degrees and is up to 1.2 metres wide, averaging 0.20 metres. Sampling in 1973 resulted in assays from 0.1 to 9.95 grams per tonne gold and from 2.1 to 3.4 grams per tonnes silver over 1.5 metre lengths (Assessment Report 14483).

The Waterfall vein is exposed by a few trenches over 35 metres, strikes north and dips about 65 degrees east. Widths range from 0.08 to 0.75 metre. Sample values were generally low except for one which assayed 404 grams per tonne gold over 0.15 metres (Assessment

Inferred and indicated geological reserves in three zones are 471,956 tonnes grading 6.23 grams per tonne gold (Westmin Resources Ltd. 1990 Annual Report).

BIBLIOGRAPHY

EMPR AR 1895-650; 1896-1,504,Bull 1-6; 1897-566,569; 1898-1132,1160; 1899-151,796; 1933-250; *1934-A28,29,F2-4; *1936-F25-30; 1944-148
EMPR ASS RPT 4915, 5443, 6153, 9111, 10206, 11278, 13700, *14483, 15909, 18936
EMPR BC METAL MM00112
EMPR BULL 37
EMPR EXPL 1983-196,197; 1985-141; 1986-A70; 1987-A74,*B28-B34; 2002-29-40
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1973-230; 1974-173
EMPR INDEX 3-187, 217
EMPR MAP 65 (1989)

BIBLIOGRAPHY

EMPR OF 1987-2; 1988-24; *1989-6; 1992-1
EMPR P 1988-4; 1991-4, p. 102
EMPR PF (Plan of Vancouver Island Gold Mine workings (date unknown); Warren, H.V. (1933): Report; Sketch of Workings 1936-37; Laanela, H. (1965): Report for Gunnex Ltd.; Nexus Resource Corporation Statement of Material Facts, July 22, 1987; Reward Resources Ltd. Statement of Material Facts Oct. 2, 1987; Angle Resources Ltd. Statement of Material Facts, Dec. 16, 1987; Nexus Resources Corp. Annual Report 1988; Westmin Resources Ltd. Annual Report 1988 (in 092F 331); Report on Debbie and Yellow Projects c. 1988; Geological and field notes, 1988-89; Photographs; M.E.G. Talk notes, 1988; Westmin Annual Report 1987; Notes on regional and property geology by N. Massey)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50, p. 38; 79-30
CIM Vol.83, No.935, March 1990 pp. 125-135
GCNL #160,#210,#226,#227,#240,#244, 1986; #7,#10,#35,#39,#41,#46,#48, #71,#74,#121,#123,#136,#141,#153,#197,#230, 1987; #3,*#8,#21,#30, #117,#131,#210,#224, 1988; #4,#27,#35,#44(Mar.3),#70,#231, 1989; #79(Apr.24), 1990; #23(Feb.1), 1991; #96(May 20), 1997
N MINER Dec.15, 1986; Feb.9, Mar.9, Oct.26, Dec.7, 1987; Feb.8,9, Sept.12, Nov.14, 1988; Mar.6, Apr.17, Dec.18, 1989
N MINER Advertising Supplement March 1989
NW PROSPECTOR Dec.86/Jan.87; Jan.87; Dec.87/Jan.88; Oct./Nov.88; Mar./Apr.89
PR REL Nexus Resources Corp. Apr.11,Aug.3, 1989
V STOCKWATCH Nov.28, 1986; Jan.28,Apr.15,Jun.23,25,Jul.15,16,Aug.12, Oct.14, 1987; Jan. 13, 1988; Aug.9, 1989
W MINER Nov.10, 1986
WWW http://www.infomine.com/index/properties/DEBBIE_GROUP=DEBBIE.html
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 138
Placer Dome File
The Vancouver Sun Dec.10, 1987, p.E6
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/02 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 080**

NATIONAL MINERAL INVENTORY: 092F2 Au2

NAME(S): **GOLDEN EAGLE (L.198)**, BSF

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 06 34 N
LONGITUDE: 124 35 29 W
ELEVATION: 960 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main mineralized quartz vein (Assessment Report 10194).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5440842
EASTING: 383859

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS
SIGNIFICANT: Pyrite Galena Sphalerite Chalcopyrite Arsenopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 0120 x 0100 x 0001 Metres
STRIKE/DIP: 030/65E
TREND/PLUNGE:
COMMENTS: Main Golden Eagle vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Feldspar Porphyry
Chert
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1965

COMMODITY	GRADE	
Silver	24.0000	Grams per tonne
Gold	1.7000	Grams per tonne
Lead	0.1000	Per cent
Zinc	0.8500	Per cent

COMMENTS: Across main quartz vein over 1.0 metre.
REFERENCE: Property File (Gunnex Limited, 1965).

CAPSULE GEOLOGY

The Golden Eagle showing is located approximately 16 kilometres southeast of Port Alberni and about 12 kilometres southeast of the Debbie deposit (092F 079).

The area is underlain by volcanic and sedimentary rocks of the Devonian Duck Lake Formation (Sicker Group). A major vertical north trending fault cuts the rocks. The volcanics are intruded by diorite (McQuillan diorite stock) of the Early to Middle Jurassic Island Plutonic Suite.

Several small quartz veins, variably mineralized with pyrite, chalcopyrite, galena, sphalerite, and arsenopyrite occur in andesite. The main quartz vein, and old workings, strikes 030 degrees, dips 65 degrees southeast and occurs in a 150 by 60 metre body of feldspar porphyry. The vein is a few centimetres to 1.5 metres in width, is about 120 metres long, and has a vertical depth of 100 metres. Mineralization consists of ribbon-quartz with pyrite and minor sulphides. A one metre sample of the vein assayed 1.7 grams per tonne gold, 24 grams per tonne silver, 0.1 per cent lead and 0.85

CAPSULE GEOLOGY

per cent zinc (Gunnex Limited, 1965).
A sub-parallel vein, known as the BSF vein, lying to the southwest of the main vein, occurs in andesite. The vein is 0.1 to 1.0 metres wide, strikes northeast and dips 70 degrees east. A 1.1 metre chip-channel sample assayed 17.5 grams per tonne gold, 1.46 grams per tonne silver, 0.35 per cent lead, 0.27 per cent zinc, and 0.05 per cent copper (Assessment Report 10194).

BIBLIOGRAPHY

EMPR AR 1893-1080; 1894-773; *1895-651-652; 1896-556,7 (Bull 1); 1897-566; 1898-1132; 1899-607,779,785; 1901-1190; 1902-230,257; *1944-150-151
EMPR ASS RPT 9126, *10194, 12538, 12696, 13668, 13670, 14483, 14880, 14928, 15288
EMPR BULL 37
EMPR EXPL 1981-230; 1982-142
EMPR FIELDWORK 1988 pp. 61-74
EMPR PF (*Reports by Gunnex Limited, 1965; Sketch Map of China Creek Mining Camp, in Gillespie, 092F 082)
EMPR OF 1987-2; 1988-24; *1989-6
EMPR P 1988-4
GSC MAP 17-1968; 17A; 49-1963
GSC OF 463; 1272
GSC P 68-50, p. 38; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 081**

NATIONAL MINERAL INVENTORY: 092F2 Au2

NAME(S): **B AND K**, BEATON, LAKEVIEW, SUMMIT LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 06 24 N
LONGITUDE: 124 35 05 W
ELEVATION: 1055 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quartz veins located at the south end of Summit Lake (Property File - Sketch map C, 1940's).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5440523
EASTING: 384339

COMMODITIES: Gold Silver Copper Lead

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Galena Sphalerite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	

LITHOLOGY: Tuff
Chert
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEINS

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1965

COMMODITY	GRADE	
Silver	13.7000	Grams per tonne
Gold	2.7000	Grams per tonne
Copper	0.1500	Per cent

COMMENTS: 1.5 metre sample from veins north of lake.
REFERENCE: Property File (Laanela, 1965).

CAPSULE GEOLOGY

The B and K showing is located 2 kilometres east of the Golden Eagle showing (092F 080), about 19 kilometres southeast of Port Alberni.

The area is underlain by volcanic and minor sedimentary rocks of the Devonian Duck Lake Formation (Sicker Group). A major vertical north trending fault cuts the rocks.

Several widely scattered narrow (up to 20 centimetres) quartz veins, with pyrite and minor sulphides, occur in shear zones within tuffs, cherts and andesite. A sample of one of these veins at the south end of Summit Lake assayed 87.8 grams per tonne gold (Minister of Mines Annual Report, 1944). To the north of the lake one hundred metres, quartz stringers with chalcopyrite, pyrite, sphalerite and galena occur. A 1.5 metre sample from a vein in a trench assayed 2.7 grams per tonne gold, 13.7 grams per tonne silver and 0.15 per cent copper (Laanela, 1965).

BIBLIOGRAPHY

EMPR AR *1944-151-153
EMPR ASS RPT 9126, 10902, 12538, 12696, 13668, 13670, 14483, 14880, 14928, 15288

BIBLIOGRAPHY

EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Sketch Map of Showings (approx. 1940's); Starr, C.C. (1941):
Report of Examination of the Beaton and Keisig-Cameron Groups,
6 p.; Beaton Group - Detail of Workings near Lake (1"=50'), 1945;
*Report by H. Laanela, 1965, Gunnex Limited)
GSC MAP 17-1968; 17A; 49-1963
GSC OF 463, 1272
GSC P 68-50, p. 38; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 082** NATIONAL MINERAL INVENTORY: 092F2 Au1

NAME(S): **GILLESPIE**, HAVILAH, KING SOLOMON, STORM, SOL B

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 06 59 N NORTHING: 5441640
LONGITUDE: 124 36 30 W EASTING: 382639
ELEVATION: 1060 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Havilah mine adits.

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS
SIGNIFICANT: Pyrite Sphalerite Galena Arsenopyrite Chalcopyrite Pyrrhotite
COMMENTS: Banded sulphides in quartz.
ASSOCIATED: Quartz
ALTERATION: Mariposite Carbonate
ALTERATION TYPE: Carbonate Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
SHAPE: Tabular
MODIFIER: Sheared Faulted
DIMENSION: 0200 x 0001 Metres STRIKE/DIP: 010/70E TREND/PLUNGE:
COMMENTS: The Gillespie vein is 10 to 80 centimetres wide.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	317.0900	Grams per tonne
Gold	7.3300	Grams per tonne

COMMENTS: Across 0.2 metres.
REFERENCE: George Cross News Letter #2, 1990.

CAPSULE GEOLOGY

The Gillespie vein, one of the Havilah mine deposits, is located about 3 kilometres south of McKinlay Peak, 18 kilometres southeast of Port Alberni.

Paleozoic Sicker Group volcanics of the Devonian Duck Lake Formation are cut by a body of coarse-grained hybrid diorite of the Early to Middle Jurassic Island Plutonic Suite. A north trending faul bounds the diorite to the west and cuts andesite to the north of the diorite.

The Gillespie vein occurs in andesite along a north-northeast trending shear zone for about 200 metres, strikes 010 degrees and dips 65 to 80 degrees east. The vein, 10 to 80 centimetres wide, averages 30 centimetres in width and contains ribbon-quartz with pyrite, sphalerite, galena, pyrrhotite, arsenopyrite and chalco-pyrite. The wall-rock is replaced by mariposite and carbonate minerals. A 0.20 metre chip sample assayed 7.33 grams per tonne gold and 317.09 grams per tonne silver (George Cross News Letter #2, 1990). From the Gillespie vein in 1936 and 1939, 949 tonnes was

CAPSULE GEOLOGY

mined produced 8,056 grams of gold, 43,669 grams of silver, 4,244 kilograms of copper, and 12,677 kilograms of lead. The McQuillan vein (O92F 437) lies 600 metres to the south.

BIBLIOGRAPHY

EMPR AR 1893-1080; 1894-773; 1895-652; *1936-A37,F30; 1939-40,42,88; *1944-153-154
EMPR ASS RPT 5354, 9126, 10194, *11988, 12538, 13668, 14483, 14928, 12696, 14880, 15288, 17222, 18400, 19695
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR GEM 1974-172-173
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF ((1895): Sketch Map of China Creek Mining Camp; (1939): Plans and Workings; (1965): *Report by H. Laanela, Gunnex Limited; (1942): Photos by J.S. Stevenson; Consolidated Goldwest Resources Ltd. Prospectus Apr. 18, 1988)
EMR MP CORPFILE (Havilah Gold Mines Ltd.)
GSC MAP 17-1968; 17A; 49-1963
GSC OF 463, 1272
GSC P 68-50, p. 38; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #57, 1985; #2, 1990

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 083**

NATIONAL MINERAL INVENTORY: 092F2 Cu1

NAME(S): **THISTLE (L.91)**

STATUS: Past Producer Underground
MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 06 23 N
NORTHING: 5440573
LONGITUDE: 124 38 13 W
EASTING: 380527
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adits and gloryholes.

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Magnetite Pyrrhotite
ASSOCIATED: Quartz Calcite Diopside Epidote Pyroxene
ALTERATION: Diopside Epidote Malachite
ALTERATION TYPE: Silicific'n Skarn Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Massive
CLASSIFICATION: Epigenetic Hydrothermal Volcanogenic Skarn
TYPE: I06 Cu±Ag quartz veins K01 Cu skarn
G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 20 x 8 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Mineralization occurs primarily in auriferous pyrite and chalcopyrite in quartz veins over intervals up to 2.44 metres. Dimension of one ore zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

LITHOLOGY: Pyrite Quartz Sericite Schist
Chloritic Mafic Flow
Tuff
Basalt
Limestone
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1982
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	30.5000	Grams per tonne
Gold	38.4000	Grams per tonne
Copper	2.6900	Per cent

COMMENTS: 1.8 metre chip channel sample of high grade shear south and of lower gloryhole.
REFERENCE: Assessment Report 11064.

CAPSULE GEOLOGY

The Thistle mine is located about 16 kilometres southeast of Port Alberni, just south of Father and Son Lake.

Basaltic flows and pillow basalt of the Triassic Karmutsen Formation (Vancouver Group) are underlain by a complexly inter-layered succession of volcanics and sediments of the Paleozoic Sicker and Mississippian to Lower Permian Buttle Lake groups. These include basaltic flows, agglomerates and bedded tuffs of the Upper Devonian McLaughlin Ridge Formation (Myra Formation), Sicker Group and limestones and marbles of the Upper Pennsylvannian to Lower Permian Mount Mark Formation (Buttle Lake Group, previously Buttle Lake

CAPSULE GEOLOGY

Formation).

Disseminated to massive sulphide mineralization, consisting of pyrite, chalcopyrite and minor pyrrhotite plus sulphide rich quartz-carbonate veins, occur in sheared pyritic quartz-sericite schists with chloritized mafic volcanic flows ("Mine Flow Unit") and tuffs of the Upper Devonian McLaughlin Ridge Formation. A nearby limestone, which strikes 170 degrees and dips 65 degrees southwest, has largely been replaced by diopside (skarn). Disseminated magnetite, some of which has been oxidized to hematite, occurs in the calcite and malachite occurs in places.

Two ore zones, 40 metres apart, measure 2 to 20 metres long by 1 to 8 metres wide. A 1.8-metre chip channel sample of a high grade shear at the south end of the lower glory hole assayed 38.4 grams per tonne gold, 30.5 grams per tonne silver and 2.69 per cent copper (Assessment Report 11064). Drilling in 1984, intersected 20 centi-metres of 17.6 grams per tonne gold in chloritic basalt, including 2 centimetres of massive pyrite (Assessment Report 15288).

The Thistle Mine was reported by early workers to be a skarn deposit in altered limestone, intruded by fine-grained diorite.

BIBLIOGRAPHY

EMPR AR 1899-608,778-779; 1901-1097,1101; 1902-307; 1927-340-341; 1928-366; 1930-291; 1938-A38; 1939-40; 1940-27,73-74; 1941-27,71; 1942-66; *1944-147,154-157; 1965-238
EMPR ASS RPT 8088, 9126, *11064, 11949, 12538, 12696, 13668, 13711, 14483, 14880, 14928, *15288, 17661
EMPR BC METAL MM00108
EMPR BULL 37; 101, p. 158, Appendix 6
EMPR EXPL 1980-166; 1982-143; 1983-196; 1985-141; 1986-A70
EMPR FIELDWORK 1988 pp. 61-74
EMPR INDEX 3-216
EMPR OF 1987-2; 1988-24; *1989-6
EMPR P 1991-4, pp. 102,105
EMPR PF (Stevenson, J.S., (1941): Plan of Workings; 092F General File - Laanela, H., (1965): Report, Gunnex Limited, Occurrence #10)
EMR MP CORPFILE (United Prospectors Ltd.; Vananda Explorations Ltd.)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50, p. 38; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #213,#226, 1982; #103, 218, 1984; #50,#96,#178, 1985; Dec.8, 1986
N MINER Aug.18, 1983; May 30,Oct.28, 1985
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 139-140

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/22 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 084**

NATIONAL MINERAL INVENTORY: 092F2 Au4

NAME(S): **BLACK PANTHER**, NITNAT, VAN,
MT. MCQUILLAN, MAR, NAT,
REMY

STATUS: Past Producer Underground
MINING DIVISION: Victoria
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 05 59 N
NORTHING: 5439787
LONGITUDE: 124 36 30 W
EASTING: 382600
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit A (Assessment Report 9639).

COMMODITIES: Gold Silver Lead Copper Zinc

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Galena Sphalerite
ASSOCIATED: Quartz
ALTERATION: Ankerite Quartz
ALTERATION TYPE: Carbonate Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Shear
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 12 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Stringers in main shear.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: C ADIT REPORT ON: Y

CATEGORY: Inferred YEAR: 1980
QUANTITY: 12250 Tonnes

COMMODITY	GRADE
Gold	6.8600 Grams per tonne

REFERENCE: Assessment Report 9639.

CAPSULE GEOLOGY

The Black Panther mine, originally discovered in 1936, is located approximately 20 kilomtres southeast of Port Alberni.

In the area, a north striking fault separates andesites of the Devonian Duck Lake Formation (Sicker Group) from Early to Middle Jurassic Island Plutonic Suite diorite.

Quartz veins, lenses, stockworks and stringers containing variable amounts of sulphides, mainly pyrite, chalcopyrite, minor galena and sphalerite, occur in a shear zone which sub-parallels the andesite/diorite contact. The wallrock is strongly altered by ankeritic carbonate for widths of several centimetres to 9 metres. The main shear zone, which has been traced for at least 3.2 kilometres, is locally cut by quartz stringers. The stringers are 2.5 centimetres to 0.9 metre wide and up to 12 metres long. A subordinate shear set, trending 20 to 30 degrees, is also present. Ore grades are highest where these two shear sets intersect.

Reserves have been estimated at 12,250 tonnes grading 6.86 grams per tonne gold (Assessment Report 9639). The Black Lion showing (092F 085), about 1/2 kilomentre to the southeast, is considered to

CAPSULE GEOLOGY

be an extension of the main shear zone.
Sampling of the workings in 1987 averaged 18.5 grams per tonne over vein material from 1.7 to 2.1 metres wide (George Cross Newsletter #34, 1987). Production in 1947, 1948 and 1950 totalled 1715 tonnes which yielded 15,832 grams gold, 29,642 grams silver, 226 kilograms copper and 5588 kilograms lead.

BIBLIOGRAPHY

EMPR AR 1939-88; 1941-71; *1944-147,157-159,160; 1945-114-115; 1947-182-183; 1948-158
EMPR ASS RPT 7857, 9126, *9639, *10902, 12538, 12969, 13668, 14483, 14880, 14928, 14965, 15288, 17235
EMPR BC METAL MM00070
EMPR BULL 37
EMPR EXPL 1980-165-166; 1982-142; 1986-161
EMPR FIELDWORK 1988 pp. 61-74
EMPR INDEX 3-189
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (092F General File - Laanela, H., (1965): Report, Gunnex Limited, Occurrence #14; Horie, R.L., (1941): Maps; Photos (1941))
EMR MIN BULL MR 223 (1989) B.C. 93
EMR MP CORPFILE (Premier Mines of British Columbia Limited; Nitinat Mines Ltd.; Oliver Resources Ltd.; Jan Resources Ltd.; Lode Resources Corp.)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
GCNL #16, #90, #251, 1980; #20, #192, #219, 1981; #200, 1982; #14, #218, 1984; #199, 1985; #34, 1987
N MINER Oct. 15, 1981
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 141

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 085**

NATIONAL MINERAL INVENTORY: 092F2 Cu1

NAME(S): **BLACK LION**, MT. MCQUILLAN, BLACK PANTHER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 05 39 N
LONGITUDE: 124 36 17 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing (Assessment Report 10902).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5439164
EASTING: 382850

COMMODITIES: Gold Lead

MINERALS
SIGNIFICANT: Pyrite Galena
ASSOCIATED: Quartz
ALTERATION: Carbonate
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0053 Metres STRIKE/DIP: 360/75E TREND/PLUNGE:
COMMENTS: Veins occur in 53 metre long zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	1.7100	Grams per tonne

COMMENTS: From shear zone over 4 metres.
REFERENCE: Assessment Report 17235.

CAPSULE GEOLOGY

The Black Lion showing is located approximately 20.5 kilometres southeast of Port Alberni. The mineralization is related to the Black Panther mine (092F 084) about 1/2 kilometre to the northwest.

In the area, a north striking fault separates andesites of the Devonian Duck Lake Formation (Sicker Group) diorite of the Early to Middle Jurassic Island Plutonic Suite.

Pyrite and galena occur in quartz veins within a 0.25 to 2.8 metre wide carbonate altered shear zone within andesite and diorite. The veins are 30 to 50 centimetres wide over a 53 metre long zone which strikes north and dips 75 degrees east.

A shear zone sampled in 1987 assayed 1.71 grams per tonne gold over 4 metres (Assessment Report 17235).

BIBLIOGRAPHY

EMPR AR *1944-147,159-160
EMPR ASS RPT 7857, 9126, 9639, 10902, 12538, 12969, 13668, 14483, 14880, 14928, 14965, 15288, *17235
EMPR BULL 37
EMPR EXPL 1980-165-166; 1982-142; 1986-161
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Horie, R.L., (1941): Map, in 092F 084-Black Panther;

BIBLIOGRAPHY

092F General File - Laanela, H., (1965): Report, Gunnex Limited, Occurrence #15)
GSC MAP 17-1968; 49-1963
GSC OF 463, 1272
GSC P 68-50, p. 38; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #16, #20, #90, #251, 1980; #192, 1981; #200, 1982; #218, 1984; #199, 1985
N MINER Oct. 15, 1981

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 086**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLACK PRINCE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 01 10 N
LONGITUDE: 124 58 47 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Above the Sunshine Group (Lots 332-339) near the headwaters of "Cascade" (Cass) Creek on the summit of "Cascade" (Hecate?) Mountain.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5431505
EASTING: 355258

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Magnetite Pyrite Pyrrhotite
COMMENTS: Some copper minerals reported.
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive
CLASSIFICATION: Skarn Industrial Min.
SHAPE: Irregular
DIMENSION: 0060 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Large magnetite lenses occur over 60 metres along northeast trend. The largest exposure is 23 square metres in size.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Porphyritic Andesite
Tuff
Hornblende Diorite
Limestone
Skarn

HOSTROCK COMMENTS: Bonanza volcanics in contact with intrusive, near Quatsino or Karmutsen limestone.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1916
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Iron	70.2000	Per cent

REFERENCE: Minister of Mines Annual Report 1916, page 287.

CAPSULE GEOLOGY

Volcanics of the Lower Jurassic Bonanza Group overlie Upper Triassic Vancouver Group rocks consisting of Karmutsen Formation volcanics and Quatsino Formation limestone. The strata may be intruded locally by diorite and granodiorite of the Early to Middle Jurassic Island Plutonic Suite. The limestone of this skarn deposit may be from the Quatsino Formation or from beds found in the upper part of the Karmutsen Formation.

Six separate masses of pure and rocky magnetite occur along a northeast trend for about 60 metres. The largest of these masses has an exposure of about 23 square metres. They are irregular in shape and occur in association with a fine grained, cherty, porphyritic andesite or tuff, near its contact with intrusive hornblende diorite. Limestone is reported to occur within a few hundred metres.

Two bodies of high-grade, lustrous, granular magnetite occur.

CAPSULE GEOLOGY

These are strongly sheeted, with sheets from about 4 to 5 centimetres thick, having a sugary texture. Pyrrhotite, pyrite, copper minerals and garnet are also reported. A sample assayed 70.2 per cent iron, 1.4 per cent silica and traces of phosphorous and sulphur (Minister of Mines Annual Report 1916).

BIBLIOGRAPHY

EMPR AR 1910-151; *1916-287; 1928-368
EMPR BULL *3, 1917, pp. 20,21
EMPR FIELDWORK 1988, pp. 61-74
EMPR OF 1988-28
GSC BULL 172
GSC EC GEOL *No.3, Vol.1, p. 226
GSC MAP 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 71-36; 72-44
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 087**

NATIONAL MINERAL INVENTORY:

NAME(S): **COMET MOUNTAIN**, B.C. (L.71), STORNEWAY (L.72), NELSON (L.73)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 43 09 N
LONGITUDE: 124 28 39 W
ELEVATION: 177 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches and pits, 800 metres south from the summit of Comet Mountain 4.5 kilometres north of the village of Gillies Bay, on Texada Island (Assessment Report 12085).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508455
EASTING: 393498

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Hematite Malachite Epidote
ALTERATION TYPE: Oxidation Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Chloritic Amygdaloidal Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: LENS

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1984

COMMODITY	GRADE	
Copper	0.3000	Per cent

COMMENTS: Sample from small mineralized quartz lenses.
REFERENCE: Assessment Report 12085.

CAPSULE GEOLOGY

The Comet Mountain area is underlain by massive, fractured chloritic amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group). Pervasive manganese and hematitic staining and some epidote is evident in the fractures. Minor small, discontinuous quartz and calcite veinlets and lenses are found throughout mineralized with pyrite, chalcopyrite and some malachite staining. Wallrock basalt is locally silicified. A rock chip sample from a small quartz lense assayed 0.3 per cent copper (Assessment Report 12085).

BIBLIOGRAPHY

EMPR ASS RPT 12084, *12085, 14445
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/02/22
DATE REVISED: 1998/05/12

CODED BY: GO
REVISED BY: LJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 088**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANDERSON BAY**, HENDERSON BAY, TEXADA ISLAND, NOOTKA QUARRIES, CONTINENTAL MARBLE

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09E
BC MAP:
LATITUDE: 49 30 59 N
LONGITUDE: 124 08 38 W
ELEVATION: 152 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on quarry on Lot 345 (Bulletin 40, Figure 4, page 48).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5485492
EASTING: 417202

COMMODITIES: Limestone Marble Building Stone Dolomite Dimension Stone

MINERALS
SIGNIFICANT: Carbonate Calcite Marble Dolomite
ASSOCIATED: Jasper
MINERALIZATION AGE: Pennsylvan.-Permian

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone R04 Dimension stone - marble
R10 Dolomite
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 1740 x 60 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone in quarry strikes north to northwest and dips 30 to 60 degrees west.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Buttle Lake	Undefined Formation	

LITHOLOGY: Limestone
Marble
Dolomite
Mafic Breccia
Argillite
Aphanitic Volcanic Rock
Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1957
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	47.9000	Per cent

COMMENTS: Average of 3 chip samples taken across 27 metres. Grade given for CaO.
REFERENCE: Bulletin 40, page 49.

CAPSULE GEOLOGY

The Anderson Bay deposit is located just west of Anderson Bay on the southeast coast of Texada Island, 43 kilometres northwest of Nanaimo. Marble was produced from several quarries up to 1917.

A 37 to 60 metre thick limestone bed of the Mississippian to Permian Buttle Lake Group extends northward for 1.7 kilometres and is unconformably overlain by Upper Triassic Karmutsen Formation (Vancouver Group) amygdaloidal basaltic flows, and underlain by Paleozoic Sicker Group mafic breccias, grey argillites and aphanitic volcanics. Bedding strikes north to northwest and dips 30 to 60 degrees west. The limestone bed pinches out to the south and is truncated to the north by a fault extending northwest from Anderson Bay.

The deposit is comprised of coarse to fine-grained white to

CAPSULE GEOLOGY

reddish brown crinoidal limestone. The lower 12 to 15 metres consists of white to pink crinoidal limestone that grades upward into 9 to 15 metres of banded pink to red crinoidal limestone containing some jasper. This is overlain by red and green tuffaceous limestone. Magnesian and high calcium beds are found in the upper portion of the deposit. Lenticular masses of fine-grained pink dolomite veined with white calcite occur near the north end of the deposit. A sample from one of these assayed 33.02 per cent CaO, 16.20 per cent MgO, 4.94 per cent SiO_2, 0.85 cent Al_2O_3 and 1.56 per cent Fe_2O_3 (CANMET Report 811, page 157). Four chip samples taken in succession across a total stratigraphic thickness of 53 metres averaged 48.4 per cent CaO, 2.8 per cent MgO, 2.9 per cent insolubles, 1.7 per cent R_2O_3, 0.92 per cent Fe_2O_3, 0.065 per cent MnO, 0.13 per cent P_2O_5, 0.004 per cent sulphur and 42.95 ignition loss (Bulletin 40, page 49).

Two small quarries were opened on this deposit in the early 1900's. Nootka Quarries operated a quarry on Lot 26, 380 metres northwest of the head of Anderson Bay. About 540 metres to the south, Continental Marble operated a second quarry on Lot 345. Up to 1916, 96.7 tonnes (1265 cubic feet) of marble was produced from this quarry for ornamental stone (CANMET Report 811, page 154). Red marble from this site was likely used in the columns and panelling throughout the Rotunda in the Legislative Buildings, Victoria.

BIBLIOGRAPHY

EMPR AR 1904-251
EMPR BULL *40, pp. 47-49
EMPR EXPL 1985-B20-B24
EMPR FIELDWORK 1979, pp. 109-111; 1986, pp. 309,315
EMPR IF CIRC 1994-15, pp. 11, 27
EMPR MAP 65, 1989
EMPR OF 1991-20; 1992-1; 1992-9; 1992-18, pp. 19-20
GSC ANN RPT 1887, Vol.2B
GSC MAP 17-1968; 1386A
GSC MEM 58, pp. 14-17
GSC OF 463
GSC P 68-50, p. 8; 79-30, p. 18
CANMET RPT *452, Vol.5, pp. 149-155; *811, Part 5, pp. 156,157

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/13 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 089**

NATIONAL MINERAL INVENTORY:

NAME(S): **HORNE LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 21 34 N
LONGITUDE: 124 43 52 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Center of outcrop on south side of Mount Mark (Open File 1989-6).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5468856
EASTING: 374299

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Silica
ALTERATION: Silica
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Tabular
MODIFIER: Folded Faulted
DIMENSION: 360 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The deposit, up to 360 metres thick, is folded into a northwest plunging syncline.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone
Chert
Argillite
Tuff
Gabbroic Sill
Greenstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located at the north end of the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The deposit consists of a limestone bed of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group (reassigned from the Sicker Group). It is exposed as an arc along the steep bluffs on the north and west sides of Horne Lake. The limestone is unconformably overlain by massive to pillowed basalts of the Upper Triassic Karmutsen Formation (Vancouver Group) and underlain by bedded tuffs and volcanic breccias of the Upper Devonian McLaughlin Ridge Formation (Sicker Group). Exposed thicknesses are up to 360 metres, as revealed on the south face of Mount Mark, north of Horne Lake. To the east, and west, of Mount Mark the limestone thins to less than 120 metres. The unit is folded into a broad northwesterly plunging syncline that is segmented by a series of steeply dipping faults.

The deposit is consists of medium to light grey, fine to coarse-grained recrystallized, yet well bedded bioclastic limestone, containing abundant crinoid remains. Thin sections display numerous whole and fragmented crinoid discs in a very fine grained limy mud matrix with minor secondary silica. At Mount Mark, the limestone contains minor thin chert beds in the upper and lower portions of the exposed section. In the middle of this unit, the limestone is interbedded with lenses and beds of argillite and tuff. Several gabbro sills intrude the limestone near the top of the section.

Development is limited to some mapping and sampling by B.C. Cement in the 1950's.

BIBLIOGRAPHY

EMPR AR 1873, p. 54
EMPR BULL *40, pp. 49-51
EMPR FIELDWORK 1988, pp. 61-74
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
EMPR OF 1988-24, p. 46; 1989-6; *1992-18, p. 19
GSC MAP 49-963; 17-1968
GSC OF 463; 1272
GSC P 68-50, pp. 9,10; 79-30, p. 18
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 153
Lockie, D.A. (1957): A Petrographic Analysis of Some Limestones of Southwestern British Columbia, unpublished University of British Columbia B.A. Thesis, pp. 8-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 090** NATIONAL MINERAL INVENTORY:

NAME(S): **BIG INTERIOR MOUNTAIN**

STATUS: Showing MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 27 21 N NORTHING: 5481310
LONGITUDE: 125 34 18 W EASTING: 313634
ELEVATION: 1680 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Center of limestone outcrop (Geological Survey of Canada Map 17-1968).

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Silica
COMMENTS: As chert within the limestone.
MINERALIZATION AGE: Pennsylvan.-Permian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 2500 x 1250 Metres STRIKE/DIP: 092/40S TREND/PLUNGE:
COMMENTS: Outcrop occurs over a 2.5 by 1.25 kilometre area.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Chert
Granodiorite
Quartz Diorite
Basaltic Dike
Basaltic Sill

HOSTROCK COMMENTS: The Azure Lake Formation was previously known as the Buttle Lake Formation, within the Buttle Lake uplift.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: Post-mineralization GRADE:
COMMENTS: Island arc sequence at the south end of the Buttle Lake uplift.

CAPSULE GEOLOGY

The deposit consists of a mass of limestone of the Upper Pennsylvanian to Lower Permian Azure Lake Formation (Buttle Lake Group) occurring at the southern end of the Buttle Lake uplift (Refer to the H-W deposit (092F 330) for a discussion of the nomenclature revisions of Buttle Lake uplift stratigraphy). The outcrop covers a 1.25 by 2.5 kilometre area on Big Interior Mountain, 53 kilometres southwest of Comox.

The limestone is bounded to the west and north by granodiorite and quartz diorite of the Early to Middle Jurassic Island Intrusions and partially overlain to the south by pillowed basalts of the Upper Triassic Karmutsen Formation (Vancouver Group). The limestone strikes 092 degrees and dips 40 degrees south. Basaltic dykes and sills intrude the limestone. The deposit is comprised of light grey to white recrystallized limestone containing abundant crinoids, corals and brachiopods, and dark grey to white chert.

BIBLIOGRAPHY

EMPR BULL *13, pp. 17-21
EMPR IND MIN FILE (Limestone Occurrences in British Columbia, by J.W. McCammon, 1973, p. 11 (in Ministry Library))
EMPR OF 1992-18, p. 139
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, p. 8; 79-30, p. 18
GSC SUM RPT 1930A, pp. 59,60
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of

BIBLIOGRAPHY

British Columbia, Vol. 1: Vancouver Island, p. 165

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/30

CODED BY: GSB
REVISED BY: PSF

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 091**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEAUTY LAKE**, NINE PEAKS, BIG INTERIOR MOUNTAIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 25 54 N
LONGITUDE: 125 31 37 W
ELEVATION: 1240 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Center of limestone outcrop adjacent to Beauty Lake (Bulletin 13, Fig. 1).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5478514
EASTING: 316785

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 350 x 140 Metres STRIKE/DIP: 072/30S TREND/PLUNGE:
COMMENTS: Dimensions of one of the two limestone outcrops.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Volcanic Breccia
Tuff
Argillite
Pillow Basalt

HOSTROCK COMMENTS: Formerly the Buttle Lake Formation; now the Azure Lake Formation, within the Buttle Lake uplift.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Island arc sequence at the south end of the Buttle Lake uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Two small masses of light grey to white recrystallized limestone of the Upper Pennsylvanian to Lower Permian Azure Lake Formation, Buttle Lake Group occur on the southeast side of Beauty Lake, within the Buttle Lake uplift. Refer to the H-W deposit (092F 330) for a discussion of the nomenclature revisions of the Buttle Lake uplift stratigraphy.

A 140 metre wide limestone mass adjacent to the lake shore strikes 072 degrees for 350 metres and dips 30 degrees south. A second mass, 700 metres to the southeast, outcrops over a 280 by 420 metre area. Both masses are underlain to the north by volcanic breccia, tuff and argillite of the Paleozoic Sicker Group and are overlain to the south by pillowed basalts of the Upper Triassic Karmutsen Formation.

BIBLIOGRAPHY

EMPR BULL 13, pp. 17-21
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, p. 8; 79-30, p. 18
GSC SUM RPT 1930A, pp. 59,60
PERS COMM Massey, Nick, Feb. 1990
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 092**

NATIONAL MINERAL INVENTORY:

NAME(S): **MT. SEPTIMUS**, BIG INTERIOR MOUNTAIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 28 51 N
LONGITUDE: 125 31 32 W
ELEVATION: 1560 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Center of limestone outcrop (Bulletin 13, Fig. 1).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5483976
EASTING: 317068

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 350 x 280 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone outcrop.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Volcanic Breccia
Tuff
Argillite
Pillow Basalt

HOSTROCK COMMENTS: The former Buttle Lake Formation (Sicker Group) is now the Azure Lake Formation within the Buttle Lake uplift.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Island arc sequence at the south end of the Buttle Lake uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

A mass of light grey to white, recrystallized limestone of the Upper Pennsylvanian to Lower Permian Azure Lake Formation (Buttle Lake Group) outcrops over a 280 by 350 metre area on the west slope of Mount Septimus, at the southern end of the Buttle Lake uplift. The limestone is underlain to the southwest by volcanic breccia, tuff and argillite of the Paleozoic Sicker Group and is overlain to the northeast by pillowed basalts of the Upper Triassic Karmutsen Formation (Vancouver Group). Refer to the H-W deposit (092F 330) for a discussion of the revised nomenclature of the Buttle Lake uplift stratigraphy.

BIBLIOGRAPHY

EMPR BULL *13, pp. 17-21
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, p. 8; 79-30, p. 18
GSC SUM RPT 1930A, pp. 59,60
PERS COMM Massey, Nick, Feb. 1990
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 093**

NATIONAL MINERAL INVENTORY:

NAME(S): **PRICE CREEK**, BIG INTERIOR MOUNTAIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 29 51 N
LONGITUDE: 125 30 39 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Center of outcrop (Bulletin 13, Figure 1).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5485793
EASTING: 318196

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 500 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Deposit trends north, dips east.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Volcanic Breccia
Tuff
Argillite
Pillow Basalt

HOSTROCK COMMENTS: The former Buttle Lake Formation (Sicker Group) is now the Azure Lake Formation (Buttle Lake Group) within the Buttle Lake uplift.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Island arc sequence at the south end of the Buttle Lake uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

A mass of light grey to white, recrystallized limestone of the Upper Pennsylvanian to Lower Permian Azure Lake Formation (Buttle Lake Group) trends northward for 500 metres on the north side of Price Creek, at the south end of the Buttle Lake uplift. The limestone is underlain to the southwest by volcanic breccia, tuff and argillite of the Paleozoic Sicker Group and overlain to the east by pillowed basalts of the Upper Triassic Karmutsen Formation (Vancouver Group). Refer to the H-W deposit (092F 330) for a discussion of the revised nomenclature of the Buttle Lake uplift stratigraphy.

BIBLIOGRAPHY

EMPR BULL 13, pp. 17-21
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, p. 8; 79-30, p. 18
GSC SUM RPT 1930A, pp. 59,60

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 094**

NATIONAL MINERAL INVENTORY:

NAME(S): **DELLA LAKE**, BIG INTERIOR MOUNTAIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 26 39 N
LONGITUDE: 125 32 57 W
ELEVATION: 1160 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Center of limestone outcrop adjacent to the south end of Della Lake (Bulletin 13, Figure 1).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5479958
EASTING: 315220

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: STRIKE/DIP: 092/45E TREND/PLUNGE:
COMMENTS: Bedding strikes 085 to 100 degrees; dips 20 to 70 degrees south.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Volcanic Breccia
Tuff
Argillite
Pillow Basalt

HOSTROCK COMMENTS: The former Buttle Lake Formation (Sicker Group) is now the Azure Lake Formation within the Buttle Lake uplift.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Island arc sequence at the south end of the Buttle Lake uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Della Lake showing consists of various small masses of light grey to white recrystallized limestone of the Upper Pennsylvanian to Lower Permian Azure Lake Formation, Buttle Lake Group. They form a discontinuous band extending westward for 1600 metres from the south end of Della Lake, at the south end of the Buttle Lake uplift. Bedding strikes between 085 and 100 degrees and dips 20 to 70 degrees south. The limestone is underlain by volcanic breccia, tuff and argillite of the Paleozoic Sicker Group and overlain by pillowed basalts of the Upper Triassic Karmutsen Formation (Vancouver Group). Refer to the H-W deposit (092F 330) for a discussion of the revised nomenclature of the Buttle Lake uplift stratigraphy.

BIBLIOGRAPHY

EMPR BULL 13, pp. 17-21
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, p. 8; 79-30, p. 18
GSC SUM RPT 1930A, pp. 59,60

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 095**

NATIONAL MINERAL INVENTORY:

NAME(S): **MARBLE BAY LIMESTONE**, STURT BAY

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 45 34 N
LONGITUDE: 124 33 58 W
ELEVATION: 6 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Center of quarry on the west side of Marble Bay (Bulletin 40, Fig. 6).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5513062
EASTING: 387205

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite Serpentinite Silicate
ALTERATION: Serpentinite Silicate
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Regular
MODIFIER: Folded Faulted
COMMENTS: Folded into an open anticline plunging southeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
DATING METHOD: Fossil			
MATERIAL DATED: Various Fossils			
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Dike
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1944
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	51.9300	Per cent

COMMENTS: Average of 9 chip samples. Grade given for CaO.
REFERENCE: Bulletin 40, page 73.

CAPSULE GEOLOGY

The Marble Bay deposit is situated within a 13 kilometre long belt of Upper Triassic Quatsino Formation (Vancouver Group) limestone The belt is up to 3 kilometres wide and is preserved along the axis of a broad northwest plunging syncline. The limestone in the vicinity of Marble Bay is folded into a smaller open anticline that gently plunges to the southeast. Various quarries are developed in the upper portion of the middle calcium member some 600 metres above the base of the formation. A few steeply dipping, north to northwest striking faults are evident. The limestone is intruded by a small stock of diorite-gabbro in the vicinity. A few north to northeast trending dykes are exposed in the quarries.

The deposit is composed mostly of fine-grained, black to light grey, calcium and high calcium limestone and some pale brown to greenish grey magnesian limestone with serpentinite and other magnesium silicates. A series of 9 chip samples taken from the east and west ends of the main quarry averaged 51.93 per cent CaO, 3.96 per cent MgO, 1.12 per cent insolubles ,0.39 per cent R2O3, 0.25 per cent Fe2O3, 0.035 per cent MnO, 0.013 per cent P2O5, 0.059 per cent sulphur and 42.41 per cent ignition loss (Bulletin 40, page 73).

Limestone was produced from one large quarry and several smaller

CAPSULE GEOLOGY

quarries on the west shore of Marble Bay by various operators between 1898 and 1962. Most of the limestone was quarried by W.S. Beale between 1946 and 1956.

BIBLIOGRAPHY

EMPR AR 1897-1137,1138; 1898-804; 1900-926; 1902-235; 1916-359; 1919-28; 1920-216; 1921-222; 1922-238; 1923-256; 1926-316; 1927-358; 1929-392; 1931-238; 1933-344; 1947-217; 1948-189; 1949-256; 1951-221; 1952-259; 1953-192; 1954-182; 1955-96; 1956-153; 1957-87; 1961-149; 1962-155
EMPR BULL *23, pp. 80,81; *40, pp. 51-58,72-74
EMPR OF 1990-3; 1992-18, pp. 24, 28-29
GSC MAP 17-1968; 1386A
GSC MEM 58, p. 96
GSC OF 463
GSC P 68-50, pp. 14,15
CANMET RPT 452, Vol.5, p. 160; *811, Part 5, pp. 152,153

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/17 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 096**

NATIONAL MINERAL INVENTORY:

NAME(S): **TB**, CAPTAIN HOOK, GIANT BEAR

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 10 08 N
LONGITUDE: 125 25 09 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: One kilometre west of Kennedy River, from a point about 5.0 kilometres from the mouth in Kennedy Lake (Assessment Report 18693). See also 092F 044 - Bear and 092F 045 - Shack.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5449048
EASTING: 323663

COMMODITIES: Gold, Silver, Copper

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Bornite, Pyrrhotite
ASSOCIATED: Quartz
ALTERATION: Silica, Chlorite, Magnetite, Epidote, Diopside, Garnet, Hematite, Malachite
COMMENTS: Azurite also reported.
ALTERATION TYPE: Silicific'n, Chloritic, Skarn, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic, Skarn
DIMENSION: 0038 Metres
STRIKE/DIP: 084/70N
TREND/PLUNGE:
COMMENTS: TB vein.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone, Andesite, Felsic Rock

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: TB VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	9.9400	Grams per tonne
Gold	18.5500	Grams per tonne

COMMENTS: Taken across 15 centimetres of TB vein.
REFERENCE: Assessment Report 18693.

CAPSULE GEOLOGY

Karmutsen Formation volcanics and Quatsino Formation limestones of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Intrusions consisting of granodiorite to quartz diorite. The volcanic rocks consist of andesitic to basaltic flows, tuffs and volcaniclastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.

The TB vein is emplaced in a footwall splay of the Mine fault that cuts Quatsino limestone at and/or adjacent to its contact with Karmutsen andesites. The 15 to 50 centimetre wide vein strikes 084 degrees and dips 70 degrees to the north. It has been traced along strike for a total of 38 metres.

The limestone host, well brecciated and weakly silicified, has an additional 20 to 40 centimetre wide silicified and chloritized halo about the vein. The vein is mineralized with clots and masses of pyrite, chalcopyrite and bornite. A 0.15 metre assayed a high gold value of 18.55 grams per tonne with 9.94 grams per tonne silver. Another 0.25 metre sample contained a high silver value of 547.89

CAPSULE GEOLOGY

grams per tonne with 0.86 grams per tonne gold (Henneberry, 1987).

Andesite and felsic rock have locally been altered to garnet-magnetite-diopside skarn. The skarns are most pervasive near faults and along the margin of limestone beds. They locally contain epidote, pyrite, chalcopyrite, pyrrhotite, hematite, malachite, azurite and quartz veinlets. Magnetite occurs as crystals, irregular masses and as bands up to 0.20 metres wide.

Skarn mineralization occurs about 25 metres to the southwest of the western limit of the TB vein and about 15 metres north of the eastern end. A sample from the southwestern skarn contained 2.33 grams per tonne gold, 9.60 grams per tonne silver and 2.78 per cent copper across 43 centimetres. A selected sample from the northern skarn assayed 1.44 grams per tonne gold, 40.46 grams per tonne silver and 10.53 per cent copper (Assessment Report 18693).

BIBLIOGRAPHY

EMPR ASS RPT 15395, *18693
EMPR BULL 55
EMPR EXPL 1987-C143
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Henneberry, R.T. (1987): Economic Potential of the Kennedy River Gold Camp, Vancouver Island, British Columbia; New Releases, International Coast Minerals Corp.: Nov.10, 1987, June 20, 1988 (see 92F 044, Bear file for these reports))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/11/30 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 097**

NATIONAL MINERAL INVENTORY:

NAME(S): **UPPER CAMPBELL LAKE**, CAMPBELL RIVER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E
BC MAP:
LATITUDE: 49 57 50 N
LONGITUDE: 125 37 29 W
ELEVATION: 418 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Center of surface trace of limestone band (Geological Survey of Canada Map 17-1968).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5537918
EASTING: 311764

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Regular
MODIFIER: Faulted
DIMENSION: 1750 x 500 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone strikes northwest, dips northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Basaltic Flow
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:
COMMENTS: Formed on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

A 500 metre wide band of Upper Triassic Quatsino Formation (Vancouver Group) limestone extends northwestward from the west shore of Upper Campbell Lake for 1.75 kilometres to the southwest side of Bacon Lake. Underlying basalts of the Upper Triassic Karmutsen Formation (Vancouver Group) outcrop to the southwest. To the northeast, the limestone contacts granodiorite of the Early to Middle Jurassic Island Intrusions. The band is truncated to the northwest by a northeast trending fault.

BIBLIOGRAPHY

EMPR BULL 23, p. 91; 40, p. 84
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 13 (in Ministry Library))
EMPR P 1984-3
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 14,15
GSC SUM RPT 1930A, pp. 61,62

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/13 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 098** NATIONAL MINERAL INVENTORY:

NAME(S): **GREENSTONE CREEK**, UPPER CAMPBELL LAKE, CAMPBELL RIVER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E 092K04E
BC MAP:
LATITUDE: 49 59 55 N
LONGITUDE: 125 37 52 W
ELEVATION: 472 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Center of the limestone outcrop in Greenstone Creek (Bulletin 40, p. 84).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5541794
EASTING: 311442

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Regular
MODIFIER: Faulted
DIMENSION: 8000 x 1500 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone strikes northwest, dips northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Basaltic Flow
Volcanic
Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: Formed on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

A band of Upper Triassic Vancouver Group, Quatsino Formation limestone, up to 1500 metres wide, trends north-northwest for 8 kilometres, crossing Greenstone Creek 4.8 kilometres above its mouth, northwest of Upper Campbell Lake. The northeastward dipping limestone bed is bounded to the west by basalts of the Upper Triassic Vancouver Group, Karmutsen Formation and to the east by Lower Jurassic Bonanza Group volcanics and sediments. To the south, the band is truncated by a northeast trending fault.

BIBLIOGRAPHY

EMPR BULL 23, p. 91; 40, p. 84
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 13 (in Ministry Library))
EMPR P 1984-3
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 14,15
GSC SUM RPT 1930A, pp. 61,62

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/13 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 099**

NATIONAL MINERAL INVENTORY:

NAME(S): **ESTHER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 09 35 N
LONGITUDE: 125 24 18 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: About 500 metres east of Kennedy River, about 4.0 kilometres from Kennedy Lake (Assessment Report 11940).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5447996
EASTING: 324663

COMMODITIES: Gold, Silver, Zinc, Copper, Lead

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Sphalerite, Chalcopyrite, Galena
ASSOCIATED: Quartz, Carbonate, Chlorite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0100 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Veinlets persist laterally for over 100 metres.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic
Basalt
Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1983

COMMODITY	GRADE	
Silver	4.4600	Grams per tonne
Gold	1.3000	Grams per tonne

COMMENTS: One metre chip sample.
REFERENCE: Assessment Report 11940.

CAPSULE GEOLOGY

Upper Triassic basalts and andesites of the Karmutsen Formation, Vancouver Group are intruded by quartz diorite to granodiorite of the Early to Middle Jurassic Island Intrusions and Tertiary dacitic dykes of the Eocene Tofino Intrusive Suite. The rocks are cut by northwest trending faults which typically show intense shearing and local seri-citization, silicification and pyritization over widths of 0.5 to 2 metres.

The showings consist of a series of sulphide-bearing quartz veinlets which occupy northeasterly trending fractures in Karmutsen volcanics. Over a distance of about 70 metres there are approximate-ly 60 quartz veinlets ranging in thickness from 0.5 to 8 centimetres. The veinlets consist of coarse, milky-white, commonly drusy quartz hosting pyrite, pyrrhotite, sphalerite and chalcopyrite. The vein-lets also carry fragments of wallrock, as well as accessory chlorite and carbonate. The wallrock around larger veins shows a sheared and siliceous envelope. The veinlets persist laterally for over 100 metres where they are obscured by overburden.

A continuous 1 metre sample of volcanic rock, containing a 0.6 metre wide quartz vein, assayed 1.30 grams per tonne gold and 4.46 grams per tonne silver (Assessment Report 11940). A sample of a

CAPSULE GEOLOGY

fracture containing vuggy quartz with minor chalcopyrite and galena contained 101.49 grams per tonne gold and 36.34 grams per tonne silver (Assessment Report 12047).

BIBLIOGRAPHY

EMPR ASS RPT *11940, *12047, 16145
EMPR BULL 55
EMPR EXPL 1983-201,202
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/12/04 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 100** NATIONAL MINERAL INVENTORY:

NAME(S): **NELSON ISLAND**

STATUS: Past Producer Open Pit Underground MINING DIVISION: Vancouver
REGIONS: British Columbia
NTS MAP: 092F09E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 44 35 N NORTHING: 5510699
LONGITUDE: 124 09 05 W EASTING: 417045
ELEVATION: 52 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Center of quarry (Bulletin 40, page 96, fig. 16).

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite Silica Serpentinite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 600 x 120 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone trends 150 degrees.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Mesozoic-Cenozoic			Coast Plutonic Complex

LITHOLOGY: Limestone
Quartz Diorite
Banded Tuff
Gneissic Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:
COMMENTS: Situated within a roof pendant in the Coast Plutonic Complex.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1956
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	53.4400	Per cent

COMMENTS: Average across 32.9 metres. Grade given for CaO.
REFERENCE: Bulletin 40, page 95.

CAPSULE GEOLOGY

The Nelson Island occurrence is located on the east shore of Blind Bay on Nelson Island, 68 kilometres northwest of Nanaimo.

A 60 to 120 metre wide band of limestone trending 150 degrees extends inland up the steep side of Blind Bay for 600 metres. The limestone likely continues under Blind Bay to the north end of Hardy Island (see Hardy Island 092F 101). This bed is situated within a 670 metre wide roof pendant of Upper Triassic Vancouver Group, Karmutsen Formation(?) volcanics and sediments in quartz diorite of the Jurassic to Tertiary Coast Plutonic Complex. The limestone is enclosed in a gneissic porphyry (altered lavas(?)) and banded green tuffs intruded by a few dykes.

The deposit is generally comprised of fine to coarse-grained white to light bluish high calcium limestone. The northeast side of the band contains silicious blue limestone and dolomite. Thin lenses of white dolomite are scattered throughout the rest of the deposit. Minor serpentinite is developed in fractures. Four chip samples taken in succession across a total width of 32.9 metres in the central part of the band averaged 53.44 per cent CaO, 0.75 per cent MgO, 2.21 per cent insolubles, 0.27 per cent R2O3, 0.26 per cent Fe2O3, 0.97 per cent MnO, 0.013 per cent P2O5, 0.02 per cent sulphur, 42.96 per cent ignition loss, and 0.14 per cent water (Bulletin 40,

CAPSULE GEOLOGY

page 95).
Nelson Island Lime Co. produced 726 tonnes of limestone from a quarry and an adit between 1929 and 1936 for the pulp mill at Woodfibre.

BIBLIOGRAPHY

EMPR AR 1911-206; 1927-358
EMPR BULL 23, pp. 103-105; 39; *40, pp. 95-97
EMPR PF (Cummings, J.M. (1937): The Possibilities for the Manufacture of Mineral Wool in British Columbia)
GSC MAP 42-1963; 17-1968; 1386A
GSC OF *611
GSC P 66-1; 68-50; 72-44
GSC RPT 996, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/12 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 101**

NATIONAL MINERAL INVENTORY:

NAME(S): **HARDY ISLAND LIMESTONE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F09E 092F16E
BC MAP:
LATITUDE: 49 44 41 N
LONGITUDE: 124 09 46 W
ELEVATION: 1 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location determined from plot on Geological Survey of Canada Open File 611.

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5510897
EASTING: 416228

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Silicate Pyrite
ALTERATION: Silicate Serpentinite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: Limestone band strikes northwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Mesozoic-Cenozoic			Coast Plutonic Complex

LITHOLOGY: Limestone
Quartz Diorite
Siliceous Schist

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:
COMMENTS: Situated in a roof pendant in the Coast Plutonic Complex.

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1944
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	54.1800	Per cent

COMMENTS: Grade given for CaO.
REFERENCE: Canmet Report 811, page 160.

CAPSULE GEOLOGY

A shallow dipping to tightly folded band of limestone outcrops on the northeastern tip of Hardy Island in Jervis Inlet, 68 kilometres north-northwest of Nanaimo. This band is likely the northwestern continuation of the Upper Triassic Vancouver Group, Karmutsen Formation limestone bed on Nelson Island (see Nelson Island 092F 100). It lies in siliceous schist within quartz diorite of the Jurassic to Tertiary Coast Plutonic Complex. The limestone extends northwest from Blind Bay initially as a single 21 metre wide band that eventually splits into two narrower bands. The rock is generally fine grained and impure. It contains zones paralleling bedding comprised of silicates and pyrite. A sample contained 54.18 per cent CaO, 0.24 per cent MgO, 1.80 per cent SiO2 and 0.70 per cent Fe2O3 (CANMET Report 811, page 160).

BIBLIOGRAPHY

EMPR BULL *23, p. 103; 39; 40, p. 95
GSC MAP 17-1968; 42-1963; 1386A
GSC OF *611
GSC P 66-1; 68-50; 72-44
GSC SUM RPT 916, pp. 14,15

BIBLIOGRAPHY

CANMET RPT *811, Part 5, p. 160

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/12 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 102**

NATIONAL MINERAL INVENTORY:

NAME(S): **DINNER ROCK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 56 33 N
LONGITUDE: 124 42 29 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Center of limestone body on northwest corner of Lot 5347 (Bulletin 40, page 94).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5533636
EASTING: 377446

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Stratiform
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 46 x 15 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Exposed limestone.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic-Cenozoic			Coast Plutonic Complex

LITHOLOGY: Limestone
Granite
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:
COMMENTS: Located at the western margin of the Coast Plutonic Complex.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1947
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	51.6900	Per cent

COMMENTS: Across 30 metres of second deposit. Grade given for CaO.
REFERENCE: Bulletin 40, page 94.

CAPSULE GEOLOGY

Several bodies of limestone occur as inclusions along the coast in granitic and dioritic rocks of the Jurassic to Tertiary Coast Plutonic Complex, 13 kilometres northwest of Powell River.

A limestone mass exposed, on the shore cliffs on the northwest corner of Lot 5347, is 15 metres wide and 46 metres long. A second mass, 90 metres to the northwest, is 90 metres long and 60 metres wide. A third body, 400 metres to the northwest, is at least 300 metres long. A 20.7 metre long chip sample taken across the north-west end of the first deposit contained 51.64 per cent CaO, 2.38 MgO, 2.22 per cent insolubles, 0.22 per cent Al2O3, 0.25 per cent Fe2O3, 0.03 per cent sulphur and 43.08 per cent ignition loss. A second 30 metre long sample taken across the middle of the second deposit contained 51.69 per cent CaO, 3.32 per cent MgO, 1.20 per cent insolubles, 0.15 per cent Al2O3, 0.14 per cent Fe2O3, 0.03 per sulphur and 43.26 per cent ignition loss (Bulletin 40, page 94).

BIBLIOGRAPHY

EMPR AR 1911-205
EMPR BULL *23, pp. 102,103; *40, pp. 94,95
GSC MEM 23, p. 66

BIBLIOGRAPHY

GSC OF 611

DATE CODED: 1985/07/24
DATE REVISED: 1989/07/14

CODED BY: GSB
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 103**

NATIONAL MINERAL INVENTORY:

NAME(S): **KOLA**, SKY, MICK,
MC

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 11 31 N
LONGITUDE: 124 57 11 W
ELEVATION: 640 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Six kilometres south of Sproat Lake (Assessment Report 12052).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5450630
EASTING: 357702

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Bornite Magnetite
COMMENTS: Pods of massive sulphide related to shear zone.
ASSOCIATED: Quartz Ankerite Carbonate
ALTERATION: Limonite Silica Carbonate Epidote
ALTERATION TYPE: Oxidation Silicific'n Carbonate Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Podiform Massive Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0040 x 0010 x 0003 Metres STRIKE/DIP: 035/70W TREND/PLUNGE:
COMMENTS: Main zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Dacite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	37.0300	Grams per tonne
Gold	2.5600	Grams per tonne
Copper	3.0100	Per cent

COMMENTS: From a 1.21 metre drill interval on the main mineralized zone.
REFERENCE: Assessment Report 15658.

CAPSULE GEOLOGY

The area is underlain by andesite and andesite-dacite volcanic flows of the Upper Triassic Karmutsen Formation, Vancouver Group. The structures trend north and are expressed by shear zones exposed along a road cut. A section of the road has recently been trenched exposing the mineralized zone for 300 metres with the main section exposed for about 110 metres.

At least five zones of mineralization are evident, consisting mainly of massive pods and lenses of pyrite and chalcopyrite associated with shears in andesite. The following is a description of the zones going north:

(1) North trending siliceous shear zones with quartz carbonate stringers, ankerite veinlets and disseminated sulphides. A 0.3 metre wide unfractured siliceous "vein" occurs at the base of the zone.

(2) Thirty-six metres north of zone 1, a northwest trending zone of massive chalcopyrite, bornite and chalcopyrite-pyrite pods with occasional fragments of andesite, cemented together with quartz-carbonate in a matrix of volcanic debris, occurs. The zone is up to 0.6 metre wide.

CAPSULE GEOLOGY

(3) Forty-five metres at 013 degrees from zone 2, is a heavily limonitized zone.
(4) Thirty-six metres at 013 degrees from zone 3, a zone of dark and light limonitic breccia occurs.
(5) Ninety metres along the road from zone 4, is a shear zone striking 035 degrees and dipping 70 degrees west. The zone, locally carbonatized, is 3 metres wide and contains massive sulphide pods over 1 metre in width. This zone is known as the main zone. A grab sample of the zone contained 7.27 per cent copper, 22.97 grams per tonne silver and 2.81 grams per tonne gold (Assessment Report 15658).
(6) Seventy-six metres north along the road, outcrops exhibiting epidote and carbonate alteration on fracture planes occur. The zone contains limonite, magnetite and occasional blebs of pyrite.

A diamond drill program, by Amstar Venture Corporation, consisting of 22 holes for 1308 metres was completed in 1986. The main zone was found to be limited to 10 metres along strike with values and widths decreasing substantially along strike. The main zone is continuous to a depth of 40 metres and remains open. Drill hole 86-3, at 40 metres, contained a 1.21 metre section which assayed 3.01 per cent copper, 37.03 grams per tonne silver and 2.56 grams per tonne gold (Assessment Report 15658).

SYMC Resources Limited trenched in 1998.

BIBLIOGRAPHY

EM EXPL 1998-53; 1999-25-32
EMPR ASS RPT 9313, 10288, 12052, *13949, *15658
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 49-1963, 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 104**

NATIONAL MINERAL INVENTORY:

NAME(S): **TEXADA LIMESTONE**, DAVIE BAY, PAUL, TEXADA QUARRY

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 36 24 N
LONGITUDE: 124 22 00 W
ELEVATION: 290 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Center of surface trace of sampled outcrop on Lot 573 (Bulletin 40, page 81, Figure 14).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5495797
EASTING: 401260

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Carbonate
ASSOCIATED: Calcite Dolomite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Regular
MODIFIER: Faulted
DIMENSION: 6400 x 1600 x 300 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Limestone belt trends northwest, dips southwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
DATING METHOD: Fossil			
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Basaltic Flow
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression
COMMENTS: Situated on a shallow marine platform of ocean rift volcanics.

INVENTORY

ORE ZONE: MAIN
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1991
QUANTITY: 100000000 Tonnes

COMMODITY	GRADE
Limestone	90.0000 Per cent

COMMENTS: Drill indicated reserves at greater than 90 per cent CaCO3.
REFERENCE: Property File - Report by CBR Cement Canada, circ. 1990.

CAPSULE GEOLOGY

A belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 1600 metres wide extends northwest for 6.4 kilometres, paralleling the west coast of Texada Island, between Davie Bay and Mouat Bay. The limestone dips southwest, with underlying basaltic flows of the Upper Triassic Vancouver Group, Karmutsen Formation outcropping along the northeast margin of the belt. To the southwest, the limestone is in fault contact with the volcanics. The unit is possibly up to 300 metres thick. Diamond drilling on the Paul claim Ggoup in 1973 and 1974 intersected up to 100 metres of limestone without encountering the underlying volcanics. Dikes within the limestone are rare.

The limestone belt is generally composed of fine-grained, medium to light grey, high-calcium limestone frequently cut by calcite veins. Locally, tiny dolomite crystals are disseminated in the limestone. On Lot 25, high calcium limestone is found interbedded with magnesian limestone. A sample from one of these magnesian beds anlaysed 38.11 per cent CaO, 13.88 per cent MgO, 1.72 per cent SiO2,

CAPSULE GEOLOGY

1.03 per cent Al2O3, and 0.63 per cent Fe2O3 (CANMET Report 811, page 157). Five chip samples taken in succession over a total width of 381 metres, across the south end of the deposit, from its northeastern edge averaged 53.79 per cent CaO, 1.53 per cent MgO, 0.29 per cent insolubles, 0.24 per cent R2O3, 0.082 per cent Fe2O3, 0.005 per cent MnO, 0.015 per cent P2O5, 0.038 per cent sulphur and 44.00 per cent ignition loss (Bulletin 40, page 82).

B.C. Cement Co. Ltd. initially carried out some exploration work near the south end of the deposit in the 1950s. Canada Cement Lafarge Ltd. drilled 31 holes on the north end of the deposit near Mouat Bay in 1973 and 1974. The company conducted a total field magnetometer survey over the area of drilling in 1985 to test for deep-seated dikes and dikes on surface obscured by overburden.

CBR Cement Canada Limited engages in the manufacturing, production and sales of Portland cement, aggregates, concrete and concrete products in British Columbia and the Pacific Northwest region of the United States. The company operates a modern 1 million tonne capacity plant on Tilbury Island adjacent to the Fraser River in Delta. The plant was put into operation in 1978 and replaced an obsolete plant that was located on Vancouver Island at Bamberton, north of Victoria, on the west side of Saanich Inlet.

Extensive exploration of District Lots 573 and 589 on Texada Island has established reserves of limestone suitable for the Tilbury plant. Drillholes determined 100 million tonnes of reserves in an area 300 metres wide extending 2000 metres in a southeast direction from the proposed quarry's northwest extremity at the boundary of lots 235 and 573. The limestone consists mainly of calcium carbonate (CaCO3) in a concentration greater than 90 per cent; a deposit of massive thickness, somewhat faulted, bent and dipping to the northeast about 40 to 50 degrees. Surface samples were taken systematically over the area and cores were taken from drillholes to determine the extent of the deposit (Property File - Texada Limestone Property Report, by CBR Cement Canada Limited, circa 1990).

BIBLIOGRAPHY

EM EXPL 1999-25-32
EMPR ASS RPT 4723, 5273, 14817
EMPR BULL *23, pp. 87,88; *40, pp. 80-82
EMPR FIELDWORK *1979, p. 109
EMPR GEM 1971-249,250; 1972-599; 1973-233; 1974-382
EMPR OF 1992-18, pp. 24, 27
EMPR PF (Texada Limestone Property Report, by CBR Cement Canada Limited, circa 1990)
GSC MAP 1386A; 17-1968
GSC MEM 58, pp. 90,99
GSC OF 463
GSC P 68-50, pp. 14,15
CANMET RPT 452, p. 169; *811, pp. 155-157
WWW
http://www.infomine.com/index/properties/TEXADA_LIME_MINE_&_PLANT.html

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/12 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 105** NATIONAL MINERAL INVENTORY: 092F15 Cu3

NAME(S): **LITTLE BILLIE**, LITTLE BILLY, MCLEOD NO. 1 FRACTION (L.521), MCLEOD NO. 2 FRACTION (L.522), VAN ANDA , VANANDA

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 45 30 N NORTHING: 5512910
LONGITUDE: 124 32 49 W EASTING: 388583
ELEVATION: 32 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, on Lot 522 close to the boundary with Lot 521, just east of Vananda on Texada Island (Minister of Mines Annual Report 1944).

COMMODITIES: Gold, Copper, Wollastonite, Silver, Molybdenum, Zinc, Lead, Tungsten, Bismuth, Tellurium

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Wollastonite, Molybdenite, Sphalerite, Galena, Scheelite, Silver, Hessite, Petzite, Wehrlite, Pyrrhotite
ASSOCIATED: Quartz, Pyrite, Magnetite, Pyroxene, Epidote, Vesuvianite
ALTERATION: Garnet, Wollastonite, Diopside, Tremolite, Feldspar, Magnetite, Grossularite, Andradite
COMMENTS: Also epidote.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Massive
CLASSIFICATION: Skarn, Industrial Min.
TYPE: K01 Cu skarn, K05 W skarn
SHAPE: Irregular
MODIFIER: Folded, Faulted

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Cretaceous			Little Billy Stock

ISOTOPIC AGE: 120 Ma
DATING METHOD: Unknown
MATERIAL DATED: U/Pb

LITHOLOGY: Limestone, Tonalite, Amphibole Mafic Dike, Skarn, Basalt, Gabbro, Diorite, Quartz Monzonite

HOSTROCK COMMENTS: Age date from J.E. Gabites, pers. comm. 1992; see EMPR Bull 101, p. 159.

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: LITTLE BILLIE REPORT ON: Y

CATEGORY: Inferred YEAR: 1992
QUANTITY: 181420 Tonnes

COMMODITY	GRADE	
Silver	34.2800	Grams per tonne
Gold	11.6500	Grams per tonne
Copper	2.0000	Per cent

COMMENTS: Geological reserves.
REFERENCE: George Cross News Letter No.202 (October 20), 1992.

CAPSULE GEOLOGY

The Little Billie mine is located just outside the town of Vananda on the northeast coast of Texada Island, 120 kilometres northwest of Vancouver. Historic work at the Little Billie mine has included moderate underground development. The shaft collar is situated on Lots 521 and 522, 0.5 kilometre east-southeast of Vananda Cove.

Northern Texada Island is underlain by Karmutsen Formation pillowed and massive basaltic flows with thick units of pillowed breccia conformably overlain by massive limestone of the Quatsino Formation, both of the Upper Triassic Vancouver Group. Various Middle Jurassic stocks and minor intrusions, ranging in composition from gabbro through diorite to quartz monzonite, intrude the volcanics and limestones. These intrusions are locally associated with iron and copper-gold skarn mineralization. A major episode of folding (F1) has resulted in the limestones and, to a lesser extent, the underlying volcanics, being deformed into a series of broad, northwest trending open folds that plunge northwards. Three subparallel northwest striking lineaments are also recognized and coincide with the Ideal, Holly and Marble Bay faults. These faults cut a set of northeast striking faults. The Marble Bay fault, and to a lesser extent the Ideal fault, have apparently controlled the emplacement of some of the Jurassic intrusions and their associated skarn mineralization.

The Little Billie occurrence, near the Marble Bay fault, is underlain by massive, recrystallized limestone of the Quatsino Formation intruded by the Cretaceous Little Billy stock comprised of a light grey, fine to medium-grained equigranular tonalite. A suite of amphibole rich mafic dykes also occur and appear to pre- and postdate the Little Billy stock. The limestone is gently folded and bedding is poorly defined. Skarn mineralization is spatially associated with the dykes and stock. Mineralization often forms irregular pipe-like bodies that plunge moderately, subparallel to the contacts between limestone and intrusive rocks. The mafic dykes appear to be of two generations. The older, and commonly altered northeast striking dykes cut only the limestone and are cut off along strike by the Little Billy stock. They contain abundant veinlets and lenses of garnet-diopside skarn which locally have completely replaced the dyke rock. The younger, "fresher looking" dykes strike east and cut the older dykes, the Little Billy stock and skarn developed along the intrusive/limestone contacts. Several, west-dipping, quartz-feldspar porphyry and hornblende-feldspar porphyry dykes are locally present in the mine area but are not exposed in the mine workings. Numerous minor faults are exposed underground. At the Little Billie mine, irregularly distributed skarn and related mineralization is developed in limestone near the tonalitic Little Billy stock where amphibole-rich mafic dykes cut the limestone. The skarn also extends into dyke material. The shape of the skarns are determined by the tonalite/limestone contacts or by the attitude of the mafic dykes. The skarns are comprised of coarse, light tan grossularite and light green and dark brown andradite garnet as well as wollastonite, clinopyroxene (diopside), tremolite, quartz and feldspar.

Two types of skarn ore are recognized; one is characterized by a gangue of coarse granular brown garnet and abundant magnetite that is loosely held together and the second by a gangue of green garnet, wollastonite and diopside which is dense and hard. The main ore minerals are chalcopyrite and bornite with variable but minor amounts of molybdenite, pyrite, magnetite and sphalerite. Bornite sometimes occurs as coarse euhedral crystals intergrown with garnet, and the higher gold values are commonly found with the higher copper concentrations. Chalcopyrite and bornite are interstitial to bladed wollastonite. Although chalcopyrite and bornite occur together in both the green and brown garnet skarn bodies, the chalcopyrite favours the brown garnet (andradite)-magnetite bodies and the bornite favours the green garnet (andradite)-wollastonite-diopside bodies. The light tan grossularite garnet is associated with diopside and wollastonite and clusters of quartz, epidote and feldspar but is typically not mineralized with sulphides.

Other minerals identified at the Little Billie mine include galena, scheelite and native silver as well as the tellurides hessite, petzite and wehrlite (Fieldwork, 1989). Small amounts of pyrrhotite are found along joints in some altered mafic dykes.

Inferred reserves are 181,420 tonnes of ore grading 11.65 grams per tonne gold, 2 per cent copper and 34.28 grams per tonne silver (George Cross News Letter No. 202 (October 20), 1992)). A recent diamond-drill hole intersection of skarn mineralization below the 6th level graded 7.26 grams per tonne gold, 29.13 grams per tonne silver and 1.6 per cent copper across 5.8 metres of skarn (Northern Miner - January 2, 1989).

CAPSULE GEOLOGY

Wollastonite, at the Little Billie, is common in green exoskarn which commonly occurs with green andradite in layers 0.6 to 5 centimetres thick.

A 38.7 kilogram sample of massive, white wollastonite-rich skarn was sent to CANMET for processing and the results were as follows (Open File 1991-17):

SiO2	44.5 %
Al2O3	1.10%
Fe2O3	4.21%
CaCo3	14.3 %
MgO	1.20%
L.O.I.	5.72
Brightness	62.78
Lightness	80.30

Recent interest in the wollastonite potential of the Little Billie mine has resulted in unclassified reserves of 100,000 tonnes of wollastonite skarn material in the old mine workings. The reserve figure is based on Stevenson's report in the Minister of Mines Annual Report 1944 (Fieldwork, 1988). Recent drilling has cut intercepts of up to 24 metres comprised essentially of wollastonite (Open File 1991-17).

Production from 1896 to 1952 totalled 63,713 tonnes yielding 1,198,533 grams of silver, 363,199 grams of gold and 819,225 kilograms of copper.

The property is held by Consolidated Van Anda Gold Ltd.

BIBLIOGRAPHY

EMPR AR 1897-560-562; 1898-1136,1144; 1899-802; 1907-L215; 1908-J154; 1910-K166; 1911-K212; 1912-K197,K238,K239,K323; 1913-K287,K288, K324,K421; 1914-K381,K420; 1915-K289,K368,K447; 1916-K355,K356, K519; 1917-F258; 1918-K306; 1919-N254; 1922-N235; 1925-A284,A288-A290; 1928-C384; 1929-C393; 1943-A45,A69; *1944-A66,A162-A174; 1945-A112,A114; 1946-A176,A177,A294,A295; 1947-A179,A277; 1948-A156,A157,A197,A253,A254; 1949-A217,A218,A322; 1950-A178,A234; 1951-A196,A321; 1952-A209,A210,A338; 1965-224
EMPR ASS RPT 3, 5077, 6770, 8004, 9300, 14425, 15750, 16104, 16749
EMPR BC METAL MM00168
EMPR BULL 101, pp. 80, 83, 85, 89, 91, 93, 159, Appendix 6
EMPR EXPL 1977-E113,E114; 1979-132,133; 1986-C179; 1987-C153,C154
EMPR FIELDWORK *1988, p. 493; 1989, pp. 257-265
EMPR GEM 1970-282; 1974-180
EMPR INDEX 3-203, 217
EMPR OF 1988-28; 1990-3; *1991-17; 1992-1; 1992-9
EMPR P 1989-3, pp. 51-53
EMPR PF (Geology maps, undated; Vananda Gold Ltd., Prospectus, July 31, 1987; Consolidated Van Anda Gold Ltd. Website (Apr. 1998): Little Billy Property, 22 p.)
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58, pp. 9,45,46,62-64
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
GCNL #3, 1980; #21, 1985; #231,#244, 1988; #45(Mar.6), 1989; #30(Feb.12),#41(Feb.27),#49(Mar.11),#126(Jul.2), 1991; #36(Feb.20),#48(Mar.9),#202(Oct.20), 1992; #191(Oct.3), 1997
N MINER Jan.2, Mar.(Advertising Supplement), 1989; Jan.2, 1990; Apr.8, June 17, 1991; Feb.17, 1992
V STOCKWATCH, Nov.16, 1989
WWW http://www.infomine.com/
Deleen, J.L. (1946): The Geology and Mineralogy of the Little Billie Mine, Texada Island, British Columbia, M.Sc. Thesis, University of British Columbia
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/12 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 106** NATIONAL MINERAL INVENTORY: 092F10 Fe1

NAME(S): **PRESCOTT-TEXADA MINES**, TEXADA MINES-PRESCOTT, MIDWAY, ANOMALY A, JACK NORTH (L.266), TEXADA IRON MINES

STATUS: Past Producer Open Pit Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 42 11 N NORTHING: 5506770
LONGITUDE: 124 33 02 W EASTING: 388195
ELEVATION: 50 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Open pit on Lot 266 (Jack North claim), 1.75 kilometres west-southwest of Paxton Lake, 6.2 kilometres south from Vananda on Texada Island (Open File 1990-3). See also Paxton, Yellow Kid and Lake (092F 107, 258 and 259, respectively). Production after 1956 is included with Yellow Kid.

COMMODITIES: Iron, Copper, Silver, Gold, Zinc, Magnetite, Cobalt, Molybdenum

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite, Pyrite, Pyrrhotite, Arsenopyrite, Sphalerite, Molybdenite
COMMENTS: Rare sphalerite, trace arsenopyrite.
ALTERATION: Garnet, Pyroxene, Amphibole, Diopside, Actinolite, Epidote, Calcite, Scapolite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated, Vein
CLASSIFICATION: Skarn, Industrial Min.
TYPE: K03 Fe skarn, K01 Cu skarn
SHAPE: Irregular
MODIFIER: Faulted, Folded

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Middle Jurassic			Gillies Stock

ISOTOPIC AGE: 178 Ma
DATING METHOD: Uranium/Lead
MATERIAL DATED: Zircon

LITHOLOGY: Limestone
Basalt
Quartz Monzonite
Skarn
Marble
Feldspar Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	46.6200	Grams per tonne
Gold	2.8100	Grams per tonne
Copper	3.1400	Per cent

COMMENTS: Sample across 5 metres.
REFERENCE: George Cross News Letter #217, 1988.

CAPSULE GEOLOGY

The Quatsino Formation is a limestone sequence 60 to 250 metres thick that occupies a belt 3 kilometres wide extending northwest from Gillies Bay to Blubber Bay at the tip of Texada Island. It

CAPSULE GEOLOGY

conformably overlies Karmutsen Formation volcanics and mainly comprises pure, massive to poorly bedded calcareous and dolomitic limestone. Both formations form part of the Upper Triassic Vancouver Group. Exposed contacts between the limestone and underlying volcanic rocks are usually marked by steep faults. The volcanic rocks comprise rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows. A major episode of folding (F1) has been recognized; this resulted in the limestones and, to a lesser degree, the underlying volcanics, being deformed into a series of broad, northwest trending open folds that plunge northwards. Two subparallel, northwest striking lineaments are evident in the area. The Ideal and Holly faults have apparently controlled the emplacement of some Jurassic intrusions and the associated skarn mineralization.

The Middle Jurassic Gillies stock intrudes both the Quatsino and Karmutsen formations. The stock has yielded a zircon U-Pb radiometric age of 178 Ma (Fieldwork 1989) and is genetically associated with several magnetite-rich skarn deposits (Prescott, Lake 092F 259, Yellow Kid 092F 258 and Paxton 092F 107) in an area 1524 by 609 metres. It mainly comprises a grey, medium-grained equigranular quartz monzonite that contains amphibole, biotite and occasional pyroxene phenocrysts. A late potassium feldspar rich phase is also present. The stock and the surrounding limestones are cut by sets of north and east trending feldspar porphyritic dykes that reach 10 metres in thickness and postdate skarn mineralization. The Gillies stock and its associated iron-skarn deposits lie close to the Ideal fault. Locally, at the iron mines (Prescott, Lake, Yellow Kid and Paxton), the volcanic-limestone contact is highly deformed and these structures have partly controlled the distribution of the magnetite ore. The Karmutsen volcanics in the vicinity of the Gillies stock are variably metamorphosed, most generally to a chloritized or epidotized basalt; the Quatsino limestone is bleached white and coarsely recrystallized.

Magnetite skarn mineralization at the Prescott mine is generally developed close to or along the margin of the Gillies stock and comprises an irregular lens or group of lenses that plunges steeply south, parallel to the dip direction of the quartz monzonite-limestone contact. Mineralization is concentrated along either the Quatsino-Karmutsen formations contact, the margin of the Gillies stock or within limestone and volcanic rocks some distance from the stock where the skarn forming fluids were controlled by subvertical brittle fractures. Magnetite orebodies adjacent to the stock are generally associated with abundant garnet-pyroxene-amphibole skarn, while the more distal, structurally controlled, subvertical deposits have less extensive skarn envelopes. The massive magnetite occurs with reddish-brown garnet, pyroxene (hedenbergite-diopside), epidote, amphibole (actinolite), minor calcite and sporadic chalcopyrite, pyrite and pyrrhotite. Traces of arsenopyrite and rare sphalerite are also observed (International Geological Congress Guidebook, Day 2-Texada, by A. Sutherland Brown). The skarn alteration and mineralization overprints all phases of the Gillies stock and, to a lesser degree, the limestone and volcanic rocks, although it is difficult to distinguish between exoskarn and endoskarn. Contacts between the skarn and unaltered rocks are generally sharp. Mineralogical zoning is recognized and, where fully developed, comprises barren skarn close to the intrusion, grading outwards to magnetite-rich skarn and then into marble. Locally, chalcopyrite and pyrite occur close to the outer margins of the skarn envelope, adjacent to limestone or marble. Magnetite veinlets commonly cut garnet-pyroxene skarn. Early garnet-pyroxene assemblages were followed by the introduction of magnetite and late sulphide mineralization. Feldspar porphyry dykes are prominent in the magnetite orebodies.

Copper concentrates produced from milling contain recoverable amounts of gold and silver. The initial discoveries of the four main iron-skarn deposits were from west to east, the Prescott, Yellow Kid (092F 258), Paxton (092F 107) and Lake (092F 259). Subsequent discoveries by underground exploration included the Midway (combined with the Yellow Kid), Le Roi (combined with the Yellow Kid), Lake Extension (combined with the Lake) and Anomaly A (combined with the Prescott). During the years 1885 to 1903, and 1908, 26,213 tonnes of magnetite ore were reported to be shipped; this was from the Prescott deposit except for approximately 964 tonnes from the Lake deposit (092F 259). Sporadic activity continued until 1916; at that time the workings at the Prescott mine included a large quarry, shaft, an adit connected to the shaft and four working levels above the adit. No further activity was reported until 1952 when open pit operations began in earnest at the Lake, Paxton and Prescott deposits.

Production figures from the Lake (092F 259) and Paxton (092F 107) mines are included with the Prescott. The Yellow Kid deposit

CAPSULE GEOLOGY

(092F 258) was discovered in 1953-54; in 1955 an open pit operation started and in 1957 milling of magnetite ore began. Underground exploration began in 1959 in an adit driven from the shoreline to explore beneath the Prescott and Yellow Kid open pits. In the course of this underground development, the Midway deposit was discovered between the Prescott and Yellow Kid pits and production from here, beginning in 1964, is included with the Yellow Kid. A shaft and 5 levels were established to mine the deposits. A crosscut driven in 1964 to intersect the Lake Extension orebody (an extension of the Lake deposit), discovered another orebody, the Le Roi, which occurs between the Paxton open pit and the Yellow Kid open pit. The Le Roi orebody, due to its proximity to the Yellow Kid deposit, has been included with the Yellow Kid. A decline was started in 1966 from the Lake open pit to mine the Le Roi and Lake Extension orebodies. By 1968, all open pit mining ceased. Some underground development work was done on the Anomaly A orebody in 1969-70, located 440 metres northwest of the Prescott open pit.

Reported production from 1952 to 1956 totalled 1,300,466,116 kilograms of iron from 1,997,313 tonnes mined.

The Texada Mines, which encompassed all of the above deposits and orebodies, closed on December 17, 1976 due to exhaustion of ore reserves. Recent sampling of skarn mineralization at the mines assayed 3.14 per cent copper, 46.62 grams per tonne silver and 2.81 grams per tonne gold across 5 metres (George Cross Newsletter #217, 1988).

The property is held by Consolidated Van Anda Gold Ltd.

BIBLIOGRAPHY

EMPR AR 1876-429; 1888-324; 1897-559,560; 1898-1144; 1899-557,805,806, 816; 1901-1232; 1902-H225-H228,H236; 1903-H205; 1904-G247; 1905-J215; 1906-H203; 1907-L152; 1908-J146,J154; 1912-K197; 1916-K276, K296,K298-K300,K356,K357,K365; 1951-A196; *1952-A218-A221,A338, A339; 1953-A162,A163,A277; 1954-A48,A164,A263; 1955-A46,75; 1956-A48,116,129-131; 1957-A48,67,68,154; 1958-A43,57,121; 1959-A46,130, 131; 1960-A52,89,90; 1961-A47,90,91,240,241,281; 1962-A47,94,95, 246,247,285,287; 1963-A47,96-98,222,224,272; *1964-A53,146-151,334; 1965-224,225; 1966-72,73; 1967-72; 1968-101
EMPR BC METAL MM00189
EMPR BULL 3, 1917; 40, p. 80; 101, pp. 13, 57, 59, 159, Appendix 4A, 6
EMPR FIELDWORK *1989, pp. 257-265
EMPR GEM 1969-213; 1970-282; 1971-251; 1972-269,270; 1973-233,234; 1974-179,180; 1977-E113
EMPR INDEX 3-209
EMPR OF 1988-28; 1990-3
EMPR P 1898-3, pp. 51-53
EMPR PF (*Robinson, W.C. (1974): Preliminary Report of Texada Mine; Haig-Smillie, L.D. (1973): Sea Water Flotation, Texada Mines Ltd.; Paterson, R.G. (1973): Notes on Ore Reserves; Various maps on surface and underground geology, pit outlines, photographs; see Lake - 092F 259, Texada Mines Ltd.-21 Years of Shipments of Iron Ore to Japan; Consolidated Van Anda Gold Ltd. Website (Apr. 1998): Texada Iron Mines, 14 p.)
EMR MP CORPFILE (Texada Mines Ltd.)
GSC BULL *172, pp.56-63
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50; 71-36
GSC SUM RPT 1924 Part A, pp. 106-144
CANMET IR 728, pp. 156-158; 736, pp. 269-273,276-281; 744, pp. 25-31; 763, p. 232
CANMET RPT 47, pp. 21-24
CIM Transactions Vol.LXXVII, pp. 8-13 (1974)
CMJ Vol.83, pp. 53-56 (1962)
EG Vol. 79, pp. 869-882
GCNL #217, 1988
W MINER (Vol.39, Nov.1966, pp. 30-36; Vol.36, June 1963, pp. 34-44; Vol.33, Aug.1960, pp. 28-34; Vol.33, Jan.1960, pp. 31-36; Vol.32, Oct.1959, pp. 122-124)
Ettlinger, A.D. (1990): A Geological Analysis of Gold Skarns and Precious Metal Enriched Iron and Copper Skarns in British Columbia; unpublished Ph.D. Thesis, Washington State University, 246 pages

MINFILE NUMBER: **092F 107**

NATIONAL MINERAL INVENTORY: 092F10 Fe1

NAME(S): **PAXTON-TEXADA MINES**, TEXADA MINES-PAXTON, LEROI (L.264), L.M.C. (L.268), BOULDER WEST (L.265), TEXADA IRON MINES, TEXADA

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 42 16 N
LONGITUDE: 124 32 17 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Open pit on Lots 264 (Leroi), 268 (L.M.C.), and 265 (Boulder West), 750 metres southwest of Paxton Lake, 6.2 kilometres south from the community of Vananda on Texada Island (Open File 1990-3). See also Prescott, Yellow Kid and Lake (092F 106, 258 and 259 respectively). Production is included with Prescott.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5506906
EASTING: 389100

COMMODITIES: Iron, Copper, Silver, Gold, Molybdenum, Zinc, Magnetite, Cobalt

MINERALS

SIGNIFICANT: Magnetite, Chalcopyrite, Molybdenite, Sphalerite, Pyrite, Pyrrhotite, Arsenopyrite
COMMENTS: Rare sphalerite, trace arsenopyrite.
ASSOCIATED: Albite
ALTERATION: Garnet, Pyroxene, Amphibole, Diopside, Epidote, Actinolite, Calcite, Scapolite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated, Stockwork
CLASSIFICATION: Skarn, Industrial Min.
TYPE: K03 Fe skarn, K01 Cu skarn, T01 Tailings
SHAPE: Irregular
MODIFIER: Faulted, Folded

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	
Middle Jurassic			Gillies Stock

ISOTOPIC AGE: 178 Ma
DATING METHOD: Uranium/Lead
MATERIAL DATED: Zircon

LITHOLOGY: Basalt, Quartz Monzonite, Limestone, Skarn, Feldspar Porphyry Dike, Marble

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:

CAPSULE GEOLOGY

The Quatsino Formation is a limestone sequence 60 to 250 metres thick that occupies a belt 3 kilometres wide extending northwest from Gillies Bay to Blubber Bay at the tip of Texada Island. It conformably overlies Karmutsen Formation volcanics and mainly comprises pure, massive to poorly bedded calcareous and dolomitic limestone. Both formations form part of the Upper Triassic Vancouver Group. Exposed contacts between the limestone and underlying volcanic rocks are usually marked by steep faults. The volcanic rocks comprise rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows. A major episode of folding (F1) has been recognized; this resulted in the limestones and, to a lesser degree, the underlying volcanics, being deformed into a series of broad, northwest trending open folds that plunge northwards. Two

CAPSULE GEOLOGY

subparallel, northwest striking lineaments are evident in the area. The Ideal and Holly faults have apparently controlled the emplacement of some Jurassic intrusions and their associated skarn mineralization.

The Middle Jurassic Gillies stock intrudes both the Quatsino and Karmutsen formations. The stock has yielded a zircon U-Pb radiometric age of 178 Ma (Fieldwork 1989) and is genetically associated with several magnetite-rich skarn deposits (Prescott 092F 106, Lake 092F 259, Yellow Kid 092F 258 and Paxton) in an area 1524 by 609 metres. It mainly comprises a grey, medium-grained equigranular quartz monzonite that contains amphibole, biotite and occasional pyroxene phenocrysts. A late potassium feldspar rich phase is also present. The stock and the surrounding limestones are cut by sets of north and east trending feldspar porphyritic dykes that reach 10 metres in thickness and postdate skarn mineralization. The Gillies stock and its associated iron-skarn deposits lie close to the Ideal fault. Locally, at the iron mines (Prescott, Lake, Yellow Kid and Paxton), the volcanic-limestone contact is highly deformed and these structures have partly controlled the distribution of the magnetite ore. The Karmutsen volcanics in the vicinity of the Gillies stock are variably metamorphosed, most generally to a chloritized or epidotized basalt; the Quatsino limestone is bleached white and coarsely recrystallized.

Magnetite skarn mineralization at the Paxton mine is generally developed close to or along the eastern margin of the Gillies stock. Mineralization is concentrated along either the Quatsino-Karmutsen formations contact or the margin of the Gillies stock. Magnetite orebodies adjacent to the stock are generally associated with abundant garnet-pyroxene-amphibole skarn. The massive magnetite occurs with reddish-brown garnet, pyroxene (hedenbergite-diopside), epidote, amphibole (actinolite), minor calcite and sporadic chalcopyrite, pyrite and pyrrhotite. Traces of arsenopyrite and rare sphalerite are also observed (International Geological Congress Guidebook, Day 2-Texada, by A. Sutherland Brown). The skarn alteration and mineralization overprints all phases of the Gillies stock and, to a lesser degree, the limestone and volcanic rocks, although it is difficult to distinguish between exoskarn and endoskarn. The main ore mass appears to have formed in a wedge between the intrusion and the southwest dipping limestone-volcanic contact. High grade ore replaces either quartz monzonite or adjacent volcanic rock. Lower grade ore and skarn continues north as a subhorizontal tongue-like projection along the limestone-volcanic contact. The contact of skarn with volcanic rocks is generally gradational over several metres and only occasionally is sharp. In contrast, skarn always terminates abruptly against limestone. Mineralogical zoning is recognized in the main ore lens. The centre of the lens comprises coarse-grained massive magnetite relatively free of skarn and containing small pods of calcite mineralized with chalcopyrite and pyrite. Calcite veinlets project into the main mass of magnetite. The massive magnetite then grades in a mixed magnetite and skarn zone in which magnetite both veins and replaces skarn. Locally, chalcopyrite and pyrite occur close to the outer margins of the skarn envelope, adjacent to limestone or marble. Magnetite veinlets commonly cut garnet-pyroxene skarn. Early garnet-pyroxene assemblages were followed by the introduction of magnetite and late sulphide mineralization. In the southeast portion of the Paxton pit, thin stringers of molybdenite cut both skarn and quartz monzonite. A feldspar porphyry dyke 10 metres wide strikes through the northwest part of the pit. The ore at the Paxton mine contains a high copper content and concentrates produced from milling contain recoverable amounts of gold and silver.

The initial discoveries of the four main iron-skarn deposits were from west to east, the Prescott (092F 106), Yellow Kid (092F 258), Paxton and Lake (092F 259). Subsequent discoveries by underground exploration included the Midway and the Le Roi (combined with the Yellow Kid), Lake Extension (combined with the Lake) and Anomaly A (combined with the Prescott).

During the years 1885 to 1903, and 1908, 26,213 tonnes of magnetite ore were reported to be shipped from the Prescott deposit except for approximately 964 tonnes from the Lake deposit (092F 259). Sporadic activity continued until 1916; at that time the workings at the Prescott mine included a large quarry, shaft, an adit connected to the shaft and four working levels above the adit. No further activity was reported until 1952 when open pit operations began in earnest at the Lake, Paxton and Prescott deposits. Production figures from the Lake (092F 259) and Paxton mines are included with the Prescott (092F 106). The Yellow Kid deposit (092F 258) was discovered in 1953-1954; in 1955 an open pit operation started and in 1957 milling of magnetite ore began. Underground exploration began

CAPSULE GEOLOGY

in 1959 in an adit driven from the shoreline to explore beneath the Prescott and Yellow Kid open pits. In the course of this underground development, the Midway deposit was discovered between the Prescott and Yellow Kid pits and production, beginning in 1964, is included with the Yellow Kid. A shaft and 5 levels were established to mine the deposits. A crosscut driven in 1964 to intersect the Lake Extension orebody (an extension of the Lake deposit), discovered another orebody, the Le Roi, which occurs between the Paxton and the Yellow Kid open pits. The Le Roi orebody, due to its proximity to the Yellow Kid deposit, has been included with the Yellow Kid. A decline was started in 1966 from the Lake open pit to mine the Le Roi and Lake Extension orebodies. By 1968 all open pit mining ceased. Some underground development work was done on the Anomaly A orebody in 1969-70, located 440 metres northwest of the Prescott open pit.

The Texada Mines, which encompassed all of the above deposits and orebodies, closed on December 17, 1976 due to exhaustion of ore reserves.

Consolidated Van Anda Gold Ltd. reported that its processing mill is now in place, and it has approval to process a 10,000-tonne bulk sample of magnetite from the Paxton pit. The mill will initially produce magnetite as a heavy medium for use in the coal industry; production was scheduled to commence in October 1997 to secure contract bids in January, 1998. The magnetite has also been successfully tested as a sandblasting abrasive (T. Schroeter, personal communication, 1997).

The mill, completed in 1998, will produce clean magnetite from skarn ore stockpiled by Texada Iron Mines in the 1960's. Consolidated Van Anda shipped a small amount of magnetite to the Quinsam Coal operation (092F 319).

BIBLIOGRAPHY

EM EXPL 1998-50-51
EMPR AR 1876-429; 1888-324; 1897-559,560; 1898-1144; 1899-557,805,806, 816; 1901-1232; 1902-H225-H228,H236; 1903-H205; 1904-G247; 1905-J215; 1906-H203; 1907-L152; 1908-J146,J154; 1912-K197; 1916-K276, K296,K298-K300,K356,K357,K365; 1951-A196; *1952-A218-A221,A338, A339; 1953-A162,A163,A277; 1954-A48,A164,A263; 1955-A46,75; 1956-A48,116,129-131; 1957-A48,67,68,154; 1958-A43,57,121; 1959-A46,130, 131; 1960-A52,89,90; 1961-A47,90,91,240,241,281; 1962-A47,94,95, 246,247,285,287; 1963-A47,96-98,222,224,272; *1964-A53,146-151,334; 1965-224,225; 1966-72,73; 1967-72; 1968-101
EMPR BULL 3 (1917); 40, p. 80; 101, pp. 13,80,83,160,Appendix 4A,6
EMPR FIELDWORK *1989, pp. 257-265
EMPR GEM 1969-213; 1970-282; 1971-251; 1972-269,270; 1973-233,234; 1974-179,180; 1977-E113
EMPR INF CIRC 1998-1, p. 24
EMPR OF 1988-28; 1990-3
EMPR P 1898-3, pp. 51-53
EMPR PF ((see Prescott-092F 106, *Robinson, W.C. (1974): Preliminary Report of Texada Mine; Haig-Smillie, L.D. (1973): Sea Water Flotation, Texada Mines Ltd.; Paterson, R.G. (1973): Notes on Ore Reserves; Various maps on surface and underground geology, pit outlines, photographs); Texada Mines Ltd.-21 Years of Shipments of Iron Ore to Japan (1973); Survey maps of North and South Paxton pits)
GSC BULL *172, pp.56-63
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50; 71-36
GSC SUM RPT 1924 Part A, pp. 106-144
EMR MP CORPFILE (Texada Mines Ltd.)
CANMET IR 728, pp. 156-158; 736, pp. 269-273,276-281; 744, pp. 25-31; 763, p. 232
CANMET RPT 47, pp. 21-24
CIM Transactions Vol.LXXVII, pp. 8-13, 1974
CMJ Vol.83, pp. 53-56 (1962)
GCNL #217, 1988; #191(Oct.3), 1997
PR REL Consolidated Van Anda Gold Ltd., Sept. 30, 1997
W MINER Vol.39, Nov. 1966, pp. 30-36; Vol.36, June 1963, pp. 34-44; Vol.33, Aug. 1960, pp. 28-34; Vol.33, Jan. 1960, pp. 31-36; Vol.32, Oct. 1959, pp. 122-124

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/02 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 108**

NATIONAL MINERAL INVENTORY:

NAME(S): **GRAD**, BLACK PRINCE, CROWN PRINCE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 42 04 N
LONGITUDE: 124 26 20 W
ELEVATION: 445 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit, 400 metres north of the microwave tower on Mount Pocahontas at the southern tip of a small lake, in the central portion of Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5506393
EASTING: 396243

COMMODITIES: Gold, Copper, Magnetite

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite, Pyrite
ALTERATION: Garnet, Epidote, Silica
ALTERATION TYPE: Skarn, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated, Massive
CLASSIFICATION: Skarn, Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Unknown	Vancouver	Karmutsen	Unnamed/Unknown Informal

LITHOLOGY: Siliceous Amygdaloidal Basalt
Limestone
Marble
Quartz Diorite
Calc-silicate

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Georgia Depression
GRADE:

CAPSULE GEOLOGY

The Black Prince occurrence area is underlain predominantly by Upper Triassic amygdaloidal basaltic rocks and locally interbedded limestone of the Karmutsen Formation (Vancouver Group) intruded by a quartz diorite stock. Garnet-epidote-magnetite skarns have been developed in siliceous volcanic rocks and limestone. Some marble has also been observed. Mineralization consists of massive magnetite with mixed chalcopyrite and pyrite carrying gold values. The magnetite is sometimes banded with pyrite and garnet.

BIBLIOGRAPHY

EMPR AR 1898-1145; 1899-804; 1900-926
EMPR ASS RPT 10292, *13911, *14862, 17693, 19017
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3
GSC MAP 1386A; 17-1968
GSC MEM 58, p. 69
GSC OF 463
GSC P 68-50
GCNL #234, 1985

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/20 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 109** NATIONAL MINERAL INVENTORY:

NAME(S): **MARJORIE (L.217)**, SAGA (L.216), MAIN SHAFT VEIN, BIG VEIN, NO. 8 VEIN

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 45 07 N NORTHING: 5512258
LONGITUDE: 124 35 09 W EASTING: 385767
ELEVATION: 94 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main shaft on Saga claim (Lot 216), 500 metres east from the tip of Spectacle Lake, 2 kilometres west from the cummunity of Vananda on Texada Island (Open File 1990-3).

COMMODITIES: Gold Silver Copper Lead

MINERALS

SIGNIFICANT: Gold Galena Pyrite Pyrrhotite
ASSOCIATED: Quartz Calcite Siderite Ankerite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 0044 x 0001 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Veins strike west-southwest, dip vertically and are up to 1.2 metres wide along a maximum strike length of 44 metres.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Amygdaloidal Basalt
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell

INVENTORY

ORE ZONE: BIG VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1922
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	10.9600	Grams per tonne

COMMENTS: Sample across the vein.
REFERENCE: Minister of Mines Annual Report 1922, page N236.

ORE ZONE: MAIN SHAFT VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1922
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	17.1400	Grams per tonne
Gold	67.8700	Grams per tonne

COMMENTS: Sample of sorted ore from dump material.
REFERENCE: Minister of Mines Annual Report 1922, page N237.

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1925
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	20.5600	Grams per tonne
Gold	87.7500	Grams per tonne

COMMENTS: Sample of sorted ore from dump material.
REFERENCE: Minister of Mines Annual Report 1925, page A287.

CAPSULE GEOLOGY

The Marjorie occurrence area is underlain by Upper Triassic Karmutsen Formation amygdaloidal basalt close to the contact with Quatsino Formation limestone, both of the Vancouver Group. The basalts are fractured and sheared and host a series of eight parallel gold-bearing, pyritic quartz-calcite veins and stringers with variable amounts of siderite and ankerite. The veins strike west-southwest, dip vertically and occur within 100 metres of one another. They vary from a few centimetres to 1.2 metres in width, and attain a maximum strike length of 44 metres. Wallrock contacts are well-defined. Mineralization in the veins also include minor amounts of native gold, pyrrhotite and occasional galena.

A main shaft is developed on a vein (Main Shaft vein) on the Saga claim (Lot 216) where some historic production has taken place from drifting and stoping. At the face of the west drift a fault cuts off the vein. A grab sample of sorted ore from dump material from the west drift assayed 67.87 grams per tonne gold and 17.14 grams per tonne silver (Minister of Mines Annual Report 1922, page N237). Sixty-one metres south of the Main Shaft vein, an open cut exposes the Big vein which parallels the Main Shaft vein and dips 80 degrees north towards it. A chip sample taken across the Big vein assayed 10.96 grams per tonne gold (Minister of Mines Annual Report 1922, page N236). Five other veins occur between the Main Shaft vein and the Big vein. Forty-two metres north of the Main Shaft vein, an open cut exposes the No. 8 vein. A grab sample of sorted ore from dump material from an open cut on the No. 8 vein assayed 87.75 grams per tonne gold and 20.56 grams per tonne silver (Minister of Mines Annual Report 1925, page A287).

BIBLIOGRAPHY

EMPR AR 1901-1103; 1902-H307; 1921-G215; *1922-N236; *1925-A286,A287; 1926-A316; 1927-C359; 1939-A87; 1940-A71
EMPR ASS RPT 6842
EMPR EXPL 1977-E115,E116; 1978-E133
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58, p. 92
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/28 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 110**

NATIONAL MINERAL INVENTORY:

NAME(S): **COMMODORE**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 26 N
LONGITUDE: 124 33 35 W
ELEVATION: 90 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, near the north edge of the Ideal Cement open pit (092F 395), 2 kilometres south of Priest Lake, 3.6 kilometres south from the community of Vananda on Texada Island (Assessment Report 5655).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509100
EASTING: 387583

COMMODITIES: Silver Zinc Gold Copper Lead

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Faulted
COMMENTS: Vein occurs along fault zone contact betwen limestone and basalt.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Amygdaloidal Basalt
Porphyritic Basalt
Limestone
Diorite Dike
Hornblende Porphyry Dike
Feldspar Porphyry Dike
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Commodore occurrence area is underlain by massive recrystallized limestone of the Quatsino Formation in fault contact with porphyritic and amygdaloidal basalt of the Karmutsen Formation, both of the Upper Triassic Vancouver Group. This sequence is intruded by hornblende porphyry, feldspar porphyry, diorite dykes and a more massive diorite at depth.

The fault zone contact between limestone and basalt contains quartz veins mineralized with pyrite, chalcopyrite and galena carrying values in silver, zinc and gold. Three quartz veins were exploited on the property. Mineralization tends to be more concentrated where veins crosscut dykes. The veins also extend into the limestone with minor disseminated galena evident in the limestone.

Past work included an inclined shaft, drifting and a crosscut.

BIBLIOGRAPHY

EMPR AR 1901-1111; *1906-H202,H203,H255; 1907-L152
EMPR ASS RPT 5655
EMPR BULL 40, p. 55
EMPR FIELDWORK 1989, pp. 257-265
EMPR GEM 1975-E101
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58, pp. 72,73
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/27 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 111**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAVEN**, RED CLOUD

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 44 06 N
LONGITUDE: 124 29 52 W
ELEVATION: 45 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, on the south shore of Raven Bay, 4.6 kilometres south-southeast from the community of Vanada on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510244
EASTING: 392072

COMMODITIES: Copper, Iron, Cobalt

MINERALS
SIGNIFICANT: Magnetite, Pyrite, Chalcopyrite, Erythrite
ASSOCIATED: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic, Skarn, Industrial Min.
DIMENSION: 0045 x 0002 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Fracture zone hosting massive magnetite lenses.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt
Diorite
Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Raven occurrence is underlain by amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group). A narrow band of diorite and quartz monzonite outcrops south and north respectively, of Raven Bay.

Massive magnetite lenses containing pyrite and minor chalcopyrite are irregularly distributed in a fracture zone in basalt. The zone is 0.3 to 2.4 metres wide and traceable for 45 metres along strike. Locally, a band of chalcopyrite 2 to 38 centimetres wide is found within the magnetite. Minor garnet occurs with the magnetite and erythrite is also present.

A shaft and two drifts exploited the magnetite lenses. Historically, a considerable amount of material was stoped out and shipped as a flux (Geological Survey of Canada Memoir 58, page 67).

BIBLIOGRAPHY

EMPR AR 1896-554; 1897-560; 1898-1144; 1899-607; 1901-1112; 1910-K166; 1911-K196; 1912-K197
EMPR ASS RPT 3244, 14474, 17947, 18087
EMPR FIELDWORK 1989, pp. 257-265
EMPR GEM 1971-250
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, p. 67
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/16 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 112**

NATIONAL MINERAL INVENTORY: 092F10 Cu1

NAME(S): **CORNELL (L.201)**, CORNELL, VAN ANDA , VANANDA , TEXADA

STATUS: Past Producer Underground
MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 44 34 N
NORTHING: 5511169
LONGITUDE: 124 32 22 W
EASTING: 389087
ELEVATION: 90 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on Lot 201, 1 kilometre east of the east end of Priest Lake, 250 metres south of Emily Lake and 1.75 kilometres south of the Vananda on Texada Island (Open File 1990-3).

COMMODITIES: Copper Silver Gold Molybdenum Tungsten

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Molybdenite Tetrahedrite Silver Pyrite Magnetite Stibnite Pyrrhotite Gold Scheelite
ALTERATION: Garnet Pyroxene Diopside Calcite Epidote Serpentine
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Middle Jurassic			Cornell Stock

ISOTOPIC AGE: 175 Ma
DATING METHOD: Uranium/Lead
MATERIAL DATED: Zircon

LITHOLOGY: Limestone
Diorite
Hornblende Porphyritic Diorite
Porphyritic Hornblende Diorite Dike
Skarn

HOSTROCK COMMENTS: Age date from Open File 1990-3.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1984
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Gold	0.8200	Grams per tonne

COMMENTS: Sample of skarn across 61 centimetres.
REFERENCE: Assessment Report 14425.

CAPSULE GEOLOGY

Northern Texada Island is underlain by Karmutsen Formation pillowed and massive basaltic flows with thick units of pillowed breccia conformably overlain by massive limestone of the Quatsino Formation, both formations of the Upper Triassic Vancouver Group. Various stocks and minor intrusions (Middle Jurassic) ranging in composition from gabbro through diorite to quartz monzonite, intrude the volcanics and limestones, and are locally associated with iron and copper- gold skarn mineralization. A major episode of folding (F1) has resulted in the limestones and, to a lesser extent, the

CAPSULE GEOLOGY

underlying volcanics, being deformed into a series of broad, northwest trending open folds that plunge northwards. Three subparallel northwest striking lineaments are also recognized and coincide with the Ideal, Holly and Marble Bay faults. These faults cut a set of northeast striking faults. The Marble Bay fault, and to a lesser extent the Ideal fault, have apparently controlled the emplacement of some of the Jurassic intrusions and their associated skarn mineralization.

The Cornell occurrence area is underlain by bleached, massive recrystallized limestone of the Quatsino Formation intruded by the Middle Jurassic Cornell stock comprised of diorite and hornblende porphyritic diorite. Several porphyritic hornblende diorite dykes also occur. The Cornell mine is located on the Marble Bay fault which hosts the small Cornell stock which has been dated at 175 Ma (Open File 1990-3). Prominent east striking faults appear to be displaced by less continuous faults striking between 130 to 135 degrees near the Cornell shaft.

Skarn mineralization is associated with the contacts of limestone and diorite and porphyritic diorite dykes. Mineralization often forms irregular pipe-like bodies that plunge moderately, subparallel to the contacts between the limestone and intrusive rock. Garnet-diopside-calcite-epidote skarns are mineralized with bornite and chalcopyrite. Pyrite and magnetite occur in small quantities with rare molybdenite, tetrahedrite and native silver also present. These mineralized bodies are dominantly within the limestone but occasionally occur in diorite.

Several orebodies were historically exploited by underground development to the 110 metre level where the more important zones were named the Shaft, Coney, 4B, No. 8 and Glory Hole. Grades varied markedly from one zone to the next. Total production from 1897 to 1919 was 471,085 grams of gold, 2,194,471 grams of silver and 1,368,512 kilograms of copper from 40,687 tonnes of mined ore.

A 1984 drill hole intersected skarn mineralization across 61 centimetres and assayed 0.82 grams per tonne gold (Assessment Report 14425).

The property is held by Consolidated Van Anda Gold Ltd.

BIBLIOGRAPHY

EMPR AR 1898-1136,1144; 1899-607,801-806,851; 1900-925,943,944; 1901-1102,1105-1110,1190; 1902-H23,H235,H236,H258; 1903-H26,H204,H254; 1904-G247; 1905-J214,J221; 1906-H202,H216,H250; 1907-L152,L153, L164,L215; 1908-J146,J153; 1909-K274; 1910-K166,K245; 1911-K212, K286; 1912-K197; 1913-K288,K324,K421; 1914-K378,K380,K420,K511; 1915-K368; *1916-K353-K355,K431; 1917-F258; 1918-K306; 1919-N254; 1922-N235; 1925-A284,A288-A290; 1928-C384; 1929-C393; 1937-A30; 1938-A28; 1939-A30; 1940-A19; 1941-A20; 1942-A22; 1943-A39; 1944-A163,A164
EMPR ASS RPT 5077, 6770, 14425, 15750, 16104, 16749
EMPR BC METAL MM00155
EMPR BULL 101, pp. 57, 160, Appendix 6
EMPR FIELDWORK 1989, pp. 257-265
EMPR GEM 1974-180
EMPR INDEX 3-193
EMPR OF 1988-28; 1989-3, pp. 51-53; 1990-3
EMPR PF (Consolidated Van Anda Gold Ltd. Website (Apr. 1998): Texada Island Mines History, 3 p.)
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, pp. 56-59
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
GCNL #21, 1985
N MINER Feb.7, 1985; June 21, 1984
WWW http://www.infomine.com/
Ettlinger, A.D. (1990): A Geological Analysis of Gold Skarns and Precious Metal Enriched Iron and Copper Skarns in British Columbia; unpublished Ph.D. Thesis, Washington State University, 246 pages

MINFILE NUMBER: **092F 113**

NATIONAL MINERAL INVENTORY:

NAME(S): **SENTINEL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 07 N
LONGITUDE: 124 31 35 W
ELEVATION: 142 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, 500 metres north of Paxton Lake, 4.6 kilometres south from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508464
EASTING: 389973

COMMODITIES: Silver, Gold, Zinc, Copper, Lead

MINERALS

SIGNIFICANT: Pyrite, Tetrahedrite, Galena, Sphalerite, Chalcopyrite
ASSOCIATED: Calcite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Diorite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SHAFT

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Silver	362.3300	Grams per tonne
Gold	2.0900	Grams per tonne
Copper	0.1500	Per cent
Lead	0.7700	Per cent
Zinc	3.3000	Per cent

COMMENTS: Sample from shaft.
REFERENCE: Press Release - Vananda Gold Ltd., February 15, 1988.

CAPSULE GEOLOGY

The Sentinel occurrence is underlain by massive recrystallized limestone of the Upper Triassic Quatsino Formation near the contact with underlying Karmutsen Formation amygdaloidal basalt, both of the Vancouver Group. The limestone is strongly fractured in a northerly direction and is locally brecciated. Narrow branching calcite veinlets and irregular patches of calcite are numerous. Occasional diorite dykes crosscut the limestone.

Mineralization consists of grains, small clots and veinlets of pyrite, tetrahedrite, galena, sphalerite and chalcopyrite associated with small calcite veins, and occurs in a fractured and somewhat silicified zone within the limestone. A grab sample from a shaft assayed 3.3 per cent zinc, 362.33 grams per tonne silver, 0.77 per cent lead, 0.15 per cent copper and 2.09 grams per tonne gold (Press Release - Vananda Gold Ltd. February 15, 1988).

Past work included pits, open cuts and a shallow shaft. A shipment of 3.6 tonnes of sorted ore was made in 1927 (Minister of Mines Annual Report 1927, page C359).

BIBLIOGRAPHY

EMPR AR 1912-K197; 1916-K357; 1921-G224; *1927-C359

BIBLIOGRAPHY

EMPR BULL 40, p. 55
EMPR FIELDWORK 1989, pp. 257-270
EMPR OF 1990-3; 1988-28
EMPR PF (see 092F 373 (Sandy) for property description)
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, pp. 70,71
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
PR REL Vananda Gold Ltd. February 15, 1988

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/27 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 114** NATIONAL MINERAL INVENTORY: 092F1 Au1

NAME(S): **VULCAN (L.48G)**, AUSTRIAN (L.49), AFRICAN (L.50), ALLIANCE (L.51G)

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 07 55 N NORTHING: 5442898
LONGITUDE: 124 16 05 W EASTING: 407498
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on Lot 48G on Deadhorse Creek, on the northwest slopes of Mount DeCosmos, 5 kilometres north of Nanaimo Lake (Assessment Report 17258).

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Galena Sphalerite
COMMENTS: Trace chalcopyrite, galena and sphalerite.
ASSOCIATED: Quartz
ALTERATION: Chlorite Sericite Silica Limonite Hematite
ALTERATION TYPE: Propylitic Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared Faulted
DIMENSION: 0037 x 0001 Metres STRIKE/DIP: 039/75N TREND/PLUNGE:
COMMENTS: Vulcan shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Cretaceous	Nanaimo	Undefined Formation	
Jurassic			Island Plutonic Suite
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Andesite
Andesite Pillow Lava
Andesite Tuff
Andesite Flow
Biotite Granodiorite
Conglomerate
Sandstone
Dacite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY
ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	8.0900	Grams per tonne

COMMENTS: Sample of quartz vein.
REFERENCE: Assessment Report 17258.

CAPSULE GEOLOGY

Regionally, the area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) volcanic rocks intruded by granodiorites of the Early to Middle Jurassic Island Plutonic Suite. These rocks are unconformably overlain by conglomerates and sandstones of the Upper Cretaceous Nanaimo Group. Dacite dykes of the Late Eocene to Early Oligocene Mount Washington Intrusive Suite (previously Catface Intrusions) cut the overall sequence and numerous northwest trending shear zones and faults occur.

CAPSULE GEOLOGY

The Vulcan occurrence is underlain by Karmutsen Formation massive, chloritic andesitic pillow lavas, flows and tuffs intruded by a slightly clay-chlorite-argillite altered biotite granodiorite of the Island Plutonic Suite. Conglomerates with lesser sandstone of the Nanaimo Group occur at predominantly higher elevations. Mineralization consists of shear zone-hosted auriferous quartz veins. The shear structures are observed in all units but mineralized quartz veins occur in shears in the andesites. Pronounced alteration halos consisting of bleaching, chlorite, limonite with lesser sericite and silicification, are associated with the shear zones in the conglomerate and granodiorite. Shear zone alteration in the andesites consists of chlorite with local limonite and silicification.

Propylitized andesites host the Vulcan shear zone which strikes 039 degrees and dips 75 degrees northwest. Chlorite and carbonate content and degree of brecciation appears to increase as you approach the shear zone. Minor hematite is observed in some of the shears. Mineralization is absent in the andesites outside the contacts of the shear zone. The zone consists of intensely sheared andesite hosting discontinuous quartz and/or sulphide lenses and has been traced on surface for 37 metres. The zone ranges in width from 40 to 150 centimetres. Discontinuous lenses of quartz and sulphides occur on the footwall and hangingwall of the shear; the width of these structures ranges from 2 to 15 centimetres. Mineralization consists of blebs and pods of pyrite with local traces of chalcopyrite, galena and sphalerite. The pods range from 2 to 10 centimetres wide and can be 30 centimetres in length. A rock chip sample taken from the Vulcan shear zone from the upper level assayed 8.09 grams per tonne gold (Assessment Report 17258).

Past work on the Vulcan shear included a shaft, a drift from the shaft 5 metres below the shaft collar (upper level) and a crosscut adit (adit level) driven 12 metres below the shaft collar. The lower level (or adit level) is on a parallel structure to the Vulcan shear which is developed by the shaft and the upper level. A second zone, the E shear zone within the Vulcan shear zone, was also tested by a shaft. On the adjoining Austrian claim (Lot 49), 90 metres east, a shaft was sunk on a 60 centimetre wide auriferous quartz vein hosted in another shear zone in andesite.

A total of 15 tonnes of ore was mined in 1938 and 1940 , yielding 1,119 grams of gold, 405 grams of silver and 10 kilograms of copper.

BIBLIOGRAPHY

EMPR AR 1899-851; 1930-A303; *1937-F13-F15; 1940-A73; 1963-121,122; 1964-168
EMPR ASS RPT 5315, *17258, 18317
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR PF (Plan maps of claims survey (1897); Section of undergroud workings; 092F General File - Rpt. by H. Laanela (1965), Gunnex Ltd., Occurrence #5; Prospectus, Stow Resources Ltd. March 25, 1988)
EMR MP CORPFILE (Sileurian Chieftain Mining Company Ltd.)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/11 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 115**

NATIONAL MINERAL INVENTORY: 092G12 Cu2

NAME(S): **KING MIDAS**, V1, ART

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 092F09E 092G12W
BC MAP:
LATITUDE: 49 40 04 N
LONGITUDE: 124 00 10 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: King Midas showing.

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5502177
EASTING: 427640

COMMODITIES: Copper, Silver, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Copper, Pyrite, Magnetite
ASSOCIATED: Calcite, Epidote, Garnet
ALTERATION: Epidote, Calcite, Hematite, Specularite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Stockwork
CLASSIFICATION: Skarn, Porphyry
DIMENSION: 0075 x 0006 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Skarn zone.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Mesozoic-Cenozoic	Vancouver	Undefined Formation	Coast Plutonic Complex

LITHOLOGY: Granodiorite
Limestone
Quartz Diorite
Skarn

HOSTROCK COMMENTS: Limestone is possible of the Karmutsen Formation, Vancouver Group.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)
TERRANE: Plutonic Rocks
COMMENTS: Located in a roof pendant within the Coast Plutonic Complex.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1975
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	43.9000	Grams per tonne
Copper	2.4400	Per cent

COMMENTS: 1.8 metre sample.
REFERENCE: Assessment Report 5444.

CAPSULE GEOLOGY

The area is underlain by granodiorite and older quartz diorite of the Jurassic to Tertiary Coast Plutonic Complex. A 100 metre wide band of limestone trending 60 degrees and dipping 80 degrees, possibly of the Upper Triassic Karmutsen Formation (Vancouver Group), lies in the granodiorite. A 4 to 6 metre wide, 75 metre long skarn zone occurs along the sediment-intrusive contact.

Copper mineralization occurs in both the skarn and intrusive rock. Pyrite, chalcopyrite and occasionally native copper occur as irregular streaks and blebs in the skarn. In the intrusive, chalcopyrite occurs as stockwork and disseminations. Gangue minerals include epidote, calcite, hematite, magnetite and garnet. A 1.8 metre sample taken in 1975, assayed 2.44 per cent copper and 43.9 grams per tonne silver (Assessment Report 5444).

In 1940, an 86 tonne shipment contained 2890 grams of silver and 2343 kilograms of copper (Bulletin 39).

BIBLIOGRAPHY

EMPR AR *1937-F31
EMPR ASS RPT *5444, *7001, 7742, 12104, 16366

BIBLIOGRAPHY

EMPR BULL 39, p. 38
GSC MAP 42-1963
GSC OF 611

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/15 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 116** NATIONAL MINERAL INVENTORY: 092F14 Au1

NAME(S): **DOMINEER (MOUNT WASHINGTON)**, MOUNT WASHINGTON (DOMINEER), DOMINEER, LAKEVIEW, MWC, DJV, WEST GRID

STATUS: Developed Prospect Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 45 30 N NORTHING: 5514300
LONGITUDE: 125 18 00 W EASTING: 334348
ELEVATION: 1402 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Lakeview adit, 0.5 kilometre southwest of McKay Lake and 1.0 kilometre north of Mount Washington. See also Mount Washington Copper (092F 117).

COMMODITIES: Gold Silver Copper Lead Zinc Molybdenum

MINERALS

SIGNIFICANT: Pyrite Arsenopyrite Chalcopyrite Covellite Sphalerite Galena Bornite Molybdenite Tennantite Chalcocite Hessite Realgar Orpiment Wehrlite
ASSOCIATED: Quartz Pyrrhotite Magnetite
ALTERATION: Kaolin Chlorite Actinolite Magnetite
ALTERATION TYPE: Argillic Chloritic
MINERALIZATION AGE: Tertiary

DEPOSIT

CHARACTER: Stockwork Vein Breccia
CLASSIFICATION: Epithermal Hydrothermal Epigenetic
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation L04 Porphyry Cu ± Mo ± Au
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 1500 x 61 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Zone of mineralization.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	
Upper Triassic	Vancouver	Karmutsen	
Tertiary			Mount Washington Intrus. Suite

ISOTOPIC AGE: 35 +/- 6 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Pyroclastic Rock
Breccia
Tuff
Sandstone
Siltstone
Greywacke
Conglomerate
Basalt Pillow Lava
Quartz Feldspar Porphyry
Quartz Diorite

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Papers 72-44 and 68-50, and Bulletin 21.

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: DOMINEER REPORT ON: Y

CATEGORY: Indicated YEAR: 1989
QUANTITY: 550298 Tonnes

COMMODITY	GRADE	
Silver	32.2300	Grams per tonne
Gold	6.7500	Grams per tonne

COMMENTS: Drill indicated reserves.
REFERENCE: George Cross News Letter August 3, 1989.

CAPSULE GEOLOGY

The Domineer epithermal deposit comprises the Domineer, Lakeview and West Grid zones. The deposit lies 400 metres south of the Mount Washington Copper open pit (see 092F 117). The centre of the Lakeview zone is located 510 metres to the west of the Domineer zone, and the West Grid zone lies about 200 metres northwest of the Lakeview. The zones form a continuous shallow-dipping tabular body of argillic alteration containing discontinuous, en echelon or stacked lenses of mineralization.

The mineralized zone occurs within a subhorizontal package of Tertiary pyroclastics and underlying clastic sediments of the Upper Cretaceous Nanaimo Group (Comox Formation), which unconformably overlie mafic volcanic rocks of the Upper Triassic Vancouver Group (Karmutsen Formation). Intruding both formations is a Late Eocene to Early Oligocene quartz diorite stock of the Mount Washington Intrusive Suite (formerly Catface Intrusions - Nick Massey, Personal Communication, May 1990), dated at 35 million years (+/- 6 million years) (Carson, 1960). Several later breccia events are imposed on all other rock types locally.

The Karmutsen Formation comprises basaltic massive and pillow lavas that are commonly porphyritic. The lavas grade into pillow breccias and aquagene tuffs. The overlying Comox Formation comprises fine-grained sandstone and greywacke, with interbedded siltstone, carbonaceous shale and minor coal. A basal conglomerate of rounded clasts separates the formations.

The Tertiary quartz diorite stock is variably porphyritic and is centred on McKay Lake northeast of the summit of Mount Washington. Several sills and dykes of quartz diorite and quartz diorite porphyry are related to the stock.

Late breccia events include the Washington, Murray, Glacier, Murex (092F 206) and Oyster (092F 365) breccias; others may also be present. Of these, the Washington breccia is the youngest and is located near the Domineer zone on a ridge north of Mount Washington. The Murex breccia, located east of the Domineer deposit, is the largest and most complicated of the breccias. Other breccias and diatremes are located 2 kilometres north and 2 kilometres east of Mount Washington.

Contact relationships of the Washington breccia with the Murray breccia, the Glacier breccia and quartz diorite are crosscutting but gradational, and are often characterized by vertically oriented crackle breccia zones. Within the Washington breccia, large angular clasts dominate over a matrix of finely pulverized rock flour, which has locally been replaced by magnetite and actinolite. Slab-like fragments, with length to width ratios of 10:1 are common, and suggest that subvolcanic collapse may have been the operative process.

Capping the west arm of Mount Washington is the tabular Murray breccia which generally contains a much higher matrix component than the other breccias, although considerable variability exists. Clasts are generally subrounded to subangular and range in size from 1 to 10 centimetres, averaging about 2 centimetres. The composition of clasts is mixed and consists of varieties of quartz diorite, sandstone, siltstone and mafic volcanics. Overlying, and in places adjacent to the Murray breccia, is a crackle breccia. The Murray breccia, which is bedded and locally displays shrinkage cracks and slump folds, has recently been identified as a coarse pyroclastic deposit with associated thinner beds of fine-grained tuff (Dahl, 1989).

Mineralization at the Domineer deposit has a defined strike length of 1.5 kilometres and an average width of 61 metres. Diamond drilling indicates that mineralization extends from the Domineer zone to the Lakeview-West Grid area. Mineralization consists of a tabular zone of alteration containing a stockwork of auriferous quartz-pyrite-arsenopyrite veins and lenses. The zone occurs within one of several subhorizontal fractures and breccias which post-date the Tertiary intrusions and volcanic activity, and may represent either thrust faults or decollements (Muller, 1989).

Enveloping the quartz-sulphide veins and lenses, is a zone of pervasive kaolinite alteration. A 2 to 5 metre wide zone of hydrothermal breccia usually lies at the centre of the alteration

CAPSULE GEOLOGY

zone. This breccia consists of angular clasts of altered wallrock in a matrix of quartz and sulphides. Locally, the sulphides envelop these clasts and exhibit a banded appearance. Away from the central alteration zone is a stockwork of smaller quartz-sulphide veins. With increasing distance the veins decrease in size and frequency, alteration becomes limited to vein selvages and chlorite becomes the dominant alteration mineral.

The dominant sulphide minerals within the gold zone are pyrite and arsenopyrite. Chalcopyrite, covellite, sphalerite, galena, bornite, tennantite, wehrlite, hessite, chalcocite, realgar and orpiment are also present in varying amounts. Pyrrhotite, molybdenite and magnetite are present in the general vicinity but appear to be unrelated to the gold-bearing mineralization.

Two high grade pods have been identified. A northern pod, centred on the Domineer showing, averaged 6.99 grams per tonne gold and 58.63 grams per tonne silver over an average thickness of 1.6 metres. The southern pod, centred 180 metres to the south of the northern pod, averaged 7.06 grams per tonne gold and 45.26 grams per tonne silver over an average thickness of 2.56 metres (Assessment Report 18472).

Underground exploration and surface diamond drilling to August 1989 have established drill indicated reserves of 550,298 tonnes grading 6.75 grams per tonne gold and 32.23 grams per tonne silver (Open File 1992-1; George Cross News Letter - August 3, 1989).

BIBLIOGRAPHY

EMPR AR 1956-119; 1957-69; 1959-135; 1960-111; 1961-102; 1962-105; 1963-103; 1964-155,157; 1965-235; 1966-71; 1968-101
EMPR ASS RPT 839, 1120, 1142, 1145, 1691, 4471, 4505, 5146, 5267, 5604, 5979, 5980, 6407, 6930, 9445, 11946, 11995, 11996, 12604, *12605, 14085, *14705, 15228, *15395, 15526, 15776, 15825, 15826, 15857, 15765, 16762, 17123, 17181, *18472, 18473
EMPR EXPL 1975-E102; 1976-E116; 1977-E115; 1978-E131; 1980-175; 1983-209; 1984-166,168; 1985-C156; 1986-B29,B32,C181,C184; 1987-A77,C156-158; 1988-C92,C93
EMPR FIELDWORK *1988, pp. 81-91
EMPR GEM 1969-212; 1970-281; 1973-236; 1974-183
EMPR INF CIRC 1989-1, p. 32; 1990-1, p. 39; 1991-1, p. 74
EMPR MAP 65 (1989)
EMPR MER 1986, p. 70
EMPR OF 1992-1; 1994-6
EMPR P 1991-4, pp. 167,203
EMPR PF (W.G. Stevenson and Associates, (1970): Mt.Washington Exploration Project; W.G. Stevenson and Associates, (1969): Geological Map, 1: 12000; McElhanney, (1972): Line Cutting Map, 1:9600; Cumberland Mining Company Limited and Mount Washington Copper Company Limited, Souvenir of the Official Opening, Dec.5, 1964; Better Resources (1987): Statement of Material Facts dated June 19 1987; Photograph, (1965): Mount Washington Mill; Map (1959): Mount Washington Diamond Drill Hole Locations; Claim Map, Mount Washington Area; Noranda Exploration Company Limited (1959): Mount Washington Property Surface Plan, T. Walker, 1: 600 (waste dump area; Nicolls, O.W.,(1961): Report on the Mount Washington Domineer Drilling Option; Mount Washington Area Claims List and Ownership)
EMR MIN BULL MR 223 (1989) B.C. 98
EMR MP CORPFILE (Mount Washington Copper Company Limited; Noranda Exploration Company; Qualicum Mines Limited; Cumberland Mining Company Limited)
GSC BULL 172
GSC MAP 49-1959; 2-1965; 17-1968; 1386A
GSC OF 9; 61; 463
GSC P 66-1; 68-50, p. 39,42; 71-36; 72-44
GSC SUM RPT 1924 Part A, pp. 106-144; 1925 Part A; 1930 Part A p. 64
CIM Transactions No.72, p. 116; Special Volume 15, 1976, Table I
CMJ Jan., 1965
GCNL Sept.17, Dec.30, 1975; Sept.22, #210, 1976; May 25, Oct.26, 1977; #7, 1978; #121,#206, 1979; #128,#155, 1984; #107,#129, #142,#150,#176,#178,#194,#198,#214, 1986; #14,#91,#107, #114,#135,#175,#176,#191,#195,#212,#225, 1987; #11,#114, #144,#177,#187,#222, 1988; #13,#149,#178, 1989; #5,#198(Oct.12), 1990
N MINER Aug.11, Oct.27, Nov.17,24, 1986; Feb.2, May 18, Sep.28, Oct. 19, Nov.16, 1987; Feb.8, July 4, 1988;
NW PROSP Oct./Nov., 1988
PERS COMM N. Massey, May 1990
PR REL Better Resources Limited Jan.16, 1987, Jul.26, 1988
V STOCKWATCH Sep.15, Jul.30, Sept.30, Oct.6, Oct.13, Nov.5,9,24, 1987; Jan.19, 1988; Aug.3, Sept.12, 1989

BIBLIOGRAPHY

W MINER Nov. 1965, p. 35; Nov. 1967, pp.35-40
*Better Resources Limited (1987): Mount Washington Precious Metals Project, Vancouver Island, Coreshack, Cordilleran Roundup
Better Resources Limited Annual Report 1987; Corporate Profile (not dated); 1989 Snapshot Review; Statement of Material Facts dated Aug.1, 1984
Carson, D.J.T. (1960): Geology of Mount Washington, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Dahl, R. (1989): Unpublished EMPR Report
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 157-158
McGuigan, P.J. (1975): Certain Breccias of Mount Washington Property, Vancouver Island, B.Sc. Thesis, University of British
Mount Washington Copper Company Limited, (1971): Statement of Material Facts dated May 26, 1971
Vancouver Market Report February, 1987
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/03 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 117** NATIONAL MINERAL INVENTORY: 092F14 Cu1

NAME(S): **MOUNT WASHINGTON COPPER**, MWC 232, DOMINEER 22, DJV, GOLD

STATUS: Past Producer Open Pit MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 45 48 N NORTHING: 5514861
LONGITUDE: 125 18 08 W EASTING: 334205
ELEVATION: 1295 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Open pit, 0.8 kilometre west of McKay Lake and 1.4 kilometres north of Mount Washington. See also Domineer (092F 116).

COMMODITIES: Copper, Gold, Silver, Arsenic, Molybdenum, Zinc, Lead

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Bornite, Covellite, Realgar, Orpiment, Molybdenite, Sphalerite, Galena, Pyrrhotite, Arsenopyrite
COMMENTS: Gold and silver mineralogy not known.
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein, Disseminated, Breccia
CLASSIFICATION: Porphyry, Epithermal, Industrial Min.
TYPE: L04 Porphyry Cu ± Mo ± Au; H04 Epithermal Au-Ag-Cu: high sulphidation
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 750 x 8 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Mineralized zone.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	
Upper Triassic	Vancouver	Karmutsen	
Tertiary			Mount Washington Intrus. Suite

ISOTOPIC AGE: 35 +/- 6 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Sandstone, Diorite Sill, Breccia, Quartz Diorite, Siltstone, Greywacke, Conglomerate, Quartz Diorite Dike, Basalt Pillow Lava, Tuff

HOSTROCK COMMENTS: Age dates from GSC Paper 72-44 and 68-50. Mineralization is in Comox sediments and diorite sill.

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: MOUNT WASHINGTON COPPER REPORT ON: Y

CATEGORY: Unclassified YEAR: 1970
QUANTITY: 305720 Tonnes

COMMODITY	GRADE	
Copper	1.0700	Per cent

COMMENTS: Estimated reserves remain adjacent to the open pit.
REFERENCE: Property File - W.G. Stevenson & Associates, 1970.

CAPSULE GEOLOGY

The Mount Washington Copper deposit is located on a ridge on the north side of Mount Washington, 400 metres north of the Domineer/

CAPSULE GEOLOGY

Lakeview occurrence (092F 116).

The area of the occurrence is underlain by sediments of the Upper Cretaceous Nanaimo Group, Comox Formation, which unconformably overlie mafic volcanic rocks of the Upper Triassic Vancouver Group, Karmutsen Formation. Intruding both formations is a quartz diorite stock of the Late Eocene to Early Oligocene Mount Washington Intrusive Suite (formerly Catface Intrusions - Massey, N. Personal Communication), dated at 35 million years (+/- 6 Ma) (Carson, 1960). Several later breccias have shattered all other rock types locally. The area is also cut by sub-horizontal thrust faults that control mineralization, and near-vertical faults with a lateral displacement of more than 1.0 kilometre.

The Karmutsen Formation comprises basaltic massive and pillow lavas that are commonly porphyritic. The lavas grade into pillow breccias and aquagene tuffs. The overlying Comox Formation comprises fine-grained sandstone and greywacke, with interbedded siltstone. A basal conglomerate of rounded clasts of Karmutsen Formation rocks separates the formations.

The Tertiary quartz diorite stock is variably porphyritic and is centered on McKay Lake northeast of the summit of Mount Washington. Several sills and dykes of diorite, quartz diorite and quartz diorite porphyry are related to the stock.

The Mount Washington Copper deposit is considered to be a porphyry-type deposit with a later superimposed epithermal gold-copper-arsenic event (see 092F 116). Mineralization has been defined over a length of more than 750 metres, and continues further to the south as the auriferous epithermal zone of the Domineer/Lakeview occurrence.

The mineralization is contained in a 1.5 to 7.6 metre wide subhorizontal tabular zone at or near the contact of Comox Formation sediments and the "Pit diorite" sill of the Mount Washington Intrusive Suite. The zone contains a stockwork of chalcopyrite-pyrite-quartz veins, and disseminated chalcopyrite in the sediments and the sill. Low gold and silver values are associated with the veins. Bornite, covellite, realgar, orpiment, pyrrhotite, arsenopyrite, molybdenite, sphalerite and galena are present.

Between 1964 and 1967, 381,773 tonnes of ore was mined from two open pits producing 131 kilograms of gold, 7235 kilograms of silver and 3548 tonnes of copper. An estimated 305,720 tonnes grading 1.07 per cent copper remain adjacent to the open pit (W.G. Stevenson and Associates, 1970).

BIBLIOGRAPHY

EMPR AR 1956-119; 1957-69; 1959-135; 1960-111; 1961-102; 1962-105; *1963-103-105; 1964-155-156, 157; 1965-A53,A57,235; 1966-A48,A50,71; 1967-A50,A53; 1968-101
EMPR ASS RPT 839, 1120, 1142, 1145, 1691, 4471, 4505, 5146, 5267, 5604, 5979, 5980, 6407, 6930, 9445, 11946, 11995, 11996, 12604, *12605, 14085, *14705, 15228, *15395, 15526, 15776, 15825, 15826, 15857, 15765, 16762, 17123, 17181
EMPR BC METAL MM00175
EMPR EXPL 1975-E102; 1976-E116; 1977-E115; 1978-E131; 1980-175; 1983-209; 1984-166, 168; 1985-C156; 1986-B29, C181, C184; 1987-C156-158; 1988-C92,C93
EMPR FIELDWORK *1988, pp. 81-91
EMPR GEM 1969-212; 1970-281; 1973-236; 1974-183
EMPR MER 1986, p. 70
EMPR OF 1994-6
EMPR PF (*W.G. Stevenson and Associates, (1970): Mt.Washington Exploration Project; various reports, maps, plans and references in Domineer (see 092F 116); Geological notes, 1987)
EMR MP CORPFILE (Mount Washington Copper Company Limited; Noranda Exploration Company; Qualicum Mines Limited; Cumberland Mining Company Limited)
GSC BULL 172
GSC MAP 49-1959; 2-1965; 17-1968; 1386A
GSC OF 9; 61; 463
GSC P 66-1; 68-50, p. 39,42; 71-36; 72-44
GSC SUM RPT 1924A, pp. 106-144; 1925A; 1930A-64
CIM Transactions #72, p. 116
CMJ Jan., 1965
PERS COMM: Nick Massey, May 1990
W MINER Nov. 1965, p. 35; Nov 1967, pp. 35-40
WWW http://www.infomine.com/
Carson, D.J.T., (1960): Geology of Mount Washington, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral

BIBLIOGRAPHY

Deposits, Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 157
McGuigan, P.J., (1975): Certain Breccias of Mount Washington Property, Vancouver Island, B.Sc. Thesis, University of British
Mount Washington Copper Company Limited, (1971): Statement of Material Facts, May 26, 1971
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/17 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 118**

NATIONAL MINERAL INVENTORY:

NAME(S): **TORSE (L.1279-1283)**, BLUE BELL

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 01 30 N
LONGITUDE: 125 01 08 W
ELEVATION: 170 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Torse 1 claim (Lot 1279), showings occur from at least 170 to 410 metres elevation (Minister of Mines Annual Report 1916).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5432198
EASTING: 352412

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrrhotite Pyrite Chalcopyrite
ALTERATION: Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive
CLASSIFICATION: Skarn
COMMENTS: Massive to disseminated in lenses.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Volcanic
Skarn

HOSTROCK COMMENTS: Skarn occurs at the limestone-volcanic rock contact.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1916

COMMODITY	GRADE	
Copper	0.8000	Per cent

COMMENTS: Across 3.7 metres, also 13.71 grams per tonne silver and trace gold.
REFERENCE: Minister of Mines Annual Report 1916, page 323.

CAPSULE GEOLOGY

The area is underlain by a north trending band of Upper Triassic Vancouver Group, Quatsino Formation limestone in contact to the east with Lower Jurassic volcanics of the Bonanza Group. The strata is intruded by diorite and granodiorite of the Early to Middle Jurassic Island Intrusions.

At various elevations, along the contacts of crystalline limestone and hornblendic volcanic rock, there occurs several outcroppings of pyrrhotite, iron pyrites and chalcopyrite. The deposits generally occur in a gangue made up of epidote-garnet, altered limestone and brecciated volcanic rock. The occurrences are lenticular in structure, with irregular boundaries, and vary considerably in extent.

There is reported to be at least two promising deposits, one at 170 metres elevation and the other at 410 metres elevation. These deposits have been exposed by open cuts and/or by shafts and tunnels. An average sample from the deposit found at the higher elevation, taken across 3.7 metres, assayed 0.8 per cent copper, 13.71 grams per tonne silver and a trace of gold (Minister of Mines Annual Report 1916).

BIBLIOGRAPHY

EMPR AR *1899-782; *1916-323; 1917-450, 1929-372
EMPR BULL 3, 1917, pp. 20,21
EMPR FIELDWORK 1988, pp. 61-74
EMPR OF 1988-28
GSC BULL 172
GSC EC GEOL No.3, Vol.1, p. 226
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 119**

NATIONAL MINERAL INVENTORY: 092F6 Au1

NAME(S): **MORNING (L.975)**, MORNING 1 (L.976), COLUMBIA, JINGO BIRD, MIKE, APEX, 6 VEIN, AJ, MOSHNING, SILVER STAR, MEN, STUMP, STRINGER

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06W
BC MAP:
LATITUDE: 49 17 54 N
LONGITUDE: 125 16 10 W
ELEVATION: 175 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adits at the boundary of Morning and Morning 1 claims, 0.5 kilometres north of Taylor River, 4.0 kilometres west of Sproat lake (Assessment Report 15910).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5463099
EASTING: 335007

COMMODITIES: Gold, Silver, Copper, Zinc, Lead

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Sphalerite, Galena
COMMENTS: Gold and silver are associated with sulphides.
ASSOCIATED: Pyrite, Quartz
ALTERATION: Limonite, Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epithermal, Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Faulted, Sheared
DIMENSION: 0160 Metres
STRIKE/DIP: 055/85N
TREND/PLUNGE:
COMMENTS: The Number 7 vein strikes 055 degrees and dips 85 degrees north. Veins are hosted in a 160 metre zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic to Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

ISOTOPIC AGE: 167 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Pillow Lava
Diorite
Diorite Dike
Quartz Diorite Dike

HOSTROCK COMMENTS: Biotite from Kennedy River (Geological Survey of Canada Papers 72-44 and 68-50).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
Plutonic Rocks

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	10.0000	Grams per tonne

COMMENTS: Highest of several samples, number 6 vein.
REFERENCE: Assessment Report 15910, page 5.

CAPSULE GEOLOGY

The Morning prospect is underlain by pillow lavas of the Upper Triassic Vancouver Group, Karmutsen Formation. Diorite of the Early to Middle Jurassic Island Plutonic Suite occurs several kilometres to the northwest. Associated diorite and quartz diorite dykes at the prospect are related to these intrusions. Strong regional faults

CAPSULE GEOLOGY

trend north-northwest and northeast.

The occurrence comprises eleven parallel veins that are hosted within a 160 metre wide northeast striking zone. At least some of the veins occupy the northeast trending faults.

Early exploration concentrated on the Number 1 vein, but more recent work, and most of the underground exploration, have taken place on the Number 6 vein.

The Number 1 (Columbia?) vein has been traced for about 200 metres on surface and underground along its 060 degree strike. The quartz-pyrite vein dips vertically and is from 0.4 to 2.0 metres wide. A sample across 1.0 metre assayed 10.29 grams per tonne gold and 2.06 grams per tonne silver (Annual Report 1934, page F4).

The Number 1 East, Number 2 East and Number 3 East veins are located about 24, 30 and 73 metres east of the Number 1 vein, respectively. They have returned assays of up to 7.54 grams per tonne gold over vein widths of less than 0.3 metres (Annual Report 1934, page F5).

The Number 2 vein, also called the Stump Vein and the Stringer Vein, is located 7.6 metres northwest of the Number 1 vein. Average values of 8.23 grams per tonne gold over 0.5 metres were obtained, and a single sample assayed 85.04 grams per tonne gold (Annual Report 1934, page F5).

The Number 3 and 4 veins appear to be branches of the same vein and are located 20 metres west of the Number 2 vein. The Number 4 vein ranges in width from 0.24 to 0.55 metres, with gold values between 3.09 and 7.54 grams per tonne. The Number 3 vein is narrow and contains up to 10.29 grams per tonne gold (Annual Report 1934, page F5). The Number 5 vein, 12.2 metres west of Number 4, has not received any work.

The Number 6 vein lies about 17 metres northwest of Number 5 and follows a strong fault. The 1.0 metre wide vein comprises quartz and country rock fragments, with clay gouge on the vein walls. Locally, the vein branches, or several parallel veins are present within the fault. The vein contains up to 25 per cent pyrite, and minor chalcopyrite, galena, sphalerite, malachite and limonite. Gold values of up to 10.0 grams per tonne are associated with the sulphides (Assessment Report 15910, page 5).

The Number 7 vein is located 20 metres northwest of the Number 6 vein. It is narrow, strikes 055 degrees and dips 80 degrees northwest.

The Number 8 vein, located 20 metres north of Number 7, has the same strike as Number 7 but dips 80 degrees southeast. It contains quartz and pyrite, and only low gold values were obtained.

BIBLIOGRAPHY

EMPR AR 1899-781, 785; 1907-147, 148; 1908-142; 1916-318, 319; 1922-229; 1923-242; 1924-222; 1925-268; 1926-297; 1927-342; 1929-373; 1930-292; *1934-F4; 1960-110; 1961-103; 1963-121
EMPR ASS RPT 5368, 5858, 7260, *15910, 17420
EMPR BULL 1, p. 33
EMPR EXPL 1976-E113; 1979-130; 1987-C149
EMPR FIELDWORK 1976, p. 31
EMPR GEM 1974-176
EMPR GEOLOGY 1976, p. 45
EMPR PF (Highland Mercury Mines Ltd, (1976): Claim Map, 1: 12,000; Morning Group clipping, source, date unknown; *Eastwood, G.E.P., (1977): Report on the Morning Property)
EMR MP CORPFILE (United Chieftain Resources Limited; Lou-Mex Mines Limited)
GSC MAP 17-1968; 1386A
GSC OF 9; 61; 463
GSC P 66-1; 68-50; 72-44
CANMET IR 643, pp. 55-58; 688, pp. 32-34
GCNL #40, #89, #104, 1976
N MINER Jun. 3, 1976
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/14 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 120**

NATIONAL MINERAL INVENTORY: 092F5 Cu2

NAME(S): **CATFACE**, CLIFF

STATUS: Developed Prospect Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 15 23 N
LONGITUDE: 125 58 51 W
ELEVATION: 823 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of main showing on the Catface peninsula, 3 kilometres west of Hecate Bay (Canadian Institute of Mining and Metallurgy Special Volume 15). See also Irishman Creek (092F 251) and Hecate Bay (092F 231).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5460234
EASTING: 283110

COMMODITIES: Copper, Molybdenum, Silver, Gold, Rhenium

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Chalcocite, Molybdenite, Covellite, Digenite, Copper, Valleriite, Tenorite, Cuprite, Scheelite
ASSOCIATED: Pyrite, Pyrrhotite, Quartz, Magnetite, Idaite, Chalcedony
ALTERATION: Malachite, Chlorite, Epidote, Zoisite, Sericite, Kaolinite, Biotite, Hematite
ALTERATION TYPE: Oxidation, Propylitic, Argillic
MINERALIZATION AGE: Tertiary

DEPOSIT

CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Porphyry, Hydrothermal, Industrial Min.
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: 650 x 350 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Zone of greater than 0.2 per cent copper measures 650 metres in diameter to a depth of 350 metres.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Paleozoic	Sicker	Undefined Formation	
Jurassic			Island Plutonic Suite
ISOTOPIC AGE: 166 +/- 8 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			
Eocene			Tofino Intrusive Suite
ISOTOPIC AGE: 48 +/- 12 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Basalt, Andesite, Tuffaceous Breccia, Quartz Monzonite, Diorite, Quartz Diorite, Porphyritic Granodiorite, Porphyritic Dacite, Andesite Dike, Dacitic Dike

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Paper 72-44.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Hornfels

INVENTORY

ORE ZONE: CATFACE REPORT ON: Y

CATEGORY: Indicated YEAR: 1990
QUANTITY: 188000000 Tonnes

COMMODITY	GRADE	
Copper	0.4200	Per cent
Molybdenum	0.0084	Per cent

COMMENTS: At a 0.30 per cent copper cut-off and 1.1:1 stripping ratio; 0.014 per cent M0S2. Other calculations are listed in Special Volume 46.
REFERENCE: CIM Special Volume 46, page 325.

CAPSULE GEOLOGY

The Catface deposit lies at the contact between mafic volcanics (Sicker(?) or Vancouver(?) groups rocks) and diorite of the Mesozoic and/or Paleozoic Westcoast Complex. The area of the contact has been intruded by the Early to Middle Jurassic Island Plutonic Suite and several phases of the Early to Middle Eocene Tofino Intrusive Suite (formerly Catface Intrusions, Personal Communication, N. Massey, May 1990). See also Irishman Creek (092F 251) and Hecate Bay (092F 231).

The mafic rocks consist of basalt and andesite flows, tuff breccia and agglomerate. It remains unclear as to whether these rocks belong to the Paleozoic Sicker Group or to the Upper Triassic Karmutsen Formation, Vancouver Group. The volcanic rocks have been weakly hornfelsed near the intrusions.

Rocks of the Westcoast Complex are considered to be intrusive and/or dioritized pre-Jurassic rocks that include Sicker Group rocks (Canadian Institute of Mining and Metallurgy Special Volume 15, page 301).

A sill-like quartz monzonite intrusion, containing xenoliths of volcanic rocks, was emplaced along the volcanic-diorite contact. The age of this quartz monzonite is unknown, but is probably related to the Island Intrusions. Propylitic alteration minerals in the quartz monzonite include chlorite, epidote, zoisite, and sericite. Kaolinite, quartz, biotite and magnetite are also recognized as alteration products.

Several phases of the Tertiary intrusions have intruded all other rocks. These include the Hecate Bay quartz diorite, dated at 48 million years, three porphyritic granodiorite phases and a late-stage porphyritic dacite. Their emplacement was, to some extent, controlled by pre-existing structures or contacts. Late (but pre-ore) andesite, dacite and quartz feldspar porphyry dykes trend north to northwest and dip 50 to 70 degrees east. Faults predate mineralization and strike northerly and easterly.

Jointing in the younger intrusive rock trends north to northeast, dipping 50 to 70 degree east. A less persistent joint set in these intrusions trends east to southeast and dips steeply north. Joints in the volcanic rocks trend 156 degrees and dip 51 degrees east.

Copper and molybdenum mineralization occur on dry fractures and in quartz veinlets. Molybdenite also occurs as rosettes in quartz veins, and disseminated copper mineralization is associated with mafic minerals.

Copper minerals include chalcopyrite, bornite and some chalcocite, with significant secondary carbonate and copper oxide minerals occurring on fractures. Other minerals recognized include pyrite, pyrrhotite, covellite, idaite, digenite, native copper, cuprite, valleriite, tenorite, limonite, goethite, magnetite, hematite, cupriferous chalcedony-opal and scheelite.

Mineralization shows distinct zoning, with a core of bornite-pyrite-pyrrhotite surrounded by a zone in which chalcopyrite predominates. The area of 0.2 per cent copper mineralization extends over 650 metres, to a depth of approximately 350 metres. The best mineralization is located in the volcanic rocks and in the younger porphyritic phases, but the grade is not consistent.

The earliest evidence of exploration at Catface is a caved adit driven about 5 metres into a highly fractured and oxidized shear; the main property was evidently not investigated between the turn of the century and 1960. In 1960, a local mine operator, John Jackson, and G. Davis, pilot prospector for Falconbridge Nickel Mines, made a brief visit to a cliff face displaying a conspicuous copper stain. Mineralized and high oxidized samples prompted a more thorough examination by Falconbridge geologist J. McDougall and company helicopter pilot R. Hepworth who then staked the property.

Falconbridge, through Catface Copper Mines Ltd., conducted exploration between 1961 and 1979. This included driving an 857-metre adit and drilling more than 19,000 metres in 127 surface and underground holes. Numerous metallurgical tests were conducted, and a bulk sample was shipped to Falconbridge's Tasu mine (103C 003) on the west coast of the Queen Charlotte Islands for processing. The geology of the property was mapped; soil and silt geochemical surveys

CAPSULE GEOLOGY

were completed. Limited geophysical test surveys including I.P./resistivity, self-potential and magnetic surveys were conducted in selected areas. The claims were also surveyed at this time.

In 1989 and 1990, Falconbridge Limited re-activated the project to increase the resource and to determine gold content of the copper mineralization. The program included detailed adit sampling for copper and gold, geological mapping of selected areas, a 19 line-kilometre I.P./resistivity, VLF and magnetometer survey to cover accessible areas, 150 line-kilometre of combined airborne magnetometer and VLF (EM) surveys covering most of the claim block and metallurgical tests. An environmental base-line survey was also carried out. Four holes (1628 metres) were drilled to test chargeability anomalies.

Between 1960 and 1990, total expenditures by Falconbridge Limited on the Catface project amounted to nearly $10 million (constant $1990). In 1990, Falconbridge Limited planned to take the claims to mining lease status and a drilling program to test the large IP anomalies south of South Peak. Granting of required work permits was delayed by the Clayoquot Land Use dispute; consequently, the Catface project was abruptly cancelled and exploration funding was transferred to other projects. Catface lies within a General Integrated Management Zone designation (multiple use). In 1999, Doublestar Resources Ltd. is acquiring the property.

Unclassified reserves in 1971 were 181.4 million tonnes grading from 0.45 to 0.50 per cent copper (EMR Mineral Bulletin MR 223 B.C. 95). In 1990, Falconbridge calculated a drill indicated resource of 188 million tonnes of 0.42 per cent copper and 0.0084 per cent molybdenum (0.014 per cent M0S2) at a 0.30 per cent copper cutoff and 1.1:1 stripping ratio (CIM Special Volume 46, page 325). Other calculations are listed in Special Volume 46.

In 1999, Doublestar Resources Ltd. plans to acquire the property from Falconbridge Limited.

BIBLIOGRAPHY

EM EXPL 1999-25-32
EMPR AR 1898-1133; 1909-147; 1910-152; 1961-101; 1962-105; 1963-102; 1964-155; 1967-74; 1968-102
EMPR ASS RPT 540, 541, 580
EMPR GEM 1970-287; *1971-236-245; 1972-266
EMPR MAP 65 (1989)
EMPR OF 1992-1; 1998-8-F, pp. 1-60
EMPR PF (McDougall, J.J. (1962): Interim Report on Catface Copper Prospect to October 15, 1962; Various maps and sketches by J.J. McDougall, 1962; Photographs of Catface Camp; McDougall, J.J. (1976?): Catface; Notes by T. Schroeter with photographs, 1989; Correspondence on X-ray data on samples, A. Panteleyev, 1989; Geology notes and rock samples from property visit, A. Panteleyev, 1989; Thin sections; Doublestar Resources Ltd., Annual Report, December 1999)
EMR MIN BULL MR 223 B.C. 95
EMR MP CORPFILE (Falconbridge Nickel Mines Limited; Catface Copper Mines Limited; Thunder Valley Mines Limited)
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 9; 61; 463
GSC P 66-1; 66-17, p. 15; 68-50, pp. 39-45; 72-44
GSC SUM RPT 1920 Part A
CIM Special Volume *15, 1976, pp. 299-310; *46, pp. 322-326
GCNL Sept.29, 1971
WWW http://www.infomine.com/
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1999/10/13 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 121**

NATIONAL MINERAL INVENTORY:

NAME(S): **AU**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 08 44 N
LONGITUDE: 125 23 39 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shear zone adjacent and parrallel to a west flowing stream that flows into Kennedy River, just north of Kennedy Lake (Assessment Report 12725).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5446397
EASTING: 325403

COMMODITIES: Gold, Copper, Zinc

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Chalcopyrite, Sphalerite
ASSOCIATED: Quartz
ALTERATION: Clay, Silica, Sericite
ALTERATION TYPE: Argillic, Silicific'n, Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0550 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Mineralized shear zone 550 metres in length trends east-west.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Granodiorite
Volcanic
Basalt
Porphyritic Andesite Dike
Hornfels

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Hornfels

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1983

COMMODITY	GRADE	
Gold	8.6400	Grams per tonne

COMMENTS: From a 0.7 metre drill section.
REFERENCE: Assessment Report 12725.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group, Karmutsen Formation volcanics which are intruded by and in fault contact with granodiorite of the Early to Middle Jurassic Island Intrusions. The volcanics are massive, fine grained and greenish. They contain zones of up to 8 per cent disseminated pyrite and pyrrhotite near to the granodiorite intrusion, where they have been hornfelsed to a flinty hard, biotitic, dark grey rock. Andesite dykes, many porphyritic containing feldspar phenocrysts, are commonly observed within the granodiorite. They are thought to cut the volcanics as well but have not been recognized because of their similar appearance.

All of the above rock types are cut by later quartz veins and an east-west trending mineralized shear zone which has been traced for approximately 550 metres. The shear zone has been mineralized with quartz, pyrite, and traces of sphalerite and chalcopyrite. Although the shear zone cuts the volcanics, the mineralized quartz portion

CAPSULE GEOLOGY

does not. Typically, the mineralized zone contains clay gouge on both sides of a highly fractured quartz vein that is up to 1 metre wide. An alteration halo, from 3 to 10 metres, surrounds the vein and consists of a hard, grey, mottled, pyritized and fine-grained mass, interpreted as a being a silicified shear breccia. Traces of sericite were also observed. The average width of the vein is from 0.3 to 0.4 metres with assays up to 38.57 grams per tonne gold. A drill hole section contained 8.64 grams per tonne gold over 0.7 metres (Assessment Report 12725).

BIBLIOGRAPHY

EMPR ASS RPT 7392, 8242, *12725
EMPR BULL 55
EMPR EXPL 1979-129; 1980-169; 1983-198
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/11/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 122** NATIONAL MINERAL INVENTORY:

NAME(S): **MARY MCQUILTON**, ABCO

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 25 02 N NORTHING: 5477831
LONGITUDE: 125 52 54 W EASTING: 291007
ELEVATION: 770 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The main workings are at 770 metres elevation but other important showings are found as low as 440 metres elevation (Property File - Claim map, Abco Mines 1939). The deposit is located on the north side of Cother Creek Valley, about 1 kilometre east of the head of Herbert Inlet.

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS
SIGNIFICANT: Gold Chalcopyrite Galena Sphalerite Pyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0027 x 0004 Metres STRIKE/DIP: 045/55N TREND/PLUNGE:
COMMENTS: Shear zone hosting Mary McQuilton lode.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Dacite
Andesite
Feldspar Porphyry Dike
Andesite Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1935
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	212.5700	Grams per tonne
Gold	448.8000	Grams per tonne

REFERENCE: Geological Survey of Canada Memoir 204.

CAPSULE GEOLOGY

The oldest rocks in the area are sedimentary rocks of the Paleozoic Sicker Group, which elsewhere on Vancouver Island are correlative with the upper part of the Myra Formation of that group. In the Cowichan uplift this package has been reassigned to the newly created Mississippian to Pennsylvanian Fourth Lake Formation of the Buttle Lake Group.

These rocks are bounded on the west by Herbert Inlet while on the north, south and east they are overlain by mafic to intermediate volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. These volcanics include tuffs, breccias, feldspar porphyry dykes and andesitic flows, dykes and sills. A small area of diorite, belonging to the Early to Middle Jurassic Island Intrusions, is exposed along the east side of Herbert Inlet.

Fourteen distinct mineral showings are exposed in a creek bed, mainly between 440 and 770 metres elevation. The showings consist of shears and fractures, with various strikes and dips, hosting quartz-carbonate veins. Occurring sparingly within the veins are pyrite, galena, sphalerite and minor chalcopyrite. Free gold can be found in many of the veins and in one case was observed in the adjacent ande-

CAPSULE GEOLOGY

sitic breccia. The host rocks are described as greenstone, predominantly dacite, and feldspar porphyry dykes.

The Mary McQuilton lode is the most significant of the showings, occurring at 770 metres elevation. The deposit consists of a shear zone, up to 3.7 metres in width, containing parallel veins separated by shattered andesite (dacite?). The strike of the zone is 045 degrees and the dip is 50 to 60 degrees northwest. As of 1935, the vein had been exposed along its length for over 27 metres. Two parallel veins along the hangingwall host pyrite and chalcopyrite. The upper vein, from 15 to 46 centimetres in width, is sparsely mineralized with sulphides. A sample assayed 448.80 grams per tonne gold and 212.57 grams per tonne silver (Geological Survey of Canada Memoir 204). The second vein, 60 centimetres below the first, is 15 to 38 centimetres wide and contains finer sulphides.

According to one mine plan dated July 13, 1940 over 440 metres of tunnelling had been completed, apparently on the Mary McQuilton zone. Seventy-eight tonnes of ore were mined between 1935 and 1938, from which was extracted 7,217 grams of gold, 3,204 grams of silver and 265 kilograms of copper (Mineral Policy data). In 1962, an adit was driven for 137 metres along a strong shear zone at an elevation of 300 metres.

BIBLIOGRAPHY

EMPR AR 1933-252; *1935-F40; 1937-A40; 1938-F69; 1959-137; 1960-106; 1962-104
EMPR ASS RPT 18460
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*McDougall, B.W.W. (1934): Report on the Mary McQuilton Group; Company report by Abco Mines Limited, Sept.22, 1934; Various surface workings and mine plans by Abco Mines Ltd. and Premier Gold Mining Company; Assay sheets of Abco surface workings, Premier Gold Mining Company, 1939; Prospectus: Golden Parl Resources Ltd., August 28, 1989)
GSC MAP 17-1968; 1386A
GSC MEM *204 pp. 21-23
GSC OF 463
GSC P 68-50, p.38; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 123** NATIONAL MINERAL INVENTORY:

NAME(S): **BIG BOY 1 (L.1714)**, BIG BOY 2 (L.1715), BIG BOY 3 (L.1716)

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 25 22 N NORTHING: 5478497
LONGITUDE: 125 53 57 W EASTING: 289762
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The main workings appear to be where the adit is located at the mouth of the Moyeha River (Herbert Inlet) on the Big Boy 1 Crown Grant (Lot 1714). The surface workings on the composite vein system are located on the border between Big Boy 2 (Lot 1715) and Big Boy 3 (Lot 1716), 40 metres east of the adit at about 150 metres elevation (Minister of Mines Annual Report 1935).

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Galena Sphalerite Pyrite Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: STRIKE/DIP: 140/35S TREND/PLUNGE:
COMMENTS: Vein explored by adit.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Porphyritic Andesite
Granite
Quartz Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1935
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	17.1400	Grams per tonne
Gold	51.4300	Grams per tonne

COMMENTS: Across 15 centimetres of the vein explored by the adit.
REFERENCE: Minister of Mines Annual Report 1935, page F45.

CAPSULE GEOLOGY

The area is underlain by andesite of the Upper Triassic Karmutsen Formation, Vancouver Group. The area to the west of the volcanics is intruded by a stock of the Early to Middle Jurassic Island Plutonic Suite. These plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite. Dykes of quartz porphyry are also reported to cut the andesite.

The deposit consists of two vein types: 1) a mineralized lens-like quartz vein, on the east bank of the Moyeha River at its mouth and; 2) a composite vein system of numerous 5 centimetre (and less) wide veins (located about 400 metres east of the river deposit).

The vein located on the river bank was mined by an adit that, by late 1935, had been driven eastward for 19 metres. The vein is described as lens-like, varying from 2.5 to 20 centimetres in width, with an average strike of 140 degrees and a dip of 35 degrees southwest. The vein branches into a hangingwall and footwall vein; but 7

CAPSULE GEOLOGY

metres from the portal they join and continue as one vein which varies in width from 1 to 10 centimetres. The quartz is milky, somewhat vuggy, and contains small amounts of pyrite, chalcopyrite, sphalerite, galena, and free gold. A 15 centimetre chip assayed 51.43 grams per tonne gold and 17.14 grams per tonne silver (Minister of Mines Annual Report 1935). A sample, taken 12 metres from the portal, contained 304.57 grams per tonne gold (Geological Survey of Canada Memoir 204).

The host rock is a very platy porphyritic andesite. The attitude of jointing in the andesite is reported to be the same as that of the quartz vein.

The composite vein system is hosted by andesite, quartz porphyry and granite. The zone of veining is 115 metres long but the aggregate vein lengths are reported to total only 11 metres. The veins have an average strike of 160 degrees and dip of 25 degrees east. These veins typically carry only a little chalcopyrite and galena. At one showing, however, a 10 centimetre vein was found to contain an abundance of these sulphides. A 10 centimetre sample across this vein assayed 425.15 grams per tonne gold and 377.15 grams per tonne silver (Minister of Mines Annual Report 1935).

There are four years in which mining production was recorded: 1933, 1939, 1940 and 1941. From a total of 63 tonnes mined during these years, 5,070 grams of gold, 2,956 grams of silver, 212 kilograms of copper and 203 kilograms of lead were produced (Mineral Policy data).

BIBLIOGRAPHY

EMPR AR 1933-251; *1935-F43; 1940-27; 1941-27
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (Sketch of mine and surface workings)
GSC MAP 17-1968; 1386A
GSC MEM *204, p. 20
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/18 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 124**

NATIONAL MINERAL INVENTORY: 092F13 Fe2

NAME(S): **SUMPTER**, LORRAIN FR. (L.117), ELIZABETH FR. (L.116), BEATRICE, SOLOMON, BACON LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E
BC MAP:
LATITUDE: 49 57 39 N
LONGITUDE: 125 36 49 W
ELEVATION: 240 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the western shore of Upper Campbell Lake, near its northern end (Geological Survey of Canada Map 2-1965).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5537550
EASTING: 312549

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Magnetite
ASSOCIATED: Garnet Epidote Quartz
ALTERATION: Garnet Magnetite Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Granodiorite
Skarn

HOSTROCK COMMENTS: Skarn in limestone near granodiorite intrusive.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHAFT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1916
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	96.0000	Grams per tonne
Copper	3.0000	Per cent

REFERENCE: Minister of Mines Annual Report 1916, page 327.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group, Quatsino Formation limestone and the western contact of the Quinsam granodiorite of the Early to Middle Jurassic Island Plutonic Suite.

A shaft has been sunk for a depth of 5 metres on a showing of garnet and epidote containing a little bornite and chalcopyrite in grey limestone. A narrow fissure cutting across the shaft is mineralized with garnet and quartz and the same two sulphides. A sample from the bottom of the shaft assayed 96.00 grams per tonne silver, 3 per cent copper and a trace of gold (Minister of Mines Annual Report 1916).

A nearby open-cut exposes 2.4 metres of copper stained garnetite with a little magnetite in altered crystalline limestone. A pronounced fault wall on the north side of the mineralized zone strikes 040 degrees along a hill and similar mineralization occurs for about 23 metres.

BIBLIOGRAPHY

EMPR AR *1916-327; 1928-377; 1929-384; *1930-300
EMPR BULL 3, 1917
EMPR P 1989-3
GSC BULL 172

BIBLIOGRAPHY

GSC EC GEOL *#3, Vol.1, p. 78
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50, p.39; 71-36; 72-44
GSC SUM RPT *1930, Part A, p. 72
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/27 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 125**

NATIONAL MINERAL INVENTORY:

NAME(S): **FLOWER RIDGE**, BUTTLE BELL 4

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12E
BC MAP:
LATITUDE: 49 33 17 N
LONGITUDE: 125 31 54 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located to the east of the southern end of Buttle Lake (Assessment Report 511).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5492204
EASTING: 316902

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Discordant
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION: STRIKE/DIP: 135/90 TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Quartz Sericite Schist
Andesite
Tuff
Breccia
Agglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The showing occurs within the Buttle Lake uplift in an area underlain by rocks of the Paleozoic Sicker Group. The geology of the uplift has recently undergone revision and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and the Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, Personal Communication, 1990). Refer to the H-W deposit (092F 330) for a summary of the revised interpretation.

The property rocks are described as tuffs, breccias, agglomerates and andesitic flows. These are intruded by andesitic and diabase dykes. A series of parallel to subparallel shears strike in a northwest direction and dip mainly to the north. One vertical shear strikes from 130 to 140 degrees and contains minor chalcopyrite in a quartz sericite schist.

BIBLIOGRAPHY

EMPR ASS RPT *533
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44; 79-30; 80-16
PERS COMM: Nick Massey, Feb., 1990
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/22 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 126**

NATIONAL MINERAL INVENTORY:

NAME(S): **LEADER LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 25 38 N
LONGITUDE: 125 33 29 W
ELEVATION: 1265 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Near Leader Lake at the head waters of McBridge Creek. Apparently discovered by Ministry of Energy, Mines and Petroleum Resources staff while on traverse (Property File - MINFILE Coding Card, 1965).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5478096
EASTING: 314512

COMMODITIES: Copper, Silver, Lead

MINERALS
SIGNIFICANT: Chalcopyrite, Galena, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear, Discordant
CLASSIFICATION: Epigenetic, Hydrothermal
DIMENSION: 0037 x 0003 Metres
STRIKE/DIP: 315/60N
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Diabase, Limestone, Tuff, Argillite, Porphyry Dike, Quartz Diorite, Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1965
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	24.0000	Grams per tonne
Copper	6.1900	Per cent
Lead	0.5800	Per cent

REFERENCE: Property File (Mineral Deposit Inventory card).

CAPSULE GEOLOGY

The area about Leader Lake is primarily underlain by rock of the Early to Middle Jurassic Island Plutonic Suite. These plutonic rocks vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite. The deposit is reported to be associated with diabase intrusive, limestone, tuff, argillite, and porphyry dykes of the Upper Triassic Karmutsen Formation, Vancouver Group.

Patchy lensoidal pods of sulphide consisting of chalcopyrite, galena, and pyrite occur along a northeast trending fault zone. The zone strikes at 315 degrees and dips from 50 to 70 degrees northeast. It measures from 9 to 37 metres in length and from 1.5 to 3 metres in width. A grab sample assayed 24.00 grams per tonne silver, 6.19 per cent copper, 0.58 per cent lead and a trace of gold (Property File - MINFILE Coding Card, 1965).

BIBLIOGRAPHY

EMPR BULL 8; 13; 20
EMPR PF (*MINFILE Coding Card, 1965)

BIBLIOGRAPHY

GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/13 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 127**

NATIONAL MINERAL INVENTORY:

NAME(S): **BALLENAS ISLANDS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F08E
BC MAP:
LATITUDE: 49 20 46 N
LONGITUDE: 124 09 20 W
ELEVATION: 25 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Center of surface trace of limestone band on the east side of North Ballenas Island (Geological Survey of Canada Open File 1272, Sheet 6).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5466575
EASTING: 416068

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Albite Silica
MINERALIZATION AGE: Pennsylvan.-Permian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 53 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Folded into a northwest plunging syncline.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Sicker	Nanoose	

DATING METHOD: Fossil
MATERIAL DATED: Brachinopods/Fusulinids

LITHOLOGY: Argillaceous Limestone
Argillite
Greywacke

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE:
COMMENTS: Situated in the offshore extension of the Nanoose Uplift.

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

A 46 to 60 metre thick bed of grey argillaceous limestone of the Permian to Pennsylvanian Nanoose Formation (Sicker Group) possibly correlative with the Fourth Lake Formation (Buttle Lake Group) outcrops on the North and South Ballenas Islands, 25 kilometres northwest of Nanaimo. The limestone contains crinoids, brachiopods, corals and fusilinids and is underlain by brown argillite and greywacke, which grade downward into green and grey bedded tuffs. The entire sequence is folded into a northwest plunging syncline. The limestone is partially silicified and displays a well developed slaty cleavage. In places the limestone contains up to 10 per cent albite grains.

BIBLIOGRAPHY

EMPR BULL 40, p. 47
EMPR OF 1988-24, p. 49
GSC MAP 49-963; 17-1968
GSC OF 463; 1272
GSC P 68-50, pp. 8,9; 79-30, p. 18
GSC PROG RPT 1873-74, pp. 94-102
Edgeworth, A.L. (1973): Geology of the South Ballenas Island, University of British Columbia B.Asc. Thesis

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/11 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 128**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOLLY**, BENTHAM

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 092F16W
BC MAP:
LATITUDE: 49 53 59 N
LONGITUDE: 124 26 31 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of mineralization, 0.5 kilometres west of Haslam Lake (Geological Survey of Canada Economic Geology 20 p. 257).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5528478
EASTING: 396447

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite
ASSOCIATED: Quartz Magnetite
ALTERATION: Molybdite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Vein Disseminated
CLASSIFICATION: Hydrothermal Porphyry Mesothermal
DIMENSION: 0300 Metres STRIKE/DIP: 040/60N TREND/PLUNGE:
COMMENTS: Attitude of dykes containing disseminated molybdenite. Minor amounts of molybdenite are reported to occur in 300 metre area.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Molybdenite

LITHOLOGY: Diorite
Quartz Diorite
Aplite Dike
Fine Grained Granitic Dike

HOSTROCK COMMENTS: Age date from Powell Lake area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1963
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Molybdenum	0.2000	Per cent

COMMENTS: Highest of 7 chip samples.
REFERENCE: GSC Economic Geology Report 20, page 257.

CAPSULE GEOLOGY

The Molly occurrence is located within diorite and quartz diorite of the Cretaceous Coast Plutonic Complex.

Small amounts of molybdenite are reported over a 300 metre area. The mineralization is disseminated in aplite and fine-grained granitic dykes, in quartz-filled joints, and in quartz veins.

The main workings are located 500 metres west of Haslam Lake. An open cut and an adit expose three aplite dykes cutting quartz diorite. The dykes strike 040 degrees and dip 60 degrees north, and range from 10.0 to 46.0 centimetres in width. Small flakes of molybdenite are associated with pegmatitic quartz and feldspar on the footwall side of the largest of the dykes.

About 270 metres southeast of the main workings, the dump of a sloughed trench contains molybdenite and chalcopyrite in 1.3 to 5.0 centimetre wide quartz stringers. Twenty five metres southwest of the trench, stripping over 10 metres exposed a quartz vein stockwork

CAPSULE GEOLOGY

in quartz diorite. The quartz veins range from 0.2 to 3.8 in width and are spaced between 10.0 to 61.0 centimetres apart, and contain molybdenite and chalcopyrite. The highest of 7 chip samples assayed 0.2 per cent molybdenite (Geological Survey of Canada, Economic Geology Report No.20, page 257).

Thirty metres southwest from this showing, a 050 degree striking quartz vein ranges in width from 5.0 to 15.0 centimetres and contains minor molybdenite and chalcopyrite.

North of the main workings, a 15.0 to 30.5 centimetre wide quartz vein strikes 050 degrees and dips 75 degrees north, and contains magnetite, molybdenite and molybdic oxide.

Several other small occurrences are reported within the area.

BIBLIOGRAPHY

EMPR AR 1968-73
EMPR ASS RPT 1864, 2411
EMPR BULL *1940-9, p. 47
EMPR GEM 1969-190; 1970-229
GSC ECON GEOL RPT *20, p. 257
GSC MAP 1386A; 17-1968
GSC OF 611
GSC P 66-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/07 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 129**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUNSHINE (L.336)**, FERN (L.332), FERN NO. 1 (L.334)

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 00 27 N
LONGITUDE: 124 59 40 W
ELEVATION: 260 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Sunshine Group of claims is located along the shore of Uchucklesit Inlet, and north up the mountain slopes. The main copper showing is believed to occur on the Sunshine claim (Lot 336 (Minister of Mines Annual Report 1928).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5430206
EASTING: 354147

COMMODITIES: Copper, Silver, Iron

MINERALS

SIGNIFICANT: Chalcopyrite, Magnetite, Pyrrhotite, Pyrite
ALTERATION: Garnet, Epidote, Tremolite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Vein
CLASSIFICATION: Skarn, Industrial Min.
DIMENSION: 0007 x 0001 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: The largest of the magnetite bodies covers a 7.5 by 1.5 metre area.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Andesite
Diorite
Skarn

HOSTROCK COMMENTS: Skarn in limestone (and andesite) adjacent to diorite intrusive.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group, Quatsino Formation limestone in contact with andesite of the Lower Jurassic Bonanza Group. The strata is intruded by diorite of the Early to Middle Jurassic Island Plutonic Suite. The intrusive has altered the limestone to masses of garnet and epidote, while the andesite is intensely fractured and metamorphosed containing bunches and stringers of garnet, epidote and tremolite.

Small lenticular bodies of magnetite occur in the contact altered limestone, the largest covers a 7.5 by 1.5 metre area. Other irregular shaped masses of very impure rocky magnetite, impregnated with considerable pyrite and chalcopyrite occur. Two showings of micaceous hematite associated with magnetite are also present. The most promising showing is reported to be a vein, striking 155 degrees and from 60 to 90 cetimetres wide, consisting of alternating masses of pyrrhotite and chalcopyrite.

At least three tunnels were driven on the deposits in the early part of the century. From one of the tunnels, driven on the pyrrhotite-chalcopyrite vein, about 6.3 tonnes of ore was shipped, from which was extracted 758 kilograms of copper (Minister on Mines Annual Report 1928). Mineral Policy data indicates that from 5 tonnes of ore mined in 1916, 869 kilograms of copper and 218 grams of silver were produced.

BIBLIOGRAPHY

EMPR AR 1902-230; 1905-250; 1913-277; *1916-288; 1918-258; *1928-368; 1929-372; 1930-292

BIBLIOGRAPHY

EMPR BULL 3, 1917
EMPR FIELDWORK 1988, pp. 61-74
EMPR OF 1988-28
GSC BULL 172
GSC EC GEOL *3, Vol.1, pp. 226-228
GSC MAP 49-1963; 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/10 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 130**

NATIONAL MINERAL INVENTORY:

NAME(S): **IRON MOUNTAIN**, MAGNETIC NO. 1

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 06 50 N
LONGITUDE: 125 06 22 W
ELEVATION: 75 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: About 3.2 kilometres from the head of Henderson Lake, on the west side of the lake.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5442252
EASTING: 346310

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite
ASSOCIATED: Garnet Epidote
ALTERATION: Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Podiform
CLASSIFICATION: Skarn Industrial Min.
TYPE: K03 Fe skarn
DIMENSION: 21 x 4 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Largest magnetite body.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Quatsino	Island Plutonic Suite

LITHOLOGY: Limestone
Skarn
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: IRON MOUNTAIN REPORT ON: Y

CATEGORY: Inferred YEAR: 1916
QUANTITY: 250000 Tonnes

COMMODITY	GRADE	
Iron	50.0000	Per cent

COMMENTS: Possible ore. A preliminary estimate of actual ore was 18,000 tonnes. No grade given; 50 per cent taken from high assay.
REFERENCE: Minister of Mines Annual Report 1916, page 286.

CAPSULE GEOLOGY

A series of iron skarn showings occur in a large bluff over a length of 85 metres. The area is underlain by diorite of the Early to Middle Jurassic Island Plutonic Suite. Small outcroppings of silicified limestone, adjacent the skarn, are likely remnants of the Upper Triassic Quatsino Formation, Vancouver Group.

Massive magnetite occurs in pods with some skarn material, entirely surrounded by skarn material composed of garnet and epidote. The largest deposit covers approximately 21 by 4.5 metres of area. A sample of the magnetite yielded 50 per cent iron, 0.24 per cent sulphur, 22 per cent silica, and no phosphorus. A preliminary estimate of actual ore was reported at 18,000 tonnes and possible ore at 250,000 tonnes (Ministry of Mines Annual Report 1916, page 286). No grade estimate was given.

BIBLIOGRAPHY

EMPR AR *1902-213; *1916-286
EMPR BULL 3, 1917
EMPR FIELDWORK 1988, pp. 61-74

BIBLIOGRAPHY

EMPR OF *1988-28, p. 62
GSC BULL 172
GSC EC GEOL *3, Vol.1, p. 224
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44
CANMET RPT *#47, p.13
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/03 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 131**

NATIONAL MINERAL INVENTORY: 092F9 Cu2

NAME(S): **VENUS (L.81)**, MARS (L.78), SANTIAGO, MATTEER, M 17 (L.81), SHERWIN, LEO

STATUS: Past Producer — Underground
MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F09W
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 30 40 N
NORTHING: 5485131
LONGITUDE: 124 20 01 W
EASTING: 403460
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Portal No. 2 on Lot 78 on the northern end of Lasqueti Island at the head of Barnes Cove between Lindbergh and Jelina islands, 2.5 kilometres north-northeast from the village of Lasqueti (False Bay) (Assessment Report 16086). See also St. Joseph (092F 132).

COMMODITIES: Copper, Gold, Silver, Zinc

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Magnetite, Sphalerite
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0300 x 0002 Metres
STRIKE/DIP: 020/90N
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Basalt
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell

INVENTORY

ORE ZONE: ADIT
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	63.8000	Grams per tonne
Gold	26.0600	Grams per tonne
Copper	6.2000	Per cent

REFERENCE: Assessment Report 16086.

CAPSULE GEOLOGY

Lasqueti Island is dominated by dark, grey-green amygdaloidal and agglomeratic basalt of the Upper Triassic Vancouver Group, Karmutsen Formation. Regional bedding strikes northwest and dips moderately northeast. The volcanic rocks are locally intruded in the False Bay area by a north-northeast trending stock of Early to Middle Jurassic Island Plutonic Suite quartz diorite. Narrow shear zones along the stock margins are common and locally contain minor quartz veining. Some hornfelsing of the basalt is also common along the quartz diorite contact but is not significant on a large scale.

Seams of massive sulphide mineralization in the area is often associated with the shear zones along the quartz diorite contact. These zones are narrow, less than 2 metres wide, strike from 010 to 040 degrees and are evident in basalt and quartz diorite.

The Venus occurrence area is underlain by basaltic rocks of the Karmutsen Formation in contact with Island Plutonic Suite quartz diorite. A highly chloritized shear zone up to 2 metres wide, striking 020 degrees and dipping vertically, occurs at the contact

CAPSULE GEOLOGY

between basalt and quartz diorite and is continuous for at least 300 metres. The zone hosts seams or lenses of massive, fine-grained chalcopyrite and pyrite. The principal mineralization occurs as a shoot of massive chalcopyrite with minor pyrite, up to 1.2 metres wide, with associated magnetite and sphalerite. A rock sample taken from an adit assayed 6.2 per cent copper, 26.06 grams per tonne gold and 63.8 grams per tonne silver (Assessment Report 16086).

Past work consists of several adits, some underground development and extensive surface workings. Some surface workings are approximately 350 metres west from the adits and expose variably mineralized shear zones. Sporadic production from 1916 to 1959 totalled 362 tonnes of ore which yielded 30,004 kilograms of copper, 28,459 grams of silver and 5,319 grams of gold.

BIBLIOGRAPHY

EMPR AR *1920-N213,N351; 1922-N238,N239; 1924-B249; 1926-A318-A320; *1927-C360,C361; 1928-C385; 1929-C394; 1930-A308; 1933-A257; 1939-A41; 1959-131
EMPR ASS RPT 950, 1241, 1716, 1807, 9975, *16086
EMPR BC METAL MM00167, MM00174
EMPR BULL 1 (1932), pp. 142,143; 20 Part IV, p. 16
EMPR EXPL 1981-170; 1987-C152
EMPR GEM 1969-214,355
EMPR INDEX 3-212,217; 4-123
EMPR PF (*Beltz, E.W. (1928): Plan map of underground workings; see Juneau, 092F 133 - *Claim map (1923); see St. Joseph, 092F 132 - *Various undated claim maps, Statement of Material Facts, Dornoch International Inc. October 1, 1987 (Hawkins, T.G. (1987): Revised report on the Raven and Golden claims))
EMR MP CORPFILE (Anchor Mines Ltd.(NPL); Pacific Gold Mines, Limited; Santiago Mines, Limited)
GSC MAP 1386A; 17-1968
GSC OF 463
GSC P 68-50
GSC SUM RPT *1921 Part A, pp. 50-58
GCNL #196, 1982
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 150

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/25 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 132** NATIONAL MINERAL INVENTORY: 092F9 Cu2

NAME(S): **ST. JOSEPH (L.50)**, HILL 60, ST. ANTHONY (L.51), AJAX (L.52), M 20 (L.50,51,52), SHERWIN

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F09W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 30 39 N NORTHING: 5485091
LONGITUDE: 124 19 36 W EASTING: 403962
ELEVATION: 26 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Upper adits on Lot 50, on the northern end of Lasqueti Island, 2.75 kilometres north-northeast from the village of Lasqueti (False Bay) (Assessment Report 16086). See also Venus (092F 131).

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0600 Metres STRIKE/DIP: 030/90N TREND/PLUNGE:
COMMENTS: Shear zones.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Quartz Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell

INVENTORY

ORE ZONE: ADIT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	36.5400	Grams per tonne
Copper	5.4800	Per cent

COMMENTS: Sample from adits.
REFERENCE: George Cross Newsletter #58, 1988.

CAPSULE GEOLOGY

Lasqueti Island is dominated by dark, grey-green amygdaloidal and agglomeratic basalt of the Upper Triassic Vancouver Group, Karmutsen Formation. Regional bedding strikes northwest and dips moderately northeast. The volcanic rocks are locally intruded in the False Bay area by a north-northeast trending stock of the Early to Middle Jurassic Island Plutonic Suite quartz diorite. Narrow shear zones along the stock margins are common and locally contain minor quartz veining. Some hornfelsing of the basalt is also common along the quartz diorite contact but is not significant on a large scale.

Seams of massive sulphide mineralization in the area is often associated with the shear zones along the quartz diorite contact. These zones are narrow, less than 2 metres wide, strike from 010 to 040 degrees and are evident in basalt and quartz diorite.

The St. Joseph occurrence area is 300 metres east of the Venus adits (092F 131) and is underlain by massive and amygdaloidal basalt of the Karmutsen Formation, east of the eastern margin of the Island Intrusions quartz diorite stock. Mineralization occurs as seams of massive chalcopyrite, pyrite and magnetite hosted within 1 to 2 metre wide shear zones. These zones dip vertically, strike from 030 to 035 degrees, are continuous for at least 600 metres and hosted wholly in basalt. The seams of massive sulphide mineralization are often

CAPSULE GEOLOGY

separated by 30 to 50 centimetre wide zones of barren basalt.
Several adits have been developed on the main shear zone. The lower or main adit is just above high tide level on Lot 50 while the upper adit is 185 metres south. The adits are not along strike which may suggest an east striking, right-lateral fault system. Rock samples taken from the adits assayed 5.48 per cent copper and 36.54 grams per tonne gold (George Cross Newsletter #58, 1988). In 1909 and 1937, 44 tonnes of ore was mined producing 498 grams of gold, 1,368 grams of silver and 1,790 kilograms of copper.

Six hundred and fifty metres to the south of the upper St.Joseph adit is the Hill 60 showing which is believed to be the southern extension of the St. Joseph occurrence. A shear zone 0.6 to 1.2 metres wide and up to 274 metres long occurs in basalt and quartz diorite. Samples obtained (1920) from the zone where it crosses quartz diorite assayed 14.4 per cent copper, 13.03 grams per tonne gold and 61.72 grams per tonne silver (Assessment Report 16086).

Past work consists of several adits and some underground development.

BIBLIOGRAPHY

EMPR AR 1909-K150,K274; *1910-K160; 1911-K292; 1920-N213,N214; 1922-N238,N239; 1926-A318,A319; 1927-C360,C361; 1928-C385; 1937-A40
EMPR ASS RPT 950, 1241, 1716, 1807, 9975, *16086
EMPR BC METAL MM00185
EMPR BULL 1 (1932), pp. 142,143; 20 Part IV, p. 16
EMPR EXPL 1981-170; 1987-C152
EMPR GEM 1969-214,355; 1971-248,249
EMPR INDEX 3-211
EMR MP CORPFILE (Anchor Mines Ltd.(NPL); Pacific Gold Mines, Limited; Santiago Mines, Limited)
EMPR PF (Starr, C.C. (1945): Report on the St. Joseph Group of Mining Claims, 6 p.; Map showing claims and plan of workings; Detail of Workings, 1945; *Leighton, D.G. and Stokes, R.B. (1972): Report on the Sherwin Group; *Various undated claim maps; *Statement of Material Facts, Dornoch International Inc. October 1, 1987 (Hawkins, T.G. (1987): Revised report on the Raven and Golden claims); see Juneau, 092F 133 - *Claim map (1923))
GSC MAP 1386A; 17-1968
GSC OF 463
GSC P 68-50
GSC SUM RPT *1921 Part A, pp. 50-58
GCNL #58, 1988; #196, 1982
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 150

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/25 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 133** NATIONAL MINERAL INVENTORY: 092F9 Cu2

NAME(S): **JUNEAU**, OHM, MORORE, KIM, BAYVIEW, SHERWIN

STATUS: Prospect Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F09W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 30 19 N NORTHING: 5484499
LONGITUDE: 124 20 48 W EASTING: 402503
ELEVATION: 36 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Ohm adit portal, just east of Scottie Bay road on Lasqueti Island, 750 metres south of Scottie Bay and 1.5 kilometres north of the village of Lasqueti (False Bay) (Assessment Report 16086).

COMMODITIES: Gold Copper Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Chalcocite Bornite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: STRIKE/DIP: 020/90N TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Basalt
Quartz Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell

INVENTORY

ORE ZONE: ADIT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	4.5000	Grams per tonne
Gold	1.9200	Grams per tonne
Copper	0.0400	Per cent

COMMENTS: Sample from Ohm adit.
REFERENCE: Assessment Report 16086.

CAPSULE GEOLOGY

Lasqueti Island is dominated by dark, grey-green amygdaloidal and agglomeratic basalt of the Upper Triassic Vancouver Group, Karmutsen Formation. Regional bedding strikes northwest and dips moderately northeast. The volcanic rocks are locally intruded in the False Bay area by a north-northeast trending stock of Early to Middle Jurassic Island Plutonic Suite quartz diorite. Narrow shear zones along the stock margins are common and locally contain minor quartz veining. Some hornfelsing of the basalt is also common along the quartz diorite contact but is not significant on a large scale.

Seams of massive sulphide mineralization in the area is often associated with the shear zones along the quartz diorite contact. These zones are narrow, less than 2 metres wide, strike from 010 to 040 degrees and are evident in basalt and quartz diorite.

The Juneau occurrence area is underlain by locally altered basalt of the Karmutsen Formation in contact with quartz diorite of the Island Plutonic Suite. At the contact, a short adit (Ohm adit) explores narrow vertical shear zones striking 020 degrees and hosting massive pyrite and chalcopyrite. Quartz veining also occurs with massive to disseminated chalcopyrite and pyrite mineralization. A

CAPSULE GEOLOGY

sample from the adit assayed 0.04 per cent copper, 1.92 grams per tonne gold and 4.5 grams per tonne silver (Assessment Report 16086). Quartz veins hosted in basalt occur 200 metres to the north in a gravel pit.

Approximately 600 metres along a north-northeast strike from the Ohm adit, several pits and trenches which historically explored 3 narrow, parallel quartz veins striking 035 degrees occur. The veins are hosted in shear zones in quartz diorite near the contact with basalt and contain disseminated chalcopyrite, chalcocite, bornite and pyrite. The easternmost vein trends onto the Venus property (092F 131) to the east. Recent rock samples assayed 0.24 per cent copper, 6.07 grams per tonne gold and 21.9 grams per tonne silver (Assessment Report 16086).

BIBLIOGRAPHY

EMPR AR 1923-A256,A388; 1924-B249; *1926-C318-C320; 1927-C361; 1928-C385; 1929-C394; 1930-A308; 1933-A257
EMPR ASS RPT 950, 1716, *16086
EMPR BULL 1 (1932), pp. 142,143; 20 Part IV, p. 16
EMPR EXPL 1987-C152
EMPR GEM 1969-214; 1974-179
EMPR PF (*Claim map (1923); see Old Bill, 092F 134 - *Undated claim maps; see St. Joseph, 092F 132 - *Various undated claim maps, Statement of Material Facts, Dornoch International Inc. October 1, 1987 (Hawkins, T.G. (1987): Revised report on the Raven and Golden claims))
EMR MP CORPFILE (Anchor Mines Ltd.(NPL); Pacific Gold Mines, Limited; Santiago Mines, Limited)
GSC MAP 1386A; 17-1968
GSC OF 463
GSC P 68-50
GSC SUM RPT *1921 Part A, pp. 50-58
GCNL #196, 1982
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 150

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/25 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 134**

NATIONAL MINERAL INVENTORY: 092F9 Cu2

NAME(S): **OLD BILL**, ALADDIN, ALADIN, BETTER 'OLE, NEW STRIKE, NORTH STAR, SHERWIN

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F08W
BC MAP:
LATITUDE: 49 29 51 N
LONGITUDE: 124 21 58 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Old Bill adit portal on the northern shoreline of False Bay on Lasqueti Island, just across from Higgins Island in the bay, 1.25 kilometres north-northwest from the village of Lasqueti (False Bay) (Assessment Report 16086).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5483660
EASTING: 401080

COMMODITIES: Gold, Copper, Silver

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 080/80N
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Amygdaloidal Basalt
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: ADIT
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1987

COMMODITY	GRADE	
Silver	17.1000	Grams per tonne
Gold	6.4100	Grams per tonne
Copper	0.8700	Per cent

COMMENTS: Sample from Old Bill adit.
REFERENCE: Assessment Report 16086.

CAPSULE GEOLOGY

Lasqueti Island is dominated by dark, grey-green amygdaloidal and agglomeratic basalt of the Upper Triassic Vancouver Group, Karmutsen Formation. Regional bedding strikes northwest and dips moderately northeast. The volcanic rocks are locally intruded in the False Bay area by a north-northeast trending stock of the Early to Middle Jurassic Island Plutonic Suite quartz diorite. Narrow shear zones along the stock margins are common and locally contain minor quartz veining. Some hornfelsing of the basalt is also common along the quartz diorite contact but is not significant on a large scale.

Seams of massive sulphide mineralization in the area are often associated with the shear zones along the quartz diorite contact. These zones are narrow, less than 2 metres wide, strike from 010 to 040 degrees and are evident in basalt and quartz diorite.

The Old Bill occurrence area is underlain by amygdaloidal basalt of the Karmutsen Formation, which hosts a shear zone 50 centimetres wide striking 080 degrees and dipping 80 degrees north. The zone contains variable pyrite, chalcopyrite and narrow pyritic quartz

CAPSULE GEOLOGY

veins. The zone has been developed by a short adit (Old Bill adit). A sample from the quartz vein assayed 0.87 per cent copper, 6.41 grams per tonne gold and 17.1 grams per tonne silver (Assessment Report 16086). Another short adit, the Aladdin adit, is 50 metres west of the Old Bill adit and is developed on the same shear zone. Open cuts above and to the east of the Aladdin adit reveal a second, parallel, but flat-dipping shear zone hosting massive chalcopyrite and pyrite. A sample from here assayed 1.12 per cent copper, 5.47 grams per tonne gold and 32.2 grams per tonne silver (Assessment Report 16086).

The Old Bill occurrence differs from the nearby Juneau (092F 133), Venus (092F 131) and St. Joseph (092F 132) occurrences in that the shear zone strikes east as opposed to north-northeast.

BIBLIOGRAPHY

EMPR AR *1922-N238,N239; 1924-B249; 1928-C522
EMPR ASS RPT *16086
EMPR BULL 20 Part IV, p. 16
EMPR EXPL 1987-C152
EMPR PF (Cleveland, C. (1945): Geology report; *Plan maps of underground and surface workings, Cleveland, C. (1945); *Various undated claim maps; see St. Joseph, 092F 132 - *Various undated claim maps, Statement of Material Facts, Dornoch International Inc. October 1, 1987 (Hawkins, T.G. (1987): Revised report on the Raven and Golden claims))
EMR MP CORPFILE (Anchor Mines Ltd.(NPL); Pacific Gold Mines, Limited; Santiago Mines, Limited)
GSC MAP 1386A; 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50
GSC SUM RPT *1921 Part A, pp. 50-58
GCNL #196, 1982

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/25 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 135** NATIONAL MINERAL INVENTORY:

NAME(S): **JERVIS ISLAND**, SIR CHET (L.156), SIR NED (L.158), LADY HELEN (L.157), LADY EVELYN (L.159), ST. PAUL

STATUS: Showing MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 30 46 N NORTHING: 5485203
LONGITUDE: 124 14 32 W EASTING: 410078
ELEVATION: 91 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, on Jervis Island approximately 450 metres from the western shore in a gully between two prominent bluffs (Minister of Mines Annual Report 1926, page A320).

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcocite
COMMENTS: Also copper carbonates.
ASSOCIATED: Quartz Calcite Garnet Epidote
ALTERATION: Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 0100 Metres STRIKE/DIP: 075/90 TREND/PLUNGE:
COMMENTS: Shear zones have been traced for over 100 metres.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

ISOTOPIC AGE: 230 Ma
DATING METHOD: Fossil
MATERIAL DATED: Ammonites

LITHOLOGY: Porphyritic Volcanic Rock

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Paper 68-50.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1926
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	6.8000	Grams per tonne
Copper	4.7000	Per cent

COMMENTS: Sample across a shear in a shallow shaft.
REFERENCE: Minister of Mines Annual Report 1926, page A320.

CAPSULE GEOLOGY

Jervis Island is underlain by sheared, fractured and locally schistose porphyritic volcanic rocks of the Upper Triassic Vancouver Group, Karmutsen Formation. Several steeply dipping shear zones striking 075 degrees contain lensy quartz veins up to 30 centimetres wide. The shears have been traced for over 100 metres and may also contain calcite, garnet and epidote.

The Jervis Island showing comprises lenses of chalcocite up to 15 centimetres wide and copper carbonates occurring in shear zones. A sample across a shear in a shallow shaft assayed trace gold, 6.8 grams per tonne silver and 4.7 per cent copper (Minister of Mines Annual Report 1926, page A320).

BIBLIOGRAPHY

EMPR AR 1922-N239; *1926-A320,A321
GSC MAP 17-1968; 1386A
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50

DATE CODED: 1985/07/24
DATE REVISED: 1990/01/23

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 136**

NATIONAL MINERAL INVENTORY: 092F9 Cu2

NAME(S): **HELEN K**, TRIO, OLD BILL, NORTH STAR, NEW STRIKE

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F08W
BC MAP:
LATITUDE: 49 29 41 N
LONGITUDE: 124 22 05 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit portal, on the shoreline at the northwest tip of Higgins Island in False Bay on Lasqueti Island, 1.5 kilometres north-northwest from the village of Lasqueti (False Bay) (Assessment Report 16086).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5483353
EASTING: 400933

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Magnetite Pyrrhotite Bornite
ASSOCIATED: Quartz Calcite Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Massive
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 070/28N
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Amygdaloidal Basalt
Quartz Diorite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: ADIT
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1987

COMMODITY	GRADE	
Silver	121.4000	Grams per tonne
Gold	13.2300	Grams per tonne
Copper	1.3200	Per cent

COMMENTS: Sample from adit.
REFERENCE: Assessment Report 16086.

CAPSULE GEOLOGY

Lasqueti Island is dominated by dark, grey-green amygdaloidal and agglomeratic basalt of the Upper Triassic Vancouver Group, Karmutsen Formation. Regional bedding strikes northwest and dips moderately northeast. The volcanic rocks are locally intruded in the False Bay area by a north-northeast trending stock of Early to Middle Jurassic Island Plutonic Suite quartz diorite. Narrow shear zones along the stock margins are common and locally contain minor quartz veining. Some hornfelsing of the basalt is also common along the quartz diorite contact but is not significant on a large scale.

Seams of massive sulphide mineralization in the area are often associated with the shear zones along the quartz diorite contact. These zones are narrow, less than 2 metres wide, strike from 010 to 040 degrees and are evident in basalt and quartz diorite.

The Helen K occurrence area is underlain by amygdaloidal basalt of the Karmutsen Formation, which hosts a 30 to 50 centimetre wide shear zone striking 070 degrees and dipping 28 degrees northwest. A quartz diorite dyke, possibly related to a nearby Island Plutonic Suite quartz diorite stock, locally intrudes the zone.

Mineralization in the shear zone occurs as massive pyrite, chal-

CAPSULE GEOLOGY

copyrite and magnetite. Some quartz, calcite, epidote and bornite also occur. A parallel, slightly structurally lower, shear zone hosts massive magnetite and pyrrhotite mineralization. A rock sample from an adit assayed 1.32 per cent copper, 13.23 grams per tonne gold and 121.4 grams per tonne silver (Assessment Report 16086).

The Helen K showing differs from other nearby shear zone-hosted occurrences (Venus, 092F 131; St. Joseph, 092F 132; Juneau, 092F 133) in that most shears trend north-northeast, but the Helen K shear trends in an east direction. Also, the pyrrhotite-magnetite assemblage found in an adit at the Helen K is not seen anywhere else in the area.

Past work consisted of two short adits 25 metres apart.

BIBLIOGRAPHY

EMPR ASS RPT *16086
EMPR BULL 20 Part IV, p. 16
EMPR EXPL 1987-C152
EMPR PF (see Old Bill, 092F 134 - Plan maps of underground and surface workings, Cleveland, C. (1945) and undated claim maps; see St. Joseph, 092F 132 - *Various undated claim maps, Statement of Material Facts, Dornoch International Inc. October 1, 1987 (Hawkins, T.G. (1987): Revised report on the Golden and Raven claims))
GSC MAP 1386A; 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50
GSC SUM RPT *1921 Part A, pp. 50-58
GCNL #196, 1982

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/25 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 137**

NATIONAL MINERAL INVENTORY: 092F16 Ge1

NAME(S): **LANG BAY**, LANG CREEK

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 092F16W
BC MAP:
LATITUDE: 49 48 48 N
LONGITUDE: 124 24 29 W
ELEVATION: 137 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of kaolin deposit, 1.25 kilometres east of East Lake between Kelly and Lang creeks, 8.5 kilometres east of the town of Powell River (Exploration in British Columbia 1988, page B66).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5518828
EASTING: 398700

COMMODITIES: Kaolinite, Germanium, Gallium, Indium, Clay

MINERALS

SIGNIFICANT: Kaolin, Coal, Clay
COMMENTS: Germanium, gallium and indium values in coal seams.
ASSOCIATED: Feldspar, Clay
ALTERATION: Kaolin
ALTERATION TYPE: Argillic
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT

CHARACTER: Stratabound, Massive
CLASSIFICATION: Sedimentary, Residual, Hydrothermal, Industrial Min.
TYPE: B05 Residual kaolin
SHAPE: Tabular
DIMENSION: 2600 x 200 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Kaolinized zone.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous Mesozoic-Cenozoic	Nanaimo	Extension	Coast Plutonic Complex

LITHOLOGY: Kaolin
Granodiorite
Diorite
Coal
Kaolin Claystone
Mudstone
Siltstone
Sandstone
Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

INVENTORY

ORE ZONE: LANG BAY — REPORT ON: Y

CATEGORY: Indicated — YEAR: 1983
QUANTITY: 2000070 Tonnes

COMMODITY	GRADE	
Germanium	0.0700	Per cent

COMMENTS: Grade is 70 grams per tonne.
REFERENCE: Property File - Wright Engineers Limited, 1983.

ORE ZONE: LANG BAY — REPORT ON: Y

CATEGORY: Measured — YEAR: 1988
QUANTITY: 6000000 Tonnes

COMMODITY	GRADE	
Kaolinite	15.0000	Per cent

COMMENTS: Reserves of raw material with a yield of some 15 per cent kaolin product. Brightness varies from 62.9 to 77.2 per cent.
REFERENCE: Exploration in British Columbia 1988, page B68.

CAPSULE GEOLOGY

A small sedimentary basin, measuring 25 square kilometres,

CAPSULE GEOLOGY

overlies a granodiorite-diorite pluton at the western edge of the Jurassic to Tertiary Coast Plutonic Complex. The Upper Cretaceous (Campanian) sedimentary outlier consists of irregular layers of kaolin claystones, mudstones, siltstones, sandstones and conglomerates with minor detrital coal and coal lenses. The coal occurs in seams up to 5 metres thick and is germanium-bearing. Germanium values are primarily contained in the vitrinite fraction of the lignite lenses, which makes up to 2 per cent of the seam. Within the vitrinite, germanium is associated with iron and sulphur. Typical analyses are 30 to 70 grams per tonne germanium, 15 to 20 grams per tonne gallium and less than 10 grams per tonne indium (National Mineral Inventory card 092F16 Ge1). Indicated reserves of 2,000,070 tonnes contain an estimated average of 70 grams per tonne germanium in a area that measures 1000 by 356 by 2.44 metres (Property File - Wright Engineers Limited, 1983).

The Lang Bay kaolin deposit was discovered during exploration for the germanium-bearing beds. The kaolin deposit occurs within a granodiorite-diorite pluton below the small outlier of sedimentary rocks. Recent palynological analyses of carbonaceous siltstone and claystone samples correlate the Lang Bay sediments with the Extension Formation (Nanaimo Group) of Vancouver Island. The age of these rocks is Early to Middle Campanian (Upper Cretaceous). The entire basin is poorly exposed, being covered by a continuous mantle of glacial till; outcrops are confined to the banks of Lang Creek.

Drilling indicates that the primary kaolin is confined to the eastern margin of the sedimentary basin. The upper part of the kaolin deposit is sedimentary in origin while a significant thickness of kaolinized intrusive rock occurs underneath. The kaolinized zone in the granitic basement is approximately 200 metres wide and extends northwest over a length of more than 2600 metres. The residual kaolin attains a thickness of up to 30 metres. The Cretaceous sediments throughout most of the basin strike northwest and dip approximately 20 degrees southwest, parallel to the paleosurface which floors the basin (i.e. the top of the primary kaolin deposit). There are some indications that the dip of the paleosurface in the area of the deposit is steeper than bedding in the overlying sediments. There is a gradual decrease of kaolinization with depth in the residual deposit. The upper half is characterized by the presence of white, coarser-grained kaolin crystals. With increasing depth the white colour gradually darkens to light grey. Mineralogical examination indicates that unweathered feldspar is present in the lower part of the deposit together with some swelling clays. The drilling programs have outlined measured geological reserves of primary kaolin of approximately 6 million tonnes of raw material with a yield of some 15 per cent kaolin product (Exploration in British Columbia, 1988).

A number of claystone and mudstone beds interbedded with a coarser lithologic unit were intersected during exploration drilling. Preliminary tests reported by Fargo Resources indicate that this usually brown or dark grey-coloured clay and mudstone can be classified commercially as a "medium to high duty" fireclay (Exploration in British Columbia, 1988). These so called "brown beds" are abundant in the Lang Bay basin.

An initial study of the mineralogy, processing possibilities and the properties of recovered kaolin was undertaken at the University of British Columbia. The results established a decrease in kaolin content with increasing depth; the presence of coarse-grained kaolin crystals (up to 9.3 microns) with a brightness of 74.5 to 77.2 per cent in the uppermost part of the deposit; and a fine-grained (less than 1 micron) kaolin with a brightness of 62.9 per cent at greater depth. Bleaching tests indicate that the brightness of kaolin from the deeper parts of the deposit can be significantly improved. Work to date has confirmed that it is feasible to improve the brightness of the Lang Bay kaolin to meet paper-filler specifications (Exploration in British Columbia, 1988).

A pre-feasibility study prepared for Brenda Mines Ltd. and Fargo Resources Ltd. by Kilborn Engineering Ltd. in 1989, concluded that the extraction of the kaolinite is uneconomic because of the high strip ratio (7.6:1). The marketability of the "brown bed" material, which comprises most of the overburden, as a cement additive was therefore examined to enhance the economics of the deposit. The brown bed clay contains low sulphur and low alkaline oxides, making it suitable for the manufacture of cement.

Lang Bay Resources (formerly Fargo Resources) is presently, 1991-1992, investigating the possibility of using kaolin as a wood fibre substitute in newsprint. In order to avoid the problem of the high stripping ration, the company is also considering "roadheader mining" which could remove the kaolin from underground, instead.

BIBLIOGRAPHY

EMPR AR 1949-218; *1959-127-130
EMPR ASS RPT *10384, 11263, 14303, 14872, 15836, 16734, 17616
EMPR EXPL 1982-149; 1983-212; *1985-B29,B30,160; 1986-A73,C188;
*1988-B65-B68
EMPR FIELDWORK *1985, pp. 261-264; 1987 pp. 441-450; 1988 pp. 553-558
EMPR INF CIRC 1987-1, p. 72; 1988-1, pp. 71-73,74; 1989-1, p. 35;
1990-1, p.40; 1994-19, p.16; 1995-1, p.16
EMPR MAP 22; 34; 65, 1989
EMPR MER 1986, p. 72; 1987, pp. 73,74
EMPR OF 1988-13; 1991-23; 1992-1; 1992-9
EMPR PF (Wright Engineers Limited (1983): Lang Bay Germanium Project,
Prefeasibility Study; *Skerl, A.C. (1959): Report on the Germanium
Property of Taiga Mines Limited; Hilchey, G.R. (1959): Progress
Report on the Taiga Mines Limited Property; Hemsworth, F.J.
(1958): Letter Report on Lang Creek Germanium; McKechnie, N.D.
(1959): Letter Report on Lang Creek Germanium; Taiga Mines Limited
claim map (1959); Maps of No. 1-3 showings; News Release, Fargo
Resources Limited-Nov.4, 1987; Fargo Resources Ltd. 1989 Annual
Report; Skeetch map of 1987 drill holes)
EMR MP CORPFILE (Taiga Mines Ltd.; Brenda Mines Ltd.)
Focus on Industrial Minerals, Vol. 3, Issue 1
GSC MAP 1386A; 17-1968
GSC MEM 335, p. 69
GSC OF 611; 643
GSC P 60-1; 68-50; 70-52, p. 21; 91-1A, pp. 229-240
CIM *Vol.79, No.886, Feb. 1986, pp. 92-97; CIM 12th Annual
District Meeting, 1988 (Paper by J.A. Currie)
GCNL #156,#217, 1986; #49,#80,#87,#113,#170,#188,#214,#224,#234,
1987; #33,#51,#154,#246, 1988; #35, 1989; #44(Mar.4),#177(Sept.13),
1991; #110(June 8), 1992
N MINER Oct.1, 1959; Jan.16, 1989
V STOCKWATCH June 12, Aug.1, 1987
VANCOUVER SUN Nov.27, 1987; Feb.11, 1988; May 20, 1989; Nov. 16, 1991
W MINER Vol.32, No.9, Sept. 1959, pp. 30-34
WIN Jan. 1987
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/03 REVISED BY: DH FIELD CHECK: Y

MINFILE NUMBER: **092F 138** NATIONAL MINERAL INVENTORY:

NAME(S): **KITCHENER (L.49)**, MODOC (L.48), ISLAND COPPER

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 02 13 N NORTHING: 5433184
LONGITUDE: 124 50 05 W EASTING: 365906
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On Crown-grant Modoc (Lot 48) and Kitchener (Lot 49) about 750 metres east of Alberni Inlet, and 750 metres south from Chesnucknuw Creek to centre of claim area.

COMMODITIES: Copper Iron

MINERALS
SIGNIFICANT: Magnetite Pyrrhotite Pyrite Chalcopyrite
ASSOCIATED: Magnetite Hornblende
ALTERATION: Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Shear
CLASSIFICATION: Skarn Industrial Min.
TYPE: K01 Cu skarn
DIMENSION: 0213 x 0060 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Outcrops containing ore occur over 60 metre width and at intervals for 180 to 213 metres.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Volcanic
Granodiorite
Skarn

HOSTROCK COMMENTS: In Karmutsen limestone near granodiorite intrusive.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

CAPSULE GEOLOGY

The Kitchener skarn deposit is underlain by alternating bands of volcanics and limestone of the Upper Triassic Karmutsen Formation, Vancouver Group. A wide belt of granodiorite of the Early to Middle Jurassic Island Plutonic Suite occurs to the northeast of the occurrence.

Magnetite, pyrrhotite and chalcopyrite occur in a hornblende gangue, replacing limestone along limestone-volcanic contacts, a few hundred metres from the granodiorite. Ore outcroppings have been exposed along three such contacts, in a width of about 60 metres, at intervals for 180 to 213 metres.

In 1929, development work consisted of surface stripping and trenching and a crosscut tunnel driven for 24 metres. In this year, 168 tonnes of ore was mined from which was produced 5,366 kilograms of copper, 124 grams of gold and 653 grams of silver (Mineral Policy data).

On the nearby Bell claim, at 90 metres elevation in a railway cut, pyrite and chalcopyrite ore occur within a shear zone within the volcanics. This deposit was mined along with the Kitchener deposit, and the 18 tonnes produced from it are included in the above Kitchener production figures.

BIBLIOGRAPHY

EMPR AR 1901-1097; 1902-306; 1916-320; *1929-371; 1930-291;
*1931-166; 1957-69
EMPR BULL 3, 1917

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1971-233
EMPR OF 1988-28
GSC BULL 172
GSC EC GEOL 3, Vol.1, pp. 226-228
GSC MAP 49-1963, 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50, p. 38; 71-36; 72-44
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 139**

NATIONAL MINERAL INVENTORY:

NAME(S): **WHITE ROCK QUARRY**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 42 29 N
LONGITUDE: 124 31 49 W
ELEVATION: 150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quarry, 200 metres west of Paxton Lake, 5.8 kilometres south of the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5507296
EASTING: 389669

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Regular
MODIFIER: Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Mafic Dike
Intermediate Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The White Rock quarry is situated at the south end of a 13 kilometre long belt of Upper Triassic Quatsino Formation (Vancouver Group) limestone. The belt, up to 3 kilometres wide, is preserved along the axis of a broad northwest plunging syncline. The quarry lies approximately 200 metres southwest of the fault contact with underlying basaltic flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Limestone in the quarry is white, massive and recrystallized with an average of over 97 per cent $CaCO_3$ content and less than 1 per cent SiO_2. Brightness is 88 to 96 (green filter). Faulting is evident with up to 12 metre offsets; small crosscutting mafic and intermediate dykes are also observed.

Ideal Cement Company Ltd. began quarrying limestone here in 1987. The company currently mines 25,000 to 30,000 tonnes of limestone per year for export to the United States (H. Diggon, personal communication, 1990). Production figures are included with the Ideal Cement (092F 395) deposit.

BIBLIOGRAPHY

EMPR BULL 23, pp. 60-67; 40, pp. 52-58
EMPR OF 1992-18, pp. 23-24
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

DATE CODED: 1990/01/29 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1990/02/14 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 140**

NATIONAL MINERAL INVENTORY:

NAME(S): **THREE JAYS (L.518-527)**, JJJ, HAYES, NAHMINT

STATUS: Past Producer Underground
MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 02 26 N
NORTHING: 5433678
LONGITUDE: 124 53 10 W
EASTING: 362161
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the west side of Alberni Inlet about 2.5 kilometres south of Nahmint Bay (Minister of Mines Annual Report 1918).

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Bornite
ASSOCIATED: Magnetite
ALTERATION: Epidote Garnet Magnetite Actinolite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive Disseminated
CLASSIFICATION: Skarn
DIMENSION: 0045 x 0008 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Ore occurs over 1500 metre with individual shoots 2 to 8.5 metres wide and 20 to 45 metres long.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Tuff
Basalt
Andesite
Granodiorite
Skarn

HOSTROCK COMMENTS: Skarn mineralization occurs in all units and also in Bonanza Group volcanics.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:

CAPSULE GEOLOGY

The stratigraphy of the area primarily comprises Upper Triassic Vancouver Group rocks consisting of Quatsino Formation limestone, and underlying Karmutsen Formation basalts and interbedded tuffs. Lower Jurassic Bonanza Group tuffs, agglomerates and andesite flows are also present. These rocks are folded and faulted and intruded by a granodiorite dyke, 60 metres in width, and by many diorite and quartz feldspar porphyry bodies. These intrusives are related to the Early to Middle Jurassic Island Plutonic Suite, large bodies of which occur to the north.

The occurrence consists of skarn deposits hosted in Quatsino limestone, in the overlying Bonanza rocks and in the tuff horizons at the top of the Karmutsen. Some larger disseminated deposits also occur in the intrusives or volcanics.

These deposits typically consist of high-grade chalcopyrite occurring with magnetite, pyrite, bornite, epidote, garnet and actinolite. The chalcopyrite is fine grained, sometimes bedded and fills cavities or coats fossils or skarn minerals.

There are seven major ore shoots in three parallel zones that are separated by about 30 metres. The deposits show ore for a length of 1500 metres, with individual ore shoots from 2 to 8.5 metres in width and from 20 to 45 metres in length. The trend of the ore is east and the shoots all dip about 80 degrees south, pitching to the west.

CAPSULE GEOLOGY

The mine was in operation from about 1898 to 1902 and produced 148,889 kilograms of copper, 1,929 grams of gold and 75,207 grams of silver from a total of 1,981 tonnes mined (Mineral Policy data). The workings consist of surface pits, several short tunnels, one short shaft and 3 adits at 530, 470 and 380 metres elevation, driven for lengths of 300, 200 and 600 metres respectively.

BIBLIOGRAPHY

EMPR AR 1898-1131; 1899-607,779,778,785; *1900-917; 1916-320; 1917-454; *1918-257; 1926-295; 1928-367; 1930-292; 1947-182
EMPR ASS RPT *8286
EMPR BULL 3, 1917
EMPR FIELDWORK 1988, pp. 61-74
EMPR OF 1988-28
EMPR PF (Sketch of the 3 Jays Group showing geology, Scale 1 to 2640, 1928; Sketch Plan of the 3 Jays Group and workings, Scale 1 to 2640, 1928; *Malcolm, D.C. (1974): Report on Island Mining and Exploration Co. Ltd., Hayes Mine)
GSC BULL 172
GSC EC GEOL 3, Vol.1
GSC MAP 49-1963, 17-1968; 1386A
GSC OF 463; *1272
GSC P 68-50, p. 38; 71-36; 72-44
CANMET RPT #47
GCNL July 27, 1977
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/11 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 141** NATIONAL MINERAL INVENTORY:

NAME(S): **WWW (L.37,38,39,53)**, 3W'S, CORRIGAN CREEK

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 01 44 N NORTHING: 5432034
LONGITUDE: 124 41 05 W EASTING: 376849
ELEVATION: 640 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Upper adit.

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS
SIGNIFICANT: Pyrite Galena Sphalerite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0300 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Zone containing 3 veins occurs over 300 metres.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite
Diorite

HOSTROCK COMMENTS: Corrigan Creek Pluton.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	136.8000	Grams per tonne
Gold	35.3000	Grams per tonne
Copper	0.3000	Per cent
Lead	0.1300	Per cent
Zinc	1.2000	Per cent

REFERENCE: Assessment Report 2771.

CAPSULE GEOLOGY

The WWW veins are located east of Alberni Inlet, about 23 kilometres southeast of Port Alberni.

Three northeast trending quartz veins mineralized with pyrite, sphalerite and galena occur over a 300 metre length in granodiorite and diorite (Corrigan Creek Pluton) of the Early to Middle Jurassic Island Plutonic Suite. The pluton intrudes volcanics of the Upper Triassic Karmutsen Formation.

The No. 1 vein is 90 metres long, 10 to 25 centimetres wide and dips 45 degrees southeast. It is exposed in one adit and 4 open cuts. In 1935, a 10 centimetre sample taken across the vein assayed 205.7 grams per tonne gold and 137 grams per tonne silver (Annual Report 1935). A 20 centimetre sample taken in 1970 assayed 7.3 grams per tonne gold and 57 grams per tonne silver (Assessment Report 2771).

The No. 2 vein, exposed by an adit, is 50 metres long, 0.20 metres wide and also dips 45 degrees southeast. A 0.10 metre sample assayed 58.6 grams per tonne gold and 84 grams per tonne silver (Assessment Report 2771).

The No. 3 vein dips about 25 degrees north, and measures 94 metres by 5 to 35 centimetres. A grab sample assayed 35.3 grams per

CAPSULE GEOLOGY

tonne gold, 136.8 grams per tonne silver, 0.3 per cent copper, 0.13 per cent lead and 1.2 per cent zinc (Assessment Report 2771).

BIBLIOGRAPHY

EMPR AR 1898-1132; 1899-607; 1906-198; *1921-206-208; 1922-228; 1926-295; 1927-341; 1930-291; 1932-203; 1933-250; 1935-A28,*F49-52; 1940-27; 1941-27
EMPR ASS RPT *2771, 6865
EMPR BULL 1, (1932), p. 132; 37
EMPR GEM 1970-289; 1974-172
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (092F General File - Laanela, H., (1966): Report, Gunnex Limited, Occurrence #17; Carter, N.C., (1974): Memo)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #199,#200, 1982
The Miner *Oct., 1935

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 142**

NATIONAL MINERAL INVENTORY:

NAME(S): **OCEAN WAVE (L.303)**, BIG BEAR (L.304), BELVIDERE (L.301)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 02 44 N
LONGITUDE: 125 01 14 W
ELEVATION: 320 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Ocean Wave and Big Bear claim area. Most of the information on this deposit was drawn from Alberni Mines Ltd. prospectus and there is some confusion in the document with respect to the relative positions of the described showings.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5434487
EASTING: 352351

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Magnetite Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Vein
CLASSIFICATION: Skarn Hydrothermal
DIMENSION: 0004 Metres STRIKE/DIP: 030/65W TREND/PLUNGE:
COMMENTS: Vein.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Diorite
Rhyolite
Skarn

HOSTROCK COMMENTS: Skarn in Quatsino or Karmutsen limestone in contact with rhyolite and diorite.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	13.3700	Grams per tonne
Copper	1.2000	Per cent

COMMENTS: From a 5 metre section.
REFERENCE: Assessment Report 2856.

CAPSULE GEOLOGY

The area is underlain by a narrow north trending band of Upper Triassic Vancouver Group, Quatsino Formation limestone. The band is in contact, on the west, with Karmutsen volcanics (Vancouver Group), and on the east with Lower Jurassic volcanics of the Bonanza Group. The strata is intruded by diorite and granodiorite of the Early to Middle Jurassic Island Plutonic Suite.

On the Ocean Wave claim (Lot 303) skarn related mineralization is reported to occur where limestone is in contact with rhyolite and diorite (Bonanza and/or Island Plutonic Suite?). A shaft put down on the zone reaches a depth of about 12 metres. Boulders rich in magnetite and chalcopyrite are piled near the shaft. Several drill holes were reported to have been put down on the claim. One 5 metre section of core was reported to have assayed 1.2 per cent copper and 13.37 grams per tonne silver (Assessment Report 2856).

The Big Bear claim (Lot 304) is reported to have two adits, with a 7.5 metre deep shaft beside the upper adit. About 13.6 tonnes of

CAPSULE GEOLOGY

rich chalcopyrite bearing rock is stockpiled by the shaft. A sample taken from a quartz vein in the upper adit assayed 0.73 per cent copper (Prospectus: Alberni Mines Ltd., 1965). Another report (Minister of Mines Annual Report 1899) describes the quartz vein (presumably the same one) as being 3.7 metres wide, striking at 030 degrees and dipping 65 degrees to the northwest. The vein matter is calcareous and heavily mineralized with iron and copper pyrites. Surface stripping about 30 metres to the north has exposed what is thought to be the same vein.

BIBLIOGRAPHY

EMPR AR *1899-782; 1902-230; 1903-250; 1928-368
EMPR ASS RPT *2856
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1971-233
EMPR PF (*Prospectus: Alberni Mines Ltd., January 21, 1965
(in 092F 166 file))
GSC BULL 172
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 143** NATIONAL MINERAL INVENTORY:

NAME(S): **HIGH GRADE**, EMMA, CM - 240

STATUS: Showing MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 10 04 N NORTHING: 5447296
LONGITUDE: 124 34 18 W EASTING: 385433
ELEVATION: 870 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of High Grade vein and sample 16215B (Assessment Report 17207).

COMMODITIES: Gold Silver Copper Zinc

MINERALS
SIGNIFICANT: Pyrite Sphalerite Chalcopyrite Arsenopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Carbonate
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Folded
DIMENSION: 0700 x 0200 Metres STRIKE/DIP: 175/32E TREND/PLUNGE:
COMMENTS: High Grade zone dimensions; attitude of quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Cherty Tuff
Volcaniclastic
Pillow Basalt
Cherty Argillaceous Tuff
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: VEINS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	17.1000	Grams per tonne
Gold	0.5000	Grams per tonne
Copper	0.1784	Per cent

COMMENTS: Sample from 3 centimetre wide vein containing 50 per cent pyrite and trace chalcopyrite.
REFERENCE: Assessment Report 17207.

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	24.5000	Grams per tonne
Silver	63.1000	Grams per tonne
Copper	1.0000	Per cent
Zinc	21.2800	Per cent

COMMENTS: Sample 16215B.
REFERENCE: Assessment Report 17207.

CAPSULE GEOLOGY

The High Grade vein and CM-240 zone are located 1 and 1.8 kilometres respectively, north of Peak Lake.

The area is underlain by rocks of the Paleozoic Sicker Group comprising deformed breccia, tuff, argillite, greenstone, greenschist, narrow dykes of andesite porphyry, and argillaceous and calcareous sedimentary rocks. There are numerous faults and shear zones in the area suggesting a north-northeast fault through the Peak Lake area. A number of quartz veins and carbonatized zones are present.

The High Grade vein is hosted within a tightly folded sequence of cherty tuffs. The zone is characterized by tightly folded and fault bounded volcaniclastic rocks with minor pillow basalt of the Upper Devonian McLaughlin Ridge Formation, Sicker Group. Numerous quartz veins cut the volcaniclastic rocks and frequently yield anomalous values for gold upon geochemical analysis. The zone is broadly defined as having an average width of 200 metres, extending 700 metres northeast. The vein, open to the southwest, strikes 175 degrees and dips 32 degrees east. The vein is mineralized with sphalerite, pyrite, chalcopyrite and arsenopyrite. A grab sample (16215B) from the vein assayed 24.5 grams per tonne gold, 63.1 grams per tonne silver, 1.0 per cent copper and 21.28 per cent zinc. Drilling on the vein typically resulted in assays of 0.107 grams per tonne gold, 0.7 grams per tonne silver, 0.0071 per cent copper and

The CM-240 zone, 800 metres north of the High Grade vein, is characterized by numerous north-northeast trending quartz and quartz-carbonate veins cutting tuffs, cherty tuffs and cherty argillaceous tuffs. The veins, up to 15 centimetres wide, contain pyrite and sphalerite. A sample from a 3 centimetre vein containing 50 per cent pyrite and trace chalcopyrite assayed 0.5 grams per tonne gold, 17.1 grams per tonne silver and 0.17 per cent copper (Assessment Report 17207).

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT 12070, 13875, 16799, *17207
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
GCNL #115, 1984; #59,#189, 1985; #164, 1988
V STOCKWATCH June 17, Aug.26, Oct.7, 1987

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 144**

NATIONAL MINERAL INVENTORY:

NAME(S): **GREAT EXPECTATIONS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 02 12 N
LONGITUDE: 125 21 17 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located near the northwest shore of Toquart Bay, probably within a kilometre or so of the mouth of Toquart River (Minister of Mines Annual Report 1899, Sketch Map Showing).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5434203
EASTING: 327903

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION:
STRIKE/DIP: 075/
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Diabase

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Two adjacent quartz veins hosting chalcopyrite and bornite have been explored by a tunnel, driven on the veins for a length of at least 35 metres. A 46 centimetre wide vein is visible for 13 metres at the beginning of the tunnel, after which the vein turns into the hangingwall and the tunnel does not follow it. The tunnel proceeds in the original direction picking up the second vein, which is up to 1.2 metres in width. Both veins appear to strike at 075 degrees. The wallrocks are diabase (basalt) of the Upper Triassic Karmutsen Formation, Vancouver Group.

BIBLIOGRAPHY

EMPR *1899-607,783
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/29 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 145**

NATIONAL MINERAL INVENTORY:

NAME(S): **BELVEDERE (L.798)**, ANNEX (L.799)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 26 48 N
LONGITUDE: 125 43 44 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Belvedere and Annex crown grants are located about 1.5 kilometres northwest of Bedwell River, about 10 kilometres from Bedwell Sound. It is not known on which of the claims the showing is located. There is also confusion with the Dry Gulch showings (092F 252) because early reports indicate that these may occur on the Belvedere Group of claims (Bulletin 8 and Geological Survey of Canada Memoir 204).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5480692
EASTING: 302205

COMMODITIES: Gold, Silver, Copper

MINERALS
SIGNIFICANT: Chalcopyrite, Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
DIMENSION: 0004 x 0180 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Diorite
Granodiorite
Andesite
Basalt

HOSTROCK COMMENTS: The occurrence is near a volanic/intrusive contact. The actual host is not reported.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: STOCKPILE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Bulk Sample
YEAR: 1941

COMMODITY	GRADE	
Silver	100.8400	Grams per tonne
Gold	26.7400	Grams per tonne
Copper	0.2000	Per cent

COMMENTS: Test lot of 0.44 tonnes.
REFERENCE: Minister of Mines Annual Report 1941, page 41.

CAPSULE GEOLOGY

The area is underlain by volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group) which are intruded by granitic rock of the Early to Middle Jurassic Island Plutonic Suite. In the Bedwell River area the Karmutsen rocks consist of fine-grained andesites and black or dark green basalts. The plutonic rocks vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite. The volcanic-intrusive contact occurs in the vicinity of the prospect.

A quartz vein, 3.7 metres in width, was traced for a distance of 180 metres and is reported to carry chalcopyrite and free gold (Minister of Mines Annual Report 1899). The host rock was not reported.

A test lot totalling 0.044 tonnes of ore was shipped from the Belvedere Group in the locality of Tofino and is assumed to have come from this deposit. This ore sample contained 26.74 grams per tonne

CAPSULE GEOLOGY

gold, 100.84 grams per tonne silver, 0.2 per cent copper and nil lead and zinc (Minister of Mines Annual Report 1941, page 41).

BIBLIOGRAPHY

EMPR AR *1899-791, 1902-232, 1903-192, 1909-148, 1911-292, *1941-41
EMPR BULL 8, p.21; 13; 20, pp. 24-28
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50, p. 38; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 146**
NATIONAL MINERAL INVENTORY: 092F15 Zn2

NAME(S): **JOHN BULL**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 56 46 N
LONGITUDE: 124 42 38 W
ELEVATION: 73 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, just north of Lot 2362 (Raven) 200 metres from the shoreline across from Dinner Rock, 14 kilometres northwest from the community of Powell River (Assessment Report 13808).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5534042
EASTING: 377276

COMMODITIES: Zinc, Silver, Copper, Lead, Gold, Molybdenum

MINERALS
SIGNIFICANT: Sphalerite, Chalcopyrite, Galena, Molybdenite
COMMENTS: Rare molybdenite; minor galena.
ASSOCIATED: Pyrite, Pyrrhotite
ALTERATION: Epidote, Garnet, Silica, Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated, Massive
CLASSIFICATION: Skarn
SHAPE: Irregular
MODIFIER: Faulted, Sheared

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Unknown	Unnamed/Unknown Group	Unnamed/Unknown Formation	
Mesozoic-Cenozoic			Coast Plutonic Complex

LITHOLOGY: Limestone, Diorite, Tonalite, Mafic Dike, Felsic Dike, Tonalite Dike, Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1926
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	150.8300	Grams per tonne
Gold	23.9900	Grams per tonne
Copper	0.8000	Per cent
Lead	2.0000	Per cent
Zinc	52.0000	Per cent

COMMENTS: Best assays of several samples.
REFERENCE: Minister of Mines Annual Report 1926, page A312.

CAPSULE GEOLOGY

The area is underlain by Jurassic to Tertiary Coast Plutonic Complex rocks consisting of diorite and tonalite. The intrusive rocks contain minor volcanic and sedimentary roof pendants where the sedimentary pendant rocks are commonly limestone containing numerous dykes. Sulphide mineralization occurs in skarn developed in the limestone near intrusive contacts.

The John Bull occurrence comprises an intensely sheared and brecciated, northwest trending crystalline limestone pendant hosted within tonalite. The pendant is generally 30 to 60 metres wide but

CAPSULE GEOLOGY

locally is 106 metres wide and appears to be caught up in a fault zone which strikes 320 degrees. Banding in the limestone indicates a northerly strike with an 85 degree east dip. The limestone contains numerous mafic, felsic and tonalite dykes which are cross-cutting and also conformable to bedding. Many of the dykes are located along shear zones and several terminate against faults.

Irregular, siliceous epidote-garnet skarn is developed in limestone near the intrusive dykes, small diorite plugs and the basement intrusive rocks. Mineralization in the skarn zones is erratic and consists of locally massive and commonly widespread disseminated sphalerite and chalcopyrite with minor amounts of magnetite, pyrite and pyrrhotite. Minor galena and rare molybdenite have also been reported to occur. Massive magnetite is locally developed in epidote-garnet skarn in a surface pit and in a drill core intersection. The best assays from several samples were 52 per cent zinc, 150.83 grams per tonne silver, 0.8 per cent copper, 2.0 per cent lead and 23.99 grams per tonne gold (Minister of Mines Annual Report 1926, page A312).

Past work included several shallow shafts and numerous open cuts.

BIBLIOGRAPHY

EMPR AR 1922-N234; 1924-B247,B248; 1925-A290-A292; 1926-A310,A312; 1927-C357; 1928-C382; 1929-C391
EMPR ASS RPT *6258, 8003, 10321, *13808
EMPR GEM 1977-E116
EMPR PF (Report by Mellin, R.G.)
EMR MP CORPFILE (Malaspina Mines, Limited)
GSC MAP 17-1968; 1386A
GSC OF 611

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/06 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 147** NATIONAL MINERAL INVENTORY: 092F15 Zn1

NAME(S): **FLORENCE**, MALASPINA

STATUS: Past Producer Underground MINING DIVISION: Vancouver
REGIONS: British Columbia
NTS MAP: 092F15E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 56 48 N NORTHING: 5534081
LONGITUDE: 124 41 49 W EASTING: 378254
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit portal, 150 metres west of Highway 101, 13 kilometres northwest from the town of Powell River (Assessment Report 16179).

COMMODITIES: Zinc, Copper, Silver, Lead, Cadmium, Gold

MINERALS

SIGNIFICANT: Sphalerite, Bornite, Chalcopyrite, Galena, Tetrahedrite, Copper
COMMENTS: Minor galena, tetrahedrite and native copper.
ASSOCIATED: Silica, Pyrite, Pyrrhotite
ALTERATION: Epidote, Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated, Stockwork
CLASSIFICATION: Skarn
SHAPE: Irregular
MODIFIER: Fractured, Sheared
DIMENSION: 152 x 36 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Florence deposit.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Unknown	Unnamed/Unknown Group	Unnamed/Unknown Formation	
Mesozoic-Cenozoic			Coast Plutonic Complex

LITHOLOGY: Limestone, Tonalite, Diorite, Mafic Dike, Felsic Dike, Tonalite Dike, Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Coast Crystalline PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: ADIT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1974
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	320.8600	Grams per tonne
Gold	0.6800	Grams per tonne
Cadmium	0.1600	Per cent
Copper	9.2600	Per cent
Zinc	32.8700	Per cent

COMMENTS: Sample from adit.
REFERENCE: Assessment Report 4961.

CAPSULE GEOLOGY

The area is underlain by Jurassic to Tertiary Coast Plutonic Complex rocks consisting of diorite and tonalite. The intrusives host roof pendants consisting of sedimentary and volcanic rocks. The sedimentary pendant rocks are commonly limestone containing numerous dykes. Sulphide mineralization occurs in skarn developed in the limestone near intrusive contacts.

The Florence deposit comprises an intensely sheared and brecci-

CAPSULE GEOLOGY

ated, northwest trending crystalline limestone pendant within tonalite. The pendant is generally 30 to 60 metres wide but locally is 106 metres wide and appears to be caught up in a fault zone striking 320 degrees. Banding in the limestone indicates a northerly strike with an 85 degree east dip. The limestone contains numerous mafic, felsic and tonalite dykes which are crosscutting and also conformable to bedding. Many of the dykes are located along shear zones and several terminate against faults. They contain varying amounts of pyrrhotite and pyrite with minor amounts of chalcopyrite. Epidote-garnet skarn is developed in the limestone at or near the intrusive dyke contacts and also within the intrusive rocks. Some large plugs or sill-like pipes of diorite are exposed underground in the main deposit zone and are mineralized with significant amounts of pyrite, pyrrhotite, chalcopyrite and minor sphalerite.

The skarn is usually a siliceous, epidote-garnet rich mass. The Florence deposit varies in width up to approximately 36 metres and is more than 152 metres long. Mineralization consists mainly of lenses and large pods of massive banded sphalerite ranging from a honey resin to black colour; bornite and chalcopyrite is disseminated or occurs as fine fracture-fillings. Disseminated sphalerite also occurs towards the flanks of the main deposit mass. Minor amounts of galena, tetrahedrite and native copper have also been observed. A grab sample from the adit assayed 32.87 per cent zinc, 9.26 per cent copper, 320.86 grams per tonne silver, 0.16 per cent cadmium and 0.68 grams per tonne gold (Assessment Report 4961).

Past work includes approximately 260 metres of underground development consisting of drifting and crosscutting. Numerous surface cuts and pits are also evident. Records indicate that 39 tonnes were mined in 1928 and a further 8 tonnes in 1935. From this a total of 6221 grams of silver, 2,149 kilograms of copper and 4,781 kilograms of zinc were produced.

BIBLIOGRAPHY

EMPR AR 1917-F256,F257; 1922-N234; 1924-B246; 1925-A290-A292; 1926-A310-A312; 1927-C356,C357; 1928-C382; 1929-C391; 1935-A29
EMPR ASS RPT *4961, 5439, *6258, 8003, *16179, 17707
EMPR GEM 1974-189; 1975-E104; 1977-E116
EMPR PF (Report on metallurgical testing (1927); Plan map of underground workings; Map of drill sections and underground workings)
EMR MP CORPFILE (Canadian Centura Developments Ltd.; Malaspina Mines, Limited)
GSC MAP 17-1968; 1386A
GSC OF 611

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/06 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 148**

NATIONAL MINERAL INVENTORY: 092F15 Zn2

NAME(S): **ROYAL ARCH**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 56 34 N
LONGITUDE: 124 41 40 W
ELEVATION: 79 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shallow shaft, 400 metres west of Highway 101, 13 kilometres northwest from the community of Powell River (Minister of Mines Annual Report 1925, page A291).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5533645
EASTING: 378423

COMMODITIES: Zinc, Copper, Silver

MINERALS

SIGNIFICANT: Sphalerite, Chalcopyrite
ASSOCIATED: Silica, Pyrite
ALTERATION: Epidote, Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Skarn
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Unknown	Unnamed/Unknown Group	Unnamed/Unknown Formation	
Mesozoic-Cenozoic			Coast Plutonic Complex

LITHOLOGY: Limestone
Tonalite
Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)
GRADE:

INVENTORY

ORE ZONE: SKARN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1926
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	75.4100	Grams per tonne
Copper	6.9000	Per cent
Zinc	17.5000	Per cent

COMMENTS: Best assays from several samples.
REFERENCE: Minister of Mines Annual Report 1926, page A312.

CAPSULE GEOLOGY

The area is underlain by Jurassic to Tertiary Coast Plutonic Complex rocks consisting of diorite and tonalite. The intrusives host roof pendants comprising sedimentary and volcanic rocks. The sedimentary pendant rocks are commonly limestones, which host numerous dykes. Sulphide mineralization occurs in skarn developed in the limestone near intrusive contacts.

The Royal Arch occurrence comprises an intensely sheared and brecciated, northwest trending crystalline limestone pendant within tonalite. The pendant is generally 30 to 60 metres wide but locally is 106 metres wide and appears to be caught up in a fault zone striking 320 degrees. Banding in the limestone indicates a northerly strike with an 85 degree east dip.

Minor, irregular siliceous epidote-garnet skarn is developed in limestone near the intrusive contacts. A shallow shaft explores a 60 centimetre wide skarn zone mineralized with disseminated chalcopyrite, sphalerite and pyrite. Best assays from several samples were 6.9 per cent copper, 17.5 per cent zinc and 75.41 grams

CAPSULE GEOLOGY

per tonne silver (Minister of Mines Annual Report 1926, page A312).

BIBLIOGRAPHY

EMPR AR *1924-B246; 1925-A290-A292; 1926-A312
GSC MAP 17-1968; 1386A
GSC OF 611

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/06 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 149**

NATIONAL MINERAL INVENTORY:

NAME(S): **KITKAT 3**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 03 44 N
LONGITUDE: 124 33 35 W
ELEVATION: 480 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing C, Assessment Report 13945.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5435544
EASTING: 386062

COMMODITIES: Copper, Gold, Silver, Cobalt

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite
ASSOCIATED: Quartz
ALTERATION: Chlorite, Sericite, Epidote, Pyrite
ALTERATION TYPE: Chloritic, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Podiform, Massive
CLASSIFICATION: Volcanogenic, Epigenetic
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Gabbroic Flow
Hornblendite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1985

COMMODITY	GRADE	
Silver	1.4000	Grams per tonne
Gold	2.9400	Grams per tonne
Cobalt	0.1100	Per cent

REFERENCE: Assessment Report 13945.

CAPSULE GEOLOGY

The Kitkat 3 showing is located east of Alberni Inlet on the slopes of Mt. Logan.

The area is underlain mainly by basalt, pillowed basalt, basaltic tuff and agglomerate of the Devonian Duck Lake Formation, Sicker Group. The mafic volcanics contain gabbroic sills probably related to the Early to Middle Jurassic Island Plutonic Suite.

Discontinuous shearing and fracturing tend to parallel large scale regional structures, specifically the fault zone forming the Nitinat River valley. Gossans are associated with the mineralized shears, which occur mainly in coarse-grained, hornblende-rich basalt. Pyrite occurs as a replacement of hornblende. The basalt is typically chloritized and less altered to pyrite, sericite and epidote. Areas of intense shearing contain quartz veins with pods of massive sulphides (mainly pyrite).

A lens of semi-massive pyrite and minor pyrrhotite occur in a gabbroic flow (Showing C). The lens contained low assay values, however, a 20 centimetre sample, 400 metres to the south, assayed 0.17 per cent copper and 0.05 per cent cobalt, and a 20 centimetre sample of massive pyrite in hornblendite, 400 metres to the west, assayed 2.94 grams per tonne gold, 1.4 grams per tone silver and 0.11 per cent cobalt (Assessment Report 13945).

BIBLIOGRAPHY

EMPR ASS RPT *13945
EMPR BULL 37
EMPR EXPL 1985-135-136
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1988/04/14 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 150**

NATIONAL MINERAL INVENTORY: 092F6 Au1

NAME(S): **APEX (L.978)**, MIKE, AJ, MORNING, JINGO BIRD, HIGH LEVEL, MEN

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06W
BC MAP:
LATITUDE: 49 18 22 N
LONGITUDE: 125 15 49 W
ELEVATION: 366 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of adit on Lot 978 is 1.5 kilometres north of Taylor River, 4.0 kilometres west of Sproat Lake (Highland Mercury Mines Ltd., claim map).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5463951
EASTING: 335457

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Galena Chalcopyrite Sphalerite
ASSOCIATED: Quartz Pyrite Pyrrhotite Arsenopyrite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: l06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION:
STRIKE/DIP: 070/80N
TREND/PLUNGE:
COMMENTS: Apex vein.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

DATING METHOD: Fossil
MATERIAL DATED: Ammonites
ISOTOPIC AGE: 167 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Pillow Lava
Diorite
Diorite Dike
Quartz Diorite Dike

HOSTROCK COMMENTS: Ammonites from Texada Island, biotite from Kennedy River (Geological Survey of Canada Papers 72-44 and 68-50).

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1916
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	3.4300	Grams per tonne
Gold	4.8000	Grams per tonne

COMMENTS: Across 45.7 centimetres.
REFERENCE: Minister of Mines Annual Report 1916, page K319.

CAPSULE GEOLOGY

The Apex vein occurrence is underlain by pillow lavas of the Upper Triassic Vancouver Group, Karmutsen Formation. Diorite and quartz diorite dykes cut the volcanics and are related to a diorite stock of the Early to Middle Jurassic Island Plutonic Suite which occurs several kilometres to the northwest.

Strong regional faults trend north-northwest and northeast, and

CAPSULE GEOLOGY

the Apex vein is associated with the latter, striking 070 degrees and dipping 80 degrees north.

The vein comprises quartz lenses and brecciated diorite (dyke?) country rock fragments, with clay gouge on the vein walls. The fault zone containing the vein is about 2.5 to 3.0 metres wide, with the vein width averaging 45.7 centimetres. The vein contains pyrite, pyrrhotite, arsenopyrite and minor galena, chalcopyrite, sphalerite and limonite.

A sample across 45.7 centimetres assayed 4.80 grams per tonne gold and 3.43 grams per tonne silver (Annual Report 1916, page K319).

BIBLIOGRAPHY

EMPR AR 1899-781, 785; 1907-147, 148; 1908-142; *1916-318, 319; 1922-229; 1923-242; 1924-222; 1925-268; 1926-297; 1927-342; 1929-373; 1930-292; 1934-F4; 1960-110; 1961-103; 1963-121
EMPR ASS RPT 5368, 5858, 7260, *15910
EMPR BULL 1, p. 33
EMPR EXPL 1976-E113; 1979-130; 1987-C149
EMPR GEM 1974-176
EMPR PF (Highland Mercury Mines Ltd, (1976): Claim Map, 1: 12,000 scale, see Morning - 092F 119)
EMR MP CORPFILE (United Chieftain Resources Limited; Lou-Mex Mines Limited)
GSC MAP 17-1968; 1386A
GSC OF 9; 61; 463
GSC P 66-1; 68-50; 72-44
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/14 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 151**

NATIONAL MINERAL INVENTORY:

NAME(S): **MORIARTY LAKE**, COAL

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 08 39 N
LONGITUDE: 124 23 37 W
ELEVATION: 970 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main showing near the headwaters of a creek flowing into Englishman River, 500 metres north of Moriarty Lake, 33 kilometres west of the town of Nanaimo (Assessment Report 10025).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5444417
EASTING: 398364

COMMODITIES: Silver, Zinc, Copper, Lead

MINERALS

SIGNIFICANT: Pyrite, Sphalerite, Galena, Chalcopyrite, Tetrahedrite
ALTERATION: Carbonate, Ankerite, Clay
ALTERATION TYPE: Carbonate, Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 025/75S
TREND/PLUNGE:
COMMENTS: Veins.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Undefined Formation	
Tertiary			Mount Washington Intrus. Suite
Jurassic			Island Plutonic Suite

LITHOLOGY: Dacite
Dacite Sill
Sandstone
Mudstone
Silty Mudstone
Pebble Conglomerate
Biotite Hornblende Granodiorite
Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1981

COMMODITY	GRADE	
Silver	1405.4000	Grams per tonne
Copper	0.2000	Per cent
Lead	0.0400	Per cent
Zinc	1.7000	Per cent

REFERENCE: Assessment Report 10025.

CAPSULE GEOLOGY

The Moriarty Lake occurrence area is underlain by biotite-hornblende granodiorite of the Early to Middle Jurassic Island Plutonic Suite unconformably overlain by the Upper Cretaceous Nanaimo Group consisting of pebbly sandstone, siltstone and mudstone. The Nanaimo Group is intruded by thick dacite sills of the Late Eocene to Early Oligocene Mount Washington Intrusive Suite. The sedimentary sequence dips gently to the northeast and has been transected by an east trending fault, the Moriarty fault. The Moriarty fault has acted as a feeder zone for the intrusion of the dacite sills and is the locus of several stages of dyke emplacement and brecciation associated with locally intense hydrothermal alteration and sporadic sulphide miner- alization. The alteration appears to be vertically

CAPSULE GEOLOGY

zoned, with prop- ylitization and silicification dominating where the fault cuts base- ment granodiorite and clay-carbonate alteration in the overlying Nanaimo Group sediments and Tertiary sills.

The main showing is located in the fault zone in intensely carbonated and clay altered dacite at the base of a major sill, about 40 metres vertically above the Cretaceous unconformity. It is exposed in a creek gully where intensely altered carbonated rock carrying trace pyrite is intermittently exposed for 78 metres. The lower 30 metres of the section appears to consist of intensely altered sandstone with an outcrop of intensely altered dacite near the base. The upper part of the section is altered dacite within which the main showing is located just above the contact with the sandstone. The mineralized zone consists of a 12 metre section of intensely altered dacite with ankeritic carbonate veins 1 centimetre wide. The veins carry pyrite, sphalerite, galena, chalcopyrite and tetrahedrite. These minerals also occur in disseminated zones up to 18 centimetres wide in altered dacite with irregular ankeritic gashes. The veins generally strike 025 degrees and dip 75 degrees southeast and appear to be tension gashes en echelon to the Moriarty fault which is inferred to lie on the south side of the showing. This suggests a component of left-lateral movement on the fault. A grab sample assayed 1405.4 grams per tonne silver, 1.7 per cent zinc, 0.2 per cent copper and 0.04 per cent lead (Assessment Report 10025).

Minor disseminated pyrite and chalcopyrite occur in both silty mudstone and dacite where the Moriarty fault juxtaposes the two units about 600 metres east of the main showing. A rock sample assayed 0.14 per cent copper (Assessment Report 10025).

Further east, pebbly sandstone contains minor disseminated pyrite and traces of chalcopyrite associated with ankerite veins about 200 metres south of the Moriarty fault.

BIBLIOGRAPHY

EMPR ASS RPT *10025, 10983, 18668
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/12 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 152**

NATIONAL MINERAL INVENTORY: 092F4 Cu1

NAME(S): **GENERAL JAMES M. (L.318)**, B.C. WONDER, DUCHESS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 14 47 N
LONGITUDE: 125 38 50 W
ELEVATION: 617 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 3.0 kilometres north of Deer Bay (Tofino Inlet) on Crown Grant Lot 318.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5458219
EASTING: 307342

COMMODITIES: Copper Silver Iron Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Magnetite Pyrite
COMMENTS: Zinc mineral not identified.
ALTERATION: Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Massive Disseminated
CLASSIFICATION: Hydrothermal Replacement Skarn Industrial Min.
DIMENSION: 0010 x 0002 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Main adit vein.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Jurassic			Island Plutonic Suite
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Calcareous Sediment/Sedimentary
Limestone
Diorite
Porphyritic Andesite
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1987

COMMODITY	GRADE	
Silver	36.7000	Grams per tonne
Copper	4.3200	Per cent
Zinc	0.1500	Per cent

COMMENTS: 1 metre chip sample across vein.
REFERENCE: Assessment Report 16354.

CAPSULE GEOLOGY

Diorite to quartz-diorite of the Early to Middle Jurassic Island Plutonic Suite or the Paleozoic and/or Mesozoic West Coast Complex intrude Upper Paleozoic Sicker Group volcanics and Buttle Lake Group sediments. Magnetite-copper skarns and veins located along the igneous/volcanic contact, are localized by calcareous sediments and limestone, which likely belong to the Upper Pennsylvanian to Lower Permian Mount Mark Formation (Buttle Lake Group). The volcanics include porphyritic andesite.

At the General James M. workings, occur three steeply dipping, east trending, sub-parallel veins occur. The main adit vein is 2.0 metres wide and 10 metres long. The hangingwall consists of porphyritic andesite and breccia. Mineralization consists of chalcopyrite, magnetite, pyrrhotite, pyrite, garnet and epidote. A one metre chip sample assayed 4.32 per cent copper, 36.7 grams per tonne silver and 0.15 per cent zinc (Assessment Report 16354).

BIBLIOGRAPHY

EMPR AR 1901-1232A; 1913-280; 1914-375-376; *1916-330-332; 1931-167; 1946-18
EMPR ASS RPT 14337, *16354
EMPR EXPL 1985-C146; 2002-29-40
EMPR FIELDWORK 1988, pp. 61-74
EMPR OF 1988-28
EMPR PF (Letter by G.E.P. Eastwood, in 092F 043)
GSC BULL 172
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
GCNL #133, #186, 1984
PERS COMM: N. Massey
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/01/13 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 153**

NATIONAL MINERAL INVENTORY: 092F4 Cu1

NAME(S): **IRON DUKE (L.325)**, B.C. WONDER, DUCHESS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 14 11 N
LONGITUDE: 125 38 05 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 3.0 kilometres north of Deer Bay (Tofino Inlet) on Crown Grant Lot 325.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5457076
EASTING: 308213

COMMODITIES: Copper, Silver, Iron

MINERALS
SIGNIFICANT: Chalcopyrite, Magnetite
ASSOCIATED: Garnet, Epidote
ALTERATION: Garnet, Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Skarn, Replacement, Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Paleozoic	Sicker	Undefined Formation	
Jurassic			Island Plutonic Suite
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Limestone
Diorite
Porphyritic Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SKARN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1916

COMMODITY	GRADE	
Silver	13.7000	Grams per tonne
Copper	2.0000	Per cent

COMMENTS: Average sample.
REFERENCE: Minister of Mines Annual Report, 1916-331.

CAPSULE GEOLOGY

Diorite to quartz-diorite of the Early to Middle Jurassic Island Plutonic Suite or the pre-Jurassic Westcoast Complex intrude Paleozoic Sicker Group volcanics and Buttle Lake Group sediments. Magnetite- copper skarns and veins located along the igneous/volcanic contact, are localized by calcareous sediments and limestone, which likely belong to the Upper Pennsylvanian to Lower Permian Mount Mark Formation (Buttle Lake Group). The volcanics include porphyritic andesite.

The Iron Duke showing occurs along a northwest trending, 70 degree southeast dipping contact between diorite and limestone. A skarn containing chalcopyrite and magnetite, with garnet and epidote, occurs in limestone. An average sample taken assayed 2.0 per cent copper and 13.7 grams per tonne silver (Minister of Mines Annual Report, 1916-331).

BIBLIOGRAPHY

EMPR AR 1899-792; 1900-994; 1914-375-376; *1916-330-331; 1931-167
EMPR ASS RPT 16354
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (Letter by G.E.P. Eastwood, in 092F 043)

BIBLIOGRAPHY

GSC BULL 172
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
GCNL #133, #186, 1984
PERS COMM: N. Massey
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/01/13 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 154**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOOD HOPE (L.394)**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 16 02 N
LONGITUDE: 125 54 58 W
ELEVATION: 75 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 170 metres from the western shore of Cypress Bay, at an elevation of 75 metres (Minister of Mines Annual Report 1899, page 791).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5461255
EASTING: 287865

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: 0002 Metres STRIKE/DIP: 100/37S TREND/PLUNGE:
COMMENTS: Vein.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diabase
Andesite
Amphibole Gabbro
Diorite Gneiss

HOSTROCK COMMENTS: Fourth Lake Formation, formerly Cameron River Formation (Sicker Group).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1899
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	68.5700	Grams per tonne
Gold	10.2900	Grams per tonne
Copper	6.0000	Per cent

REFERENCE: Minister of Mines Annual Report 1899, page 791.

CAPSULE GEOLOGY

The area is underlain predominantly by a northwest trending sequence of mafic volcanics and sediments. Originally assigned to the Sicker Group, this sequence may be more closely related to the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group. These are intruded by Paleozoic or Triassic diabasic sills and feldspar porphyritic dykes of possible Tertiary age. Gneisses, hornfelsic basalts and amphibolites of the pre-Jurassic Westcoast Complex are in a gradational contact with these rocks. This complex is considered to be derived largely from Paleozoic and Mesozoic rocks which were migmatized in early Jurassic time. The mobilized granitoid portion was thought to have become the source for the Early to Middle Jurassic Island Intrusions but new data suggests a mantle derived source.

A quartz vein, from 1 to 2 metres in width, strikes 100 degrees and dips 37 degrees southwest through diabasic rock. The quartz is mineralized with chalcopyrite, pyrite and pyrrhotite. A short

CAPSULE GEOLOGY

distance to the east of this vein another quartz vein, less than a metre in width, strikes 105 degrees and dips 75 degrees south. The mineralization is the same and a sample taken from it assayed 6 per cent copper 68.57 grams per tonne silver and 10.29 grams per tonne gold (Minister of Mines Annual Report 1899, page 791).

Other rock types mapped near the adit site include andesite, amphibole gabbro and diorite gneiss (Assessment Report 4177 Plate 1, Map #5).

By 1906, about 240 metres of drifting and crosscutting had been completed. Results at the time were not considered significant but work was reported to be continuing (Minister of Mines Annual Report 1906).

BIBLIOGRAPHY

EMPR AR *1899-606,791; 1900-923; 1901-1098; 1902-233; 1903-193; 1905-212; *1906-188,199
EMPR ASS RPT *4177, *4688, *17098
EMPR EXPL 1986-C86
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1969-217, 1972-266, 1973-231
EMPR PF (Prospectus: Thunder Valley Mines Ltd., Aug. 24, 1971; Prospectus: Suntac Minerals Corporation, July 11, 1988 (located in Cyprus occurrence file, 092F 299))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/08 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 155**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOLK**, RAVEN, STAMP, SKY

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 14 00 N
LONGITUDE: 124 50 31 W
ELEVATION: 90 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west side of Alberni Inlet, near Holk Island (Assessment Report 17557, Figure 4).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5455028
EASTING: 365909

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEINS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	12.7000	Grams per tonne
Gold	0.2000	Grams per tonne
Copper	0.6800	Per cent

COMMENTS: Five samples assayed between 0.24 and 0.68 per cent copper, one sample also contained silver and gold values.
REFERENCE: Assessment Report 17557.

CAPSULE GEOLOGY

Three quartz veins are reported to comprise the Holk showing, in an area underlain by andesite of the Upper Triassic Karmutsen Formation, Vancouver Group. One vein is 1.2 metres in width and carries up to 20 centimetres of chalcopyrite ore. By 1901, a tunnel had been driven for 15 metres on the vein, producing about 7 tonnes of ore. No record, however, of any ore shipment exists.

Two quartz veins, relocated in the late 1980's, are 20 centimetres in width and strike 180 and 230 degrees. Both veins contain 1 per cent pyrite and lesser chalcopyrite. Five rock samples taken assayed between 0.24 and 0.68 per cent copper. One of these samples also contained 12.7 grams per tonne silver and 0.2 grams per tonne gold (Assessment Report 17557).

SYMC Resources Limited explored the area in 1998 and 1999.

BIBLIOGRAPHY

EMPR AR *1898-1131; *1901-1097; 1908-142; 1909-146; 1910-151
EMPR ASS RPT 447, 11357, *15038, *17557, 18771, 19346
EMPR EXPL 1983-197; 1986-C168; 1988-C83; 1999-25-32; 2002-29-40
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 49-1963, 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

BIBLIOGRAPHY

WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 156** NATIONAL MINERAL INVENTORY:

NAME(S): **SAUCY LASS (L.1673)**, SAUCY LASS NO. 1 (L.1675), THUNDERBOLT

STATUS: Showing MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E 092F02W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 00 44 N NORTHING: 5430747
LONGITUDE: 125 00 10 W EASTING: 353552
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Most work was done on the Saucy Lass (Lot 1673) and Saucy Lass No. 1 (Lot 1675) claims.

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite
ALTERATION: Magnetite Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform
CLASSIFICATION: Skarn Replacement

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Limestone
Volcanic
Gneissic Intrusive
Skarn

HOSTROCK COMMENTS: Host rock not reported. These units underlie the area.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: WORKINGS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1920
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	14.5000	Per cent

COMMENTS: A selected sample.
REFERENCE: Minister of Mines Annual Report 1920, page 194.

CAPSULE GEOLOGY

The area is underlain by the contact of Upper Triassic Vancouver Group, Quatsino Formation limestone and volcanics of the Lower Jurassic Bonanza Group. Intrusions of black igneous rocks are found in the immediate vicinity of the skarn deposits. These black rocks have a gneissic structure and are considerably sheared locally.

Several occurrences of chalcopyrite ore associated with magnetite, garnet and epidote are reported. Development work, done prior to 1920, consists of 3 adits; one is 18 metres long and the other two are 3 metres long each. A selected sample taken near the portal of a short adit assayed 14.5 per cent copper, 27.43 grams per tonne silver and a trace of gold (Minister of Mines Annual Report 1920).

BIBLIOGRAPHY

EMPR AR 1908-142; 1911-191; *1920-194; 1925-450
EMPR BULL 3, 1917
GSC BULL 172
GSC EC GEOL No.3, Vol.1
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44
CANMET RPT #47

BIBLIOGRAPHY

Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/10 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 157**

NATIONAL MINERAL INVENTORY:

NAME(S): **CASCADE**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 00 26 N
LONGITUDE: 125 00 29 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Small tonnage mine at Kildonan, on Uchucklesit Inlet (Minister of Mines Annual Report 1904).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5430201
EASTING: 353151

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrrhotite
ALTERATION: Garnet Epidote Hornblende Quartz
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn
COMMENTS: Described in one report as a vein.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Limestone
Dike
Diabase Dike
Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: ADIT
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1906

COMMODITY	GRADE	
Silver	2.0600	Grams per tonne
Gold	4.1100	Grams per tonne
Copper	5.5000	Per cent

COMMENTS: From a selected sample.
REFERENCE: Minister of Mines Annual Report 1906, page 190.

CAPSULE GEOLOGY

The area is underlain by the contact of Upper Triassic Vancouver Group, Quatsino Formation limestone and volcanics of the Lower Jurassic Bonanza Group.

The Cascade occurrence is located within a few hundred metres of the beach at Kildonan, Uchucklesit Inlet. A diabase dyke (andesite) intrudes limestone and is impregnated with chalcopyrite and iron pyrite (pyrrhotite?). The deposit is also reported to be associated with skarn material made up of garnetite, epidote, hornblende and quartz and is described as a vein.

The deposit was mined in 1904 and 1905 produced 113 tonnes of ore, which contained 14,629 kilograms of copper and 3,235 grams of silver (Mineral Policy data). Most of the ore was taken from an open cut on the surface showing. A short tunnel was driven under the open cut but encountered little ore. One selected sample assayed 2.06 grams per tonne gold, 4.11 grams per tonne silver and 5.5 per cent copper (Minister of Mines Annual Report 1906).

BIBLIOGRAPHY

EMPR AR *1904-243; 1906-190; 1916-323; *1928-367
EMPR BC METAL MM00062
EMPR BULL 3, 1917, pp. 20,21; 101, p. 162, Appendix 6
EMPR INDEX 3-191
EMPR OF 1988-28
GSC BULL 172
GSC EC GEOL No.3, Vol.1, p. 226
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 147

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 158**

NATIONAL MINERAL INVENTORY:

NAME(S): **IRON CAP**

STATUS: Past Producer — Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04W
BC MAP:
LATITUDE: 49 12 43 N
LONGITUDE: 125 52 16 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 1 KM
MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5454985
EASTING: 290905
COMMENTS: Exact location unknown. In 1898 reported to be a producer with considerable work done; in 1900 reported to be only prospected and sampled. Rediscovered in 1988, on northwest coast of Lemmens Inlet (Assessment Report 18624).

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Amphibolite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Amphibolite

INVENTORY

ORE ZONE: DUMP
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	32.3000	Grams per tonne
Copper	1.5800	Per cent

COMMENTS: From the dump of old mine workings.
REFERENCE: Assessment Report 18624.

CAPSULE GEOLOGY

Meares Island is underlain mainly by rocks of the pre-Jurassic Westcoast Complex. This complex is a heterogeneous assemblage of hornblende-plagioclase gneiss, amphibolite, agmatite, basic migmatite, quartz diorite or tonalite and minor metasedimentary and metavolcanic rocks. It is considered to be derived from Sicker and Vancouver group rocks which were migmatized in early Jurassic time. The mobilized granitoid portion is thought to have become the source for the Early to Middle Jurassic Island Intrusions.

The Iron Cap mine is located on "Disappointment Inlet" (Lemmens Inlet). A large amount of work was reportedly done on the property in and before 1898. In that year, 17 tonnes of ore were shipped, producing 933 grams of gold, 809 grams of silver and 169 kilograms of copper (Mineral Policy data).

The location of the Iron Cap mine had been lost until 1988 when prospecting on the headlands around a bay (God's Pocket) on the northwest corner of Lemmens Inlet led to its apparent rediscovery. A mine shaft (filled with water) and a series of pits along the strike of a narrow vein were found. Six veins, occurring in amphibolite striking north to northwest, were examined and sampled. The area between two of the veins is reported to be a wide shear zone. A sample taken from the mine dump assayed 1.58 per cent copper and 32.3 grams per tonne gold (Assessment Report 18624). Details of the mineralogy were not reported.

BIBLIOGRAPHY

EMPR AR *1898-1133; 1900-924
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 159**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOLY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E
BC MAP:
LATITUDE: 49 06 17 N
LONGITUDE: 124 11 27 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pits on a hill north of the road between Nanaimo Lakes, 18 kilometres west of the town of Nanaimo (Property File - Report by Laanela).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5439780
EASTING: 413083

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Porphyritic Basalt
Aplitic Dike
Pegmatitic Dike
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DUMP

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1965

COMMODITY	GRADE	
Molybdenum	0.7600	Per cent

COMMENTS: Sample of pit dump material.
REFERENCE: Property File - Report by H. Laanela, 1965.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) porphyritic andesitic to basaltic rocks in contact with Paleozoic Sicker Group argillites and intruded by diorite of the Early to Middle Jurassic Island Plutonic Suite.

The Moly occurrence is underlain by porphyritic basalt of the Karmutsen Formation intruded by a swarm of aplitic to pegmatitic dykes. The pegmatitic dykes grade into dioritic rocks resembling nearby Island Plutonic Suite diorite. Traces of chalcopyrite are associated with minor amounts of disseminated molybdenite in the dykes. A grab sample of dump material from a pit assayed 0.76 per cent molybdenum (Property File-Report by Laanela).

BIBLIOGRAPHY

EMPR ASS RPT 10373
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR PF (*092F General File - Report by H. Laanela (1965), Gunnex Ltd., Occurrence #22)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/11

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 160**

NATIONAL MINERAL INVENTORY:

NAME(S): **IVANHOE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 01 45 N
LONGITUDE: 125 01 34 W
ELEVATION: 90 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Reported to be 0.4 kilometres from deep water in Snug Basin; no direction given (Minister of Mines Annual Report 1908).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5432676
EASTING: 351896

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Tetrahedrite
ASSOCIATED: Talc
ALTERATION: Epidote
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Skarn

HOSTROCK COMMENTS: Limestone may be either Quatsino or Karmutsen.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group rocks consisting of Karmutsen Formation volcanics, overlain to the east by a north trending band of Quatsino Formation limestone. The limestone band is bounded on the east by Lower Jurassic volcanics of the Bonanza Group. The strata is intruded by diorite and granodiorite of the Early to Middle Jurassic Island Intrusions. The limestone involved in this skarn deposit may be from the Quatsino Formation or from limestone beds found in the upper part of the Karmutsen Formation.

At an elevation of 90 metres, a 70 metre tunnel has been driven to a limestone contact. At about 24 metres from the entrance a crosscut was made opening up about 90 centimetres of low-grade ore. Another tunnel farther up the mountain was driven in for 30 metres through limestone, cutting copper and iron sulphides. The tunnel was not considered far enough in to cut the orebody. About 90 centimetres of iron and copper sulphides, with about 10 centimetres of talc was exposed on the wall. About 90 metres from this point, an outcrop of chalcopyrite, bornite and tetrahedrite occurs. A shaft about 6 metres deep shows stringers of bornite all the way down with 90 centimetres of epidote carrying blebs of chalcopyrite. Ninety metres further, there is another showing of chalcopyrite traceable for about 7.6 metres.

BIBLIOGRAPHY

EMPR AR *1908-142; 1909-146
EMPR OF 1988-28
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/06

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 161**

NATIONAL MINERAL INVENTORY:

NAME(S): **ARROWSMITH**, OUTLOOK, COPPER KING, CAMERON

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 16 37 N
LONGITUDE: 124 34 57 W
ELEVATION: 480 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Upper portal along McBey Creek, 1.2. kilometres south from the east tip of Cameron Lake, 20 kilometres west from the town of Parksville (Minister of Mines Annual Report 1924, page B250).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5459448
EASTING: 384897

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz Pyrrhotite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 210/
TREND/PLUNGE:
COMMENTS: Quartz veinlets.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Limestone
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: ADIT
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1965

COMMODITY	GRADE	
Silver	27.4000	Grams per tonne
Gold	6.8000	Grams per tonne
Copper	9.0500	Per cent

COMMENTS: Sample from adit; across 1.2 metres.
REFERENCE: Property File (Laanela, H. (1965): Report).

CAPSULE GEOLOGY

The Arrowsmith occurrence is underlain by massive and locally porphyritic andesite of the Upper Triassic Karmutsen Formation (Vancouver Group) near the fault contact with an extensive body of diorite 2.4 kilometres to the east. The andesite is cut by several shear zones up to 6 metres in width. Mineralization consists of chalcopyrite, bornite, pyrrhotite and pyrite hosted in quartz veins and veinlets up to 60 centimetres wide in a shear zone. The veinlets strike 210 degrees. Some minor fault offsets of the veins are evident. An altered limestone bed 4.5 to 6 metres wide occurs locally in the andesite and carries minor disseminated chalcopyrite. A grab sample across 1.2 metres from a lower adit assayed 9.05 per cent copper, 27.4 grams per tonne silver and 6.8 grams per tonne gold (Property File - Report by H. Laanela).

Past work included two adits, some crosscutting and a winze developed along the shear zone. One adit is at 454 metres elevation and the second is at 480 metres elevation (ASL). Surface work consisted of stripping and pits.

BIBLIOGRAPHY

EMPR AR 1898-1146; 1899-807; 1901-1103; *1917-F259,F260; *1924-B249-B251; *1927-C348,C349
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR PF (092F General File - Rpt. by H. Laanela (1965), Gunnex Ltd., Occurrence #18)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/13 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 162**

NATIONAL MINERAL INVENTORY:

NAME(S): **DARBY AND JOAN**, DARBY-JOAN

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 02 34 N
LONGITUDE: 124 50 06 W
ELEVATION: 35 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: About 600 metres east of Smith's Landing near the mouth of Chesnucknuw Creek, on the east side of Alberni Inlet, between 25 and 45 metres elevation.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5433833
EASTING: 365902

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite
ALTERATION: Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Skarn Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Tuff
Porphyry
Skarn
Diabase
Diorite
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

INVENTORY

ORE ZONE: DUMP
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1902
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Iron	55.9000	Per cent

REFERENCE: Minister of Mines Annual Report 1902, page 218.

CAPSULE GEOLOGY

This magnetite skarn lies enclosed in rosette porphyry (feldspar glomerophyric ?) sills of the Upper Triassic Karmutsen Formation (Vancouver Group). Limestone is reported to occur about 800 metres south of the skarn deposit.

Magnetite occurs in two parallel belts, conformable to the structure of the rocks, dipping east 40 to 45 degrees into the hill. It is found throughout a longitudinal distance of 95 metres, but is separated by drift into four principal exposures, varying in length from 10 to 30 metres, and up to 3.3 metres wide. The continuity of the zone is broken by a dip fault near the middle of the area and their depth has only been proved for 4.6 metres. Both footwall and hangingwall are fractured and metamorphosed almost beyond recognition, being now largely made up of garnet and epidote.

The deposit is a mixture of magnetite and garnet, with the garnet being either irregularly disseminated through the magnetite or occurring as thin, elongated, lenticular, closely spaced streaks that produced a marked banding in the deposit. The deposit is thought to have originated by the replacement of tuff or tuff-breccia beds between walls of rosette porphyry, since the banded structure characteristic of tuff replacement is strongly evident.

CAPSULE GEOLOGY

Development work, as of 1916, consists of a series of opencuts and two short adits. A rough, but approximate, average sample of the ore on the dump contained 55.9 per cent iron, 16.0 per cent silica, 1.0 per cent sulphur, and no copper (Minister of Mines Annual Report 1902).

BIBLIOGRAPHY

EMPR AR *1902-212; *1916-289
EMPR BULL 3, 1917
EMPR FIELDWORK 1988, pp. 61-74
EMPR OF 1988-28
GSC BULL 172
GSC EC GEOL *3, Vol.1, p. 218
GSC MAP 49-1963; 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50, p. 38; 71-36; 72-44
CANMET RPT #47, p. 14
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 163**

NATIONAL MINERAL INVENTORY: 092F4 Au2

NAME(S): **SYOUTL**, MW 46, HAMATSA, KEEHA, TWIN PEAK

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04W
BC MAP:
LATITUDE: 49 11 11 N
LONGITUDE: 125 49 53 W
ELEVATION: 430 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of skarn mineralization, 2.5 kilometres west of the east side of Meares Island.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5452036
EASTING: 293691

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite
COMMENTS: Gold, silver mineralogy not known.
ASSOCIATED: Quartz Carbonate
ALTERATION: Unknown
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Vein Massive
CLASSIFICATION: Skarn Hydrothermal Epigenetic
SHAPE: Tabular
DIMENSION: 0180 x 0001 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Vein has been traced for 150 to 180 metres.

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex
ISOTOPIC AGE: 245 Ma			
DATING METHOD: Zircon			
MATERIAL DATED: Zircon			
Eocene			Tofino Intrusive Suite
ISOTOPIC AGE: 48 +/- 12 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Limestone
Tuff
Skarn
Amphibolite
Migmatite
Gneiss
Quartz Diorite
Granodiorite
Quartz Feldspar Porphyry Dike
Breccia

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Paper 80-16 and 72-44.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Granulite

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1969

COMMODITY	GRADE	
Silver	27.4300	Grams per tonne
Gold	2.4000	Grams per tonne
Copper	21.0000	Per cent

REFERENCE: Assessment Report 2108, Figure 2.

CAPSULE GEOLOGY

The Syoutl occurrence is underlain by amphibolite, agmatite, gneiss, limestone, tuff, andesite and quartz diorite of the pre-

CAPSULE GEOLOGY

Jurassic Westcoast Complex. A northwest-elongated quartz diorite stock of the Early to Middle Eocene Tofino Intrusive Suite (formerly Catface Intrusions) lies 2.0 kilometres to the west and granodiorite of the Early to Middle Jurassic Island Intrusions lies 1.0 kilometre east of the occurrence. Small quartz feldspar porphyry dykes are present. A 180 by 200 metre wide explosive breccia, containing fragments of Westcoast Complex rocks, metavolcanics, hornfels, dacite quartz, lies 1.0 kilometre to the west.

The mineralization occurs in a vein and in a skarn lens. The vein contains quartz, carbonate and chalcopyrite, and is about 0.3 metres wide. It has been traced over a strike length of 150 to 180 metres. A sample assayed 21.0 per cent copper, 2.40 grams per tonne gold and 27.43 grams per tonne silver (Assessment Report 2108, Figure 2).

Lenses of skarn occur at a limestone-tuff contact near Twin Creek on the MW 46 claim, and contain pyrrhotite, pyrite and chalcopyrite over 0.9 to 1.2 metres. A sample assayed 161.63 grams per tonne silver and 4.3 per cent copper (Assessment Report 2108, Figure 2).

BIBLIOGRAPHY

Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/30 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 164**

NATIONAL MINERAL INVENTORY:

NAME(S): **MACMILLAN**, T.E.L., BEAR, BULL

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E
BC MAP:
LATITUDE: 49 06 22 N
LONGITUDE: 124 04 34 W
ELEVATION: 350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches and pits near the headwaters of a tributary to Wolf Creek, 1.5 kilometres north of Barsby Lake and 10 kilometres west from the town of Nanaimo (Property File - Report by Caanela).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5439809
EASTING: 421459

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Tetrahedrite Bornite Chalcocite Pyrite Chalcopyrite Arsenic Corynite
COMMENTS: Possible native arsenic and corynite.
ASSOCIATED: Quartz Chalcedony Ankerite Calcite
ALTERATION: Silica Hematite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Cretaceous	Nanaimo	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Sandstone
Conglomerate
Pebble Conglomerate
Granodiorite
Hornblende Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock

YEAR: 1984

COMMODITY	GRADE	
Silver	20.5000	Grams per tonne
Copper	8.9000	Per cent

COMMENTS: Sample from trenched area.
REFERENCE: Assessment Report 13451.

CAPSULE GEOLOGY

The MacMillan occurrence area is underlain primarily by massive basalts of the Upper Triassic Karmutsen Formation (Vancouver Group) intruded by granodiorite and hornblende diorite of the Early to Middle Jurassic Island Plutonic Suite. Sandstone, pebbly sandstone and conglomerate of the Cretaceous Nanaimo Group unconformably overlies this sequence.

Mineralization occurs in a breccia zone near the Nanaimo Group-Karmutsen Formation contact. The zone is buff coloured, siliceous and comprised of quartz, chalcedony, ankerite(?), calcite and hematite. Sulphide content is low and occurs in the siliceous matrix or in widespread stockwork fractures and consists of tetrahedrite, bornite, chalcocite, pyrite and chalcopyrite. Native arsenic(?) and corynite(?) is also reported (Assessment Report 13451). A rock

CAPSULE GEOLOGY

sample from a trenched area on this zone assayed 16.6 grams per tonne silver (Assessment Report 14496). A rock sample taken in 1984 (Assessment Report 13451) from a trench assayed 8.9 per cent copper and 20.5 grams per tonne silver.

BIBLIOGRAPHY

EMPR ASS RPT 12151, 13451, *14496, 15805, 16591
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR PF (092F General File - Rpt. by H. Laanela (1965), Gunnex Ltd., Occurrence #4; Trench location maps)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1990/04/12	REVISED BY:	GO	FIELD CHECK:	N

MINFILE NUMBER: **092F 165**

NATIONAL MINERAL INVENTORY:

NAME(S): **BIG BLUFF**

STATUS: Showing Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 02 05 N
LONGITUDE: 125 03 08 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near the summit of a bluff, about 800 metres up the west side of Henderson Lake from the narrows at the mouth (Minister of Mines Annual Report 1916).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5433345
EASTING: 350004

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Ore is assumed to be chalcopyrite.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown Vein
CLASSIFICATION: Unknown Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 12 Metres STRIKE/DIP: 025/26E TREND/PLUNGE:
COMMENTS: Described as a ledge of ore.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Volcanic

HOSTROCK COMMENTS: No rocks described, but the area is underlain by mafic Karmutsen volcanics.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1916
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Copper	9.0000	Per cent
Silver	13.7000	Grams per tonne

REFERENCE: Minister of Mines Annual Report 1916, page 324.

CAPSULE GEOLOGY

A vein of copper ore is reported to occur near the summit of a bluff on the west side of Henderson Lake, about 800 metres up the lake from the narrows at its mouth. In an adit 6 metres long, copper ore about 60 centimetres wide is exposed, striking 025 degrees and dipping 26 degrees to the southeast. The vein of copper (described as a ledge of ore) can be traced on surface for at least 12 metres. A sample of sorted ore assayed 9 per cent copper and 13.7 grams per tonne silver (Minister of Mines Annual Report 1916).

The area is mapped as mafic volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group.

BIBLIOGRAPHY

EMPR AR *1916-324
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of

BIBLIOGRAPHY

British Columbia, Vol. 1: Vancouver Island, p. 147

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/03

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 166**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAINY DAY (L.379)**, LAKE SHORE

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 03 05 N
LONGITUDE: 125 01 25 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On Lot 379, east side of Henderson Lake about 3.5 kilometres from the south end of the Lake.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5435141
EASTING: 352145

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Marcasite Chalcopyrite
ALTERATION: Garnet Epidote Magnetite Hornblende
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive
CLASSIFICATION: Skarn Replacement
DIMENSION: 0004 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Ore body "C", dips vertically.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Basalt
Granodiorite
Skarn

HOSTROCK COMMENTS: Quatsino limestone is in contact with volcanics, probably of the Bonanza Group, near granodiorite.

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1916
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	4.5000	Per cent

COMMENTS: Selected sample.
REFERENCE: Minister of Mines Annual Report 1916, page 325.

CAPSULE GEOLOGY

The area is underlain by a north trending band of Upper Triassic Vancouver Group, Quatsino Formation limestone. This narrow limestone band is in contact to the west with basalt of the Karmutsen formation (Vancouver Group), and to the east with Lower Jurassic volcanics of the Bonanza Group. The strata is intruded by diorite and granodiorite of the Early to Middle Jurassic Island Plutonic Suite. Mafic dykes are also observed in the area.

Iron and copper minerals are found in skarn at the contact of limestone and basalt in the vicinity of granodiorite. There are four such deposits found on the Rainy Day claim (Lot 379), striking parallel to each other in a northeast direction over considerable distances. The deposits outcrop near the shore of Henderson Lake, all within a length of 50 metres.

Ore-body "A" occurs at the immediate contact of limestone and basalt. The mineralization is an association of iron pyrites and some chalcopyrite in garnet and limestone gangue. Little work has been done on this deposit.

CAPSULE GEOLOGY

Ore-body "B" has filled a vertical fissure in a shear zone in metamorphosed rock. The fissure is 3 metres wide and has been drifted on for 12 metres in solid ore consisting of mainly pyrrhotite with some copper minerals.

Ore-body "C" occurs at the limestone-basalt contact, having a 4 metre width and a vertical dip. The mineralization is chalcopyrite, pyrrhotite and some magnetite in a gangue made up of garnet, epidote, hornblende and crushed limestone. A 20 metre adit was driven parallel to the deposit, with a crosscut to intersect the ore. A winze is sunk for 6 metres in the ore body, near the crosscut, and a drift started along the strike of the deposit. Selected samples show the copper content varying from 4.5 to 16 per cent, but the body as a whole was considered low grade (Minister of Mines Annual Report 1916).

Ore-body "D" is about 12 metres in width and is made up of pyrite, marcasite, some chalcopyrite, hornblende, epidote and garnet. Little work has been done on this deposit.

BIBLIOGRAPHY

EMPR AR 1898-1132; *1899-606,783,784; 1907-221; *1916-324; 1928-369; 1967-77
EMPR ASS RPT 2856, 8898
EMPR BULL 3, 1917
EMPR EXPL 1980-168
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1971-233
EMPR PF (Prospectus: Alberni Mines Ltd., January 21, 1965)
GSC BULL 172
GSC EC GEOL #3, Vol.1
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p.38; 71-36; 72-44
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 167** NATIONAL MINERAL INVENTORY:

NAME(S): **BANK GP.**, GREEN, GHYLBANK, HAZEL, ORE, SINGAPORE, ALBERNI

STATUS: Showing MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 09 11 N NORTHING: 5445767
LONGITUDE: 124 38 29 W EASTING: 380315
ELEVATION: 633 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on or near the southwestern corner of the Singapore claim (Assessment Report 18557).

COMMODITIES: Gold Copper Silver Lead

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Galena
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Fractured Sheared
DIMENSION: 0100 x 0003 Metres STRIKE/DIP: 200/30W TREND/PLUNGE:
COMMENTS: Dimension and attitude of Bank Group mineralized zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Diorite
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan Uplift.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.9000	Grams per tonne

COMMENTS: Sample of quartz-carbonate veined sulphide rich volcanic rock from south boundary of claim.
REFERENCE: Assessment Report 18557.

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1917
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	34.0000	Grams per tonne
Copper	3.2000	Per cent

COMMENTS: Sample from dump material. Trace gold.
REFERENCE: Annual Report 1917 page 247.

CAPSULE GEOLOGY

The Bank Group showing is located on the north bank of China Creek, 21 kilometres east of Port Alberni. It is located on or near the southwestern corner of the Singapore claim just southeast of the Debbie/Yellow property (092F 079, 331).

The area is underlain by volcanic and volcaniclastic rocks of

CAPSULE GEOLOGY

the Devonian Duck Lake Formation (Sicker Group) which have been intruded by Early to Middle Jurassic Island Plutonic Suite dioritic rock. The showing is hosted in andesitic rocks that have been altered, fractured and sheared.

A series of open cuts have been dug on quartz veins carrying pyrite, chalcopyrite and galena. The mineralized zone, striking 200 degrees and dipping 20 to 40 degrees west, was reported to be 3 metres wide extending 100 metres or so along strike. A grab sample from the dump assayed trace gold, 34 grams per tonne silver and 3.2 per cent copper (Annual Report 1917 p. 247).

Quartz-carbonate veining, generally 1 to 5 milimetres in width, is common in the area and pyrite content increases in veined rocks.

Exploration in 1984 resulted in one anomalous sample (0.9 grams per tonne) from a quartz-carbonate veined, sulphide rich volcanic rock taken from near the south boundary of the claim. Results from a 1987 geochemical survey were not significant. The 1988 program results confirmed the previous anomalous results and demonstrated the erratic nature of the high values.

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR AR *1917-247
EMPR ASS RPT 12563, 17110, *18557
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1990/05/09	REVISED BY:	DEJ	FIELD CHECK:	N

MINFILE NUMBER: **092F 168** NATIONAL MINERAL INVENTORY:

NAME(S): **DAUNTLESS**, GLORIA (L.258G), SKY, STAMP

STATUS: Prospect Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 12 48 N NORTHING: 5452780
LONGITUDE: 124 49 42 W EASTING: 366846
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: At Stamp Point on the west side of Alberni Inlet, on Crown-granted Lot 258G.

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 0002 Metres STRIKE/DIP: 071/90N TREND/PLUNGE:
COMMENTS: North upper shear zone contains 1.8 metre wide vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1918
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	2.2000	Per cent

REFERENCE: Minister of Mines Annual Report 1918, page 256.

CAPSULE GEOLOGY

The area is underlain by andesite of the Upper Triassic Karmutsen Formation, Vancouver Group. Two series of mineralized shears make up the Dauntless occurrence: (1) the south shear zone, striking 025 degrees and dipping 60 degrees east, extending from the beach; and (2) the north upper shear zone, striking 71 degrees and dipping vertically, higher up the hill.

The south shear zone consists of small seams of ground-up material with minor mineralization. To the south of this, 2 short tunnels, 4.6 metres apart, are driven on the zone. Except for some chalcopyrite near the collar of the south tunnel, these appear to be mudseams. About 60 metres to the north another parallel shear has been driven on for 15 metres from the water's edge, showing minor chalcopyrite. Another tunnel 45 metres higher up, driven for 30 metres, shows similar conditions.

The north (upper) shear zone has been drifted on in an opencut and short tunnel, showing a well pyritized quartz vein about 1.8 metres wide. In the opencut at the adit is a showing of solid pyrrhotite and chalcopyrite about 0.6 metre wide, on which a shaft has been sunk 8 metres, in which good ore is reported.

A sample taken from the dump assayed 2.2 per cent copper and trace gold and silver (Minister of Mines Annual Report 1918).

SYMC Resources Limited sampled the stockpile in 1998.

BIBLIOGRAPHY

EM EXPL 1999-25-32; 2000-25-32; 2001-23-31; 2002-29-40
EMPR AR *1918-256; 1925-268; *1926-298; *1927-341; 1928-366;

BIBLIOGRAPHY

1929-371; 1930-291; *1931-165
EMPR ASS RPT 447, 15038, 17557, 18771, 19346
EMPR EXPL 1983-197; 1986-C168; 1988-C83
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (Laanela, H. (1965): Mineral Occurrence #25, Dauntless Copper Showing, Gunnex Limited)
GSC MAP 49-1963, 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50, p. 38; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 169**

NATIONAL MINERAL INVENTORY:

NAME(S): **STELLAR**, JULIA

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E
BC MAP:
LATITUDE: 49 59 32 N
LONGITUDE: 125 37 53 W
ELEVATION: 550 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about one kilometre west of Becher Lake, itself located just west of the northern end of Upper Campbell Lake (Assessment Report 17405).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5541084
EASTING: 311397

COMMODITIES: Copper Zinc

MINERALS

SIGNIFICANT:	Pyrite	Chalcopyrite	Sphalerite		
ASSOCIATED:	Quartz	Sericite	Magnetite		
ALTERATION:	Silica	Carbonate	Magnetite	Chlorite	Sericite
ALTERATION TYPE:	Silicific'n	Carbonate	Skarn	Sericitic	
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER:	Shear	Discordant	Massive
CLASSIFICATION:	Skarn	Hydrothermal	Epigenetic
TYPE:	I06 Cu±Ag quartz veins		
COMMENTS:	Sulphides occur massively in shear.		

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic Jurassic	Vancouver	Quatsino	Island Plutonic Suite

LITHOLOGY: Andesite
Diorite
Gabbro
Limestone

HOSTROCK COMMENTS: Mineralized shear is in Karmutsen volcanic intruded by diorite near Quatsino limestone.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1987

COMMODITY	GRADE	
Copper	2.3600	Per cent
Zinc	0.8900	Per cent

REFERENCE: Assessment Report 17405.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group, Quatsino Formation limestone and calcareous shales overlain by Karmutsen Formation volcanics. These Karmutsen rocks consist of andesitic tuff, andesitic volcanic breccia and flows with interbeds of argillite, siltstone and limestone. Intruding the stratigraphy are plutonic rocks of the Jurassic Island Plutonic Suite. These plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

The Stellar showing is associated with intrusions of a medium to coarse grained diorite with associated regions of coarse grained magnetic gabbro. These intrude a fine grained moderately silicified andesitic lava which is locally bleached and cut by epidote and calcite veins.

The mineralization occurs in a silicified-carbonate shear structure occurring within a 6 metre wide rusty orange zone. This structure is enveloped in a 10 to 15 metre wide zone of prominent

CAPSULE GEOLOGY

chlorite/magnetite replacement occurring as kidney shapes and amoeboid blobs in the host rock. The zone is mineralized with massive to semi-massive pyrite plus or minus chalcopyrite and sphalerite. Associated with the sulphide mineralization is quartz and sericite. One sample assayed 2.36 per cent copper, 16.4 grams per tonne silver 0.89 per cent zinc and 0.08 grams per tonne gold (Assessment Report 17405).

BIBLIOGRAPHY

EMPR ASS RPT *17405, *18947
EMPR BULL 3, 1917
EMPR EXPL 1987-C92
EMPR P 1989-3
GSC BULL 172
GSC EC GEOL #3, Vol.1
GSC MAP 2-1965, 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44
GSC SUM RPT 1930, Part A
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/01 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 170**

NATIONAL MINERAL INVENTORY:

NAME(S): **WATERFALL**, SONGBIRD

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E
BC MAP:
LATITUDE: 49 13 45 N
LONGITUDE: 124 14 04 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trench on the east side of a road, 750 metres west of Nanoose Creek, 15 kilometres west from the village of Wellington (Assessment Report 17837).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5453665
EASTING: 410126

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Pyrite Arsenopyrite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	Undefined Formation	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Argillite
Andesite
Meta Argillite
Dacitic Andesitic Tuff
Quartz Sericite Schist

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Overlap Assemblage

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1988

COMMODITY	GRADE	
Gold	0.5600	Grams per tonne

COMMENTS: Sample of quartz vein.
REFERENCE: Assessment Report 17837.

CAPSULE GEOLOGY

The area is underlain by Paleozoic Sicker Group volcanic rocks and sediments in fault contact with Upper Triassic Karmutsen Formation (Vancouver Group) andesites. Cretaceous sediments of the Nanaimo Group unconformably overlies these rocks.

The Waterfall occurrence area is underlain by rocks of the Sicker, Vancouver and Nanaimo groups. In this area the Sicker Group thought to be correlative with the Devonian McLaughlin Ridge Formation (Cowichan uplift) represented by a lower phyllite unit, a dacitic to andesitic tuff unit and an upper quartz-sericite schist unit. The phyllite unit is predominantly a meta-argillite sequence which is locally cherty and becomes graphitic near faults. Overlying and interbedded with this is a pyritic dacitic to andesitic tuff sequence. Overlying both units is a quartz-sericite schist commonly containing thin bands of chert and local lenses of pyrite. In fault contact with the Sicker rocks are massive dark green andesites of the Karmutsen Formation. Local porphyritic and cherty andesite are observed. Nanaimo Group sediments consisting of fossiliferous sandstone with local conglomerate lie unconformably on Sicker rocks.

The Waterfall zone consists of graphitic argillite of the Sicker Group cut by quartz veins up to 0.5 metres wide contained in a zone 4.2 metres wide that is associated with the sheared contact with Karmutsen Formation andesite. The veins are mineralized with

CAPSULE GEOLOGY

disseminated pyrite, arsenopyrite and chalcopyrite. A rock chip sample assayed 0.56 grams per tonne gold (Assessment Report 17837).

BIBLIOGRAPHY

EMPR ASS RPT *17837
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50
Falconbridge File

DATE CODED: 1990/04/10 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1990/05/14 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 171**

NATIONAL MINERAL INVENTORY:

NAME(S): **P.D.**, HILL

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 22 16 N
LONGITUDE: 124 43 01 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located to the north of Horne Lake and west of Mount Mark's summit (Assessment Report 13105).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5470129
EASTING: 375357

COMMODITIES: Zinc Silver Copper

MINERALS
SIGNIFICANT: Sphalerite Arsenopyrite Pyrite Marcasite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive Disseminated
CLASSIFICATION: Skarn Replacement
COMMENTS: Sulphides occur massively in pods and in disseminations.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Volcanic

HOSTROCK COMMENTS: Mineralization in Buttle Lake limestone near Karmutsen volcanic.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1984

COMMODITY	GRADE	
Silver	43.8900	Grams per tonne
Copper	0.3900	Per cent
Zinc	21.9800	Per cent

COMMENTS: From a 0.5 metre chip sample.
REFERENCE: Assessment Report 13105.

CAPSULE GEOLOGY

A zinc skarn or replacement deposit occurs in crystalline limestone of the Pennsylvanian to Permian Mount Mark Formation, Buttle Lake Group, just north of Horne Lake. The limestone is in contact with Upper Triassic Vancouver Group, Karmutsen Formation volcanics to the north of the occurrence.

The deposit consists of lenses and pods of predominantly massive sulphides and disseminated sphalerite exposed over a length of 122 metres and a width of 24 metres. An early report describes the massive sulphides as arsenopyrite with some sphalerite (Minister of Mines Annual Report 1927), however, a more recent report describes them as consisting of pyrite, marcasite and sphalerite (Assessment Report 14415). The individual zones of sulphide are reported to be up to 7.5 metres in width with a 025 degree strike and a 70 to 90 degree west dip.

A trench sample taken across 2.4 metres assayed 20 per cent zinc (Minister of Mines Annual Report 1927). Another zone was sampled across 0.5 metres and was found to contain 21.98 per cent zinc, 0.39 per cent copper and 43.89 grams per tonne silver (Assessment Report 13105).

Three shafts were sunk on the deposit circa 1927, totalling about 72 metres in depth, and numerous trenches also exposed the showings. In 1964 Cominco was reported to have drilled 4 holes in the vicinity of the shafts. Recent work includes more diamond

CAPSULE GEOLOGY

drilling and various geophysical surveys.

BIBLIOGRAPHY

EMPR AR *1927-351
EMPR ASS RPT *13105, *14415
EMPR EXPL 1984-164; 1986-C174
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
EMPR P 1989-3
EMPR PF (Preliminary map of the Horne Lake area, R.W. Yole, 1962;
092F General File - Report on the P.D. showing, H. Laanela, 1966,
Gunnex Ltd., Occurrence #44)
GSC BULL 172
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P *68-50, p.38; 71-36; 72-44; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With
Emphasis on the Relationships of Mineral Deposits to Plutonic
Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 172** NATIONAL MINERAL INVENTORY:

NAME(S): **GRIZZLY**

STATUS: Past Producer Underground MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 09 34 N NORTHING: 5446586
LONGITUDE: 124 42 30 W EASTING: 375450
ELEVATION: 520 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Map (Assessment Report 15368); small (mineral specimens) producer.

COMMODITIES: Arsenic Silver Gold

MINERALS
SIGNIFICANT: Arsenic Arsenopyrite Pyrite
ASSOCIATED: Calcite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Industrial Min.
SHAPE: Tabular
DIMENSION: 0009 x 0005 x 0001 Metres STRIKE/DIP: 075/90 TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Haslam	
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Argillite
Shale
Granitic Porphyry

HOSTROCK COMMENTS: Tertiary intrusions were formerly known as Catface Intrusions.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1924
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Arsenic	5.9700	Per cent
Gold	0.3400	Grams per tonne

COMMENTS: A 0.6 metre wide sample.
REFERENCE: Minister of Mines Annual Report 1924, page 221.

CAPSULE GEOLOGY

The Grizzly showing is located about 3 kilometres east of the Alberni Inlet and 7 kilometres southeast of Port Alberni.

The area is underlain by Haslam Formation sediments of the Cretaceous Nanaimo Group which are intruded by granite porphyry of the Tertiary Mount Washington Intrusive Suite (formerly known as the Catface Intrusions) (Personal Communication - N. Massey, May 1990).

A vein of calcite, striking 75 degrees and dipping vertically, and quartz stringers occur in 60 degree striking, vertically dipping argillites and shales. These are mineralized with disseminations and stringers of arsenopyrite, pyrite and nodules of native arsenic. The vein, which is 30 to 60 centimetres wide, 4.6 metres deep and about 9 metres long, follows a fracture zone 1.2 to 1.5 metres wide. A 30 centimetre sample across the vein assayed 10.6 per cent arsenic and 6.9 grams per tonne silver (Minister of Mines Annual Report 1924). A 60 centimetre sample over the main vein assayed 5.97 per cent arsenic and 0.34 grams per tonne gold (Laanela, 1965).

High-grade ore and arsenic specimens are reported to have been removed from the site.

BIBLIOGRAPHY

EMPR AR *1924-221; 1926-298; *1927-340
EMPR ASS RPT 12538, 12696, 14880, 15016, 15368

BIBLIOGRAPHY

EMPR BULL 37
EMPR EXPL 1986-157-158
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (092F General File - Laanela, H. (1965): Report, Gunnex Limited, Occurrence #9)
GSC MAP 17-1968; 49-1963
GSC OF 1272; 463
GSC P 68-50, p. 36,38,42; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
PERS COMM (N. Massey, May 1990)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 173**

NATIONAL MINERAL INVENTORY:

NAME(S): **NORTHERN CROWN**, JEM

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 11 14 N
LONGITUDE: 125 31 43 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located about 1.6 kilometres up Clayoquot River from the head of Clayoquot Arm, at about 100 metre elevation (Minister of Mines Annual Report 1928). Also reported to be 800 metres from shore; the shore point being about 2.5 kilometres from the Kennedy Lake fish hatchery (Minister of Mines Annual Report 1918). Other reports indicate that the workings are on the Indian Reserve at the head of Clayoquot Arm (Assessment Report 16182).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5451347
EASTING: 315754

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrrhotite Chalcopyrite Pyrite
ALTERATION: Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Undefined Formation	
Tertiary			Gillies Stock
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Limestone
Skarn
Diorite

HOSTROCK COMMENTS: Skarn in limestone near Intrusion of Westcoast Complex or Tofino Intrusive Suite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1918
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	27.4300	Grams per tonne
Copper	8.4000	Per cent

COMMENTS: About 1.0 metre chip length.
REFERENCE: Minister of Mines Annual Report 1918, page 263.

CAPSULE GEOLOGY

The Northern Crown skarn deposit occurs in limestone of the Upper Paleozoic Buttle Lake Group (correlative with the Pennsylvanian to Permian Azure Lake Formation of the Buttle Lake uplift) near its contact with dioritic rocks. The intrusives may be part of the Mesozoic and/or Paleozoic West Coast Complex, which mapping shows to be in contact with the limestone to the west, or they may have affinity to an intrusive stock of the Tofino Intrusive Suite located a few kilometres to the southeast.

Mineralization consists of pyrrhotite, chalcopyrite and pyrite, along with garnet and epidote. A sample taken across about 1 metre assayed 8.4 per cent copper, 27.43 grams per tonne silver and a trace of gold (Minister of Mines Annual Report 1918, page 263). Development work done in the early part of the century consisted in part of at least 20 metres of tunneling.

BIBLIOGRAPHY

EMPR AR 1916-363; 1917-292; *1918-263,304; 1919-198; 1920-223; *1928-3
EMPR ASS RPT 16182
EMPR EXPL 1987-C144
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/11/18 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 174**

NATIONAL MINERAL INVENTORY:

NAME(S): **STURT BAY**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 45 52 N
LONGITUDE: 124 34 11 W
ELEVATION: 31 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quarry, just north of the shoreline of Sturt Bay, one kilometre northwest from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5513623
EASTING: 386956

COMMODITIES: Limestone Marble Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
TYPE: R09 Limestone R04 Dimension stone - marble

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Marble

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Sturt Bay occurrence is underlain by massive, recrystallized limestone of the Upper Triassic Quatsino Formation (Vancouver Group) near a small quartz monzonite-granodiorite plug.

In the Sturt Bay quarry, the limestone is medium grained, white to light grey and traversed by numerous small irregular fractures and occasional strong jointing. Quarry production statistics are not available.

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, p. 96
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/04/05 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 175** NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNTAIN TREASURE (L.346)**, PACIFIC (L.344), PHEASANT (L.345), FORFARSHIRE, GE

STATUS: Showing MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 03 05 N NORTHING: 5435194
LONGITUDE: 125 03 03 W EASTING: 350156
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Middle of Crown Grants group 344 to 346, on the west side of Henderson Lake about 2.5 kilometres from its southern end.

COMMODITIES: Copper Iron Lead Zinc

MINERALS
SIGNIFICANT: Pyrrhotite Pyrite Magnetite Chalcopyrite
ALTERATION: Epidote
ALTERATION TYPE: Skarn Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn Industrial Min.
TYPE: K01 Cu skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Limestone
Andesite
Skarn

HOSTROCK COMMENTS: Skarn mineralization along limestone andesite contact. Limestone may be Quatsino or Karmutsen.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: SHAFT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1966
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	2.0600	Per cent
Lead	1.3000	Per cent
Zinc	0.5500	Per cent

COMMENTS: A 15 metre chip sample.
REFERENCE: Allen, A. (1966): Progress Report on Mountain Treasure.

CAPSULE GEOLOGY

Skarn mineralization occurs along a limestone-andesite contact for a length of at least 460 metres. The area is mapped as Lower Jurassic Bonanza Group volcanics. The limestone, typically epidotized, may belong to the underlying Quatsino Formation or to beds that are known to occur in the upper part of the Karmutsen Formation; both formations belong to the Upper Triassic Vancouver Group. Argillite, slate and abundant skarn material occur as well.

Several drill holes were put down to examine the deposit in 1966. One hole cut 4.6 metres of massive pyrrhotite, pyrite and magnetite which assayed 0.54 per cent copper (Allan, 1966). Other drill holes intersected these sulphides, in disseminated or massive form, and also contained chalcopyrite. Samples of this material contained up to 17.8 grams per tonne silver and traces of gold. A composite chip sample was taken over the 15 metre length of an inclined shaft and this assayed 2.06 per cent copper, 1.3 per cent lead, 0.55 per cent zinc and traces of silver and gold (Allen, 1966).

BIBLIOGRAPHY

EMPR AR 1898-1131, 1899-606, 1900-994, 1929-373
EMPR ASS RPT 2573
EMPR EXPL 1970-289
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Allen, A. (1966): Progress Report on Mountain Treasure, Henderson Lake; Hings, D.L. (1969): Klyceptor Geophysical Report in the Kildonan Area
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 176**

NATIONAL MINERAL INVENTORY:

NAME(S): **BARAMBA**, THIRD CHANCE, JACK OF CLUBS, EVVELYN, LEONARD, MARY, COPPER PRINCESS, ARCHIE, SILVER STAR

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 092F16E
BC MAP:
LATITUDE: 49 56 47 N
LONGITUDE: 124 02 15 W
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of mineralization is 2.4 kilometres north of the head of Hotham Sound on Jarvis Inlet (Minister of Mines Annual Report 1929, page C394 and 1917, page F284).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5533186
EASTING: 425563

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite Magnetite
ALTERATION: Epidote
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic Porphyry
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0005 Metres STRIKE/DIP: 070/80N TREND/PLUNGE:
COMMENTS: Mineralization strikes 070 degrees, dips 80 degrees north and is 4.9 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Gambier	Undefined Formation	
Mesozoic			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Feldspathic Sediment/Sedimentary
Andesite
Quartz Monzodiorite

HOSTROCK COMMENTS: Hornblende age date from Powell Lake area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING

TECTONIC BELT: Coast Crystalline
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)
TERRANE: Gambier
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Amphibolite

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1917
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.3000	Per cent

REFERENCE: Minister of Mines Annual Report 1917, page F284.

CAPSULE GEOLOGY

The Baramba occurrence is underlain by north-north-west striking volcanics and sediments of the Lower Cretaceous Gambier Group which are intruded by quartz monzodiorite of the Mesozoic Coast Plutonic Complex.

At the occurrence, feldspathic sediments and andesite have been epidote altered and strongly fractured and sheared along a 240 metre wide zone. Pyrrhotite, pyrite, magnetite and chalcopyrite occur over a width of 4.9 metres in some of the fissures within the shear zone. The mineralization strikes 070 degrees and dips 80 degrees north. A representative sample assayed 0.3 per cent copper, with only traces of gold and silver (Minister of Mines Annual Report 1917, page F284).

CAPSULE GEOLOGY

The 1917 Annual Report states that most of the exploration activities took place on the Third Chance claim whose exact location is not known. Additional development is reported at a location 30 metres above sea level.

BIBLIOGRAPHY

EMPR AR 1914-388; 1915-293; *1917-284; 1918-309; 1919-256; 1923-268; 1926-333; 1929-394
EMPR BULL 39
GSC MAP 17-1968; 1386A
GSC OF 611
GSC P 66-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/26 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 177**

NATIONAL MINERAL INVENTORY:

NAME(S): **FERGUSON NO. 2 (L.1587)**, EVANS (L.1586), CADY (L.1588)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 14 09 N
LONGITUDE: 125 00 52 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the south shore of Two River Arm (Sproat Lake) (Minister of Mines Annual Report 1932).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5455626
EASTING: 353360

COMMODITIES: Gold, Lead, Zinc

MINERALS
SIGNIFICANT: Pyrite, Galena, Sphalerite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1932

COMMODITY	GRADE	
Gold	1.3000	Grams per tonne

COMMENTS: From a 60 centimetre chip sample.
REFERENCE: Minister of Mines Annual Report 1932, page 203.

CAPSULE GEOLOGY

Several small mineralized quartz veins are reported to occur on the beach on Two Rivers Arm (Sproat Lake). The area is underlain by andesite to basalt of the Upper Triassic Karmutsen Formation, Vancouver Group.

The first vein up the hill, striking 050 degrees, has been opened up and examined for a length of 90 to 120 metres. The vein averages about 30 centimetres in width and contains pyrite, galena and sphalerite. A sample taken across 60 centimetres assayed 1.3 grams per tonne gold (Minister of Mines Annual Report 1932). Gold values up to 22 grams per tonne were reported from sulphide rich areas. Above this vein a short distance is a parallel vein of about 60 centimetres width. To the west a small cross-vein of about 30 centimetres width occurs.

BIBLIOGRAPHY

EMPR AR *1932-203
GSC MAP 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/24

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 178**

NATIONAL MINERAL INVENTORY:

NAME(S): **GEORGINA**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F08E
BC MAP:
LATITUDE: 49 16 13 N
LONGITUDE: 124 14 21 W
ELEVATION: 41 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft and open cut on the south bank of Nanoose Creek, three kilometres west from the village of Nanoose Bay (Assessment Report 14762).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5458241
EASTING: 409857

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Arsenopyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 285/75N
TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	Undefined Formation	

LITHOLOGY: Schist
Felsic Volcanic Rock
Andesite
Shale

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell Overlap Assemblage

INVENTORY

ORE ZONE: DUMP
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	4.1100	Grams per tonne

COMMENTS: Sample from dump material.
REFERENCE: Assessment Report 16041.

CAPSULE GEOLOGY

The Georgina occurrence area is underlain by Sicker Group rocks, thought to be correlative with the Devonian McLaughlin Ridge Formation (Cowichan uplift). These are intruded by fine to coarse-grained diorite of the Jurassic Island Intrusions and unconformably overlain by Upper Cretaceous Comox Formation (Nanaimo Group) fossiliferous sandstone and conglomerate. The Sicker rocks comprise black shale, felsic volcanic rocks, maroon and grey schist and andesite.

A strong 1.8 metre wide northwest trending shear zone within the Sicker volcanic rocks hosts a 10 centimetre wide quartz-carbonate vein striking 285 degrees and dipping 75 degrees north. The vein is mineralized with chalcopyrite, pyrite and arsenopyrite and assays give values in gold and silver. Several unmineralized veinlets also occur.

The vein was exploited by a small shaft and trenches along the bank of a creek. A chip sample from dump material at the shaft assayed 4.11 grams per tonne gold (Assessment Report 16041).

BIBLIOGRAPHY

EMPR AR *1934-F7; 1935-G46; 1936-F63; 1939-A89
EMPR ASS RPT 14762, *16041
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74

BIBLIOGRAPHY

EMPR PF (*092F General File - Rpt. by H. Laanela (1965), Gunnex Limited, Occurrence #1)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/09 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 179**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOYEHA 1 (L.1701)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 25 36 N
LONGITUDE: 125 55 08 W
ELEVATION: 315 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located within 1.0 kilometres to the northwest of Moyeha Bay (Minister of Mines Annual Report 1935). From description in the Annual Report, it appears to be located on Moyeha #1 (Lot 1701). See also 092F 501 - Moyeha R.L.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5478985
EASTING: 288349

COMMODITIES: Gold, Copper

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Silica, Pyrite
ALTERATION TYPE: Silicific'n, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Hydrothermal, Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Quartz Porphyry Dike

HOSTROCK COMMENTS: Veins cut andesite and dyke rock.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1935

COMMODITY	GRADE	
Gold	24.0000	Grams per tonne

COMMENTS: A 5.0 centimetre chip across vein.
REFERENCE: Minister of Mines Annual report 1935, page F45.

CAPSULE GEOLOGY

The occurrence is located near the northwest corner of the head of Herbert Inlet. To the east of the occurrence the area is underlain by volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group). To the west the volcanics are intruded by a stock of the Jurassic Island Plutonic Suite. These plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

Several showings of quartz veins and stringers occur on the steep eastern slope above Moyeha Bay, at elevations ranging from 286 to 347 metres. The country rock is Karmutsen andesite that has been invaded by dykes of quartz porphyry. The veins cut both rock types and may be mineralized with pyrite plus or minus chalcopyrite. The wallrock is commonly silicified and pyritized.

The veins range from 0.5 to 20 centimetres in width and are reported, at two of the showings, to have a strike of 150 degrees and dip of 65 degrees southwest. The largest vein, dipping 60 degrees south, pinches and swells from 5 to 20 centimetres along a 100 degree strike. The exposed length of the vein is 23 metres. A 13 centimetre sample of this vein containing chalcopyrite and pyrite assayed 24.00 grams per tonne gold and 10.29 grams per tonne silver (Minister of Mines Annual Report 1935, page F45).

BIBLIOGRAPHY

EMPR AR 1933-252; *1935-F45
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC MEM *204 pp. 23,24
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 180**

NATIONAL MINERAL INVENTORY:

NAME(S): **TYEE (L.1784)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 25 12 N
LONGITUDE: 125 55 11 W
ELEVATION: 260 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Tyee 1 to 3 reverted Crown Grants (Lots 1783, 1784 and 1785) are located at the northwest corner of the head of Herbert Inlet (Minister of Mines Annual Report 1935, page F46).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5478246
EASTING: 288260

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION: Clay
ALTERATION TYPE: Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1935
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Gold	137.1400	Grams per tonne

COMMENTS: Bulk sample of unspecified quantity.
REFERENCE: Minister of Mines Annual Report 1935, page F46.

CAPSULE GEOLOGY

The occurrence is located near the northwest corner of the head of Herbert Inlet. To the east of the occurrence the area is underlain by volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group); to the west the volcanics are intruded by a stock of Jurassic Island Plutonic Suite. These plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

A trench at 260 metres elevation has exposed three parallel fissures filled by quartz and pyrite that strike 135 degrees and dip 45 degrees southwest through quartz porphyry. The footwall vein, with a width of 20 centimetres, is the widest. The footwall of this vein has a 5 centimetre wide envelope of gouge.

The second trench, 30 metres northwest from the first, exposes similar mineralization and vein structure. A vertical rock face hosts numerous small tight quartz veins ranging from from 0.5 to 5 centimetres in width. There is also a footwall seam of gouge 15 centimetres thick that contains abundant pyrite. A bulk sample of this material was reported to contain 137.14 grams per tonne gold and and 13.71 grams per tonne silver (Minister of Mines Annual Report 1935, page F46).

BIBLIOGRAPHY

EMPR AR *1935-F46
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A

BIBLIOGRAPHY

GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 181**

NATIONAL MINERAL INVENTORY:

NAME(S): **GAM**, DONNER LAKE, DONNER, HEBER

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13W 092F12W
BC MAP:
LATITUDE: 49 45 05 N
LONGITUDE: 125 57 30 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Scattered skarn showings northwest of Donner Lake (Assessment Report 8037).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5515190
EASTING: 286909

COMMODITIES: Iron, Copper, Silver, Gold, Zinc

MINERALS

SIGNIFICANT: Magnetite, Chalcopyrite, Copper, Sphalerite
ALTERATION: Garnet, Epidote, Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated, Vein
CLASSIFICATION: Skarn, Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Limestone
Granodiorite

HOSTROCK COMMENTS: Skarn mineralization occurs in all three rock units.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1979

COMMODITY	GRADE	
Silver	230.0000	Grams per tonne
Gold	1.7500	Grams per tonne
Copper	13.5000	Per cent

REFERENCE: Assessment Report 8037.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group rocks consisting of Karmutsen Formation basalts overlain by Quatsino Formation limestone. These are intruded by the Jurassic Island Plutonic Suite consisting dominantly of quartz diorite with lesser diorite and granodiorite. At least 23 skarn showings are scattered within all three major rock units and at their contacts. Several of the skarns within the Karmutsen basalts are conformable, occupying highly amygdaloidal flow tops.

The skarns consist primarily of magnetite and garnet with strong concentrations of epidote in surrounding basalts. Some contain, pyrite, chalcopyrite and one contains sphalerite. Diamond drill core shows chalcopyrite occurring in patches, vesicles and veins within highly silicified basalts. In one section native copper also occurs in vesicles. Assays of mineralized sections range from 0.13 to 0.89 grams per tonne copper. One sample, of unknown character, contained 13.5 per cent copper, 230 grams per tonne silver and 1.75 grams per tonne gold (Assessment Report 8037).

A large sill of high grade magnetite was located in the northeast portion of the Ucona River valley. The exposed face of the sill has an approximate depth of 6 metres and can be traced along the

CAPSULE GEOLOGY

side of the mountain for some 300 metres (Report by Marmon Exploration).

BIBLIOGRAPHY

EMPR ASS RPT 560, 4972, 5853, 6281, 6705, 7410, *8037
EMPR BULL 3, 1917
EMPR EXPL 1976-E116, 1977-E114, 1978-E113, 1988-174
EMPR GEM 1974-182
EMPR P 1989-3
EMPR PF (*Report by Marmon Explorations on the Trim Magnetite-Copper claims; Property Examination Report by Noranda Exploration, Nov. 25-26, 1961)
GSC BULL 172
GSC EC GEOL #3, Vol.1
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44; 79-30; 80-16
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 182**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKARN**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 04 54 N
LONGITUDE: 124 27 45 W
ELEVATION: 640 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches, centre of skarn zone.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5437564
EASTING: 393206

COMMODITIES: Copper, Iron, Silver, Zinc

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Pyrrhotite, Sphalerite, Galena, Magnetite
ASSOCIATED: Quartz, Calcite
ALTERATION: Epidote, Garnet, Diopside, Vesuvianite, Malachite, Azurite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Podiform, Layered, Disseminated
CLASSIFICATION: Skarn, Industrial Min.
DIMENSION: 0550 x 0150 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Upper Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Skarn
Diorite
Chert
Tuff

HOSTROCK COMMENTS: Mineralization along contact of quartz diorite and limestone, sediments, and volcanics. Nitinat Formation also occurs.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1965

COMMODITY	GRADE	
Silver	216.3000	Grams per tonne
Copper	0.5900	Per cent
Zinc	0.6200	Per cent

COMMENTS: 2.6 metre drill intersection.
REFERENCE: H. Laanela, 1965.

CAPSULE GEOLOGY

The Skarn showing is located about 4 kilometres south of Labour Day Lake, 28 kilometres southeast of Port Alberni.

Volcaniclastics, volcanics and sediments of the Paleozoic Sicker Group and the Mississippian to Permian Buttle Lake Group are intruded by quartz monzonite to granodiorite of the Early to Middle Jurassic Island Plutonic Suite. These are overlain by sediments of the Cretaceous Comox Formation of the Nanaimo Group. The Sicker Group includes andesite and volcaniclastics of the Upper Devonian McLaughlin Ridge Formation and the Buttle Lake Group includes limestone and chert of the Upper Pennsylvannian to Lower Permian Mount Mark Formation.

Mineralized skarns have developed along the contact of quartz diorite and limestone, limey sediments and volcanics. The skarns form garnet-epidote-actinolite-minor diopside-phlogopite-quartz-

CAPSULE GEOLOGY

calcite-vesuvianite mineral assemblages. They contain lenses, layers, veinlets and patches of chalcopyrite, magnetite and minor pyrite, sphalerite, specularite and pyrrhotite.

The skarn zone outcrops over a distance of 550 metres with an average width of 150 metres. A drill hole intersected 14.5 metres containing 2.1 per cent copper and 2.6 metres containing 0.59 per cent copper, 0.62 per cent zinc, and 216.3 grams per tonne silver (Laanela, 1965). Holes drilled in 1980, intersected 18.6 metres containing 0.91 per cent copper and 14 grams per tonne silver and 4.6 metres containing 3.72 per cent copper, 53.5 grams per tonne silver and 0.12 per cent zinc (Assessment Report 8487).

BIBLIOGRAPHY

EMPR AR 1965-239
EMPR ASS RPT 6585, 7834, *8487, *14729, 14993
EMPR BULL 37
EMPR EXPL 1977-109; 1980-163-164; 1986-155-156
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (092F General File - Laanela, H., (1965): *Report, Gunnex Ltd., Occurrence #21; Rose, R.C., (1965,1966): Reports)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 183**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOOD HOPE**, WOLF LAKE, WOLF, LUPUS, CLIFF

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14E
BC MAP:
LATITUDE: 49 46 14 N
LONGITUDE: 125 12 02 W
ELEVATION: 275 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located northwest of Wolf Lake (Geological Survey of Canada Economic Geology #4).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5515444
EASTING: 341550

COMMODITIES: Arsenic Copper

MINERALS

SIGNIFICANT: Realgar Arsenopyrite Chalcopyrite Arsenic Pyrite
ASSOCIATED: Calcite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epithermal Hydrothermal Epigenetic Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Cretaceous	Nanaimo	Comox	

LITHOLOGY: Andesite
Basalt
Sediment/Sedimentary

HOSTROCK COMMENTS: Main showing is in Karmutsen andesite.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1986

COMMODITY	GRADE	
Arsenic	0.5200	Per cent
Copper	0.1300	Per cent

REFERENCE: Assessment Report 15034.

CAPSULE GEOLOGY

The Good Hope arsenic showing occurs about 800 metres northwest of the north end of Wolf Lake. The area is underlain primarily by basaltic lavas of the Upper Triassic Karmutsen Formation, Vancouver Group. These rocks are mostly massive flows and pillow lavas of partly amygdaloidal basalts, with minor tuffs, volcanic breccias and agglomerates. These are overlain by sediments of the Upper Cretaceous Nanaimo Group, Comox Formation.

The showing is exposed in a dry creekbed at an elevation of 260 metres. For about 75 metres the creek follows, and has exposed, a breccia zone in andesitic rocks. This zone varies from 0.6 to 3.6 metres in width, strikes 035 degrees and appears to dip steeply to the southeast. It contains lenses and veins of calcite up to 1.8 metres in width, in which numerous shattered and angular fragments of andesite are embedded. These bodies of calcite outcrop at intervals of about 45 metres along the creek bottom and contain occasional lenticular masses of realgar. The largest exposure of this arsenic sulphide measures 1.2 metres in length with a maximum width of 23 centimetres. Tiny veinlets of arsenopyrite occur locally within the andesitic wall rock. In some instances realgar has been replaced by native arsenic. Chalcopyrite has also been observed. The best assay from this zone was 4.9 grams per ton silver and 0.1 per cent copper over 2 metres (Assessment Report 14434).

The Cliff showing was dicovered on the Lupus claims in the

CAPSULE GEOLOGY

probable vicinity of the Good Hope arsenic showing. A 5 centimetre wide pyrite-arsenopyrite-quartz vein occurs in Nanaimo Group sediments. The vein has a vertical dip and a westerly trend. A grab sample assayed 15.77 grams per tonne silver, 0.10 grams per tonne gold, 0.52 per cent arsenic and 0.13 per cent copper (Assessment Report 15034).

BIBLIOGRAPHY

EMPR ASS RPT 12015, *14434, *15034
EMPR EXPL 1983-208; 1986-C183,C184
GSC EC GEOL *No.4, p. 36-38
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 184**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNTAIN**, JUBILEE, GREEN MOUNTAIN, PITSON (L.80), PITTSON

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 01 34 N
LONGITUDE: 124 19 45 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Adit location and centre of Lot 80, which is likely the Pitson Crown Grant. Gemini Mountain is likely the Green Mountain referred to in old reports (Minister of Mines Annual Report, 1908,1930).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5431209
EASTING: 402833

COMMODITIES: Iron

MINERALS

SIGNIFICANT: Magnetite Pyrite Marcasite
ASSOCIATED: Jasper Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive
CLASSIFICATION: Evaporite Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Sicker	Nitinat	

LITHOLOGY: Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

CAPSULE GEOLOGY

Massive and stringer magnetite, jasper, pyrite and marcasite occur in shears within volcanics, likely of the Devonian Nitinat Formation (Sicker Group). One tunnel has been driven on the zone for 150 metres and another, higher up the mountain, for 45 metres.

BIBLIOGRAPHY

EMPR AR 1898-1146; 1899-807-808; 1902-236; 1904-247; 1905-215; *1908-149; 1930-302
EMPR ASS RPT 15452, 16592
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 70-30
Sutherland Brown, A., (1988): Mineral Resources of the Alberni Region, EMPR, British Columbia Geoscience Research Program (RG87-26)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/04/22 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 185**

NATIONAL MINERAL INVENTORY:

NAME(S): **JACK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E
BC MAP:
LATITUDE: 49 06 53 N
LONGITUDE: 124 05 52 W
ELEVATION: 540 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Altered outcrop in roadcut whre it crosses Wolf Creek, 3 kilometres northwest of Barsby Lake, 12 kilometres west from the town of Nanaimo (Assessment Report 16591).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5440789
EASTING: 419891

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Tetrahedrite Malachite
ASSOCIATED: Carbonate Quartz Calcite
COMMENTS: Iron carbonate.
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The area is underlain primarily by massive basalts of the Upper Triassic Karmutsen Formation (Vancouver Group) intruded by granodiorite and hornblende diorite of the Jurassic Island Intrusions. Sandstone, pebbly sandstone and conglomerate of the Cretaceous Nanaimo Group unconformably overlies this sequence.

The Jack occurrence comprises two small outcrops of intensely iron carbonate altered basalt of the Karmutsen Formation. The basalt is brecciated and cut by calcite and occasionally, quartz veins. Carbonate forms the matrix in areas of brecciation. Tetrahedrite blebs (less than 1 per cent) with associated malachite staining occur within the basalt.

BIBLIOGRAPHY

EMPR ASS RPT *16591
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1990/04/12
DATE REVISED: / /

CODED BY: GO
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 186**

NATIONAL MINERAL INVENTORY: 092F1 Mn1

NAME(S): **SHAW CREEK**, BLACK PRINCE, FLIGHT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 00 04 N
LONGITUDE: 124 25 50 W
ELEVATION: 575 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: North of Cowichan Lake. See also Flight 5 (092F 563).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5428565
EASTING: 395369

COMMODITIES: Manganese Silica Rhodonite

MINERALS
SIGNIFICANT: Rhodonite Rhodochrosite
ASSOCIATED: Quartz
ALTERATION: Pyrolusite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: Q02 Rhodonite Q05 Jasper
SHAPE: Tabular
MODIFIER: Folded
DIMENSION: 100 x 30 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Mineralized area.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	

LITHOLOGY: Jasper
Cherty Tuff
Chert

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1918
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Manganese	26.8000	Per cent
Silica	52.0000	Per cent

COMMENTS: 3 metre sample.
REFERENCE: Minister of Mines Annual Report, 1918.

CAPSULE GEOLOGY

The Shaw Creek showing is located on the creek north of Cowichan Lake. The showing is located on the Flight claims, see also 092F 563.

Lenses of manganese silicates, mainly rhodonite, occur in highly folded red and white cherty tuffs of the Mississippian to Pennsylvanian Fourth Lake Formation, Buttle Lake Group. The lenses, which appear conformable, are occasionally coated with hard, black siliceous oxide.

The mineralization is exposed over an area measuring 100 by 30 metres. Three-metre samples assayed from 22.2 to 40.8 per cent manganese and 30 to 57 per cent silica (Minister of Mines Annual Report, 1918).

Tests in 1940 showed samples contained pyrolusite, rhodochrosite and rhodonite, which are the oxide, carbonate and silicate of manganese, respectively. The manganese is often finely divided and associated with a highly siliceous gangue.

BIBLIOGRAPHY

EMPR AR *1918-297-298

BIBLIOGRAPHY

EMPR ASS RPT *15887
EMPR BULL 37-69
EMPR CANMET IR 848
EMPR CANMET RPT 1920, Summary Report (Dec.31, 1919), Sessional Paper No. 26A, p. 59, Test No. 106
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Sargent, H., (1939): *Manganese Deposits of Cowichan Lake, 21p - Special Report #10)
GSC EC GEOL *#12, pp. 115-119
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 64-37, p. 19; 68-50; 72-53, pp. 34,56; 79-30
Canadian Rockhound Feb., 1966, p. 7
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 104
Mackenzie, A.C., (1920): Canadian Munition Res. Comm., Final Report, pp. 90,92-94
Sargent, H., (1956): Manganese Occurrences in British Columbia, in International Geological Congress, Symposium on Manganese, Mexico, 1956

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1988/04/21	REVISED BY:	LDJ	FIELD CHECK:	N

MINFILE NUMBER: **092F 187**

NATIONAL MINERAL INVENTORY:

NAME(S): **MO**, SW, KAR

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F16E
BC MAP:
LATITUDE: 49 50 59 N
LONGITUDE: 124 04 47 W
ELEVATION: 133 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: The claims are located at the head of St. Vincent Bay on Jarvis Inlet (Minister of Mines Annual Report 1967, page 60).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5522481
EASTING: 422379

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Quartz Monzonite

HOSTROCK COMMENTS: Age date from Powell Lake area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

CAPSULE GEOLOGY

Geological Survey of Canada Open File 611 indicates the St. Vincent Bay area is underlain by intrusive rocks of the Jurassic to Tertiary Coast Plutonic Complex. Northwest trending dyke swarms have intruded the area. The Minister of Mines Annual Report for 1967 reports molybdenite mineralization in quartz monzonite.

BIBLIOGRAPHY

EMPR AR 1967-60
EMPR BULL 39
GC MAP 17-1968; 1386A
GSC OF 611
GSC P 66-1
N MINER Jul.27, 1967

DATE CODED: 1985/07/24
DATE REVISED: 1989/06/26

CODED BY: GSB
REVISED BY: WV

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 188** NATIONAL MINERAL INVENTORY:

NAME(S): **CRANBERRY LAKE**

STATUS: Past Producer Open Pit MINING DIVISION: Vancouver
REGIONS: British Columbia
NTS MAP: 092F16W 092F15E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 51 59 N NORTHING: 5524842
LONGITUDE: 124 29 29 W EASTING: 392823
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Open pit is located east of Cranberry Lake (Annual Report 1965).

COMMODITIES: Dimension Stone

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Magmatic Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic-Cenozoic			Coast Plutonic Complex

LITHOLOGY: Diorite

HOSTROCK COMMENTS: Age date from Powell Lake area (Geological Survey of Canda Map 1386A).
The Coast Plutonic Complex ranges from Jurassic to Tertiary in age.

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)
TERRANE: Plutonic Rocks

CAPSULE GEOLOGY

The Cranberry Lake quarry is underlain by diorite of the Jurassic to Tertiary Coast Plutonic Complex.
In 1960, 36,128 cubic metres of rock was quarried for construction of the Westview breakwater. In 1965, 6,116 cubic metres of rock was quarried for the foundations of the Powell River pulp mill expansion (Minister of Mines Annual Reports, 1960, page 137; 1965, page 261).

BIBLIOGRAPHY

EMPR AR 1959-197; *1960-137, 152; 1961-156; 1964-205; 1965-261
GSC MAP 1386A; 17-1968
GSC OF 611
GSC P 66-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/06 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 189** NATIONAL MINERAL INVENTORY:

NAME(S): **QUARRY BAY**, NELSON ISLAND QUARRY , TRI-WATERS RESOURCES, HANSON AGGREGATES

STATUS: Past Producer Open Pit MINING DIVISION: Vancouver
REGIONS: British Columbia
NTS MAP: 092F09E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 39 49 N NORTHING: 5501834
LONGITUDE: 124 07 15 W EASTING: 419115
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quarry 2 on Quarry Bay, on the southwest shore of Nelson Island (Fieldwork, 1986).

COMMODITIES: Granite Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Commodity is granodiorite.
ASSOCIATED: Feldspar Quartz Biotite Hornblende Pyrite
MINERALIZATION AGE: Jurassic

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Magmatic Industrial Min.
TYPE: R03 Dimension stone - granite
SHAPE: Regular
MODIFIER: Fractured
DIMENSION: 115 x 18 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Largest quarry.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Coast Plutonic Complex

LITHOLOGY: Medium Grained Equigranular Granodiorite

HOSTROCK COMMENTS: Coast Plutonic Complex ranges from Jurassic to Tertiary in age.

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Plutonic Rocks

CAPSULE GEOLOGY

Four quarries occur in granodiorite of Jurassic age in the Jurassic to Tertiary Coast Plutonic Complex and are located on Quarry Bay at the southern tip of Nelson Island.

The granodiorite is light grey, uniform and has a medium grained texture. Black blades of biotite and occasional hornblende crystals contrast with the light grey feldspar and quartz matrix. Scattered knots of mafic minerals (less than 1 per cent by volume), up to 3 centimetres wide by 10 centimetres long, are visible in outcrop. Isolated clusters of pyrite are also visible. The largest quarry is 115 metres long and was worked in benches up to 18 metres high.

Spacing between joints and fractures at all four quarries permits removal of large blocks. Greater than 80 per cent of vertical joints and fractures, and over 74 per cent of horizontal joints, are spaced more than 50 centimetres apart. Some 60 per cent of all structures are spaced wider than 100 centimetres. Large reserves remain on site at three of the quarries. Cottages have been built on the site of the smallest quarry. Physical properties are as follows (CANMET Report 452, pp. 85-86):

Specific gravity	2.657
Crushing strength (dry) (lbs/sq.in.)	34,823
Transverse strength (lbs/sq.in.)	2,871
Shearing strength (lbs/sq.in.)	2,300

These quarries have been operated intermittently since the mid-1800's, providing stone for a number of buildings and monuments in Vancouver, Victoria, New Westminster and Nanaimo. The stone has also been exported to Australia, California and Hawaii. Vancouver Granite Company Ltd. operated the quarries more or less continuously during the first half of this century. The stone was marketed under the trade name "Nelson Island Grey". No production figures are available.

CAPSULE GEOLOGY

Hanson Aggregates plans to re-open the old Tri-Waters Resources Quarry.

BIBLIOGRAPHY

EMPR AR 1923-A268; 1929-C437; 1935-G32; 1939-A113; 1942-A92;
1949-A247; 1953-A185
EMPR FIELDWORK, *1986, pp. 309, 315, 323-327, 329
EMPR INF CIRC 1986-1, p. 67; 1987-1, p. 75; *1988-6, p. 13, 1994-15
EMPR OF 1991-20
GSC MAP 17-1968
GSC OF 611
GSC P 68-50; 90-1F, pp. 95-107
CANMET RPT *452, pp. 85-86; *846, pp. 163-166
Victoria Times Colonist, June 22, 1997, p. C8

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/03/08 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 190**

NATIONAL MINERAL INVENTORY:

NAME(S): **KENNEDY LAKE EAST**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W 092F04E
BC MAP:
LATITUDE: 49 03 05 N
LONGITUDE: 125 28 58 W
ELEVATION: 35 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location centered on site of sample Number 3, as described in Minister of Mines Annual Report 1962, page 153.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5436138
EASTING: 318598

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite Ankerite Quartz Pyrite Brucite
MINERALIZATION AGE: Upper Triassic
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Halobia

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: Limestone band trends northeast for 8.9 kilometres.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil
MATERIAL DATED: Halobia mollusks

LITHOLOGY: Limestone
Calcareous Tuff
Granodiorite
Quartz Diorite
Pyroclastic Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
METAMORPHIC TYPE: Contact RELATIONSHIP: Post-mineralization GRADE:
COMMENTS: Formed on a shallow marine platform of ocean rift volcanics.

INVENTORY

ORE ZONE: ROADCUT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1962
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	54.8000	Per cent

COMMENTS: Along 91 metres of roadcut. Grade given for CaO.
REFERENCE: Minister of Mines Annual Report 1962, page 153, Sample 3.

CAPSULE GEOLOGY

This occurrence is comprised of an irregular belt of calcareous rocks of the Upper Triassic Vancouver Group, Quatsino Formation. The belt extends northeastwards from the south slope of Salmonberry Mountain along the southeast shore of Kennedy Lake for 9 kilometres, 54 kilometres southwest of Port Alberni.

These sediments consist of a lower limestone member at least 600 metres thick overlain by 240 metres of calcareous tuff, which in turn, is overlain by 110 metres of limestone. Dips vary from 40 to 60 degrees southeast in the northwest and gradually flatten out along the belt to the southwest. The southwestern third of the belt is folded into a northeast trending syncline that preserves the calcareous tuff and upper limestone member and an overlying sequence of Lower Jurassic Bonanza Group pyroclastic andesites. The syncline is terminated to the southwest by a fault and partially truncated to the northeast, on the north slope of Salmonberry Mountain, by a mass of granodiorite and quartz monzonite of the Jurassic Island Intrusions. This mass flanks the limestone along the northeastern two-thirds of the belt. The limestone is also intruded by a few

CAPSULE GEOLOGY

dykes, sills and small stocks of fine-grained andesite.

The upper and lower limestone members are composed of dark grey to white, commonly medium grey, medium to coarse-grained limestone that is extensively recrystallized. Some zones of mottled dolomite are present. Plates and nodules of brucite are disseminated in the upper limestone member where it is truncated by the granitic intrusion on the north slope of Salmonberry Mountain. Yellow ankerite grains occur in a few places. Sporadic pyrite is also evident. Rounded grains of quartz are occasionally visible in thin section.

A sample comprised of chips taken at 3.0 metre intervals along 91 metres of roadcut on Highway 4, 400 metres west of the turn off to Maggie Lake, contained 54.80 per cent CaO, 0.74 per cent MgO, 0.84 per cent insolubles, 0.17 per cent R2O3, 0.11 per cent Fe2O3, 0.008 per cent MnO, trace of P2O5, 0.002 per cent sulphur and 43.37 per cent ignition loss (Annual Report 1962, page 153, Sample 3).

BIBLIOGRAPHY

EMPR AR *1962-111-121,151-153
EMPR BULL *55, pp. 19-21; 40
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
EMPR OF 1987-13, p. 52; 1992-18, pp. 37, 38
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/07 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 191**

NATIONAL MINERAL INVENTORY:

NAME(S): **KENNEDY LAKE WEST**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 03 16 N
LONGITUDE: 125 36 29 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location determined from approximate centre of limestone outcrop as shown in Bulletin 55, Figure 2.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5436785
EASTING: 309457

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: Limestone dips shallow to the northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Argillite
Tuff
Gabbro
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Formed on a shallow marine platform of ocean rift volcanics.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1962
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	54.9800	Per cent

COMMENTS: Grade given for Cao.
REFERENCE: Minister of Mines Annual Report 1962, page 153, Sample 2.

CAPSULE GEOLOGY

A mass of medium-grained, dark grey Upper Triassic Vancouver Group, Quatsino Formation limestone outcropping over a 950 by 630 metre area forms a low isolated hill 1.7 kilometres west of Kennedy Lake, 60 kilometres west-southwest of Port Alberni. The limestone is underlain by fine-grained argillite or tuff with a contact that dips shallowly to the northeast. The limestone is intruded on the east side by small stock of gabbro and basalt.

A sample of randomly collected chips from an exposure on the northwest corner of the hill contained 54.98 per cent CaO, 0.49 per cent MgO, 0.70 per cent insolubles, 0.22 per cent R2O3, 0.14 per cent Fe2O3, 0.012 per cent MnO, traces of P2O5, 0.001 per cent sulphur and 43.46 per cent ignition loss (Annual Report 1962, page 153, Sample 2).

BIBLIOGRAPHY

EMPR AR *1962-53
EMPR BULL 55, p. 21
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
EMPR OF 1992-18, pp. 37, 40
GSC MAP 17-1968
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/07 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 192**

NATIONAL MINERAL INVENTORY:

NAME(S): **LUPUS 6**, CREEK SHOWING

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14E
BC MAP:
LATITUDE: 49 45 58 N
LONGITUDE: 125 09 16 W
ELEVATION: 230 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.5 kilometres west of Wolf Lake at the southern end of Constitution Hill (Assessment Report 13426).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5514854
EASTING: 344856

COMMODITIES: Gold, Silver, Zinc, Lead, Copper, Arsenic

MINERALS
SIGNIFICANT: Pyrite, Arsenopyrite, Realgar, Sphalerite
ASSOCIATED: Calcite
ALTERATION: Clay
ALTERATION TYPE: Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Breccia, Vein
CLASSIFICATION: Epithermal, Hydrothermal, Epigenetic, Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Siltstone, Sandstone, Dacite

HOSTROCK COMMENTS: Tertiary dacite occurs near the showing.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1986

COMMODITY	GRADE	
Silver	144.6900	Grams per tonne
Arsenic	2.1000	Per cent
Gold	4.4900	Grams per tonne
Copper	0.5400	Per cent
Lead	1.6100	Per cent
Zinc	4.9400	Per cent

COMMENTS: From a 20 centimetre chip.
REFERENCE: Assessment Report 15034.

CAPSULE GEOLOGY

The area is underlain by the Upper Cretaceous Nanaimo Group, Haslam and Comox Formations consisting of fine to coarse grained detrital sedimentary rocks. These are underlain by basaltic and andesitic lavas of the Upper Triassic Karmutsen Formation, Vancouver Group. A major unconformity separates the Karmutsen Formation from the overlying Nanaimo Group. Diorite and granodiorite of the Tertiary Mount Washington Intrusive Suite (formerly Catface Intrusions) have intruded the above rocks, forming stocks, sills and dykes.

The Creek showing is a zone of mineralization, that extends for 200 metres, occurring in narrow breccia veins up to 10 centimetres wide and on fracture and shear surfaces. Breccia vein material consists of siltstone and sandstone fragments in a matrix of pyrite, arsenopyrite, clay, realgar, and coarse white calcite. Some breccia types and veins also contain black sphalerite. The mineralized veins are irregular in attitude, but trend approximately east-northeast and

CAPSULE GEOLOGY

have steep northerly dips. Following the trend of the zone to the west an orange gossan is encountered adjacent Wolf Lake. Exposures of altered and shattered dacite containing disseminated pyrrhotite occur adjacent the gossan.

A 20 centimetre chip sample taken across the zone assayed 4.49 grams per tonne gold, 144.69 grams per tonne silver, 4.94 per cent zinc, 1.61 per cent lead, 2.10 per cent arsenic and 0.54 per cent copper (Assessment Report 15034).

BIBLIOGRAPHY

EMPR ASS RPT *13426, *14442, *15034
EMPR EXPL 1984-168; 1986-C183,C184
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 193**

NATIONAL MINERAL INVENTORY:

NAME(S): **PORT ALBERNI**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E 092F07W
BC MAP:
LATITUDE: 49 15 48 N
LONGITUDE: 124 44 49 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Geological Survey of Canada Summary Report 1922, Part A, page 58A.
Near Rogers and Stokes creeks.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5458198
EASTING: 372902

COMMODITIES: Shale

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: B06 Fireclay E07 Sedimentary kaolin

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Haslam	

LITHOLOGY: Shale
Claystone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The characteristic rock of this shale member of the Nanaimo Group, Haslam Formation is a black, dense, homogenous, very fine-grained, non-calcareous mud rock, occurring in massive beds, as much as 4.6 metres thick. The best and most continuous exposure is in Roger Creek and its tributary Fourmile Creek. For the most part, however, the shale does not outcrop and the area underlain by it is drift covered.

Samples of this shale were collected from a pit on the Alberni-Nanaimo highway about 5 kilometres from Alberni and sent to a ceramics laboratory for testing. The material had a fusion temperature of cone 5 (1235 degrees Celsius). When ground and tempered with 14.5 per cent water it was found to be low in plasticity and could not be used alone for making hollow-ware. Tests were completed using both the wet moulded and semi-dry press methods of brick making. The fired bricklets were pink-buff in colour and hard in texture, however, the wet moulded bricklets were scummed and the semi-dry bricklets were friable on the edges. Refer to Geological Survey of Canada Summary Report of 1922, Part A, page 58A for a complete data tabulation of the firing characteristics.

BIBLIOGRAPHY

EMPR BULL *30, p. 56
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
GSC MAP 2-1965; 17-1968; 1386A
GSC MEM 47
GSC OF 463; 1272
GSC P 68-50; 72-44; 79-30
GSC SUM RPT *1922, Part A, pp. 57,58

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/18 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 194**

NATIONAL MINERAL INVENTORY:

NAME(S): **JENTIN**, NIOBY, CEDAR HILL

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E 092F14W
BC MAP:
LATITUDE: 49 53 00 N
LONGITUDE: 125 30 58 W
ELEVATION: 560 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Two to four kilometres east of Upper Quinsam Lake. The coordinates are for mineralized fault examined by DDH-5 in 1983. Other showings occur over one kilometre to the east and 1.8 kilometres to the southeast.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5528695
EASTING: 319251

COMMODITIES: Silver, Copper, Gold, Lead, Zinc

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite, Galena
ALTERATION: Azurite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Discordant, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic
DIMENSION:
STRIKE/DIP: 040/70S
TREND/PLUNGE:
COMMENTS: Fault/shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Volcanic Flow
Volcanic Breccia

HOSTROCK COMMENTS: Granodiorite intrusions occur near mineralized volcanics.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1983

COMMODITY	GRADE	
Silver	153.2600	Grams per tonne
Gold	0.6200	Grams per tonne
Copper	9.8800	Per cent
Lead	0.0700	Per cent
Zinc	0.0700	Per cent

REFERENCE: Assessment Report 12637.

CAPSULE GEOLOGY

The area is underlain by Karmutsen Formation volcanic flows, pillow lavas and aquagene tuff overlain by Quatsino Formation limestone, all of the Upper Triassic Vancouver Group. These in turn are overlain by volcanic flows and breccias of the Lower Jurassic Bonanza Group. Intruding the stratigraphy is granodiorite of the Jurassic Island Plutonic Suite.

Faults and shears in altered Bonanza volcanics are mineralized with pyrite, chalcopyrite, azurite and galena. One of these faults, striking at 040 degrees and dipping at 70 degrees to the southeast, has been traced for a distance of 61 metres. A sample taken from a trench on this fault contained 0.62 grams per tonne gold, 153.26 grams per tonne silver, 9.88 per cent copper, 0.07 per cent lead and 0.07 per cent zinc (Assessment Report 12637).

BIBLIOGRAPHY

EMPR ASS RPT *10866, *12637
EMPR EXPL 1983-207

BIBLIOGRAPHY

GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/26 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 195**

NATIONAL MINERAL INVENTORY:

NAME(S): **CONTENTED**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 06 10 N
LONGITUDE: 124 52 42 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Zone 1 on 2510 road, Zone 2 on 2500 road (Assessment Report 2044).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5440580
EASTING: 362900

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Disseminated Vein Podiform
CLASSIFICATION: Hydrothermal Epigenetic Volcanogenic
TYPE: I06 Cu±Ag quartz veins
COMMENTS: Pods are less than a metre in length.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Granodiorite

HOSTROCK COMMENTS: Mineralized sheared basalt near granodiorite intrusion.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	45.5700	Grams per tonne
Copper	5.8000	Per cent

REFERENCE: Assessment Report 12044.

CAPSULE GEOLOGY

Two mineralized zones occur within Upper Triassic Vancouver Group, Karmutsen Formation basalts, in association with underlying granodiorites of the Lower Jurassic Island Plutonic Suite.

Zone 1 consists of very fine to coarse grained, sporadic pyrite, pyrrhotite, and chalcopyrite as disseminations, fracture fillings, veinlets and massive pods within sheared basalts. Disseminations and fracture fillings are found in the more competent basalts and the sulphide pods occur in the shear zones. These pods attain a width of 15 centimetres and height of 1 metre and are 80 to 90 per cent sulphides. Hand specimen samples from these pods assayed 45.57 grams per tonne silver and 5.8 per cent copper (Assessment Report 12044).

Zone 2 consists of a flat lying, massive, 10 centimetre wide, sulphide vein comprising pyrrhotite and pyrite. It is not known if this structure is a true vein or rather an exhalative lens of sulphide. Samples are reported to contain up to 18.51 grams per tonne silver and 8.4 per cent copper (Assessment Report 12044).

BIBLIOGRAPHY

EMPR ASS RPT *12044
EMPR EXPL 1982-143
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50; 72-44

DATE CODED: 1985/08/29
DATE REVISED: 1990/04/11

CODED BY: AFW
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 196** NATIONAL MINERAL INVENTORY:

NAME(S): **GRANITE ISLAND**, KELLY ISLAND, ADERA NATURAL STONE

STATUS: Producer Open Pit MINING DIVISION: Vancouver
REGIONS: British Columbia
NTS MAP: 092F09E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 42 38 N NORTHING: 5507155
LONGITUDE: 124 12 45 W EASTING: 412584
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quarries at the southwest end of Kelly Island (formerly Granite Island), west of Nelson Island (Fieldwork, 1986).

COMMODITIES: Granite Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Commodity is granodiorite.
ASSOCIATED: Orthoclase Plagioclase Quartz Biotite Hornblende Pyrite
MINERALIZATION AGE: Jurassic

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Magmatic Industrial Min.
TYPE: R03 Dimension stone - granite
SHAPE: Regular
MODIFIER: Fractured
DIMENSION: 110 x 12 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Largest quarry.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Coast Plutonic Complex

LITHOLOGY: Medium Grained Equigranular Granodiorite

HOSTROCK COMMENTS: Coast Plutonic Complex ranges from Jurassic to Tertiary in age.

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Plutonic Rocks

CAPSULE GEOLOGY

Jurassic granodiorite, of the Jurassic to Tertiary Coast Plutonic Complex, was mined in five quarries at the turn of the century on the south-west end of Kelly Island (formerly Granite Island), west of Nelson Island.

Medium-grained granodiorite from all five quarries is similar in appearance but slightly darker than Nelson Island (092F 189) and Hardy Island (092F 425) stone, containing more biotite. In thin section, the rock is seen to be comprised of orthoclase, plagioclase, quartz, biotite and a few grains of green hornblende. Patches of pyrite less than 1 centimetre in size and a few black knots are visible on quarry faces.

The largest of the quarries is 110 metres long and has a face 12 metres high. There are potential reserves at all five quarries. Joints and fractures are irregular, striking northwest to northeast and dipping between 8 and 90 degrees. Large blocks are potentially available in areas where joints are widely spaced (greater than 1 metre). Physical properties are as follows (CANMET Report 452, p. 90):

Specific gravity	2.681
Crushing strength (dry) (lbs/sq.in.)	35,144
Transverse strength (lbs/sq.in.)	3,521
Shearing strength (lbs/sq.in.)	2,756

These quarries were operated by West Coast Granite company in the early 1900's. The granodiorite has been used as a foundation stone in Canada and the United States and was used to construct the Victoria Harbour seawall because of its durability and attractive appearance. No production figures are available.

Adera Natural Stone Supplies Ltd. operates the quarry.

Granite Island Ltd. also operates a quarry on Granite Island.

BIBLIOGRAPHY

EM EXPL 1996-A13
EMPR AR 1923-A268; 1929-C437; 1935-G32; 1939-A113; 1942-A92;
1949-A247; 1953-A185
EMPR FIELDWORK *1986, pp. 315, 323, 325, 328-330
EMPR INF CIRC *1988-6, p. 16; 1996-1, p. 10; 1997-1, p. 13;
1998-1, p. 15; 2000-1, p. 11
EMPR OF 1991-20
GSC MAP 17-1968
GSC OF 463, 611
GSC P 68-50; 90-1F, pp. 95-107
CANMET RPT *452, Vol 5, pp. 88-91; *846, pp. 161, 162

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1996/11/13 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 197**

NATIONAL MINERAL INVENTORY:

NAME(S): **EAGLE GORGE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W
BC MAP:
LATITUDE: 49 51 16 N
LONGITUDE: 125 19 34 W
ELEVATION: 240 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located along Oyster River. Location is for main showing (EG-3), (Assessment Report 13602).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5525042
EASTING: 332799

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcocite Chalcopyrite Copper Cuprite Pyrite
ASSOCIATED: Quartz Sericite
ALTERATION: Malachite Magnetite Epidote Diopside Garnet
ALTERATION TYPE: Oxidation Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Vein
CLASSIFICATION: Hydrothermal Epigenetic Skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic Glass
Basalt
Pillow Lava
Breccia
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEINS

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1984

COMMODITY	GRADE	
Silver	19.5400	Grams per tonne
Copper	7.7800	Per cent

COMMENTS: Unknown chip length.
REFERENCE: Assessment Report 13602.

CAPSULE GEOLOGY

The area is underlain by block faulted Upper Triassic Karmutsen Formation volcanics (Vancouver Group) which are unconformably overlain by Upper Cretaceous Comox Formation sediments (Nanaimo Group). The Karmutsen rocks consist of very gently dipping thick amygdaloidal basaltic flows with interbedded pillow lavas, pillow breccias and very minor intercalated tuffaceous beds. The Comox rocks are composed of fairly flat lying conglomerates and sandstones with interbedded siltstone and shale.

Six copper bearing quartz vein-breccia showings occur along Oyster River within a 2 kilometre section.

The most significant showing appears as a bleached horizon approximately 2.5 metre in width, conforming to bedding in Karmutsen rocks, and having a strike of 020 degrees and dip of 40 degrees to the southeast. The zone has a porcelain-like appearance and petrographic studies show it to be a breccia of altered, partly devitrified, porphyritic, microlitic volcanic glass. It has been crackled and filled with quartz and chalcocite with lesser chalcopyrite and sericite. These veins are irregular in attitude and range from hairline to 1 or 2 centimetres of massive chalcocite. A random chip sample assayed 7.78 per cent copper, 19.54 grams per tonne silver and 0.14 grams per tonne gold (Assessment Report 13602).

CAPSULE GEOLOGY

Another showing contains pyrite, magnetite, epidote, diopside, and garnet. Other showings contain native copper, cuprite, and malachite.

BIBLIOGRAPHY

EMPR ASS RPT 11199, 11461, *13602
EMPR EXPL 1983-209; 1985-C157
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 80-16

DATE CODED: 1985/08/29 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/03/02 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 198**

NATIONAL MINERAL INVENTORY:

NAME(S): **SIHUN CREEK**, QUINSAM I

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E
BC MAP:
LATITUDE: 49 51 15 N
LONGITUDE: 125 32 50 W
ELEVATION: 580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.5 kilometres south of Quinsam Lake, in and adjacent Sihun Creek. Showings occur over a length of about 500 metres (Assessment Report 18870).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5525529
EASTING: 316907

COMMODITIES: Copper, Iron

MINERALS

SIGNIFICANT: Chalcopyrite, Magnetite, Pyrite
ASSOCIATED: Quartz, Calcite
ALTERATION: Epidote, Garnet, Magnetite, Malachite
ALTERATION TYPE: Skarn, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Massive, Vein
CLASSIFICATION: Skarn, Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Basalt
Garnetite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1989

COMMODITY	GRADE	
Copper	0.6200	Per cent
Iron	11.9000	Per cent

REFERENCE: Assessment Report 18870.

CAPSULE GEOLOGY

Several skarn related showings occur in or adjacent Sihun Creek, just over a kilometre from the old Iron Hill mine (92F 075). The area is underlain by Upper Triassic Vancouver Group, Karmutsen Formation volcanics.

The showings consist of: (1) massive magnetite in greenish volcanics; (2) chalcopyrite, pyrite, epidote, malachite and magnetite in altered and fractured volcanics; (3) quartz and calcite veins, in altered and fractured volcanics, containing chalcopyrite, pyrite and malachite; and (4) garnetite with minor chalcopyrite and malachite. A sample of No.4 type assayed 11.19 per cent iron and 0.62 per cent copper (Assessment Report 18870).

BIBLIOGRAPHY

EMPR ASS RPT *18870
EMPR BULL 3, 1917
EMPR FIELDWORK 1988, pp. 61-74
GSC BULL 172
GSC EC GEOL #3, Vol.1
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With

BIBLIOGRAPHY

Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/02/26 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 199**

NATIONAL MINERAL INVENTORY:

NAME(S): **EMPRESS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 25 14 N
LONGITUDE: 125 44 38 W
ELEVATION: 110 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: About 4 miles from Bedwell Sound on the wagon road that follows Bedwell River.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5477829
EASTING: 301012

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Discordant
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
COMMENTS: Shear zone mineralization.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1918
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	5.1000	Per cent

REFERENCE: Minister of Mines Annual Report 1918, page 265.

CAPSULE GEOLOGY

The area is underlain by volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group) which are intruded by granitic rock of the Jurassic Island Plutonic Suite. In the Bedwell River area the Karmutsen rocks consist of fine-grained andesites and black or dark green basalts. The Jurassic plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

Chalcopyrite occurs on the cleavage planes of sheared granodiorite. The ore occurs in narrow stringers and does not appear to be disseminated throughout the country rock. This shear zone has a width of about 7.5 metres. A grab sample contained a trace of gold and silver and 5.1 per cent copper (Minister of Mines Annual Report 1918).

BIBLIOGRAPHY

EMPR AR 1917-292, *1918-265
EMPR BULL 8; 13, p. 30
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/06 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 200**

NATIONAL MINERAL INVENTORY:

NAME(S): **CISCO**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09E
BC MAP:
LATITUDE: 49 34 24 N
LONGITUDE: 124 13 43 W
ELEVATION: 640 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Rock sample location site between two small lakes 7.25 kilometres south-southeast from the summit of Mount Davies in the southern half of Texada Island, just east of a main road that bisects the island (Assessment Report 16013).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5491919
EASTING: 411173

COMMODITIES: Gold, Copper

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite
ASSOCIATED: Ankerite
ALTERATION: Chlorite, Quartz, Carbonate
ALTERATION TYPE: Chloritic, Silicific'n, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal, Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Basaltic Agglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1986
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	1.3500	Grams per tonne

REFERENCE: Assessment Report 16013.

CAPSULE GEOLOGY

Several shear zones occur in chloritic Upper Triassic Karmutsen Formation (Vancouver Group) basalt, basaltic agglomerate and amygdaloidal basalt. Numerous quartz-carbonate alteration zones are developed along or adjacent to these structures.

The Cisco occurrence comprises a northwest trending, pyritic quartz-carbonate (ankerite) shear zone within chloritic basalt and basaltic agglomerate. Some chalcopyrite has been identified within this zone. A rock sample assayed up to 1.35 grams per tonne gold (Assessment Report 16013).

BIBLIOGRAPHY

EMPR ASS RPT *16013
EMPR EXPL 1987-C152
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24
DATE REVISED: 1990/02/14

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 201**

NATIONAL MINERAL INVENTORY:

NAME(S): **FELBER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 25 21 N
LONGITUDE: 125 47 38 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located on the divide between Bedwell River and the first important tributary of Moyeha River coming in from the east (Marina Creek?) (Geological Survey of Canada Memoir 204, page 25).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5478178
EASTING: 297394

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Skarn Industrial Min.
COMMENTS: Assumed to be skarn.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Unknown	Unnamed/Unknown Group	Unnamed/Unknown Formation	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Intrusive
Basalt
Andesite

HOSTROCK COMMENTS: Rock types of deposit are not reported. Listed rocks are regional types. Limestone is of unknown group affinity.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

A persistent lead of magnetite was located on the divide between Bedwell River and the first important tributary of Moyeha River coming in from the east (Geological Survey of Canada Memoir 204). No other details of the deposit were reported.

The region is underlain by andesitic to basaltic volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. Intruding the stratigraphy and covering large areas are rocks of the Jurassic Island Plutonic Suite, which on Vancouver Island, vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite. A north trending band of limestone about 5 kilometres in length occurs, bounded on the west by Karmutsen rock and on the east by Island Plutonic Suite rock (Geological Survey of Canada Open File 463). This limestone has not been assigned to a group or formation.

Similar types of rocks found several kilometres to the southeast near Bedwell River are known to host skarn-type magnetite deposits.

BIBLIOGRAPHY

EMPR BULL 3, 1917
EMPR OF 1988-28
GSC BULL 172
GSC EC GEOL #3, Vol.1
GSC MAP 17-1968; 1386A
GSC MEM *204, p. 25
GSC OF 463
GSC P 68-50; 71-36; 72-44; 79-30; 80-16
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic

BIBLIOGRAPHY

Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/29 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 202**

NATIONAL MINERAL INVENTORY:

NAME(S): **KUNLIN LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12W 092F13W
BC MAP:
LATITUDE: 49 44 29 N
LONGITUDE: 125 59 58 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Reported to north of Kunlin Lake and a little west (Assessment Report 4972). See MINFILE occurrence 092F 181 - GAM.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5514196
EASTING: 283904

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite Calcite Arsenopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Texas Creek Plutonic Suite

LITHOLOGY: Basalt
Limestone
Granodiorite

HOSTROCK COMMENTS: Actual host rock is not reported.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1973

COMMODITY	GRADE	
Gold	1.3700	Grams per tonne
Copper	0.3900	Per cent

COMMENTS: Silver assayed 9.26 grams per tonne.
REFERENCE: Assessment Report 4972.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group rocks consisting of Karmutsen Formation basalts overlain by Quatsino Formation limestone. These are intruded by the Jurassic Island Intrusions consisting dominantly of quartz diorite with lesser diorite and granodiorite.

A showing is reported to occur north, and a little west, of Kunlin Lake on the north side of a valley. A zone impregnated with chalcopyrite, pyrite, pyrrhotite and chalcocite and another with quartz carrying a large quantity of arsenopyrite are reported. A sample assayed 1.37 grams per tonne gold, 9.26 grams per tonne silver and 0.39 per cent copper (Assessment Report 4972).

BIBLIOGRAPHY

EMPR ASS RPT 560, *4972, 5853, 6281, 6705, 7410, 8037
EMPR EXPL 1976-E116, 1977-E114, 1978-E113, 1988-174
EMPR GEM 1974-182
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44; 79-30

DATE CODED: 1990/02/25
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 203**

NATIONAL MINERAL INVENTORY:

NAME(S): **DAWN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 26 03 N
LONGITUDE: 125 54 44 W
ELEVATION: 90 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: On a bluff close to Moyeha River, within 2.5 kilometres of the river's mouth in Herbert Inlet (Geological Survey of Canada Memoir 204, page 25).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5479800
EASTING: 288864

COMMODITIES: Zinc Lead

MINERALS
SIGNIFICANT: Pyrite Arsenopyrite Sphalerite Galena
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION:
STRIKE/DIP: 130/27W
TREND/PLUNGE:
COMMENTS: Three veins in a shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by andesite of the Upper Triassic Karmutsen Formation, Vancouver Group. The area to the west of the volcanics is intruded by a stock of the Early to Middle Jurassic Island Intrusions. These plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

Three veins occur in a shear zone striking 130 degrees and dipping 27 degrees southwest. The veins are mineralized with pyrite, arsenopyrite, sphalerite, and a little galena.

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC MEM *204, p. 25
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 204**

NATIONAL MINERAL INVENTORY:

NAME(S): **MEARES NICKEL**, LONE CONE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04W
BC MAP:
LATITUDE: 49 10 59 N
LONGITUDE: 125 53 34 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Shaft on Lone Cone 13 claim located 50 metres west of shore on the west side of Lemmens Inlet, and 130 metres north of an east to southeast flowing stream (Assessment Report 739). Coordinates are a best guess taken from sketch maps from above Assessment Report. May be located on stream 850 metres north.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5451834
EASTING: 289204

COMMODITIES: Nickel Copper

MINERALS
SIGNIFICANT: Siegenite Pyrrhotite
COMMENTS: Copper sulphides are reported but not specified.
ALTERATION: Serpentine
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Vein
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Gneiss
Serpentinized Ultramafic Sill

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Meares Island is underlain mainly by rocks of the pre-Jurassic Westcoast Complex. This complex is a heterogeneous assemblage of hornblende-plagioclase gneiss, amphibolite, agmatite, basic migmatite, quartz diorite or tonalite and minor metasedimentary and metavolcanic rocks. This complex is considered to be derived from Sicker and Vancouver group rocks which were migmatized in early Jurassic time. Its mobilized granitoid part is thought to have become the source of the Jurassic Island Intrusions.

This nickel-copper deposit, of undetermined size, occurs in a serpentinized ultramafic sill (?) in the Westcoast (Gneiss) Complex. The gneisses are thought to be derived from Sicker Group rocks with the sill being equivalent to basic sills contained in the Sicker Group at other localities on Vancouver Island. These sills are believed to be intrusive equivalents of Karmutsen basalts and are therefore probably Upper Triassic (Geological Survey of Canada Paper 68-50).

It is reported that nickel-copper mineralization associated with pyrrhotite occurs in veinlets or interstitial to olivine and pyroxene. Siegenite is the only nickel-bearing mineral identified, occurring as partly replaced crystals in pyrrhotite.

BIBLIOGRAPHY

EMPR AR *1965-235; 1966-245
EMPR ASS RPT *739
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P *68-50, pp. 36-40; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

BIBLIOGRAPHY

Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/27 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 205**

NATIONAL MINERAL INVENTORY:

NAME(S): **FREE GOLD**, BAYCREST

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 15 44 N
LONGITUDE: 125 42 38 W
ELEVATION: 360 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.0 kilometre east from the head of Warn Bay.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5460142
EASTING: 302797

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Gold Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Undefined Formation	
Paleozoic-Mesozoic			Westcoast Complex
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Diorite

HOSTROCK COMMENTS: Hosted in plutonic rock of either West Coast Complex or Island Plutonic Suite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Bulk Sample
YEAR: 1942

COMMODITY	GRADE	
Silver	96.0000	Grams per tonne
Gold	309.0000	Grams per tonne

REFERENCE: Minister of Mines Annual Report 1942, page 31.

CAPSULE GEOLOGY

The region is underlain by Devonian Sicker Group rocks comprised of cherts and argillites covered by meta-andesites and meta-dacites. The Sicker rocks are overlain by the Upper Triassic Vancouver Group consisting of Karmutsen Formation volcanics and Quatsino Formation limestone. Stocks of the Jurassic Island Plutonic Suite consisting of granodiorite to quartz diorite intrude the strata. An assemblage of rocks belonging to the pre-Jurassic Westcoast Complex also occurs in the area. The assemblage consists of gneiss, amphibolite, agmatite, and quartz diorite or tonalite. This complex is considered to be derived from Sicker and Vancouver group rocks which were migmatized in early Jurassic time. Its mobilized granitoid part is thought to have become the source of the Island Plutonic Suite.

The Free Gold prospect consists of a quartz vein within a shear zone hosted by quartz diorite of the Westcoast Complex or Island Plutonic Suite. Small bodies and angular fragments of altered volcanics (Sicker Group) are found within the intrusive. The vein, from 0.2 to 1.0 metres in width, strikes at 080 degrees and dips steeply to the north. Mineralization consists of native gold and trace amounts of galena. A sample across 25 centimetres assayed 8.23 grams per tonne gold (Assessment Report 13281). Three bulk samples were shipped in 1941 and 1942. One 0.90 tonne sample was found to contain 309 grams per tonne gold and 96 grams per tonne silver (Minister of Mines Annual Report 1942).

A plan of the workings (undated) shows three adits: adit No.1 at

CAPSULE GEOLOGY

343 metres elevation shows about 57 metres of underground development, adit No.2 at 373 metres elevation shows about 51 metres of workings and adit No.3 at 381 metres elevation shows 7 metres of drifting. All three adits are adjacent a northwest flowing creek and were driven toward the east.

BIBLIOGRAPHY

EMPR AR 1941-42; 1942-31; 1946-183
EMPR ASS RPT *9418, *13281, 15551, *17589
EMPR EXPL 1981-33, 1984-160, 1987-C146, 1988-C85
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (Reports: Lynott, W.C., 1946; Campbell, C.M., 1950; Plans of workings)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 206**

NATIONAL MINERAL INVENTORY:

NAME(S): **MUREX**, HKR, MWC, MINK

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14E 092F14W
BC MAP:
LATITUDE: 49 45 40 N
LONGITUDE: 125 15 00 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the western flank of Mount Washington, adjacent to Murex Creek (Assessment Report 18391).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5514500
EASTING: 337958

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite
ASSOCIATED: Quartz Biotite Magnetite
ALTERATION: Epidote Chlorite
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Vein Discordant
CLASSIFICATION: Replacement Porphyry Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: 0700 x 0700 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Cretaceous	Nanaimo	Comox	
Tertiary			Mount Washington Intrus. Suite

ISOTOPIC AGE: 35 +/- 6 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Basaltic Breccia
Sediment/Sedimentary Breccia
Diorite Breccia
Sandstone
Siltstone
Argillite
Diorite

HOSTROCK COMMENTS: Mineralization occurs in breccias composed of all the above stratigraphic units and intrusive. Age date from GSC Paper 77-44.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	32.9100	Grams per tonne
Gold	6.3100	Grams per tonne
Copper	4.0800	Per cent

COMMENTS: From a four metre drill section.
REFERENCE: George Cross News Letter #5, 1970.

CAPSULE GEOLOGY

The area is underlain primarily by basaltic lavas of the Upper Triassic Karmutsen Formation, Vancouver Group. These rocks are mostly massive flows and pillow lavas of partly amygdaloidal basalts, with minor tuffs, volcanic breccias and agglomerates. A major unconformity separates the Karmutsen Formation from the overlying Upper Cretaceous Nanaimo Group. Haslam and Comox Formations which consist of fine to coarse grained detrital sedimentary rocks. The Benson Member is a pebble-cobble-boulder conglomerate which marks the

CAPSULE GEOLOGY

unconformity in some areas.

Diorite and granodiorite of the Late Eocene to Early Oligocene Mount Washingtone Intrusive Suite (formerly Catface Intrusions) have intruded the above rocks, forming stocks, sills and dykes. The two intrusive types, as well as xenoliths of intrusive found within diorite dykes, indicate that multiple stage intrusions have occurred.

These intrusives have, in some cases, caused the formation of breccias composed of various combinations of basalts, sediments, and diorite fragments in a fine to medium grained siliceous matrix, sometimes with accompanying sulphide mineralization. There are five breccia types recognized in the Murex breccia zone. Subdivided on the basis of their fragment lithology they are:

---

(1) A Basaltic breccia composed of fragments of Karmutsen basalt, in a rusty, vuggy, fine to coarse grained quartz rich matrix. The fragments are sub-angular to rounded, and range in size from granules to large boulder sized blocks. The quartz rich matrix makes up from 20 to less than 5 per cent of the breccia. This matrix is mineralized with up to 10 per cent sulphides including chalcopyrite, pyrite and pyrrhotite.

(2) The Comox breccia composed of fragments of Comox sandstones, siltstones and argillites in a siliceous matrix. The fragments ranging in size from pebbles to large cobbles, are generally angular to sub-angular and make up 85 per cent of the rock; the matrix makes up 15 per cent. In most cases the sulphide content makes up less than 1 per cent of the rock, chiefly in the form of blebs of pyrite, chalcopyrite and pyrrhotite.

(3) The Intrusive breccia composed of fragments of diorite in a fine grained siliceous matrix containing up to 10 per cent biotite. The fragments are angular to sub-angular and range in size from pebbles to large cobbles. The fragment to matrix ratio is generally 90 per cent to 10 per cent, respectively. Pyrite with minor pyrrhotite and chalcopyrite occur within the matrix but rarely exceed 2 per cent of the whole rock.

(4) The Mixed Lithology breccia consisting of fragments of basaltic, sedimentary and dioritic rocks, in varying proportions, in a siliceous, often biotite bearing matrix. The fragments vary from angular to sub-rounded and range in size from pebbles to large cobbles. Fragment to matrix ratio averages 90 per cent to 10 per cent, respectively.

(5) The Fluidized Milled breccia composed of 80 to 85 per cent fragments consisting of basaltic, sedimentary and dioritic fragments. The fragments are sub-angular to rounded and range in size from granule to cobble. The matrix makes up 15 to 20 per cent of the breccia and is composed of quartz plus or minus minor carbonate and varying amounts of chalcopyrite, pyrrhotite and pyrite.

Epidote also occurs within the interstices, usually at the expense of the sulphides. Chlorite generally accompanies the epidote indicating a form of propylitic alteration has taken place. Also exerting an influence on the amount of sulphides is the percentage of comminuted rock flour within the matrix. In addition, where the rock flour content is low, the clasts tend to be angular and often elongate, suggesting little movement has taken place. In these areas the origin of the Murex breccia is interpreted to be the result of collapse. Within blocks of unbrecciated mafic volcanic adjacent to the breccia a minor amount of sulphide veining is present. However, within the breccia the degree of veining is minimal. Magnetite is also reported to occur within the matrix.

The Murex zone represents an area of roughly 700 by 700 metres. The mineralization is thought to be the result of replacement but also has characteristics in common with porphyry-type deposits.

The zone has been tested by a number of diamond-drill holes. One hole drilled in 1989 cut strong breccias with pyrrhotite-chalcopyrite mineralization about 30 metres below the surface. A 4 metre section of core assayed 4.08 per cent copper, 32.91 grams per tonne silver and 6.31 grams per tonne gold (George Cross News Letter #5, January 8, 1990).

BIBLIOGRAPHY

EMPR AR 1956-119; 1957-69; 1959-135; 1960-111; 1961-102; 1962-105; 1963-103; 1964-155,157; 1965-235; 1966-71; 1968-101
EMPR ASS RPT 839, 1120, 1142, 1145, 1691, 4471, 4505, 5146, 5267, 5604, 5979, 5980, 6407, 6930, 9445, 11946, 11995, 11996, 12604, 12605, 14085, 14705, 15228, 15395, 15526, 15776, 15825, 15826, 15857, 15765, 16762, *17033, 17123, 17181, *18119, *18391
EMPR EXPL 1975-E102; 1976-E116; 1977-E115; 1978-E131; 1980-175; 1983-209; 1984-166,168; 1985-C156; 1986-B29,C181,C184; 1987-

BIBLIOGRAPHY

C156-158; 1988-C92,C93
EMPR EXPL REVIEW 1986, p. 70
EMPR FIELDWORK *1988, pp. 81-91
EMPR GEM 1969-212; 1970-281; 1973-236; 1974-183
EMPR INF CIRC 1989-1, p.32; 1990-1, p.39
EMPR PF (W.G. Stevenson and Associates, (1970): Mt.Washington Exploration Project; W.G. Stevenson and Associates, (1969): Geological Map, 1: 12000; McElhanney, (1972): Line Cutting Map, 1:9600; Cumberland Mining Company Limited and Mount Washington Copper Company Limited, Souvenir of the Official Opening, Dec.5, 1964; Better Resources (1987): Statement of Material Facts dated June 19 1987; Photograph, (1965): Mount Washington Mill; Map (1959): Mount Washington Diamond Drill Hole Locations; Claim Map, Mount Washington Area; Noranda Exploration Company Limited (1959): Mount Washington Property Surface Plan, T. Walker, 1: 600 (waste dump area; Nicolls, O.W.,(1961): Report on the Mount Washington Domineer Drilling Option; Mount Washington Area Claims List and Ownership)
EMR MIN BULL MR 223 (1989) B.C. 99
EMR MP CORPFILE (Mount Washington Copper Company Limited; Noranda Exploration Company; Qualicum Mines Limited; Cumberland Mining Company Limited)
GSC BULL 172
GSC MAP 49-1959; 2-1965; 17-1968; 1386A
GSC OF 9; 61; 463
GSC P 66-1; 68-50, p. 39,42; 71-36; 72-44
GSC SUM RPT 1924A, pp. 106-144; 1925A; 1930A-64
CIM Special Volume #15, 1976, Table I
CIM Transactions #72, p. 116
CMJ Jan., 1965
GCNL Sept.17, Dec.30, 1975; Sept.22, #210, 1976; May 25, Oct.26, 1977; #7, 1978; #121,#206, 1979; #128,#155, 1984; #107,#129, #142,#150,#176,#178,#194,#198,#214, 1986; #14,#91,#107, #114,#135,#175,#176,#191,#195,#212,#225, 1987; #11,#114, #144,#177,#187,#222, 1988; #13,149,#178, 1989; *#5, 1990
N MINER Aug 11, Oct.27, Nov.17,24, 1986; Feb.2, May 18, Sep.28, Oct. 19, Nov.16, 1987; July 4, 1988;
NW PROSP Oct./Nov., 1988
PERS COMM: Paul Wilton, 1990 (with respect to genesis)
PERS COMM: Nick Massey, May 1990 (with respect to Tertiary intrusion nomenclature)
V STOCKWATCH Sep.15, Jul.30, Sept.30, Oct.6, Oct.13, Nov.5, 9, 24, 1987; Jan.19, 1988; Aug.3, Sept.12, 1989
W MINER Nov. 1965, p. 35; Nov. 1967, pp.35-40
*Better Resources Limited (1987): Mount Washington Precious Metals Project, Vancouver Island, Coreshack, Cordilleran Roundup
Better Resources Limited, News Release Jan.16, 1987, Jul.26, 1988
Better Resources Limited, Annual Report 1987; Corporate Profile (not dated); 1989 Snapshot Review; Statement of Material Facts dated Aug.1, 1984
Carson, D.J.T., (1960): Geology of Mount Washington, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
McGuigan, P.J., (1975): Certain Breccias of Mount Washington Property, Vancouver Island, B.Sc. Thesis, University of British
Mount Washington Copper Company Limited, (1971): Statement of Material Facts dated May 26, 1971
Schroeter, T., EMPR District Geologist, Monthly Reports Jan.1987, Mar. 1988
Vancouver Market Report, February, 1987

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/07 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 207**

NATIONAL MINERAL INVENTORY:

NAME(S): **MARY**, CUP, WINE,
MT. SPENCER, BALLS, PAT,
PORT

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 03 09 N
LONGITUDE: 124 38 50 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Zone 1.

MINING DIVISION: Victoria
Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5434599
EASTING: 379647

COMMODITIES: Copper, Molybdenum, Silver, Lead, Zinc, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Molybdenite, Pyrrhotite, Sphalerite, Pyrite, Galena
ASSOCIATED: Quartz
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork, Disseminated, Shear
CLASSIFICATION: Hydrothermal, Epigenetic, Porphyry, Skarn
TYPE: I06 Cu±Ag quartz veins; K01 Cu skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Andesite
Limestone
Feldspar Porphyry
Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1976

COMMODITY	GRADE	
Copper	1.2200	Per cent
Molybdenum	0.0660	Per cent

COMMENTS: 24.7 metre sample.
REFERENCE: Assessment Report 8177.

CAPSULE GEOLOGY

Pillowed and massive andesite and associated volcaniclastics of the Upper Triassic Karmutsen Formation are intruded by gabbroic and basaltic dykes and feldspar porphyry dykes. The volcanics are overlain by thin to medium-bedded limestone, likely of the Triassic Quatsino Formation.

Several types of mineralization occur in an east-west trending area, measuring approximately 1000 by 400 metres, south of Mt. Spencer. These include: pyrrhotite, chalcopyrite, molybdenite and minor sphalerite and galena within quartz veins and shear zones in andesite; basalt dyke margins with pyrrhotite; copper-bearing skarn zones in limestone and; chalcopyrite, pyrrhotite and pyrite near feldspar porphyry dyke contacts.

In Zone 1, disseminated to massive pyrrhotite, pyrite and chalcopyrite, up to 0.6 metre thick, occur along fractures and joint surfaces over a 61 to 122 metre wide by 366 metre long area. The average grade of the zone is 0.15 per cent copper, including a 6 metre section of 0.63 per cent copper (Assessment Report 8177). A drill hole intersected 180 grams per tonne silver and 10.30 per cent

CAPSULE GEOLOGY

copper over 0.8 metres (Assessment Report 6134).

Zone 2, located 250 metres to the northeast of Zone 1, measures 15 by 300 metres and contains pods and disseminations of chalcopyrite and pyrrhotite. The average grade of the zone is 0.8 per cent copper, including a 6 metre section of 0.97 per cent copper (Assessment Report 8177).

One hundred meters north of Zone 2, Zone 3 contains disseminated and massive pyrrhotite and minor chalcopyrite on fracture planes in andesite.

Zone 3a, about 600 metres to the east of Zone 1, contains disseminated and massive chalcopyrite, pyrrhotite and molybdenite mineralization in narrow veins. A drill hole intersection contained 24.7 metres of 1.22 per cent copper and 0.066 per cent MoS_2, including 3.1 metres of 71.7 grams per tonne silver and 6.56 per cent copper (Assessment Report 8177).

There are several other small mineralized zones in the area. Pat's vein, located 100 metres south of Zone 3a, is a highly oxidized, chloritized and fractured quartz vein near a feldspar porphyry dyke. It contains pyrrhotite, pyrite and chalcopyrite and assayed 0.61 per cent copper and 1.1 grams per tonne gold (Assessment Report 8177). Ball's vein, located 350 metres northwest of Zone 1, is a 40 centimetre by 50 metre quartz vein containing galena, pyrite and chalcopyrite. A 20 centimetre sample assayed 221.5 grams per tonne silver, 0.7 per cent copper, 1.21 per cent lead and 0.5 per cent zinc (Assessment Report 14470).

BIBLIOGRAPHY

EMPR AR *1966-75-76; 1967-76
EMPR ASS RPT 6134, *8177, 9292, 12696, *13564, 14470
EMPR BULL 37
EMPR EXPL 1976-111; 1980-165; 1985-136
EMPR FIELDWORK 1988 pp.61-74
EMPR OF 1987-2, 1988-24, 1989-6
EMPR PF (092F General File - Laanela, H., (1965): *Reports; Brander, J.M., (1965); Rose, K.C., (1967): Gunnex Limited, Occurrence #16)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL Jan.26,Aug.20, 1976; Jan.19, 1977; #102(May 29), 2000
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/12 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 208** NATIONAL MINERAL INVENTORY:

NAME(S): **CALDER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F16E
BC MAP:
LATITUDE: 49 53 42 N
LONGITUDE: 124 00 43 W
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of trench on mineralization is 1.2 kilometres east of Hotham Sound, 4.0 kilometres southeast of Baker Bay (Assessment Report 11230).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5527447
EASTING: 427320

COMMODITIES: Copper Zinc Silver

MINERALS
SIGNIFICANT: Chalcopyrite Sphalerite
COMMENTS: Silver mineralogy not known.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
DIMENSION: 0004 Metres STRIKE/DIP: 350/85E TREND/PLUNGE:
COMMENTS: Veinlets strike parallel to bedding at 350 degrees, dipping 85 degrees east.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Unknown	Gambier	Undefined Formation	
Upper Cretaceous			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Rhyolite
Dacite
Diorite
Tonalite

HOSTROCK COMMENTS: Hornblende age date from Powell Lake area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)
TERRANE: Gambier
METAMORPHIC TYPE: Contact Regional RELATIONSHIP: Plutonic Rocks GRADE:

INVENTORY

ORE ZONE: TRENCH REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	88.8100	Grams per tonne
Copper	19.2000	Per cent
Zinc	2.6300	Per cent

REFERENCE: Assessment Report 11230, following page 8.

CAPSULE GEOLOGY

The Calder occurrence is located in a roof pendant of Lower Cretaceous Gambier Group rhyolite and dacite flows, 200 metres east of the contact with diorite and tonalite of the Jurassic to Tertiary Coast Plutonic Complex. The volcanic rocks strike 350 degrees and dip 80 to 85 degrees east.

Mineralization has been observed over a 4.0 metre wide zone in thin veinlets and pods that range from 1.5 to 8.0 millimetres in width, and consist of chalcopyrite and sphalerite with associated silver values. The veinlets parallel bedding attitudes. A few metres north of the trench that exposed this mineralization, no mineralization is present, while 15 metres to the south only a single veinlet is reported. A grab sample from the trench assayed 19.2 per

CAPSULE GEOLOGY

cent copper, 2.63 per cent zinc and 88.81 grams per tonne silver (Assessment Report 11230, following page 8).
Assessment Report 14272 (page 20) casts some doubt on the location of the trench.

BIBLIOGRAPHY

EMPR ASS RPT *11230; 14272
EMPR BULL 39
EMPR EXPL 1982-149; 1985-C160
GSC MAP 17-1968; 1386A
GSC OF 611
GSC P 66-1

DATE CODED: 1985/08/29 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1989/06/26 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 209**

NATIONAL MINERAL INVENTORY:

NAME(S): **ORPHAN BOY (L.298)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 02 26 N
LONGITUDE: 125 01 30 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near the southeast end of Henderson Lake (Assessment Report 777).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5433939
EASTING: 352011

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Pyrrhotite
ASSOCIATED: Ilvaite Magnetite
ALTERATION: Epidote Ilvaite Garnet Quartz Pyroxene Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Tuff
Diorite
Skarn

HOSTROCK COMMENTS: Skarn at limestone (Quatsino or Karmutsen?) contacts near diorite intrusion. Bonanza Group volcanics also occurs.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

INVENTORY

ORE ZONE: SKARN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1965

COMMODITY	GRADE	
Silver	39.4300	Grams per tonne
Copper	2.3500	Per cent

COMMENTS: A 90 centimetre chip sample.
REFERENCE: Assessment Report 777.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Vancouver Group rocks consisting of volcanics of the Karmutsen Formation, and a north trending band of limestone of the overlying Quatsino Formation. This limestone band is overlain to the east by volcanics of the Lower Jurassic Bonanza Group. The strata is intruded by diorite and granodiorite of the Jurassic Island Plutonic Suite, resulting in the recrystallization of limestone and tuff. The limestone involved in this skarn deposit may be from the Quatsino Formation or from limestone beds found in the upper part of the Karmutsen Formation.

Skarn zones are reported to have formed along limestone contacts. They are composed of epidote, ilvaite, garnet, quartz, pyroxene and minor amounts of pyrite, chalcopyrite, pyrrhotite and magnetite. Chalcopyrite is most often associated with ilvaite in the skarn zones. The zones are reported to be small, lenticular and irregular in distribution. A sample taken across 90 centimetres assayed 0.17 grams per tonne gold, 39.43 grams per tonne silver and

CAPSULE GEOLOGY

2.35 per cent copper (Assessment Report 777).

BIBLIOGRAPHY

EMPR AR 1899-782; 1903-250; 1966-246
EMPR ASS RPT *777, 2856
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1971-233
EMPR PF (Prospectus: Alberni Mines Ltd., January 21, 1965 (in 092F 166 file))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/11 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 210**

NATIONAL MINERAL INVENTORY:

NAME(S): **J AND S**, FLORENCE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 03 12 N
LONGITUDE: 125 01 10 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The J and S showing, as described by the 1965 prospectus report by Alberni Mines Ltd., is located 260 metres northeast of the Rainy Day adit (092F 166). The Florence occurrence is reported to adjoin the Lake Shore Group (Rainy Day) as well.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5435349
EASTING: 352455

COMMODITIES: Iron, Copper, Titanium

MINERALS

SIGNIFICANT: Magnetite, Chalcopyrite, Pyrite
ALTERATION: Garnet, Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn, Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Fine Grained Diorite
Rhyolite
Limestone
Basalt
Skarn

HOSTROCK COMMENTS: Skarn occurs in diorite in area of Bonanza volcanics and Quatsino limestone. Karmutsen volcanics occur in the area also.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1965
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.1500	Per cent
Iron	37.8000	Per cent
Titanium	0.1000	Per cent

COMMENTS: A 3 metre chip sample.
REFERENCE: Prospectus: Alberni Mines Ltd., 1965.

CAPSULE GEOLOGY

The area is underlain by a north trending band of Upper Triassic Vancouver Group, Quatsino Formation limestone. This narrow limestone band is in contact to the west with basalt of the Karmutsen formation (Vancouver Group), and to the east with Lower Jurassic volcanics of the Bonanza Group. The strata is intruded by diorite and grano-diorite of the Jurassic Island Plutonic Suite. Mafic dykes are also observed in the area.

Magnetite occurs as massive lenses and disseminations in an altered rhyolite (fine-grained diorite) on the J and S occurrence. Disseminated chalcopyrite and pyrite occur with the magnetite. Skarn minerals present include epidote and garnet. A sample taken across 3 metres of magnetite formation assayed 37.80 per cent iron, 0.10 per cent titanium (TiO_2), 0.15 per cent copper and trace gold and silver (Prospectus: Alberni Mines Ltd., 1965)

CAPSULE GEOLOGY

The Florence occurrence, in the same vicinity, is reported to have a lead of high grade copper ore (Minister of Mines Annual Report 1898).

BIBLIOGRAPHY

EMPR AR 1898-1132
EMPR ASS RPT 2856, 8898
EMPR EXPL 1980-168
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1971-233
EMPR PF (*Prospectus: Alberni Mines Ltd., January 21, 1965 (located in 092F 166 file))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 71-36; 72-44

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/06 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 211**

NATIONAL MINERAL INVENTORY:

NAME(S): **MARMOT (L.599)**, MOUNTAIN BEAR (L.600)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 02 58 N
LONGITUDE: 125 03 18 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Marmot (Lot 599) and Mountain Bear (Lot 600) group. On the west side of Henderson Lake, about 2.5 kilometres north from its southern end.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5434986
EASTING: 349845

COMMODITIES: Copper Iron

MINERALS
SIGNIFICANT: Pyrrhotite Pyrite Magnetite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Industrial Min. Skarn
COMMENTS: Thought to be similar to the adjacent Mountain Treasure (092F 175) skarn occurrence.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Limestone
Andesite
Skarn

HOSTROCK COMMENTS: Skarn mineralization along limestone-andesite contact. Limestone may be Quatsino or Karmutsen.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

CAPSULE GEOLOGY

There is no direct geological information on the Marmot occurrence except for a brief 1899 report stating that the property had fine surface showings which had been stripped in various places with good results.

The occurrence is adjacent to the Mountain Treasure deposit (092F 175) which shows skarn mineralization for several hundred metres along a limestone-andesite contact. It is assumed that the Marmot occurrence is an extension of the Mountain Treasure deposit. If so, the deposit would consist of massive and/or disseminated pyrrhotite, pyrite, magnetite and chalcopyrite. The area is underlain by Lower Jurassic Bonanza Group volcanics. The limestone involved in the skarn event may be from the Quatsino Formation or from limestone beds found in the upper part of the Karmutsen Formation, both of the Upper Triassic Vancouver Group. Refer to the Mountain Treasure deposit for further descriptive and bibliographic details.

BIBLIOGRAPHY

EMPR AR *1898-1131, 1903-250
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/04
CODED BY: GSB
REVISED BY: GJP
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 212** NATIONAL MINERAL INVENTORY: 092F6 Au2

NAME(S): **TAY**, TAY GOLD, TAY VEIN,
MAIN SHOWING, SHOWING NO. 2, SHOWING NO. 3,
SHOWING NO. 6, M.T., MT,
APEX, MORNING

STATUS: Developed Prospect MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 17 56 N NORTHING: 5463177
LONGITUDE: 125 16 37 W EASTING: 334464
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Tay vein zone, 250 metres west of the Morning claim (L.975) (092F 119), 250 metres north of Highway 4 and one kilometre south of Doran Lake between Great Central and Sproat lakes (Assessment Report 18395).

COMMODITIES: Gold Silver Copper Zinc Lead

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Sphalerite Arsenopyrite Pyrrhotite
COMMENTS: Trace chalcopyrite and sphalerite.
ASSOCIATED: Quartz Carbonate Arsenopyrite Pyrrhotite
COMMENTS: Trace arsenopyrite and pyrrhotite.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Bladed
MODIFIER: Fractured
DIMENSION: Metres STRIKE/DIP: 086/75N TREND/PLUNGE:
COMMENTS: Fault hosting part of Tay vein system.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Pillow Basalt
Basalt
Dacite Porphyry Dike
Quartz Diorite
Diorite Porphyry Dike
Porphyritic Dacite Dike
Quartz Diorite Porphyry
Granodiorite
Basalt Breccia
Quartz Diorite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY
ORE ZONE: TAY REPORT ON: Y

CATEGORY: Indicated YEAR: 1988
QUANTITY: 132255 Tonnes

COMMODITY	GRADE	
Silver	0.6800	Grams per tonne
Gold	2.1500	Grams per tonne

COMMENTS: Cutoff grade is 0.68 gram per tonne gold with an average true width of 1.5 metres.
REFERENCE: Assessment Report 18395.

CAPSULE GEOLOGY

The area is largely underlain by basalt and basalt breccias of the Upper Triassic Karmutsen Formation (Vancouver Group) intruded by

CAPSULE GEOLOGY

rocks of the Jurassic Island Plutonic Suite and Tertiary(?) porphyry dykes and sills. Strong faults affect the property area. Quartz-carbonate veins associated with dacite porphyry dykes near quartz diorite, are mineralized with gold-bearing pyrite, minor arsenopyrite and traces of chalcopyrite, pyrrhotite and sphalerite.

The Tay occurrence area comprises pillowed, brecciated and massive basalt flows. These rocks are commonly amygdaloidal and finely porphyritic. Locally they are characterized by myriad hairline to centimetre sized fractures that are filled variously by combinations of quartz, feldspar, carbonate and epidote. Where hornfelsed or otherwise close to quartz diorite intrusions, the basalt commonly contains irregular amounts of pyrite as fine disseminations, blebs, small aggregates, joint coatings and minute veinlets. Pyrrhotite occurs as very sporadic streaks 2 to 4 millimetres in width and as rare disseminations. The pillow selvages in the basalt flows have been variously filled with quartz, calcite, epidote and pink orthoclase and are usually mineralized with pyrite and rarely chalcopyrite and pyrrhotite. The Karmutsen Formation basalt is intruded by the faulted, southeastern portion of the Bedwell batholith, part of the Island Plutonic Suite. The rock is predominantly granodiorite and locally quartz diorite. Some porphyry and gabbroic gradations occur. Quartz diorite occurs as a complex, heterogeneous dyke connecting with the granodiorite. The pillow basalt adjacent to the dyke and extending east from it, contains a myriad complex of dykes and sills of dacite porphyry, quartz diorite and diorite porphyry. The main exposure of the quartz diorite dyke-like mass is 75 to 150 metres wide and exposed along strike for 700 metres. The south contact is sharp and linear whereas the north contact consists of a complex xenolithic zone with myriad dykes and sills. In places swarms of quartzofeldspathic veinlets cross the main dyke perpendicularly. The southeast tip of the mass appears to be offset right-laterally about 110 metres by a northeast trending fault (Wolfram fault). Numerous small, irregular dykes or sills of Tertiary(?) dacite porphyry occur in the immediate area extending east from the east end of the main quartz diorite mass.

Strong east and southeast trending fault lineaments are evident in the area with smaller north trending lineaments. Several relatively small faults occur in the occurrence area. One of these is the Wolfram fault that offsets quartz diorite right-laterally; a vertical displacement with unknown relative displacement is indicated. Graphitic faults trending south-southeast have been encountered. Many small north trending faults are exposed and have associated crushed zones. Flat faults also occur.

The Main Showing (Tay vein) is the most important known mineralization on the Tay property and comprises quartz-carbonate fissure veins located at the extreme southeast end of the Bedwell batholith, in the axial part of its roof facies. The roof facies consists of a thick succession of pillow basalt, variably faulted and hornfelsed, which contains innumerable small dykes and sills of dacite porphyry, xenolithic quartz diorite, diorite porphyry and porphyritic dacite. The veins are associated with the dacite porphyry dykes and appear to be cut and locally terminated by quartz diorite porphyry. Bulldozer trenches have exposed a fault striking 086 degrees and dipping 75 degrees north containing quartz-carbonate veining in the footwall; this forms part of the Tay vein system. The sulphide mineralization is mainly pyrite with traces of arsenopyrite and chalcopyrite. Most of the sulphides are disseminated, but sulphide-rich patches, veinlets and stringers occur with concentrations in quartz-rich parts of the vein.

Diamond drilling in 1987 deliniated the vein for 165 metres along strike, showing widths ranging from 2 to 4 metres. A minus 30 degree rake to the west was indicated with depths of 90 metres below the surface at the west end and 40 metres below the surface at the east end. The strike projection of the vein is shown to be cut off to the west where it enters quartz diorite. Drilling in 1988 was concentrated at the eastern end of mineralization and defined a large unmineralized area in the middle of the vein; thus, the mineralized part of the vein forms a semi-circular halo-shaped zone around a central unmineralized area. Current data suggests indicated reserves of 132,255 tonnes grading 2.15 grams per tonne gold and 0.68 gram per tonne silver. Calculated average thickness of the mineralization is 2.84 metres with a cutoff of 0.68 gram per tonne gold and 1.5 metres true width (Assessment Report 18395).

A number of other showings occur close to the Tay vein area. Showing No. 2 is 50 metres south of the Tay vein and consists of a flat-lying quartz-carbonate vein in faulted pillow basalt. The vein is up to 0.4 metres thick and a chip sample from it assayed 2.02 grams per tonne gold (Assessment Report 18395). Showing No. 3 is an old hand cut 100 metres south of the Tay vein which exposes a

CAPSULE GEOLOGY

mineralized fissure in pillow basalt about 0.3 metres wide containing quartz-carbonate veining. A grab sample from a few pieces of oxidized sulphide rock assayed 3.73 grams per tonne gold (Assessment Report 18395). Showing No. 6 is 900 metres northwest of the Tay Vein and consists of several diverse trending fractures in faulted basalt. One of the fractures exposed across a width of 0.2 metre and length of 1 metre consists of rusty sheared rock. A chip sample assayed 3.49 grams per tonne gold (Assessment Report 18395).

Dalmation Resources Inc. sampled and drilled the property in 1997.

BIBLIOGRAPHY

EM EXPL 1999-25-32
EMPR AR 1934-F4,F5
EMPR ASS RPT 5698, 7191, 7963, 9596, 11726, 14121, 14601, 16705, 17037, 17088, *18395
EMPR EXPL 1975-E98,E99; 1979-131; 1980-172; 1983-206; 1985-151
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMR MIN BULL MR 223 B.C. 97
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50
GCNL #105,#176,#200, 1984; #235, 1989; #151(Aug.7), #180(Sept.18), #234(Dec.5), #241(Dec.16), 1997
WWW http://www.infomine.com/
Cukor, V. (1985): Tay Gold Property in Dalmatian Resources Ltd., Prospectus, 30/01/87

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 213**

NATIONAL MINERAL INVENTORY:

NAME(S): **UNION JACK**, DUSTY COPPER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 02 13 N
LONGITUDE: 124 50 30 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Across from Hayes Landing (Hayes, 092F 140) on the east side of Alberni Inlet, about 800 metres from deep water (Minister of Mines Annual Report 1900).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5433197
EASTING: 365399

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
COMMENTS: Assumed to be a skarn deposit.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone

HOSTROCK COMMENTS: Area is mapped as Quatsino limestone and the host is assumed to be such.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1983

COMMODITY	GRADE	
Copper	3.2300	Per cent

COMMENTS: A sample containing chalcopyrite.
REFERENCE: Assessment Report 11368.

CAPSULE GEOLOGY

The Union Jack occurrence consists of a "ledge" (vein or fracture filling), 1 metre in width, that is reported to have a high copper content. It is also reported that this occurrence is located on the east side of Alberni Inlet across from Hayes Landing (probably across from Hayes Mine, 092F 140 on Hayes Creek).

The area is mapped as Karmutsen Formation volcanics and Quatsino Formation limestone, both of the Upper Triassic Vancouver Group. The deposit is in the same area as the Kitchener deposit (092F 138), and it may be assumed that the Union Jack occurrence is also a skarn deposit, either related to Quatsino limestone or to limestone beds in the upper part of the Karmutsen.

In 1983, on the Dusty Copper property located in the same general area as the Union Jack, several showings and some old trenches were located. The showings were not described. A grab sample of material containing chalcopyrite assayed 3.23 per cent copper (Assessment Report 11368).

BIBLIOGRAPHY

EMPR AR 1898-1131; 1899-785; *1900-921
EMPR ASS RPT *11368
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 49-1963, 17-1968; 1386A
GSC OF 463; 1272

BIBLIOGRAPHY

GSC P 68-50; 71-36; 72-44

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/12

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 214**

NATIONAL MINERAL INVENTORY:

NAME(S): **CANADIAN**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 02 26 N
LONGITUDE: 124 49 51 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 1 KM

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5433579
EASTING: 366200

COMMENTS: Reported to be 22 kilometres south of Port Alberni, on the east side of Alberni Inlet on the railway grade, and near Coleman Creek (Minister of Mines Annual Report 1918). Also reported to be 1.6 kilometres east of Smith's Landing (almost opposite Hayes mine, 092F 140) (Minister of Mines Annual Report 1916). Some similarities to the Bell showing (092F 138).

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1916
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	2.2000	Per cent

REFERENCE: Minister of Mines Annual Report 1916, page 320.

CAPSULE GEOLOGY

A skarn type deposit of more or less solid chalcopyrite fills a fissure in a shear zone that cuts granodiorite of the Lower Jurassic Island Plutonic Suite. Contact with limestone of the Quatsino Formation, Vancouver Group occurs about 800 metres away. The fissure is lenticular in shape, being 1.8 metres wide, 9 metres long and 4.6 metres deep. A similar lens of chalcopyrite occurs about 10 metres higher up the mountain and about 15 metres to the northeast.

Development work on the lower showing consisted of a crosscut adit about 21 metres long, an opencut 9 by 4 by 4.6 metres and several trenches and other shallow opencuts. About 68 tonnes of chalcopyrite ore was awaiting shipment on the dump in 1918. A sample of the material taken from the dump contained 7.2 per cent copper with traces of gold and silver (Minister of Mines Annual Report 1916). Little work was done on the lens found at higher elevation.

BIBLIOGRAPHY

EMPR AR *1916-320; *1917-246; *1918-257
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 49-1963, 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 71-36; 72-44

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 215**

NATIONAL MINERAL INVENTORY:

NAME(S): **STAR OF THE WEST (L.40)**, PT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W 092F02E
BC MAP:
LATITUDE: 49 05 09 N
LONGITUDE: 124 45 15 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Old adit location (Assessment Report 6676).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5438479
EASTING: 371919

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Biotite Granodiorite
Andesite
Greenstone

HOSTROCK COMMENTS: Corrigan Creek Pluton.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1895
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Gold	17.0000	Grams per tonne

COMMENTS: Some ore may have come from other sources. Bulk sample was 0.9 tonnes.
REFERENCE: Minister of Mines Annual Report 1895.

CAPSULE GEOLOGY

The Star Of The West showing is located 5 kilometres east of Sproat Narrows in Alberni Inlet.

The area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) volcanics which are intruded by biotite-granodiorite (Corrigan Creek Pluton) of the Early to Middle Jurassic Island Plutonic Suite. The volcanics consist of greenstones, andesites and basalts. Quartz-carbonate veins, carrying minor pyrite and chalcopyrite, cut both rock types (volcanics and intrusives) but are more common in the andesites.

An old adit on the Star of the West Crown Grant follows a calcite vein, from 15 to 25 centimetres wide, along a 70 degree trending, 80 degree south dipping fault zone in granodiorite. Very minor gold and copper values were obtained from samples (Assessment Report 6676).

A 0.9 tonne shipment of ore, in 1895, contained about 17 grams per tonne gold (Minister of Mines Annual Report, 1895). It is likely some of the ore came from other showings in the area (See Cor 14, 092F 389 and Cor 6, 092F 399).

BIBLIOGRAPHY

EMPR AR 1895-647,653,654; 1897-569
EMPR ASS RPT *5400, *6676, 13723, 14202, 16522
EMPR BULL 1, (1896), p. 5; 37

BIBLIOGRAPHY

EMPR EXPL 1975-94; 1977-109-110
EMPR FIELDWORK 1987, pp. 81-91; 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Focus Resources Ltd. Prospectus, 1974 and 1975; Phelps, G.B. (1975): Report on the Star West Claim Group; Sketch Map of China Creek Mining Camp, 1895, in 092F 082 - Gillespie)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #31,#224, 1975

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 216**

NATIONAL MINERAL INVENTORY:

NAME(S): **PORT**, LIGHTSTAR, STARLIGHT, MARY, FITZWATER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 02 54 N
LONGITUDE: 124 39 50 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Old adit location.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5434162
EASTING: 378419

COMMODITIES: Gold, Silver, Copper, Lead

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Galena, Gold
ASSOCIATED: Quartz, Calcite
ALTERATION: Pyrite, Quartz, Calcite
MINERALIZATION AGE: Triassic

DEPOSIT

CHARACTER: Vein, Disseminated, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 130/85E
TREND/PLUNGE:
COMMENTS: Attitude of 30 centimetre wide fault.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Unnamed/Unknown Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Hornblende Diorite
Volcanic Rock
Diabase
Dacite
Andesite
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Plutonic Rocks, Wrangell

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	1.7140	Grams per tonne
Gold	2.9000	Grams per tonne

COMMENTS: 1.5 metre chip sample of the footwall in diorite.
REFERENCE: Assessment Report 14470.

CAPSULE GEOLOGY

The Port showing is located 1.6 kilometres southwest of Mt. Spencer, 22 kilometres southeast of Port Alberni. The Cup (Mary or Balls vein) (092F 207) showing is located at the northeast corner of the Port claim.

Pyrite and minor chalcopyrite in quartz stringers occur along a fault contact between hornblende diorite of the Early to Middle Jurassic Island Plutonic Suite and Lower Jurassic Bonanza Group volcanic rocks. The 30 centimetre fault strikes 130 degrees and dips 85 degrees northeast. A 1.5 metre chip sample of the footwall in diorite assayed 2.9 grams per tonne gold and 1.714 grams per tonne silver (Assessment Report 14470).

An old adit occurs in the area and an 1895 report documented free gold with galena in altered diabase. Alteration minerals are quartz, pyrite and calcite.

BIBLIOGRAPHY

EMPR AR *1895-653

BIBLIOGRAPHY

EMPR ASS RPT *8722, 13672, *14470, 15694, 16731
EMPR BULL 37
EMPR EXPL 1985-139; 1986-165
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp.61-74
EMPR OF 1987-2, 1988-24, *1989-6
EMPR P 1988-4
EMPR PF (Sketch Map of China Creek Mining Camp, 1895, in 092F 082, Gillespie)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990, pp. 125-135
GCNL #245, 1988

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/12 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 217**

NATIONAL MINERAL INVENTORY:

NAME(S): **RODEO**, ANDY , ARLAND'S, GOLDEN SLIPPER, GOLDEN RULE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 00 39 N
LONGITUDE: 124 38 55 W
ELEVATION: 610 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location on Andy claim, Assessment Report 14930.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5429969
EASTING: 379445

COMMODITIES: Copper, Gold, Silver, Molybdenum, Zinc

MINERALS

SIGNIFICANT: Chalcopyrite, Molybdenite, Pyrrhotite, Pyrite, Sphalerite, Bornite, Covellite
ASSOCIATED: Quartz, Carbonate, Graphite
ALTERATION: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 0025 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: A vein on the Rodeo claim is exposed for 25 metres and is 0.15 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Diorite, Quartz Diorite, Granodiorite, Basalt, Andesite, Volcanic

HOSTROCK COMMENTS: Corrigan Creek Pluton.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Plutonic Rocks
Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan Uplift.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	41.1000	Grams per tonne
Gold	1.7000	Grams per tonne
Copper	4.1000	Per cent
Molybdenum	0.0866	Per cent
Zinc	0.1230	Per cent

REFERENCE: Assessment Report 14930.

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	5.5000	Grams per tonne
Gold	1.1000	Grams per tonne
Copper	0.0259	Per cent
Zinc	0.2293	Per cent

COMMENTS: From quartz vein, Sample #35210.
REFERENCE: Assessment Report 17419.

CAPSULE GEOLOGY

Mafic volcanics of the Upper Triassic Karmutsen Formation and basalt of the Lower Jurassic Bonanza Group are intruded by diorite to quartz diorite (Corrigan Creek Pluton) of the Jurassic Island Plutonic Suite. The Karmutsen volcanics are primarily basalts which exhibit lower greenschist metamorphism and are cut by feldspar porphyry dykes.

Mineralization occurs as fine-grained disseminations hosted in the intrusives and in vuggy quartz and quartz-carbonate veins. Mineralization consists of pyrite, chalcopyrite, pyrrhotite, sphalerite, molybdenite, bornite and covellite.

A sample of quartz diorite adjacent to a vein on the Andy claim assayed 4.10 per cent copper, 41.1 grams per tonne silver, 1.7 grams per tonne gold, 0.123 per cent zinc and 0.0866 per cent molybdenum. In this sample the pyrite replaces hornblende (Assessment Report 14930). An old adit occurs to the south of these showings. A typical grab sample from a quartz vein on the Rodeo claim assayed 1.1 grams per tonne gold, 5.5 grams per tonne silver, 0.026 per cent copper and 0.224 per cent zinc (Assessment Report 17419).

Prospecting and underground work on the Golden Slipper and Golden Rule claims were carried out in 1899 and 1900. These claims were likely in this area.

BIBLIOGRAPHY

EMPR AR 1895-654; 1899-785; 1900-920; 1966-76-77; 1967-76-77; 1968-104
EMPR ASS RPT 12696, 13668,*13671, 13723, 14202, 14928,*14930, 16083, *17419
EMPR BULL 37
EMPR EXPL 1985-132, 1986-159; 2002-29-40
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1969-220; 1970-289
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (092F General File - Laanela, H., (1966): Report, Gunnex Ltd., Occurrence #47)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/07 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 218**

NATIONAL MINERAL INVENTORY:

NAME(S): **KITKAT 4**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 02 39 N
LONGITUDE: 124 32 25 W
ELEVATION: 570 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing BR35A, Assessment Report 13945.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5433508
EASTING: 387442

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Pyrite Sphalerite
ASSOCIATED: Quartz Calcite
ALTERATION: Saussurite Epidote Malachite Azurite
ALTERATION TYPE: Epidote Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	

LITHOLOGY: Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1985

COMMODITY	GRADE	
Gold	3.4200	Grams per tonne

REFERENCE: Assessment Report 13945.

CAPSULE GEOLOGY

The Kitkat 4 showing is located about 1 kilometre north of the Kitkat 3 showing (092F 149), about 14.5 kilometres east of Alberni Inlet.

The area is underlain mainly by basalt, pillowed basalt, basaltic tuff and agglomerate of the Devonian Duck Lake Formation, Sicker Group. The mafic volcanics contain gabbroic sills.

Mineralization occurs in shear zones within fine to medium-grained, medium to dark green flows. The shears commonly contain 3 to 5 centimetre wide quartz veins and are crosscut by quartz-carbonate veinlets. Saussuritic alteration accompanies intense shearing.

A sample from a 30 metre wide shear (Showing BR35A) contained 3.42 grams per tonne gold. A sample, 850 metres to the south, from an epidotized fracture filling with malachite, azurite and sphalerite, assayed 0.99 per cent copper (Assessment Report 13945). Pyrite is present as disseminations and pods in the sheared flows.

BIBLIOGRAPHY

EMPR ASS RPT *13945
EMPR BULL 37
EMPR EXPL 1985-135,136
EMPR FIELDWORK 1987, pp. 81-91; 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963

BIBLIOGRAPHY

GSC OF 463; 1272
GSC P 68, p. 50; 79, p. 30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1988/04/14 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 219**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEAR 6, 8**, SUGAR, CREAM LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 29 41 N
LONGITUDE: 125 33 25 W
ELEVATION: 1320 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located north and adjacent to a small lake (Sugar Lake) itself located about 2 kilometres east of Bedwell Lake.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5485596
EASTING: 314847

COMMODITIES: Gold, Silver, Lead, Copper

MINERALS

SIGNIFICANT: Arsenopyrite, Pyrite, Galena, Chalcopyrite
ASSOCIATED: Quartz, Siderite, Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 315/75S
TREND/PLUNGE:
COMMENTS: Vein is 200 metres long, averaging 0.30 metres in width.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Intermediate Flow
Felsic Flow
Tuff
Agglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Within the Buttle Lake uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1968

COMMODITY	GRADE	
Silver	231.4300	Grams per tonne
Gold	10.8000	Grams per tonne

COMMENTS: From a 30 centimetre chip sample.
REFERENCE: Assessment Report 1884.

CAPSULE GEOLOGY

The prospect occurs within the southern part of a belt of rocks known as the Buttle Lake uplift. The belt is bounded on the east by Upper Triassic Karmutsen Formation volcanics (Vancouver Group) and on the west by Jurassic Island Intrusions.

The geology of the uplift has recently undergone revision and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and a new Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, personal communication, 1990). See the H-W occurrence (092F 330) for a summary of this revised interpretation.

The occurrence is located in an area that was originally mapped as Middle to Upper Paleozoic Sicker Group volcanics which were t hough to belong mainly to the old unrevised Myra Formation of Muller (Geological Survey of Canada Paper 79-30). The rocks underlying the property consists of felsic to intermediate flows, tuffs and agglom- erates which are overlain to the east by Buttle Lake Group, Azure Lake Formation limestone, lesser chert and argillite.

The Sugar zone, consisting of 2 parallel veins arranged en echelon plus a third vein intersecting from the west at 045 degrees, strikes northwest and dips 65 to 85 degrees south. The vein has been

CAPSULE GEOLOGY

traced for about 200 metres and has an average width of 30 centimetres. The vein consists of quartz, siderite and calcite and contains arsenopyrite, pyrite and traces of galena and chalcopyrite. A 30 centimetre sample of oxidized vein material contained 10.80 grams per tonne gold and 231.43 grams per tonne silver (Assessment Report 1884).

BIBLIOGRAPHY

EMPR AR 1966-245; 1967-78; 1968-106
EMPR ASS RPT 826, 1563, 1564, *1884, 2254, 2647, 3241, 3242, 3243, 3910, 3911, 3912, 16747, 17003
EMPR BULL 8; 13; 20-Part V, pp. 24-28
EMPR EXPL 1988-C85,C92
EMPR GEM 1969-219; 1970-286; 1971-245; 1972-267
EMPR PF (Prospectus: Cream Silver Mines Ltd., Feb.16, 1967; A Mineralographic Report on the Cream Silver Deposit by Rod Olson, 1968(?); *Report on the Cream Silver Property by R.H.D. Phillip of Agilis Exploration Services Ltd.; Cream Silver Mines correspondence containing reserve figures, 1973; Report on the Examination of Cream Silver Mines Ltd., Cream Property by K.E. Northcote, Sept.6, 1975)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44; 79-30; 80-16
GCNL #43,#61, 1987; #14,#77,#150,#172, 1988
N MINER Jan.26, Sept.12,1988
NW PROSP Jan 1987; Aug/Sept, Oct/Nov, 1988; July/Aug, 1989
PERS COMM: Nick Massey, Feb.,1990
V STOCKWATCH Jan.18, 1988
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Carvalho, I.G. (1979): Geology of the Western Mines District, Vancouver Island, British Columbia, Ph.D. Thesis, University of Western Ontario
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
Yole, R.W. (1965): A Faunal and Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 220**

NATIONAL MINERAL INVENTORY:

NAME(S): **CREAM 1, 3**, CREAM VEIN, A VEIN, CREAM LAKE

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 29 08 N
LONGITUDE: 125 32 11 W
ELEVATION: 1280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located within a few hundred metres of the southwestern shores of Cream Lake.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5484527
EASTING: 316301

COMMODITIES: Silver, Gold, Zinc, Lead, Copper

MINERALS

SIGNIFICANT: Arsenopyrite, Sphalerite, Galena, Owyheeite, Pyrite, Tetrahedrite, Pyrargyrite, Chalcopyrite
ASSOCIATED: Quartz, Siderite, Calcite
COMMENTS: Much gouge reported.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins; I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: Metres
STRIKE/DIP: 090/70N
TREND/PLUNGE:
COMMENTS: Vein is at least 135 metres long, varying from 7 to 60 centimetres.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Volcanic
Granitic Dike
Quartz Diorite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located in the Buttle Lake uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1968

COMMODITY	GRADE	
Silver	2801.1700	Grams per tonne
Gold	4.1100	Grams per tonne

COMMENTS: A 60-centimetre chip sample.
REFERENCE: Assessment Report 1884.

CAPSULE GEOLOGY

The prospect occurs within the southern part of a belt of rocks known as the Buttle Lake Uplift. The belt is bounded on the east by Upper Triassic Karmutsen Formation volcanics (Vancouver Group) and on the west by Early to Middle Jurassic Island Intrusions.

The geology of the uplift has recently undergone revision and the stratigraphy has been re-assigned to several new formations of a redefined Sicker Group and the new Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, personal communication, 1990).

The new Upper Pennsylvanian to Lower Permian Buttle Lake Group consists of: (1) the Lower Permian (?) Henshaw Formation composed of conglomerate, epiclastic deposits and vitric tuffs; and (2) the Lower Permian to Pennsylvanian Azure Lake Formation (formerly Buttle Lake Formation) consisting of crinoidal limestone and minor chert.

The Devonian to possibly Pennsylvanian or Mississippian Sicker Group consists of: (1) the Mississippian or Pennsylvanian(?) Flower Ridge Formation largely comprising coarse mafic pyroclastic deposits; 2) the Lower Mississippian (?) Thelwood Formation, a bedded sequence

CAPSULE GEOLOGY

of siliceous tuffaceous sediments, subaqueous pyroclastic deposits and mafic sills; (3) the Upper Devonian Myra Formation consisting of basaltic to rhyolitic flows and volcaniclastic rocks, lesser epiclastic sediments, argillites and cherts, and massive sulphide mineralization; and (4) the Upper Devonian or older Price Formation comprising feldspar-pyroxene porphyritic andesite flows, flow breccias and minor pyroclastic deposits.

The occurrence is located in an area that was originally mapped as Middle to Upper Sicker Group volcanics which were thought to belong mainly to the old unrevised Myra Formation of Muller (Geological Survey of Canada Paper 79-30). The rocks underlying the property consist of felsic to intermediate flows, tuffs and agglomerates which are overlain to the east by Azure Lake Formation limestone, lesser chert and argillite.

The Cream vein has been exposed intermittently for at least 135 metres along a strong lineament which is visible for about 1370 metres. The vein strikes east and dips 65 to 80 degrees north with its widths varying from 7 to 60 centimetres. It consists of quartz plus minor siderite and calcite lying within a strong gouge zone. The wall rocks consist largely of oxidized and altered greenish grey volcanics, plus a highly altered near white, igneous dyke rock. The latter rock was seen at several points along the depression of the Cream vein, and it may be an altered granitic or quartz diorite dyke occupying part of the same fracture as the vein.

Mineralization occurs as narrow bands or small masses in the quartz and consists of arsenopyrite, sphalerite, galena, owyheeite, pyrite, tetrahedrite, pyrargyrite and chalcopyrite. The latter three minerals were not identified in hand specimens. A 60-centimetre chip sample assayed 4.11 grams per tonne gold and 2801.17 grams per tonne silver (Assessment Report 1884).

The "A" vein is a south trending offshoot of the Cream vein, found at its western most exposure. The vein has an indicated width of 46 centimetres. A grab sample of vein material assayed 1.71 grams per tonne gold and 1119.44 grams per tonne silver (Assessment Report 1884).

BIBLIOGRAPHY

EMPR AR 1966-245; 1967-78; 1968-106
EMPR ASS RPT 826, 1563, 1564, *1884, 2254, 2647, 3241, 3242, 3243, 3910, 3911, 3912, 16747, 17003
EMPR BULL 8; 13; 20-Part V, pp. 24-28
EMPR EXPL 1988-C85,C92
EMPR GEM 1969-219; 1970-286; 1971-245; 1972-267
EMPR PF (*Prospectus: Cream Silver Mines Ltd., Feb.16, 1967; A Mineralographic Report on the Cream Silver Deposit by Rod Olson, 1968(?); *Report on the Cream Silver Property by R.H.D. Phillip of Agilis Exploration Services Ltd.; Cream Silver Mines correspondence containing reserve figures, 1973; Report on the Examination of Cream Silver Mines Ltd., Cream Property by K.E. Northcote, Sept.6, 1975)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44; 79-30; 80-16
GCNL #43,#61, 1987; #14,#77,#150,#172, 1988
N MINER Jan.26, Sept.12,1988
NW PROSP Jan 1987; Aug/Sept, Oct/Nov, 1988; July/Aug, 1989
PERS COMM: Nick Massey, Feb.,1990
V STOCKWATCH Jan.18, 1988
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Carvalho, I.G. (1979): Geology of the Western Mines District, Vancouver Island, British Columbia, Ph.D. Thesis, University of Western Ontario
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 220
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
Yole, R.W. (1965): A Faunal and Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia

MINFILE NUMBER: **092F 221**

NATIONAL MINERAL INVENTORY:

NAME(S): **REX**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 09 26 N
LONGITUDE: 124 54 40 W
ELEVATION: 550 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located between Cous and Mactush creeks (Assessment Report 1591).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5446692
EASTING: 360661

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Pyrite Molybdenite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L05 Porphyry Mo (Low F- type)
DIMENSION: 1370 x 0240 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Pyritic zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Basalt
Quartz Feldspar Porphyry Dike
Hornblende Diorite

HOSTROCK COMMENTS: Porphyry dykes intrude basalt. Both host mineralized veins.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by basaltic flows of the Upper Triassic Karmutsen Formation, Vancouver Group, intruded by swarms of quartz feldspar porphyry dykes. A few outcrops of hornblende diorite of the Jurassic Island Plutonic Suite were observed in the area.

An area along a creek is composed of intensely pyritized and altered quartz feldspar porphyry dykes and mafic volcanics. The pyrite zone is about 240 metres wide and 1370 metres long. Molybdenite occurs as rosettes and bands in 1.3 centimetre wide quartz stringers within dykes and volcanics. Most of the mineralized material was found within a 60 metre length of the creek. The grade of the molybdenum was estimated at 0.02 per cent.

Scattered showings of chalcopyrite were reported but considered of minor significance.

BIBLIOGRAPHY

EMPR AR 1967-77; 1968-276
EMPR ASS RPT *1591
GSC MAP 49-1963, 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 222**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLUE JAY**, LITCHIE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11E
BC MAP:
LATITUDE: 49 43 17 N
LONGITUDE: 125 12 31 W
ELEVATION: 760 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Along a road cut, about one kilometre southwest of Anderson Lake.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509995
EASTING: 340809

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Podiform Massive
CLASSIFICATION: Epigenetic Hydrothermal
COMMENTS: Sulphide lenses in a shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Small, erratic high-grade occurrences of chalcopyrite lenses are exposed in Upper Triassic Vancouver Group, Karmutsen Formation volcanics in association with steeply dipping shear zones. These volcanics are described as brown to grey, gently dipping rocks cut by porphyry dykes. Pyrite is also present.

BIBLIOGRAPHY

EMPR ASS RPT 1655
EMPR PF (*Geophysical, geochemical, and geological reports (three) on the Litchie property by W.G. Stevenson, 1967, 1968 and 1969).
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 223**

NATIONAL MINERAL INVENTORY:

NAME(S): **STROMBERG**, SEEL, TEXISLE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 35 16 N
LONGITUDE: 124 20 28 W
ELEVATION: 146 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of trenched area on the west facing slope of Mount Davies, 2 kilometres west-southwest from the summit, in the southern half of Texada Island, 250 metres east of a road along the shoreline (Assessment Report 6335).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5493663
EASTING: 403069

COMMODITIES: Copper Zinc Silver Lead

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Sphalerite Galena
COMMENTS: Trace galena.
ASSOCIATED: Pyrite Quartz Calcite Chlorite Epidote
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein Shear
CLASSIFICATION: Volcanogenic Hydrothermal
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt
Porphyritic Basalt
Basalt
Limestone
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: WORKINGS

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1925

COMMODITY	GRADE	
Silver	34.2800	Grams per tonne
Copper	8.7000	Per cent

COMMENTS: Samples from open cuts and shallow shafts.
REFERENCE: Minister of Mines Annual Report 1925, page A288.

CAPSULE GEOLOGY

The area is underlain by northwest trending and northeast dipping Upper Triassic Karmutsen Formation (Vancouver Group) massive and pillowed basalt flows and breccias, amygdaloidal and porphyritic basalt, and limestone.

The Stromberg showing occurs in a sequence of pillow basalt breccias and amygdaloidal and porphyritic basalt flows of the Karmutsen Formation with areas of massive limestone. Northeast trending shear zones cut the lithologies with diorite dykes often paralleling the shears and locally occurring in them.

A northwest trending mineralized zone, apparently stratigraphically controlled, has been investigated by shallow shafts, numerous open cuts and trenches. Exposed in the zone are pyrite, bornite, minor chalcopyrite, sphalerite and trace galena mineralization in amygdules and fracture-fillings in basalt. Malachite is occasionally present as thin coatings on mineralized outcrops. Calcite, chlorite and epidote also occur as amygdule fillings. Minor bornite and chalcopyrite area also evident in shear zones in highly chloritized

CAPSULE GEOLOGY

basalt. Quartz-calcite veins locally occur in the shear zones and host minor bornite mineralization.

Grab samples from old open cuts and shafts assayed up to 8.7 per cent copper and 34.28 grams per tonne silver (Minister of Mines Annual Report 1925).

BIBLIOGRAPHY

EMPR AR 1918-K278; 1925-A287,A288; 1926-A317,A318; 1927-C360; 1928-C385; 1929-C394; 1968-101,102
EMPR ASS RPT 1932, *6335, 8175
EMPR EXPL 1977-E112; 1980-172
EMPR GEM 1969-213,214; 1971-249
EMPR PF (Sketch map of Stromberg claim group; Geology map of shore area of the Stromberg Group (1928))
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/15 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 224**

NATIONAL MINERAL INVENTORY:

NAME(S): **CREAM 6, 8**, HUGHES, CREAM LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 29 20 N
LONGITUDE: 125 32 59 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about one kilometre west of Cream Lake (Assessment Report 1884).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5484930
EASTING: 315348

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Arsenopyrite Pyrargyrite
ASSOCIATED: Quartz Siderite Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Intermediate Flow
Felsic Flow
Tuff
Agglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1968

COMMODITY	GRADE	
Silver	103.5400	Grams per tonne
Gold	13.0300	Grams per tonne

COMMENTS: Chip across 13 centimetres.
REFERENCE: Assessment Report 1884.

CAPSULE GEOLOGY

The prospect occurs within the southern part of a belt of rocks known as the Buttle Lake Uplift. The belt is bounded on the east by Upper Triassic Karmutsen Formation volcanics (Vancouver Group) and on the west by Jurassic Island Intrusions.

The geology of the uplift has recently undergone revision and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and a new Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, personal communication, 1990). See the H-W occurrence (092F 330) for a summary of this revised interpretation.

The occurrence is located in an area that was originally mapped as Middle to Upper Paleozoic Sicker Group volcanics, which belong mainly to the unrevised Myra Formation of Muller (Geological Survey of Canada Paper 79-30). The rocks underlying the property consist of felsic to intermediate flows, tuffs and agglomerates which are overlain to the east by Buttle Lake Group, Azure Lake Formation limestone, lesser chert and argillite.

The Hughes zone consists of three separate veins arranged en echelon plus numerous smaller veins and stringers interconnecting or horsetailing off the main vein. The zone has been exposed intermittently for 380 metres. The overall zone trends easterly and dips steeply to the north with vein widths varying from millimetres to less than a metre. The veins consist of quartz with siderite and

CAPSULE GEOLOGY

calcite. The only sulphides observed in these strongly oxidized veins are arsenopyrite and pyrargyrite. One sample taken across 13 centimetres assayed 13.03 grams per tonne gold and 103.54 grams per tonne silver (Assessment Report 1884).

BIBLIOGRAPHY

EMPR AR 1966-245; 1967-78; 1968-106
EMPR ASS RPT 826, 1563, 1564, *1884, 2254, 2647, 3241, 3242, 3243, 3910, 3911, 3912, 16747, 17003
EMPR BULL 8; 13; 20-Part V, pp. 24-28
EMPR EXPL 1988-C85,C92
EMPR GEM 1969-219; 1970-286; 1971-245; 1972-267
EMPR PF (Prospectus: Cream Silver Mines Ltd., Feb.16, 1967; A Mineralographic Report on the Cream Silver Deposit by Rod Olson, 1968(?); *Report on the Cream Silver Property by R.H.D. Phillip of Agilis Exploration Services Ltd.; Cream Silver Mines correspondence containing reserve figures, 1973; Report on the Examination of Cream Silver Mines Ltd., Cream Property by K.E. Northcote, Sept.6, 1975)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44; 79-30; 80-16
GCNL #43,#61, 1987; #14,#77,#150,#172, 1988
N MINER Jan.26, Sept.12,1988
NW PROSP Jan 1987; Aug/Sept, Oct/Nov, 1988; July/Aug, 1989
PERS COMM: Nick Massey, Feb.,1990
V STOCKWATCH Jan.18, 1988
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Carvalho, I.G. (1979): Geology of the Western Mines District, Vancouver Island, British Columbia, Ph.D. Thesis, University of Western Ontario
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
Yole, R.W. (1965): A Faunal and Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 225**

NATIONAL MINERAL INVENTORY:

NAME(S): **CREAM 6,8,10,12**, ELLIOT, TURQUOISE, CAMP, CREAM LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 29 15 N
LONGITUDE: 125 33 31 W
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location for the Elliot zone, located about 3.5 kilometres west of Cream Lake (Assessment Report 1884).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5484798
EASTING: 314700

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Arsenopyrite Pyrite
ASSOCIATED: Quartz Siderite Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 045/85S
TREND/PLUNGE:
COMMENTS: Average strike of vein.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Buttle Lake uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1967
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	54.8600	Grams per tonne
Gold	1.2000	Grams per tonne

COMMENTS: A one metre chip sample.
REFERENCE: Prospectus: Cream Silver Mines Ltd., Feb. 16, 1967.

CAPSULE GEOLOGY

The prospect occurs within the southern part of a belt of rocks known as the Buttle Lake uplift. The belt is bounded on the east by Upper Triassic Karmutsen Formation volcanics (Vancouver Group) and on the west by Jurassic Island Intrusions.

The geology of the uplift has recently undergone revision and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and a new Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, personal communication, 1990). See the H-W occurrence (092F 330) for a summary of this revised interpretation.

The occurrence is lcoated within an area that was originally mapped as Middle to Upper Paleozoic Sicker Group volcanics which belong mainly to the unrevised Myra Formation of Muller (Geological Survey of Canada Paper 79-30). The rocks underlying the property consist of felsic to intermediate flows, tuffs and agglomerates which are overlain to the east by Buttle Lake Group, Azure Lake Formation limestone, lesser chert and argillite.

The Elliot zone consists of a series of shears branching off the western extension of the Hughes zone (092F 224) interconnected by several small east-west shears. Strikes vary between 030 and 060 degrees with an average dip of 85 degrees south. Vein material is strongly oxidized and consists of quartz with siderite and calcite

CAPSULE GEOLOGY

mineralized with arsenopyrite and a little pyrite. The wallrock at one locality is reported to be andesite. A sample taken across 1 metre assayed 1.20 grams per tonne gold and 54.86 grams per tonne silver (Assessment Report 1884). Gold values range up to 13.03 grams per tonne across 13 centimetres and silver up to 519.43 grams per tonne across 22 centimetres.

A few hundred metres west of the Elliot zone the Camp and the Turquoise zones occur. The Turquoise vein has been traced east-northeast for approximately 100 metres with widths varying from 10 to 90 centimetres. A sample taken across 30 centimetres assayed 4.80 grams per tonne gold, 435.43 grams per tonne silver, 0.09 per cent lead, 0.05 per cent zinc and 0.01 per cent copper (Prospectus: Cream Silver Mines, 1967). One rock specimen was reported to contain arsenopyrite. The Camp vein appears to trend east and possibly connects with the Turquoise zone. A sample taken across 63 centimetres assayed 4.80 grams per tonne gold and 20.57 grams per tonne silver (Prospectus: Cream Silver Mines, 1967). No other details of these showings are available.

BIBLIOGRAPHY

EMPR AR 1966-245; 1967-78; 1968-106
EMPR ASS RPT 826, 1563, 1564, *1884, 2254, 2647, 3241, 3242, 3243, 3910, 3911, 3912, 16747, 17003
EMPR BULL 8; 13; 20-Part V, pp. 24-28
EMPR EXPL 1988-C85,C92
EMPR GEM 1969-219; 1970-286; 1971-245; 1972-267
EMPR PF (*Prospectus: Cream Silver Mines Ltd., Feb.16, 1967; A Mineralographic Report on the Cream Silver Deposit by Rod Olson, 1968(?); *Report on the Cream Silver Property by R.H.D. Phillip of Agilis Exploration Services Ltd.; Cream Silver Mines correspondence containing reserve figures, 1973; Report on the Examination of Cream Silver Mines Ltd., Cream Property by K.E. Northcote, Sept.6, 1975)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44; 79-30; 80-16
GCNL #43,#61, 1987; #14,#77,#150,#172, 1988
N MINER Jan.26, Sept.12,1988
NW PROSP Jan 1987; Aug/Sept, Oct/Nov, 1988; July/Aug, 1989
PERS COMM: Nick Massey, Feb.,1990
V STOCKWATCH Jan.18, 1988
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Carvalho, I.G. (1979): Geology of the Western Mines District, Vancouver Island, British Columbia, Ph.D. Thesis, University of Western Ontario
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
Yole, R.W. (1965): A Faunal and Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 226**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEAR 7**, RIDGE, CREAM LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 29 57 N
LONGITUDE: 125 33 18 W
ELEVATION: 1480 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 750 metres northwest of Andrew Lake (Assessment Report 1884).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5486086
EASTING: 315005

COMMODITIES: Silver Gold Zinc Lead

MINERALS
SIGNIFICANT: Arsenopyrite Sphalerite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Buttle Lake uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1968

COMMODITY	GRADE	
Silver	216.0000	Grams per tonne
Gold	1.3700	Grams per tonne

REFERENCE: Assessment Report 1884.

CAPSULE GEOLOGY

The prospect occurs within the southern part of a belt of rocks known as the Buttle Lake Uplift. The belt is bounded on the east by Upper Triassic Karmutsen Formation volcanics (Vancouver Group) and on the west by Jurassic Island Intrusions.

The geology of the uplift has recently undergone revision and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and a new Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, personal communication, 1990). See the H-W occurrence (092F 330) for a summary of this revised interpretation.

The occurrence is located in an area that was originally mapped as Middle to Upper Paleozoic Sicker Group volcanics which belong mainly to the old unrevised Myra Formation of Muller (Geological Survey of Canada Paper 79-30). The rocks underlying the property consists of felsic to intermediate flows, tuffs and agglomerates which are overlain to the east by Buttle Lake Group, Azure Lake Formation limestone, lesser chert and argillite.

The Ridge zone quartz vein strikes north, dips steeply and is about 45 centimetres in width. The vein contains arsenopyrite, sphalerite, and galena. A specimen of wallrock consisted of andesite cut by narrow quartz veinlets and carrying similar mineralization. A grab sample of vein material assayed 1.37 grams per tonne gold and 216.00 grams per tonne silver (Assessment Report 1884).

BIBLIOGRAPHY

EMPR AR 1966-245; 1967-78; 1968-106

BIBLIOGRAPHY

EMPR ASS RPT 826, 1563, 1564, *1884, 2254, 2647, 3241, 3242, 3243, 3910, 3911, 3912, 16747, 17003
EMPR BULL 8; 13; 20-Part V, pp. 24-28
EMPR EXPL 1988-C85,C92
EMPR GEM 1969-219; 1970-286; 1971-245; 1972-267
EMPR PF (Prospectus: Cream Silver Mines Ltd., Feb.16, 1967; A Mineralographic Report on the Cream Silver Deposit by Rod Olson, 1968(?); *Report on the Cream Silver Property by R.H.D. Phillip of Agilis Exploration Services Ltd.; Cream Silver Mines correspondence containing reserve figures, 1973; Report on the Examination of Cream Silver Mines Ltd., Cream Property by K.E. Northcote, Sept.6, 1975)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p. 38; 71-36; 72-44; 79-30; 80-16
GCNL #43,#61, 1987; #14,#77,#150,#172, 1988
N MINER Jan.26, Sept.12,1988
NW PROSP Jan 1987; Aug/Sept, Oct/Nov, 1988; July/Aug, 1989
PERS COMM: Nick Massey, Feb.,1990
V STOCKWATCH Jan.18, 1988
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Carvalho, I.G. (1979): Geology of the Western Mines District, Vancouver Island, British Columbia, Ph.D. Thesis, University of Western Ontario
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
Yole, R.W. (1965): A Faunal and Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 227**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEDINGFIELD 18**, HERBERT INLET

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 18 36 N
LONGITUDE: 125 55 25 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: One showing at above coordinates, another at northing 5464850, easting 288250 and a third showing at northing 5466450, easting 286900. Located east of Herbert Inlet (Assessment Report 14500).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5466030
EASTING: 287504

COMMODITIES: Copper Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Sphalerite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Carboniferous	Buttle Lake	Undefined Formation	

LITHOLOGY: Basalt
Limestone
Argillite
Chert
Mafic Sill

HOSTROCK COMMENTS: Mineralization is found in both above groups, and possibly the Sicker Group as well.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area of the Bedingfield 18 occurrence is mapped as part of the Middle To Upper Paleozoic Sicker Group (Geological Survey of Canada Open File 463). The Sicker Group, however, is undergoing redefinition in the Cowichan and Buttle Lake uplifts, with a new Upper Paleozoic Buttle Lake Group being created from what were mainly sediments from the upper part of the Sicker Group. See the H-W occurrence (092F 330) for a summary of Paleozoic strata revisions.

In the area of interest the underlying rocks are reported to consist of: A) a rhyolitic volcanic waterlain tuff and wacke sequence, frequently pyritic and graphitic and having a 135 degree strike with 65 degree west dip; B) a middle rhyolite pyroclastic sequence characterized by waterlain tuffs, lapilli ash flows, rhyolite flows, dykes and breccia; and C) an upper rhyolite lapilli breccia unit. These are overlain by limestone of the Upper Pennsylvanian to Lower Permian Buttle Lake Group (correlative with the Azure Lake Formation in the Buttle Lake Uplift), which in turn are overlain by basalts of the Upper Triassic Karmutsen Formation, Vancouver Group (Assessment Report 15152).

Three showings recorded on Plate 3 of Assessment Report 14500 consist of:

1) chalcopyrite in Karmutsen basalt;
2) pyrrhotite and chalcopyrite in argillite, chert or mafic sills (located 900 metres northwest of showing 1); and
3) sphalerite and chalcopyrite in Buttle Lake limestone (located 1200 metres southeast of showing 1).

BIBLIOGRAPHY

EMPR ASS RPT *14500, 15152, 16667
EMPR EXPL 1986-C171,C172; 1987-C146
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A

BIBLIOGRAPHY

GSC OF 463
GSC P 68-50; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/01/10 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 228**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEDINGFIELD 5**, HERBERT INLET

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 19 46 N
LONGITUDE: 125 56 32 W
ELEVATION: 230 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located less than 1.0 kilometre east of Herbert Inlet (Assessment Report 14500).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5468244
EASTING: 286235

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain primarily by metavolcanic and meta-sedimentary rocks of the Upper Devonian McLaughlin Ridge Formation (Sicker Group) and/or rocks of the Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group). These are overlain by limestone of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, Buttle Lake Group, which in turn are overlain by basalts of the Upper Triassic Karmutsen Formation, Vancouver Group (Assessment Report 15152). See Minfile occurrence 92F 227 for a more comprehensive geologic description.

Pyrrhotite and chalcopyrite are reported to occur in Karmutsen basalt less than a kilometre to the east of Herbert Inlet (Assessment Report 14500, Plate 3). No other details of the showing were recorded.

BIBLIOGRAPHY

EMPR ASS RPT *14500, 15152, 16667
EMPR EXPL 1986-C171,C172; 1987-C146
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/01/10
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 229**

NATIONAL MINERAL INVENTORY:

NAME(S): **VENT**, KEN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 14 15 N
LONGITUDE: 125 20 42 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Area of drill holes (Unis, W.E., 1972). See also 092F 482 - Ken.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5456505
EASTING: 329305

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Pyrite Pyrrhotite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein Stockwork
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Felsite
Quartz Monzonite
Quartz Diorite
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.2100	Per cent
Molybdenum	0.2500	Per cent

REFERENCE: Unis, W.E. (1972): Evaluation of Drill Program on Vent Property.

CAPSULE GEOLOGY

The area of the Vent showing is underlain by andesite of the Upper Triassic Karmutsen Formation, Vancouver Group and by minor felsite flows. These are intruded by quartz monzonite, quartz diorite and diorite of the Lower to Middle Jurassic Island Plutonic Suite. There are two prominent sets of fractures; one set striking east-west and dipping north at 53 degrees, the other set striking 065 degrees and dipping west at 80 degrees.

Pyrite and pyrrhotite are abundant in all rock types, occurring as veins, fracture coatings and disseminations as well as in quartz-pyrite veins and stringers. Minor chalcopyrite with traces of molybdenite occur locally with the iron sulphides.

Three diamond drill holes were completed in 1972 in order to test an area of abundant pyrite mineralization. Only minor chalco-pyrite was encountered. One 30 centimetre section of core, at about 174 metres depth, contained a 1 centimetre quartz vein carrying blebs of molybdenite and pyrite. This section gave the best assay, containing 0.21 per cent copper and 0.25 per cent molybdenite (Unis, W.E., 1972).

BIBLIOGRAPHY

EMPR ASS RPT 1902, *2464, 2996, 3058, 5624
EMPR EXPL 1975-E97
EMPR GEM 1969-219,355, 1970-288, 1971-235, 1972-264

BIBLIOGRAPHY

EMPR PF (*Unis, W.E. (1972): Evaluation of the Diamond Drilling Program on the Vent Claims, DeKalb Mining Corporation (unpublished report))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 230**

NATIONAL MINERAL INVENTORY:

NAME(S): **ARK**, ARK VEIN, HANGINGWALL VEIN, H.M.

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E
BC MAP:
LATITUDE: 49 19 12 N
LONGITUDE: 125 07 19 W
ELEVATION: 860 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches on the Ark vein system 500 metres east of Forestry Camp Creek, 1.5 kilometres south of Great Central Lake (Assessment Report 16632).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5465196
EASTING: 345798

COMMODITIES: Antimony, Mercury, Silver, Gold

MINERALS

SIGNIFICANT: Stibnite, Cinnabar, Realgar, Pyrite, Orpiment
ASSOCIATED: Quartz
ALTERATION: Clay, Silica, Limonite, Hematite, Sericite, Chlorite, Carbonate, Epidote
ALTERATION TYPE: Argillic, Silicific'n, Sericitic, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION:
STRIKE/DIP: 135/75S
TREND/PLUNGE:
COMMENTS: Shear structure hosting Ark vein zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Andesite Flow
Andesite Tuff
Pillow Andesite Flow
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: ARK VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1987

COMMODITY	GRADE	
Gold	1.0700	Grams per tonne
Mercury	85.9000	Per cent
Antimony	4.0800	Per cent

REFERENCE: Assessment Report 16632.

ORE ZONE: HANGINGWALL VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1987

COMMODITY	GRADE	
Mercury	90.0000	Per cent
Antimony	0.1100	Per cent

REFERENCE: Assessment Report 16632.

CAPSULE GEOLOGY

The Ark occurrence area is underlain by locally pillowed to massive andesite flows and tuffs of the Upper Triassic Karmutsen Formation (Vancouver Group) exhibiting a regional propylitic alteration assemblage consisting of chlorite, pyrite, local carbonate

CAPSULE GEOLOGY

and epidote. Alteration increases near the sheared contact with Middle to Early Jurassic Island Plutonic Suite quartz diorite. A dominant structural feature, the "Ark" shear zone, strikes 135 degrees and dips 75 degrees southwest. A hydrothermal alteration assemblage comprising argillization, chloritization, bleaching, lesser silicification, hematite, limonite and sericitization, is associated with this shear structure and overprints the regional alteration assemblage.

The "Ark" shear zone ranges to 6 metres in width and hosts the Ark vein system which consists of a 2 metre wide zone of intense alteration hosting semi-continuous quartz veins 10 to 40 centimetres in width. The alteration assemblage comprises sericitization, silicification and intense bleaching. Mineralization within this zone consists of stibnite and lesser amounts of cinnabar and realgar. The vein material has been brecciated and re-silicified. Rock samples from surface exposures assayed up to 4.08 per cent antimony, 85.9 grams per tonne mercury and 1.07 grams per tonne gold (Assessment Report 16632). Previously in 1986, grab samples from trenches assayed up to 18.3 per cent antimony, 22 grams per tonne mercury and 15.4 grams per tonne silver (Assessment Report 15147).

Drilling failed to intersect the Ark vein system at depth but encountered the Hangingwall vein system 30 metres in the hangingwall of the projected location of the Ark vein. Andesite tuffs host the Hangingwall vein system which consists of anastomosing quartz veins, stringers and brecciated and altered wallrock fragments within a strongly bleached, argillic, limonitic and silicified zone with a distinctive hangingwall gouge 5 to 10 centimetres wide. The footwall is diffuse with no gouge. The vein zone ranges from 2.5 to 4 metres true width, with quartz veins 10 to 50 centimetres wide and local vuggy veins. Mineralization consists of traces of pyrite, stibnite, orpiment, realgar and cinnabar. Orpiment, realgar and cinnabar are concentrated within the quartz while the pyrite and stibnite occurs within both the quartz and wallrock. Samples from drill intersections of the Hangingwall vein zone assayed up to 0.11 per cent antimony and 90.0 grams per tonne mercury (Assessment Report 16632).

BIBLIOGRAPHY

EMPR ASS RPT 3651, *15147, *16632
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR GEM 1969-220; 1970-288; 1971-247; 1972-268,269
EMPR PF (Rpt. by J.A. Mitchell (1970); Prospectus, Great Central Mines Ltd. April 10, 1972)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50
GCNL #45, 1974

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/24 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 231**

NATIONAL MINERAL INVENTORY: 092F5 Cu2

NAME(S): **HECATE BAY**, CATFACE

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04W
BC MAP:
LATITUDE: 49 14 52 N
LONGITUDE: 125 57 25 W
ELEVATION: 150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of mineralization is 1.0 kilometre west of Hecate Bay (from Canadian Institute of Mining Special Volume 15). See also Catface (092F 120) and Irishman Creek (092F 251).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5459209
EASTING: 284811

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated Vein
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Paleozoic	Sicker	Undefined Formation	
Eocene			Catface Intrusions
Jurassic			Island Plutonic Suite

Eocene
ISOTOPIC AGE: 48 +/- 12 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

Jurassic
ISOTOPIC AGE: 166 +/- 8 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Diorite
Quartz Monzonite
Andesitic Flow
Basalt Flow
Diorite

HOSTROCK COMMENTS: Catface age date from Catface Peninsula; Isl. Plutonic Suite age from Ucona batholith (GSC Paper 72-44). Volcanics are Sicker or Karmutsen.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1975
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.2500	Per cent

REFERENCE: Canadian Institute of Mining Special Volume 15, page 309.

CAPSULE GEOLOGY

The Hecate Bay occurrence is underlain by quartz diorite of the Early to Middle Eocene Tofino Intrusive Suite (formerly the Catface Intrusions), (Personal Communication: Nick Massey, May 1990). It lies 2.2 kilometres southeast of the Catface copper-molybdenum developed prospect (092F 120). See also Irishman Creek (092F 251).

The area is underlain by andesite and basalt flows, breccia and agglomerate, in contact with diorite of the Mesozoic-Paleozoic West Coast Complex. The age of the volcanics is in doubt and they are thought to belong to either the Upper Triassic Karmutsen Formation (Vancouver Group) or to the Devonian Sicker Group. Quartz monzonite of the Jurassic Island Plutonic Suite, has intruded the contact area, followed by several quartz diorite to granodiorite phases of the

CAPSULE GEOLOGY

Tofino Intrusive Suite.

The Tofino Intrusive Suite phase that hosts the Hecate Bay occurrence is termed the Hecate Bay stock (CIM Special Vol.15, page 304) and has been dated at 48 million years (Geological Survey of Canada Paper 66-17, page 15). The area of mineralization is in the more porphyritic central portion composed of quartz diorite. The occurrence is circular and approximately 300 metres wide, but copper bearing shears at the periphery extend several hundred metres further. The quartz diorite is moderately fractured, and chalcopyrite and pyrite occur as fracture fillings and disseminations. Copper grades within the shear zones are locally up to 1.0 per cent copper but average only 0.25 per cent copper within the main zone (CIM Special Volume 15, page 309). Several related occurrences are reported along the shores of Hecate Bay, 1.0 kilometre to the east (CIM Special Volume 15).

In 1999, Doublestar Resources Ltd. plans to acquire the property from Falconbridge Limited.

BIBLIOGRAPHY

EMPR AR 1898-1133; 1909-147; 1910-152; 1961-101; 1962-105; 1963-102; 1964-155; 1967-74; 1968-102
EMPR ASS RPT 540, 541, 580
EMPR GEM 1970-287; *1971-236-245; 1972-266
EMPR PF (McDougall, J.J. (1962): Interim Report on Catface Copper Prospect to October 15, 1962; Various maps and sketches by J.J. McDougall, 1962; Photographs of Catface Camp; notes by T. Schroeter with photographs, 1989; see Catface - 092F 120)
EMR MP CORPFILE (Falconbridge Nickel Mines Limited; Catface Copper Mines Limited; 1971 Prospectus, Thunder Valley Mines Limited)
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 9; 61; 463
GSC P 66-1; 68-50, pp. 39-45; 72-44;
GSC SUM RPT 1920A
CIM *Special Vol. 15, 1976, pp. 299-310; *46, pp. 322-326
GCNL Sept. 29, 1971
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University

DATE CODED: 1989/07/10 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092F 232**

NATIONAL MINERAL INVENTORY: 092F6 Cu1

NAME(S): **HERB**, ARCH

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E
BC MAP:
LATITUDE: 49 17 16 N
LONGITUDE: 125 10 46 W
ELEVATION: 210 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing A in a road cut on a road that leaves Highway 4 at the west end of Sproat Lake on the lake's north shore (Assessment Report 11284).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5461733
EASTING: 341516

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Pyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Volcanogenic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Pillow Basalt
Chert
Siliceous Argillite
Basalt
Limestone
Basalt Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: C REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	7.5000	Grams per tonne
Copper	1.3400	Per cent

REFERENCE: Assessment Report 11284.

ORE ZONE: B REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	10.9000	Grams per tonne
Copper	0.3300	Per cent

REFERENCE: Assessment Report 11284.

ORE ZONE: A REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	5.8200	Grams per tonne
Copper	9.6000	Per cent

REFERENCE: Assessment Report 11284.

CAPSULE GEOLOGY

The Herb occurrence area is underlain by a sequence of gently northwest dipping Upper Triassic Karmutsen Formation (Vancouver

CAPSULE GEOLOGY

Group) basalts consisting of intercalated massive and pillowed flows and basalt breccia. Intervolcanic sediments consist of thin (30 to 60 centimetre) lenses of finely crystalline limestone with limited lateral extent. A thinly bedded, laminated chert to siliceous argillite also occurs and is locally fossiliferous at its base. This unit is of limited extent and ranges from 1 to 12 metres in width. Several small irregular masses of diorite possibly related to Jurassic Island Intrusions, intrude this succession. A set of well-developed northwest trending faults and shear zones are typically associated with pyritic quartz-carbonate alteration envelopes.

Mineralization consists of disseminated chalcopyrite and bornite occurring locally along the rims of pillows or in quartz-calcite filled interstices. A grab sample from this showing, the A showing, assayed 9.6 per cent copper and 5.82 grams per tonne silver (Assessment Report 11284). Chalcopyrite occurs on fracture plane surfaces and bed partings in chert and/or siliceous argillite at the B showing. The chert is fossiliferous at its base where pyrite occurs in thin siliceous lenses and replaces fossils. The chert is strongly fractured and contains numerous quartz stringers some of which contain chalcopyrite. A grab sample assayed 0.33 per cent copper and 10.9 grams per tonne silver (Assessment Report 11284). At the C showing, an exposure of chert contains malachite within fractures. A sample across a true width of 1.1 metres assayed 1.34 per cent copper and 7.5 grams per tonne silver (Assessment Report 11284). The A, B and C showings are located within 600 metres of one another.

BIBLIOGRAPHY

EMPR ASS RPT 2417, 3957, 4982, *11284
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR GEM 1969-219,220; 1971-247; 1974-177
EMPR PF (Prospectus, McLeod Copper Ltd.-May 1971)
EMR MP CORPFILE (McLeod Copper Ltd.)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/24 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 233**

NATIONAL MINERAL INVENTORY:

NAME(S): **KAMMAT CREEK**, EMMA 21, COP CREEK, COP, SU 3, DAUGHTERS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 11 13 N
LONGITUDE: 124 35 06 W
ELEVATION: 520 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of sample on Kammat Creek zone (Assessment Report 17207). The Cop Creek showing is located 1 kilometre to the west (Property File - Overlay of Geochemistry samples, 1968).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5449447
EASTING: 384506

COMMODITIES: Copper, Gold, Silver, Cobalt, Nickel

MINERALS

SIGNIFICANT: Pyrite, Jasper, Magnetite, Copper
ASSOCIATED: Quartz
ALTERATION: Carbonate, Quartz, Graphite, Hematite, Malachite, Azurite
ALTERATION TYPE: Carbonate, Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Layered, Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal, Volcanogenic
TYPE: I01 Au-quartz veins, Q05 Jasper
SHAPE: Irregular
MODIFIER: Faulted, Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Volcaniclastic, Jasper, Chert

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
COMMENTS: Located in the Cowichan Uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Silver	5.2000	Grams per tonne
Gold	0.4000	Grams per tonne
Cobalt	0.0103	Per cent

COMMENTS: Sample #16379, also 0.0103 per cent cobalt. Similar samples contained up to 0.0217 per cent nickel.
REFERENCE: Assessment Report 17207.

CAPSULE GEOLOGY

The Kammat Creek showing is located on the Emma 21 claim, 19 kilometres southeast of Port Alberni. The zone is characterized by intense carbonatization of mafic volcaniclastic rocks of the Upper Devonian McLaughlin Ridge Formation (Sicker Group) related to north-northeast trending faults which transect the area. Pyritic jasper with magnetite and minor black chert of the Devonian Duck Lake Formation (Sicker Group) also hosts mineralization in the area.

A number of graphitic, quartz-carbonate flooded shear zones were sampled. A sample of jasper, hematite and pyrite assayed 0.290 gram per tonne gold (Assessment Report 17207). A sample of silicified volcaniclastic rock containing up to 90 per cent massive pyrite assayed 0.40 gram per tonne gold, 5.2 grams per tonne silver and

CAPSULE GEOLOGY

0.0103 per cent cobalt. Other samples contained up to 0.0217 per cent nickel. The Cup Creek showing, possibly obliterated, consisted of minor amounts of native copper, malachite, azurite, and bornite exposed in volcanic rock in a road cut on the Su 3 claim. A sample from a 5 centimetre quartz vein cutting basalt and containing 20 per cent pyrite assayed 0.260 gram per tonne gold (Assessment Report 17207).

BIBLIOGRAPHY

EMPR ASS RPT 13875, 16799, *17207, 19471
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Mylar Overlay of Geochemical samples, 1968; Douglas, D.C. (1968): Cup Creek Native Copper Find, Assay Results, Miscellaneous Correspondence)
GSC MAP 17-1968, 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
GCNL #115, 1984; #59,#189, 1985; #164, 1988
V STOCKWATCH June 17, Aug. 26, Oct. 7, 1987
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 135

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 234**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOLD**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E
BC MAP:
LATITUDE: 49 51 19 N
LONGITUDE: 125 32 05 W
ELEVATION: 720 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of grab sample of skarn (Assessment Report 13003,13722).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5525622
EASTING: 317809

COMMODITIES: Copper Silver Iron Zinc

MINERALS
SIGNIFICANT: Magnetite Chalcopyrite Sphalerite
ASSOCIATED: Quartz Calcite
ALTERATION: Garnet Epidote Clinopyroxene Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Disseminated
CLASSIFICATION: Replacement Skarn Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Basalt
Granodiorite
Amygdaloidal Basalt
Pillow Basalt

HOSTROCK COMMENTS: Skarn occurs in both Host Rock formations, near granodiorite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
COMMENTS: Skarn type.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SKARN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1984
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	8.9000	Grams per tonne
Copper	2.5000	Per cent

REFERENCE: Assessment Report 13003.

CAPSULE GEOLOGY

Volcanics of the Karmutsen Formation are overlain by limestone of the Quatsino Formation, bot of the Upper Triassic Vancouver Group. These rocks are cut by the Quinsam granodiorite of the Lower to Middle Jurassic Island Plutonic Suite. The volcanics consist of massive, amygdaloidal and pillow basalts. The limestone is crosscut by numerous mafic dykes and sills.

The contact of the granodiorite with the limestone and volcanics has an overall east-southeast trend. Skarns have formed adjacent to the contact, within the limestones and volcanics. They are fine to medium-grained and consist of garnet, chinopyroxene and epidote, with local development of magnetite in poorly defined bands, occasional pyrite and rare chalcopyrite and sphalerite. The copper mineralization occurs in widely spaced small pods (less than 0.5 metres in diametre) within the magnetite skarn.

A grab sample of a mineralized skarn zone assayed 2.5 per cent copper and 8.9 grams per tonne silver (Assessment Report 13003). Another skarn grab sample, 400 metres to the east-southeast assayed 0.29 per cent copper and 2.1 grams per tonne silver (Assessment Report

CAPSULE GEOLOGY

13003).

BIBLIOGRAPHY

EMPR ASS RPT *13003, 13722
EMPR EXPL 1984-167; 1985-156
EMPR OF 1988-28
GSC BULL 172
GSC MAP 2-1965; 17-1968; 1386
GSC OF 463
GSC P 68-50; 72-44; 71-36

DATE CODED: 1985/08/30 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1988/03/29 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 235**

NATIONAL MINERAL INVENTORY:

NAME(S): **JUMP CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 00 18 N
LONGITUDE: 124 15 34 W
ELEVATION: 420 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Bulldozer pits just west of Jump Lake north of the road, 24 kilometres west from the town of Nanaimo (Property File - Report by Laanela).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5428776
EASTING: 407891

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Magnetite
ALTERATION: Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Skarn Igneous-contact Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Diorite
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

INVENTORY

ORE ZONE: PIT
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1965
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Iron	58.4000	Per cent

COMMENTS: Sample from pit.
REFERENCE: Property File - Report by H. Laanela, 1965.

CAPSULE GEOLOGY

The Jump Creek occurrence area is underlain by basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) intruded by altered diorite of the Lower to Middle Jurassic Island Plutonic Suite. Magnetite skarn is developed in basalt at the contact with diorite. One of two pits expose massive magnetite lenses in skarn rock. A grab sample assayed 58.4 per cent iron (Property File - Report by Laanela).

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1988-28
EMPR PF (*092F General File - Report by H. Laanela (1965): Gunnex Limited, Occurrence #23)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/11
CODED BY: GSB
REVISED BY: GO
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 236**

NATIONAL MINERAL INVENTORY:

NAME(S): **TYBER**, INDEPENDENT

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 12 12 N
LONGITUDE: 124 32 08 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Portal of upper adit 1.5 kilometres south of Arrowsmith Lake, 19 kilometres east from the town of Port Alberni (Assessment Report 10395).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5451195
EASTING: 388145

COMMODITIES: Copper, Zinc, Silver, Lead

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite, Sphalerite, Chalcocite, Galena, Bornite
ASSOCIATED: Quartz, Carbonate, Pyrrhotite, Arsenopyrite, Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt
Porphyritic Basalt
Pillow Basalt Breccia
Basalt Tuff
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel

YEAR: 1986

COMMODITY	GRADE	
Silver	402.4000	Grams per tonne
Copper	16.0000	Per cent
Lead	0.5100	Per cent
Zinc	3.8400	Per cent

COMMENTS: Highest assays from several samples.
REFERENCE: Assessment Report 15171.

CAPSULE GEOLOGY

The Tyber occurrence is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) volcanic rocks consisting of andesitic to basaltic amygdaloidal and porphyritic massive flows, pillow breccia, minor tuff and a few thin interlava limestones. The stratigraphy is nearly flat-lying and is cut by at least one regional fault and by numerous fracture and shear zones.

The occurrence area contains a number of separate but genetically related quartz vein systems hosted in shear and fracture zones. The vein systems vary in character from anastomosing to lensoidal and en echelon and range from hairline to approximately 1.5 metres in width. They are traceable in adits and on the surface for lengths from less than a metre to tens of metres. The gangue consists of mainly quartz matrix with wallrock fragments and varied amounts of carbonate. Mineralization is predominantly pyrite and/or chalcopyrite with locally abundant sphalerite and widely scattered pods of chalcocite. Locally galena is significant and pyrrhotite, arsenopyrite, magnetite and bornite have been observed. The sulphide mineralization is spotty, occurring in small massive pods and in clusters

CAPSULE GEOLOGY

of aggregates of grains with zones that are pyrite-rich, chalcopyrite-rich or sphalerite-rich. The highest assays from channel samples taken across veins and wallrock contained 16 per cent copper, 3.84 per cent zinc, 402.4 grams per tonne silver, 0.51 per cent lead and 0.1 grams per tonne gold (Assessment Report 15171).

Past work included several open cuts and two adits.

BIBLIOGRAPHY

EMPR AR 1916-K326
EMPR ASS RPT 9432, *10395, *15171
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR PF (092F General File - Rpt. by H. Laanela (1966): Gunnex Ltd., Occurrence #20)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463
GSC P 68-50

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1990/04/13	REVISED BY:	GO	FIELD CHECK:	N

MINFILE NUMBER: **092F 237** NATIONAL MINERAL INVENTORY:

NAME(S): **BIG G**, GILKIE, THUNDERBIRD (L.1215), RAINBOW (L.1216)

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 59 57 N NORTHING: 5541853
LONGITUDE: 125 37 49 W EASTING: 311504
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the north shore of Greenstone Creek, on Crown Grant Lot 1215 or 1216 (Assessment Report 699).

COMMODITIES: Copper Silver Iron Gold

MINERALS
SIGNIFICANT: Magnetite Pyrrhotite Chalcopyrite
ALTERATION: Amphibole Garnet Chlorite Magnetite Vesuvianite
COMMENTS: Vesuvianite occurrence is not certain.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Podiform
CLASSIFICATION: Skarn Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesitic Tuff
Limestone
Limy Argillite
Diorite
Mafic Dike

HOSTROCK COMMENTS: Skarn mineralization occur in limy interbeds within adesitic tuff.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

CAPSULE GEOLOGY

The area of the Big G occurrence is underlain by Karmutsen Formation volcanics overlain by Quatsino Formation limestone, both of the Upper Triassic Vancouver Group. These in turn are overlain by volcanic flows and breccias of the Lower Jurassic Bonanza Group. Intruding the stratigraphy are plutonic rocks of the Lower to Middle Jurassic Island Plutonic Suite. These plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

The volcanics, probably Karmutsen, consist of a dark green, amygdaloidal, basic volcanic flow overlain by tuffaceous andesitic rock, the contact dipping gently to the north. The tuffs contain several bands of limestone and limy argillaceous beds in which most of the economic mineralization occurs. These rocks are all cut by mafic porphyry dykes. Intrusive rocks are not found at the showing but a dioritic belt does occur to the east of the showing.

The main skarn showing seems to form a lens or lens-like body about 3 metres thick and 46 metres long, dipping about 20 degrees to the north. Minerals present in the skarn include fibrous greenish amphiboles, garnet, possibly vesuvianite, calcite, chlorite, magnetite, pyrrhotite, pyrite, chalcopyrite, and minor sphalerite. The magnetite and pyrrhotite are massive and most abundant. The chalcopyrite is more erratic and patchy but, at one location, does occur massively, over a width of 30 centimetres.

The mine workings are on the north side of a deep precipitous canyon, through which Greenstone Creek flows, and about 30 metres above the river bed. As of 1916, the workings consisted of several large open cuts and two adits, the latter 18 and 9 metres in length. In 1917, 83 tonnes of ore was mined from which 14,018 kilograms of

CAPSULE GEOLOGY

copper, 4,074 grams of silver and 31 grams of gold were produced (Mineral Policy data).

BIBLIOGRAPHY

EMPR AR *1916-326; 1924-368; 1928-377; 1929-383; 1965-233
EMPR ASS RPT *699, 2507
EMPR BULL 3, 1917
EMPR P 1989-3
GSC BULL 172
GSC EC GEOL #3, Vol.1
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, p.39; 71-36; 72-44
GSC SUM RPT *1930, Part A, pp.72-73
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/27 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 238**

NATIONAL MINERAL INVENTORY:

NAME(S): **THREE MUSKETEERS**, BROWN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11W
BC MAP:
LATITUDE: 49 42 05 N
LONGITUDE: 125 24 02 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Three Musketeer and Brown occurrences were listed by Carson in his 1968 thesis. However, he did not include the Brown occurrence in his list of deposits in Geological Survey of Canada Paper 68-50. General area location only.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508197
EASTING: 326904

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Basalt
Andesite
Quartz Diorite

HOSTROCK COMMENTS: Host rock is unknown; Karmutsen basalt is the dominant unit in the region.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area of the Three Musketeers showing is underlain by basalt and andesite of the Upper Triassic Karmutsen Formation, Vancouver Group. Stocks of quartz diorite related to the Tertiary Late Eocene to Early Oligocene Mount Washington Intrusive Suite (formerly Catface Intrusions) intrude the strata.

Little is known of these deposits except that they appear on Carson's map of mineral deposits of Vancouver Island (Carson, 1968). The Brown occurrence, located on Carson's map within a few kilometres to the northeast of the Gem Lake prospect (092F 239), is classified as a gold-quartz vein or fissure zone. The Three Musketeers showing, located within a few kilometres to the northeast of the Brown showing, is classified as a copper-shear zone type deposit.

BIBLIOGRAPHY

GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC *P 68-50, p.39; 72-44
*Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/15 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 239**
NATIONAL MINERAL INVENTORY: 092F11 Cu1

NAME(S): **GEM LAKE**, MEG

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11W
BC MAP:
LATITUDE: 49 41 04 N
LONGITUDE: 125 24 39 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about the southern end of Gem Lake. Coordinates are for the main breccia showing.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5506337
EASTING: 326103

COMMODITIES: Copper, Gold, Silver, Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite, Pyrrhotite, Pyrite, Molybdenite
ASSOCIATED: Quartz, Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Breccia, Stockwork, Vein, Podiform
CLASSIFICATION: Porphyry, Hydrothermal, Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Quartz Diorite
Polymictic Intrusive Breccia
Basalt
Felsite Dike

HOSTROCK COMMENTS: Mineralization occurs in plutonics and volcanics, but main showing is in intrusive rock.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Plutonic Rocks, Wrangell

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1961
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	1.0000	Per cent

COMMENTS: Eighteen metre interval; zone not indicated.
REFERENCE: McDougall, J.J. (1964): Summary Report on Gem Lake Copper - 1963.

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	18.0000	Grams per tonne
Gold	3.0000	Grams per tonne

REFERENCE: Assessment Report 17002, Figure 4.

CAPSULE GEOLOGY

The area of the Gem Lake occurence is underlain by basaltic and andesitic flows of the Upper Triassic Karmutsen Formation, Vancouver Group. These volcanics were intruded by stocks of quartz diorite of the Late Eocene to Early Oligocene Mount Washington Intrusive Suite (formerly Catface Intrusions), as well as several felsite dykes. The rock units were faulted and at about the same time mineralized with several generations of quartz veins. A polymictic intrusive breccia occurs consisting of 30 to 70 per cent clasts of volcanic material, quartz diorite and felsite. The matrix consists of hornblende, feldspar and quartz.

The mineralization at Gem Lake can be divided into 5 types (Assessment Report 17002):

CAPSULE GEOLOGY

---

(1) Dilational quartz veins 0.1 to 10 centimetres in width with varying amounts of magnetite are common close to the intrusive breccia. The highest gold and silver assays obtained were 0.5 and 8 grams per tonne respectively.
(2) Disseminations, filled amygdules and fracture coatings of pyrrhotite and chalcopyrite are common. Typical gold and silver values are 0.1 and 4 grams per tonne respectively.
(3) Massive sulphide pods (several) with up to 5 per cent chalcopyrite are found. The largest of these pods outcrops over an area of 2 by 4 metres. Except for one sample assaying 1.1 grams per tonne gold most samples contained less than 0.2 grams per tonne. Silver was generally below 5 grams per tonne and always below 10 grams per tonne.
(4) Quartz veins with 1 to 20 per cent pyrrhotite and chalcopyrite occur throughout the property. The veins are from 0.5 to 15 centimetres in width. The percentage of chalcopyrite is usually greater than that of pyrrhotite. The veins typically contain 0.3 and 10 grams per tonne gold and silver respectively. High values were 7.8 and 40 grams per tonne gold and silver respectively.
(5) A tectonic breccia mineralized with chalcopyrite is exposed over and area of about 15 by 30 metres (Main showing). This breccia is associated with several parallel, steeply dipping, east trending faults. The host rock is mainly the intrusive breccia but a portion of the mineralization also occurs in basalt flows. The chalcopyrite is both disseminated throughout the tectonic breccia and occupies the open spaces between the fragments that resulted from faulting. The host rocks are not pervasively altered except in the areas of intense shearing where fault gouge has formed. Four samples were collected and assays showed that values range from 0.64 to 3.0 grams per tonne gold and from 9.8 to 49 grams per tonne silver.

A 1961 drill hole encountered 1 per cent copper over an interval of 18 metres (McDougall, 1964). Minor molybdenite (0.02 per cent) was found in the deepest intrusive body intersected in 1963. One report also describes pyrite and molybdenite as occurring in fractures and veins. Carson describes the deposit as a porphyry copper type related to forcible intrusion of Tertiary stocks (Geolical Survey of Canada Paper 68-50, page 45).

BIBLIOGRAPHY

EMPR ASS RPT *17002
EMPR EXPL 1988-C91
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (McDougall, J.J. (1961): Report on Gem Lake (Meg Group) Copper Prospect-1961; McDougall, J.J. (1961): Preliminary Report on Gem Lake (Meg Group) Copper Prospect; *McDougall, J.J. (1964): Summary Report on Gem Lake Copper-1963; Geology map 1:600 scale, 1961)
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50, pp. 39,45; 72-44
*Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/15 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 240**

NATIONAL MINERAL INVENTORY:

NAME(S): **FAITH LAKE**, RIM

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11W
BC MAP:
LATITUDE: 49 38 57 N
LONGITUDE: 125 24 55 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Veins located north, west and south of Faith Lake (Assessment Report 16866, Figure 6).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5502426
EASTING: 325656

COMMODITIES: Gold, Silver, Copper, Molybdenum, Lead, Zinc

MINERALS

SIGNIFICANT: Arsenopyrite, Chalcopyrite, Pyrite, Pyrrhotite, Molybdenite, Chalcocite
COMMENTS: Bornite may be present.
ASSOCIATED: Quartz, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Hydrothermal, Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Basalt, Quartz Diorite

HOSTROCK COMMENTS: Mineralization occurs in both units.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
Plutonic Rocks

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1964
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	120.0000	Grams per tonne
Gold	24.6900	Grams per tonne
Copper	3.0000	Per cent

COMMENTS: From a 15 centimetre drill interval.
REFERENCE: McDougall, J.J. (1964): Report on Faith Lake Gold-Copper 1963.

CAPSULE GEOLOGY

The area of the Faith Lake occurrence is primarily underlain by basalt of the Upper Triassic Vancouver Group, Karmutsen Formation which consists of flows, pillow breccia, aquagene tuff, and some thin sedimentary layers. This unit was intruded by a hornblende quartz diorite stock of the Late Eocene to Early Oligocene Mount Washington Intrusive Suite (formerly Catface Intrusions), then cut by a felsite sill. The dominant structures are steeply dipping, intersecting north and east trending shears and faults. Bedding is gently warped, with an average strike of 230 degrees and dip of 15 degrees north.

At least 30 veins have been examined within a 1.2 kilometre radius of the intrusive. Within the volcanics the veins fill the north and east trending structures as well as sheared intraformational contacts. These veins vary in size from 5 to 10 centimetre wide lenses up to 0.6 to 1.2 metre wide veins fully exposed vertically through at least 600 metres. Undulating veins occupying intraformational contacts, although rarely more than 0.46 metres in width, can be traced for distances measurable in kilometres. Where seen in the plutonic rock the veins parallel a master joint or fracture system which strikes 060 degrees and dips 70 degrees to the south.

CAPSULE GEOLOGY

The banded veins are generally composed of comb quartz plus occasional ankeritic carbonates, and massive to coarsely crystalline sulphides. The sulphides typically include arsenopyrite, chalcopyrite, pyrite, pyrrhotite, molybdenite, minor secondary chalcocite and possible bornite. The Galena vein, a 30 centimetre thick and 20 metre long pod shaped vein emplaced along a shear between two basalt flows, was the only vein found that contained galena and sphalerite as well as chalcopyrite and arsenopyrite.

A 15 centimetre drill interval assayed 24.69 grams per tonne gold, 120.00 gram per tonne silver and 3 per cent copper (McDougall, 1964).

BIBLIOGRAPHY

EMPR ASS RPT 2053, *16866
EMPR EXPL 1988-C91
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (McDougall, J.J. (1962): Report on Rim Gold Deposit 1962; *McDougall, J.J. (1964): Report on Faith Lake Gold-Copper 1963; McDougall, J.J. (1964): Report on Faith Lake Gold 1964); Geology maps, 1962 and 1964; Self potential map, 1969)
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50, p.39; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/14 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 241**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHEV (FAITH LAKE)**, FAITH LAKE, FAITH COPPER, RIM

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11W
BC MAP:
LATITUDE: 49 39 28 N
LONGITUDE: 125 22 39 W
ELEVATION: 1450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 500 metres northwest of Faith Lake (Assessment Report 16866).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5503296
EASTING: 328413

COMMODITIES: Copper, Gold, Silver

MINERALS

SIGNIFICANT: Arsenopyrite, Chalcopyrite, Pyrrhotite
ALTERATION: Sericite, Silica, Clay
ALTERATION TYPE: Sericitic, Silicific'n, Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia, Disseminated
CLASSIFICATION: Porphyry, Hydrothermal, Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: 0020 x 0001 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Basalt Breccia
Basalt
Felsic Dike
Quartz Diorite

HOSTROCK COMMENTS: Mineralization occurs in mafic volcanics, related to intrusive.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1964
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	61.7100	Grams per tonne
Gold	12.3400	Grams per tonne

COMMENTS: Gold and silver values are typically much lower.
REFERENCE: McDougall, J.J. (1964): Report on Faith Lake Gold-Copper 1963.

CAPSULE GEOLOGY

The Shev occurrence area is primarily underlain by basalt of the Upper Triassic Vancouver Group, Karmutsen Formation which consists of flows, pillow breccia, aquagene tuff, and some thin sedimentary layers. This unit is intruded by a hornblende quartz diorite stock of the Late Eocene to Early Oligocene Mount Washington Intrusive Suite (formerly Catface Intrusions), then cut by a felsite sill. The dominant structures are steeply dipping, intersecting north and east trending shears and faults. Bedding is gently warped, with an average strike of 230 degrees and dip of 15 degrees north.

The Shev breccia showing consists of a poorly exposed 20 by 1 metre exposure of highly altered monolithic breccia with clasts of mafic volcanic rock up to 15 centimetres in size. The top of the showing is cut by a white felsic dyke, striking roughly east. Carson relates the brecciation of the host rocks to the forcible intrusion of the Tertiary intrusive complex and describes this showing as a porphyry copper type deposit (Geological Survey of Canada Paper 68-50, p. 45).

Pervasive sericitic alteration is characteristic of the zone,

CAPSULE GEOLOGY

varying in intensity from moderate to strong. Silicic and clay alteration are also present but subordinate to the sericitization. The intensity of the mineralization is proportional to the intensity of the alteration. Arsenopyrite, chalcopyrite and pyrrhotite are the dominant sulphides. The percentage of chalcopyrite is never more than 3 per cent. Arsenopyrite can form up to 5 per cent but averages 1 to 2 per cent. Occasional samples have assayed as high as 12.34 grams per tonne gold and 61.71 grams per tonne silver but are generally much lower (McDougall, 1964).

BIBLIOGRAPHY

EMPR ASS RPT 2053, *16866
EMPR EXPL 1988-C91
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (McDougall, J.J. (1962): Report on Rim Gold Deposit 1962; *McDougall, J.J. (1964): Report on Faith Lake Gold-Copper 1963; McDougall, J.J. (1964): Report on Faith Lake Gold 1964); Geology maps, 1962 and 1964; Self potential map, 1969)
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P *68-50, pp. 39,45; 72-44
*Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/15 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 242**

NATIONAL MINERAL INVENTORY:

NAME(S): **COAL CREEK**, TRENT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11E
BC MAP:
LATITUDE: 49 34 39 N
LONGITUDE: 125 03 20 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Scattered showing of copper occur in mafic volcanics where Trent River is joined by Tremain and Idle Creeks (Assessment Report 17972).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5493687
EASTING: 351402

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Copper Bornite Pyrite Cinnabar
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Vein
CLASSIFICATION: Volcanogenic Hydrothermal
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Coal Creek showing is underlain by Upper Triassic Vancouver Group, Karmutsen Formation basalt, which is unconformably overlain by conglomerates and sandstones of the Upper Cretaceous Comox Formation, Nanaimo Group.

Basalt containing chalcopyrite, native copper, bornite, pyrite and malachite occurs in the area where the Trent River is joined by Tremain and Idle creeks (Assessment Report 17972). Iron carbonate and calcite veining with associated breccia zones are also reported in the area. A small showing of cinnabar was observed in a flat lying calcite vein.

BIBLIOGRAPHY

EMPR ASS RPT *17972
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC *P 68-50, p.39; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 243**

NATIONAL MINERAL INVENTORY: 092F7 Sb1

NAME(S): **SILVER BELL**, CAVE, RYDER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 20 42 N
LONGITUDE: 124 43 47 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near the southern shore of Horne Lake across the lake from the mouth of Qualicum River (Assessment Report 17730).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5467248
EASTING: 374363

COMMODITIES: Antimony

MINERALS

SIGNIFICANT: Stibnite Arsenopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Sericite Quartz Carbonate
ALTERATION TYPE: Sericitic Carbonate Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I09 Stibnite veins and disseminations
DIMENSION:
STRIKE/DIP: 015/70N
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	

LITHOLOGY: Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Cowichan uplift.
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Antimony	14.2000	Per cent

REFERENCE: Assessment Report 17730.

CAPSULE GEOLOGY

The Silver Bell showing occurs at the northern end of the Cowichan uplift, near the southern shore of Horne Lake. A quartz vein, up to 20 centimetres in width and 21 metres in length, hosting massive stibnite, arsenopyrite and pyrite occurs in volcanics of the Devonian Nitinat Formation, Sicker Group. The wall rock is sericite-quartz-carbonate altered. The vein has a 015 degree strike and 70 degree northwest dip. Samples of massive stibnite assayed up to 14.20 per cent antimony (Assessment Report 17730). In 1939 an adit was driven for about 30 metres on the vein. A test sample was submitted by Ryder in 1939 (Personal communication with nephew).

BIBLIOGRAPHY

EMPR AR *1939-59,99
EMPR ASS RPT 11024, 16197, *17730
EMPR EXPL 1982-231; 1987-C151; 1988-C89
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
EMPR PF (Gunnex report on the Silver Bell Antimony Showing (#43) by H. Laanela, 1966 (in General File))
EMR MP COMM FILE MR-SB-301.00-General
GSC MAP 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50, p.38; 72-44; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With

BIBLIOGRAPHY

Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/22 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 244**

NATIONAL MINERAL INVENTORY:

NAME(S): **ESARY LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07W 092F07E
BC MAP:
LATITUDE: 49 19 29 N
LONGITUDE: 124 45 25 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Jasper showing (Assessment Report 16138).

MINING DIVISION: Nanaimo
Alberni
UTM ZONE: 10 (NAD 83)

NORTHING: 5465039
EASTING: 372333

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Unknown
ASSOCIATED: Jasper Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: G01 Algoma-type iron-formation

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	

LITHOLOGY: Iron Formation
Jasper
Bedded Jasper Chert
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Northwest trending volcanic-volcaniclastic-sedimentary rocks of the Devonian Sicker and the Mississippian to Permian Buttle Lake groups are bounded by younger mafic volcanics of the Vancouver Group and sediments of the Nanaimo Group. The Sicker Group stratigraphy is very complex with numerous intercalations and rapid lateral facies changes. The rocks are commonly schistose with associated carbonate and silica alteration in the vicinity of faults.

The Esary Lake showing occurs in a chemical sedimentary unit probably within the Devonian Duck Lake Formation, which forms the base of the Sicker Group. The sedimentary rocks include grey to green chert and lenses of pale red jasperoidal chert (taconite). The deposit is reported to be larger than the Lacy Lake (092F 245) or Cameron River (092F 246) jasper deposits which have widths up to 30 metres and lengths up to 150 metres. The deposit is described as an iron rich chert.

BIBLIOGRAPHY

EMPR ASS RPT *14941, *16138
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
EMPR PF (*Laanela, H. (1966): Report, Gunnex Ltd., occurrence #32)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50, p. 38; 72-44; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Sutherland Brown, A., (1988): Mineral Resources of the Alberni Region, EMPR, British Columbia Geoscience Research Program (RG87-26)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/26 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 245**

NATIONAL MINERAL INVENTORY:

NAME(S): **LACY LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 18 49 N
LONGITUDE: 124 44 55 W
ELEVATION: 425 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 16138).

MINING DIVISION: Nanaimo
Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5463790
EASTING: 372910

COMMODITIES: Manganese

MINERALS
SIGNIFICANT: Pyrolusite
ASSOCIATED: Jasper
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stratabound
CLASSIFICATION: Sedimentary Epigenetic Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	

LITHOLOGY: Jasper
Jasper Chert
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Manganese	0.4980	Per cent

REFERENCE: Assessment Report 16138.

CAPSULE GEOLOGY

Northwest trending volcanic-volcaniclastic-sedimentary rocks of the Devonian Sicker and Mississippian to Permian Buttle Lake groups are bounded by younger mafic volcanics of the Vancouver Group and sediments of the Nanaimo Group. The Sicker Group stratigraphy is very complex with numerous intercalations and rapid lateral facies changes. The rocks are commonly schistose with associated carbonate and silica alteration in the vicinity of faults.

The Lacy Lake showing occurs in a chemical sedimentary unit probably within the Devonian Duck Lake Formation, which forms the base of the Sicker Group. The sedimentary rocks include grey to green chert and lenses of pale red jasperoidal and manganiferous chert (taconite). The lenses are up to 50 metres thick and differ from the Cameron Lake Iron showing (092F 246) in their notable lack of magnetite and sulphides, and the paler pink to brick red colour of the jasperoidal chert. Pyrolusite occurs locally along fractures within the chert. A sample assayed 0.5 per cent manganese (Assessment Report 16138).

BIBLIOGRAPHY

EMPR ASS RPT 14941, *16138
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
EMPR PF (*Laanela, H. (1966): Report, Gunnex Ltd., occurrence #32)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50, p. 38; 72-44; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic

BIBLIOGRAPHY

Rocks, Unpublished Ph.D. Thesis, Carleton University
Sutherland Brown, A., (1988): Mineral Resources of the Alberni Region, EMPR, British Columbia Geoscience Research Program (RG87-26)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/26 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 246**

NATIONAL MINERAL INVENTORY:

NAME(S): **CAMERON LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 16 41 N
LONGITUDE: 124 42 50 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing (Assessment Report 16138).

MINING DIVISION: Nanaimo
Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5459780
EASTING: 375344

COMMODITIES: Iron Copper

MINERALS
SIGNIFICANT: Magnetite Pyrite
ASSOCIATED: Jasper Quartz Hematite
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stratabound
CLASSIFICATION: Sedimentary Epigenetic Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	

LITHOLOGY: Iron Formation
Jasper
Basalt
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEINLETS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.1200	Per cent

REFERENCE: Assessment Report 16138.

CAPSULE GEOLOGY

The Cameron Lake showing occurs in basaltic to andesitic volcanic rocks of the Devonian Duck Lake Formation, Sicker Group. Pillowed flow textures are common along with quartz and calcite filled amygdules and plagioclase/hornblende porphyritic textures.

Multiple contorted and crackle-brecciated jasper lenses ranging in thickness up to 3 metres, and exposed over a strike length of about 250 metres occur within the basalts. Magnetite seams 2 to 3 centimetres thick occur within the dark red jasper. The breccia open spaces contain white quartz with minor pyrite. Quartz veinlets containing pyrite and malachite assayed 0.12 per cent copper (Assessment Report 16138). A sample assayed 12.64 per cent iron (Assessment Report 14941).

BIBLIOGRAPHY

EMPR ASS RPT 14941, *16138
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
EMPR PF (*Laanela, H. (1966): Report, Gunnex Ltd., occurrence #27)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50, p. 38; 72-44; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Sutherland Brown, A., (1988): Mineral Resources of the Alberni

BIBLIOGRAPHY

Region, EMPR, British Columbia Geoscience Research Program (RG87-26)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 247**

NATIONAL MINERAL INVENTORY: 092F2 Au3

NAME(S): **CHINA CREEK**, DUKE OF YORK, CATARACT, BAIN

STATUS: Past Producer — Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 10 29 N
LONGITUDE: 124 43 05 W
ELEVATION: 180 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Reported location of workings.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5448300
EASTING: 374780

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent	Undefined Group	Unnamed/Unknown Formation	
Cretaceous	Nanaimo	Haslam	

LITHOLOGY: Gravel
Argillite
Shale

HOSTROCK COMMENTS: Underlying rocks are Nanaimo Group.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Overlap Assemblage — Wrangell

CAPSULE GEOLOGY

The China Creek placer occurrence is located near the confluence of China and McLaughlin creeks, about 8 kilometres southeast of Port Alberni. The area is underlain by argillites and shales of the Cretaceous Haslam Formation, Nanaimo Group.

Reported production of placer gold from China Creek, prior to 1895 was about $40,000 (Minister of Mines Annual Report 1895, page 649). The source of the gold is likely from gold-bearing quartz veins in the upper part of China Creek and it's tributaries.

The area is covered by a dam and pondage for Port Alberni's water supply.

BIBLIOGRAPHY

EMPR AR 1893-1080; *1895-649,652,653; *1896-6-8(Bull 1); 1897-566; 1924-221; 1926-298; 1944-147
EMPR BULL 28, (1980), p. 15; 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Sketch Map of China Creek Mining Camp, (1895): Shows Duke of York lease, in Gillespie - 092F 082; Eastwood, G.E.P., (1975): Report
GSC MAP 17-1968; 49-1963
GSC MEM 13, p. 154
GSC OF 463; 1272
GSC P 68-50, p. 46; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1985/07/24 — CODED BY: GSB — FIELD CHECK: N
DATE REVISED: 1990/05/09 — REVISED BY: LDJ — FIELD CHECK: N

MINFILE NUMBER: **092F 248**

NATIONAL MINERAL INVENTORY:

NAME(S): **GRETNA GREEN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 08 46 N
LONGITUDE: 125 07 36 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: One mile north of the head of Henderson Lake (where the fish hatchery was), on the east side of a creek where limestone cliffs occur (Minister of Mines Annual Report 1921).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5445876
EASTING: 344911

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite
ALTERATION: Garnet Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Diorite
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1921
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	51.4300	Grams per tonne
Gold	48.0000	Grams per tonne
Copper	17.8000	Per cent

COMMENTS: A selected sample.
REFERENCE: Minister of Mines Annual Report 1921, page 208.

CAPSULE GEOLOGY

The area is underlain by mafic to intermediate volcanic rocks of the Upper Triassic Vancouver Group, Karmutsen Formation. These are overlain by limestone of the Quatsino Formation, also of the Vancouver Group. A stock of dioritic rock of the Early to Middle Jurassic Island Intrusions occurs along the northeast side of Henderson Lake.

A skarn zone with chalcopyrite ore occurs in limestone cliffs near a contact with dioritic rock. Masses of epidote and garnet occur near, but usually not with, pods and bunches of chalcopyrite. The ore was reported to be of high grade but of limited quantity. One selected sample assayed 48.00 grams per tonne gold, 51.43 grams per tonne silver and 17.8 per cent copper Minister of Mines Annual Report 1921).

BIBLIOGRAPHY

EMPR AR *1921-208
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P *68-50, p. 38; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic

BIBLIOGRAPHY

Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24
DATE REVISED: 1990/03/30

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 249**

NATIONAL MINERAL INVENTORY:

NAME(S): **MURPHY-JOHNSON**, MURPHY , JOHNSON

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E
BC MAP:
LATITUDE: 49 16 04 N
LONGITUDE: 125 05 27 W
ELEVATION: 35 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: On the south side of Sproat Lake, about 13 kilometres from the east(?) end (Minister of Mines Annual Report 1930, page 292).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5459327
EASTING: 347898

COMMODITIES: Zinc

MINERALS
SIGNIFICANT: Pyrite Sphalerite
ASSOCIATED: Quartz
ALTERATION: Calcite Siderite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Murphy-Johnson showing consists of patches and stringers of quartz occurring in a zone of calcite and siderite about 30 metres in width. The area is underlain by andesite to basalt of the Upper Triassic Karmutsen Formation, Vancouver Group. The quartz carries fine-grained pyrite and traces of sphalerite. Gold values are reported to be low. A shallow shaft was sunk prior to 1931, about 22 metres back from the shore.

BIBLIOGRAPHY

EMPR AR *1930-292
GSC MAP 49-1963; 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50, p. 38; 71-36; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 250**

NATIONAL MINERAL INVENTORY:

NAME(S): **TOFINO MOLY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04W
BC MAP:
LATITUDE: 49 08 43 N
LONGITUDE: 125 54 45 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the tip of Esowista Peninsula, within 1.0 kilometre of Tofino.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5447691
EASTING: 287606

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Tofino Intrusive Suite

ISOTOPIC AGE: 52 +/- 5 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite Porphyry

HOSTROCK COMMENTS: These Tertiary plutonics were commonly known as the Catface Intrusions. Age date from GSC Paper 72-44.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Esowista Peninsula (Tofino located at tip) is underlain by rock of the Late Jurassic to Early Cretaceous Pacific Rim Complex. This is a highly disturbed assemblage consisting mainly of greywacke and argillite with minor ribbon chert, basic volcanics, limestone and conglomerate. The rocks are generally highly faulted and sheared and in many places are tectonic melanges. At the tip of the peninsula these rocks are intruded by a granodiorite porphyry plug of the Early to Middle Eocene Tofino Intrusive Suite (formerly Catface Intrusions).

The Tofino occurrence consists of a small stockwork of quartz veinlets containing molybdenite, chalcopyrite and pyrite hosted by the Tertiary plug.

BIBLIOGRAPHY

EMPR BULL 9
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P *68-50, pp. 36-38,41,42; 72-44; 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 251**

NATIONAL MINERAL INVENTORY: 092F5 Cu2

NAME(S): **IRISHMAN CREEK**, CATFACE, IRISHMAN'S CREEK

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 15 57 N
LONGITUDE: 125 59 13 W
ELEVATION: 350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Irishman Creek showing, from CIM Special Volume 15, is on Irishman Creek, 3.5 kilometres west of Hecate Bay. See also Catface (092F 120) and Hecate Bay (092F 231).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5461302
EASTING: 282707

COMMODITIES: Copper, Molybdenum, Silver, Gold, Zinc

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Pyrrhotite, Scheelite
ASSOCIATED: Pyrite, Pyrrhotite, Magnetite
ALTERATION: Garnet, Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry, Skarn, Industrial Min.
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Regular
DIMENSION: 350 x 100 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Zone of greater than 0.2 per cent copper measures 100 by 350 metres.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Paleozoic	Sicker	Undefined Formation	
Jurassic			Tofino Intrusive Suite
ISOTOPIC AGE: 166 +/- 8 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			
Eocene			Catface Intrusions
ISOTOPIC AGE: 48 +/- 12 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Andesite
Basalt
Breccia
Agglomerate
Diorite
Quartz Monzonite
Quartz Diorite
Granodiorite
Brecciated Quartz Monzonite
Pyroxenite Dike

HOSTROCK COMMENTS: Tertiary biotite from Catface penninsula; Isl. Intrusions biotite from Ucona batholith(GSC P72-44). Volcanics are either Karmutsen or Sicker.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
Plutonic Rocks
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: AREA
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1975
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.2000	Per cent

COMMENTS: Area of greater than 0.2 per cent copper over an area of 100 by 350 metres. The best drill intercept was 0.63 per cent copper over 155.4 metres, with silver up to 6.7 grams per tonne. A potential for 20 million tonnes of mineralized rock with unknown grade was estimated in 1970 (CIM Special Volume 46, pages 322-326).
REFERENCE: CIM Special Volume 15, page 308 and Special Volume 46, page 325.

CAPSULE GEOLOGY

The Irishman Creek occurrence lies 0.9 kilometre north of the Catface copper-molybdenum developed prospect (092F 120). See also Hecate Bay (092F 231).

The area of the deposit is underlain by andesite and basalt flows, breccia and agglomerate in contact with diorite of the Mesozoic-Paleozoic Westcoast Complex. The age of the volcanics is in doubt and they are thought to belong to either the Upper Triassic Karmutsen Formation (Vancouver Group) or to the Paleozoic Sicker Group. Quartz monzonite of the Early to Middle Jurassic Island Intrusions, has intruded the contact area, followed by several quartz diorite to granodiorite phases of the Early to Middle Eocene Tofino Intrusive Suite (formerly Catface Intrusions), (Personal Communication, Nick Massey, May 1990).

Mineralization at Irishman's Creek consists of disseminated chalcopyrite, pyrite and some pyrrhotite in volcanic rocks and in brecciated quartz monzonite, near Tofino Intrusive Suite quartz diorite. A zone with greater that 0.2 percent copper mineralization measures 100 metres wide and 350 metres long (CIM Special Volume 15, page 308). The best drill intercept was 0.63 per cent copper over 155.4 metres, with silver up to 6.7 grams per tonne. A potential for 20 million tonnes of mineralized rock with unknown grade was estimated in 1970 (CIM Special Volume 46, pages 322-326).

Also present are sulphide-rich masses containing magnetite, chalcopyrite, pyrite and pyrrhotite that occur over a width of one metre in or near a pyroxenite dyke that follows an east trending fault along Irishman's Creek.

In 1999 Doublestar Resources Ltd. plans to acquire the property from Falconbridge Limited.

BIBLIOGRAPHY

EMPR AR 1898-1133; 1909-147; 1910-152; 1961-101; 1962-105; 1963-102; 1964-155; 1967-74; 1968-102
EMPR ASS RPT 540, 541, 580
EMPR GEM 1970-287; *1971-236-245; 1972-266
EMPR PF (McDougall, J.J. (1962): Interim Report on Catface Copper Prospect to October 15, 1962; Various maps and sketches by J.J. McDougall, 1962; Photographs of Catface Camp (see Catface - 092F 120); Notes by T. Schroeter with photographs, 1989)
EMR MP CORPFILE (Falconbridge Nickel Mines Limited; Catface Copper Mines Limited; 1971 Prospectus, Thunder Valley Mines Limited)
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 9; 61; 463
GSC P 66-1; 68-50, pp. 39-45; 72-44
GSC SUM RPT 1920A
CIM *Special Vol. 15, 1976, pp. 299-310; *46, pp. 322-326
GCNL Sept. 29, 1971
PERS COMM Massey, N., May 1990 (with respect to Tertiary intrusive nomenclature)
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1999/10/13 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 252**

NATIONAL MINERAL INVENTORY:

NAME(S): **DRY GULCH**, CUB, DRY CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 26 30 N
LONGITUDE: 125 43 53 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5480142
EASTING: 302003

COMMENTS: The showing is located in or adjacent to Dry Creek. The creek itself drains west-northwest into Bedwell River about 10 kilometres from Bedwell Sound. Some earlier reports indicate that these showings were covered by the Belvedere group of claims (092F 145) but recent work and the placement of the Belvedere crown grants makes this supposition questionable. Assessment work done just south of the crown grant shows areas of mineralization similar to that described in Geological Survey of Canada Memoir 204 or Energy, Mines and Petroleum Resources Bulletin 8 for the Dry Gulch showing.

COMMODITIES: Gold Copper Molybdenum

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Pyrrhotite Molybdenite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Diorite
Granitic Gneiss
Basalt
Feldspar Porphyry Dike
Andesite

HOSTROCK COMMENTS: Mineralized vein occur in both plutonic and volcanic rock.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1935

COMMODITY	GRADE	
Gold	25.5700	Grams per tonne

COMMENTS: From a 43 centimetre wide vein.
REFERENCE: GSC Memoir 204, page 25.

CAPSULE GEOLOGY

The area of the Dry Gulch occurrence is underlain by volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group) which are intruded by granitic rock of the Early to Middle Jurassic Island Plutonic Suite. In the Bedwell River area the Karmutsen rocks consist of fine-grained andesites and black or dark green basalts. The plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

On the northern side of Dry Creek a sill-like mass of porphyritic, fine grained, quartz diorite about 53 metres thick has a sharp contact with the underlying amygdaloidal basalts. The usual medium grained, light coloured quartz diorite of the Island Plutonic Suite batholith overlies the sill. Dykes of similar character to that of the sill are found well within the main batholith. The

CAPSULE GEOLOGY

volcanics below, and the lower part of the sill are cut by narrow quartz veins and impregnated with fine disseminated grains of pyrite and chalcopyrite.

In the bluffs on the eastern side of the creek, northwest from the point where the sill is exposed, the lowest exposure consists of granitic gneiss, cut by feldspar porphyry dykes, above which the normal quartz diorite of the batholith is exposed. The gneiss and feldspar porphyry dykes are intruded by a stockwork of narrow quartz veins. The veins and wallrock host disseminated pyrrhotite and chalcopyrite. Some molybenite occurs in narrow fractures and in some of the quartz veins. One vein, 43 centimetres wide, assayed 25.57 grams per tonne gold (Geological Survey of Canada Memoir 204, page 25).

BIBLIOGRAPHY

EMPR ASS RPT *4101, 4354, 4951, *4962, 5419, *5881, *5520, 11110
EMPR BULL *8, pp. 16,17,21; 13; 20, pp. 24-28
EMPR EXPL 1975-E97
EMPR GEM 1972-267, 1973-232, 1974-176
GSC MAP 17-1968; 1386A
GSC MEM *204, p. 25
GSC OF 463
GSC P 68-50, p. 38; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 253**

NATIONAL MINERAL INVENTORY:

NAME(S): **CAVE 1**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 19 49 N
LONGITUDE: 124 43 16 W
ELEVATION: 180 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The coordinates are for sample JW8806R. JW8801R and 02R contain copper and occur a few hundred metres to the east; JW8815R, similarly mineralized, occurs a few hundred metres to the northwest (Assessment Report 17730, Figure 4).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5465597
EASTING: 374951

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Chalcopyrite	Pyrite	Stibnite	Arsenopyrite
ALTERATION:	Sericite	Quartz	Carbonate	
ALTERATION TYPE:	Sericitic	Silicific'n	Carbonate	
MINERALIZATION AGE:	Unknown			

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	

LITHOLOGY: Volcanic Rock
Schist

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

COMMODITY	GRADE	
Copper	0.3200	Per cent

REFERENCE: Assessment Report 17730.

CAPSULE GEOLOGY

Sericite-quartz-carbonate altered volcanics of the Devonian Nitinat Formation, Sicker Group contain finely disseminated pyrite and chalcopyrite. A major northwest trending fault occurs to the east of the showings. One sample (JW8815R) containing about 5 per cent pyrite, 2 per cent chalcopyrite and traces of stibnite and arsenopyrite assayed 0.32 per cent copper (Assessment Report 17730). One of the copper bearing samples was described as a schist.

BIBLIOGRAPHY

EMPR ASS RPT 11024, 16197, *17730
EMPR EXPL 1982-231; 1987-C151; 1988-C89
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
GSC MAP 17-1968; 1386A
GSC OF 463, 1272
GSC P 68-50, p.38; 72-44; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/03/22
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 254**

NATIONAL MINERAL INVENTORY:

NAME(S): **T-BIRD**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E
BC MAP:
LATITUDE: 49 11 59 N
LONGITUDE: 124 12 29 W
ELEVATION: 460 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Open cut, 2 kilometres northeast from the summit of Okay Mountain, 14 kilometres west from the village of Wellington (Assessment Report 18875).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5450361
EASTING: 411995

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite Tuff
Argillite
Cherty Argillite
Chert
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Nanoose uplift.

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1989

COMMODITY	GRADE	
Gold	2.2200	Grams per tonne

COMMENTS: Sample of quartz vein.
REFERENCE: Assessment Report 18875.

CAPSULE GEOLOGY

The area is underlain by Paleozoic Sicker Group volcanic rocks and sediments in fault contact with Upper Triassic Karmutsen Formation (Vancouver Group) andesites. Cretaceous sediments of the Nanaimo Group unconformably overlies these rocks.

The T-Bird occurrence covers faulted north-northwest trending contact zones between Karmutsen Formation basalt and Sicker Group rocks comprised of interbedded massive argillites, cherty argillite, chert and andesitic tuffs. The Sicker Group rocks may be correlative with rocks of the Devonian McLaughlin Ridge Formation (Cowichan uplift only). The argillite units are generally thick but the green-brown andesitic tuff unit is over 20 metres thick and hosts the T-Bird showing. This sequence strikes north-northwest and dips approximately 75 degrees east. At the showing, a number of quartz veins up to 30 centimetres wide, fill tension fractures that are generally normal to the bedding of the andesitic tuff unit. The veins are weakly mineralized with pyrite at surface but contain massive pyrite about a metre below the surface. A grab sample assayed 2.22 grams per tonne gold (Assessment Report 18875).

One hundred metres south of the T-Bird showing, grab samples assayed 7.26 grams per tonne gold and 5.82 grams per tonne silver

CAPSULE GEOLOGY

from a pyritic, fractured chert unit and 64.10 grams per tonne gold and 29.82 grams per tonne silver from a 1.3 to 5 centimetre wide quartz vein crosscutting argillite (Assessment Report 18875).

BIBLIOGRAPHY

EMPR ASS RPT 10372, 14427, 17382, *18875
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR PF (092F General File - Report by H. Laanela (1965): Gunnex Ltd., Occurrence #3)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/10 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 255**

NATIONAL MINERAL INVENTORY:

NAME(S): **BW**, BEVAN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11E
BC MAP:
LATITUDE: 49 41 12 N
LONGITUDE: 125 11 16 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: About two kilometres west-northwest of the confluence of Browns River and Wattaway Creek (Assessment Report 17102).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5506092
EASTING: 342198

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Silica Malachite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area of the BW occurrence is underlain by intermediate to mafic basalts, volcanic tuffs and associated breccias, all of the Upper Triassic Karmutsen Formation, Vancouver Group. The basalt is typically fine grained and porphyritic and contains abundant thin quartz stringers.

The mineralization is reported to consist of pyrite, pyrrhotite and chalcopyrite within quartz veins and siliceous altered zones. The occurrences range from shallow to steeply dipping veins, or altered zones, with thicnesses of two to three metres. Copper staining was noted at one location, north of Browns River, just over a kilometre to the northwest of the veins (Assessment Report 17102, Figure 4).

BIBLIOGRAPHY

EMPR ASS RPT *17102, 17777
EMPR EXPL 1988-C91
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/03/16
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 256**

NATIONAL MINERAL INVENTORY:

NAME(S): **BACON LAKE**, WILLY, BACON

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E
BC MAP:
LATITUDE: 49 58 02 N
LONGITUDE: 125 37 35 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Willy deposit located near the southeast corner of Bacon Lake. See also the Rock occurrence (092F 038), also part of the Bacon Lake deposits.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5538293
EASTING: 311658

COMMODITIES: Gold, Magnetite, Iron, Cobalt, Copper

MINERALS

SIGNIFICANT: Magnetite, Cobaltite, Erythrite, Pyrite, Chalcopyrite, Marcasite
ALTERATION: Garnet, Epidote, Calcite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn, Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesitic Tuff
Limestone
Diorite
Garnetite
Skarn

HOSTROCK COMMENTS: Magnetite occurs in volcanics and limestone near dioritic intrusions.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1987

COMMODITY	GRADE	
Gold	15.6300	Grams per tonne
Cobalt	0.6000	Per cent
Iron	36.6000	Per cent

COMMENTS: Sample of massive magnetite with visible cobaltite and erythrite. Also 0.08 grams per tonne silver.
REFERENCE: Assessment Report 17395.

CAPSULE GEOLOGY

The area of the Bacon Lake occurrence is underlain by Karmutsen Formation volcanics overlain by Quatsino Formation limestone, both of the Upper Triassic Vancouver Group. These in turn are overlain by volcanic flows and breccias of the Lower Jurassic Bonanza Group. Intruding the stratigraphy are plutonic rocks of the Early to Middle Jurassic Island Plutonic Suite. These plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

The Willy deposit, at Bacon Lake, occurs within beds of andesitic tuff and crystalline limestone. Magnetite is visible on the surface in ten or twelve isolated outcrops over a length of about 90 metres and a width of from 3 to 8 metres. At most exposures the magnetite is nearly pure, but at some it is disseminated throughout the volcanics. A sample of massive magnetite with visible cobaltite and erythrite assayed 15.63 grams per tonne gold, 0.8 grams per tonne

CAPSULE GEOLOGY

silver, 36.60 per cent iron and 0.6 per cent cobalt (Assessment Report 17395).

At least 19 diamond drill holes were put down on the deposit in 1951. Drill logs indicate that magnetite occurs in seams, bands and stringers, mainly in green volcanics, either massively or with garnetite, epidote, calcite and pyrite. Chalcopyrite was encountered in one hole, occurring in a seam with garnetite and epidote and as specks with marcasite in volcanic rock. Limestone is common and diorite was intersected at the bottom of a few holes.

BIBLIOGRAPHY

EMPR ASS RPT 16321, *17395, 18946
EMPR BULL 3, 1917
EMPR EXPL 1987-C154; 1988-C92
EMPR P 1989-3
EMPR PF (Hings, D.L. (1951): Report on Preliminary Magnetic Survey of the East Bacon Lake Area, B.C. Iron Ore Development Co. Ltd.; *Bacon Lake Property drill logs, B.C. Iron Ore Development Co. Ltd., Jan.3, 1952; McDougall, J.J. (1961): *Preliminary Report on the Bacon Lake and Willy Iron Prospects and Report on Bacon Lake Magnetite (including drill logs on the Rock deposit (092F 038)); Magnetic Survey map, Noranda, 1962)
GSC BULL 172
GSC EC GEOL *#3, Vol.1, pp. 78-79
GSC P 68-50; 71-36; 72-44
GSC SUM RPT 1930, Part A
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
CANMET RPT #47
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/28 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 257**

NATIONAL MINERAL INVENTORY:

NAME(S): **AOK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E
BC MAP:
LATITUDE: 49 11 14 N
LONGITUDE: 124 13 13 W
ELEVATION: 680 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sampled outcrop near the summit of Okay Mountain, 14.5 kilometres west from the village of Wellington (Assessment Report 15855).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5448985
EASTING: 411082

COMMODITIES: Silver

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Carbonate Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION:
STRIKE/DIP: 075/ TREND/PLUNGE:
COMMENTS: Shears.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Basalt
Shale

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Nanoose uplift.

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SHEAR

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock

YEAR: 1986

COMMODITY	GRADE	
Silver	15.7600	Grams per tonne

COMMENTS: Sample from narrow shear zone.
REFERENCE: Assessment Report 15855.

CAPSULE GEOLOGY

The area is underlain by Paleozoic Sicker Group volcanic rocks and sediments in fault contact with Upper Triassic Karmutsen Formation (Vancouver Group) andesites. Cretaceous sediments of the Nanaimo Group unconformably overlie these rocks.

The Aok occurrence covers faulted north-northwest trending contact zones between Karmutsen Formation basalt and Sicker Group rocks, possibly correlative with the Devonian McLaughlin Ridge Formation of the Cowichan uplift, comprised of strongly foliated argillaceous and pyritic grey to black rusty shales. Cleavage within the shale strikes between 135 to 155 degrees with dips varying between vertical and 72 degrees southwest. Local pods of massive pyrite were observed in the shales. The Karmutsen rocks comprise pillowed and columnar basalt interbedded with 2 to 5 metre thick horizons of finely banded, pyritic chert and a pyritic siliceous tuff. This sequence is folded about an axis plunging 25 to 45 degrees at 285 degrees and the strike of the two limbs are 016 and 030 degrees with 45 and 70 degree dips southwest and northwest respectively.

Numerous quartz-carbonate, carbonate and epidote veinlets and veins occupy fractures in the basalt and parallel the northwest trending structure. Vein attitudes vary between a 130 to 175 degree strike and a 60 degree to vertical dip west. Less common are vertical to steeply north dipping quartz-pyrite filled fractures and

CAPSULE GEOLOGY

shears 1 to 100 centimetres wide that strike 075 degrees. A rock sample from these narrow shears assayed up to 15.76 grams per tonne silver (Assessment Report 15855).

BIBLIOGRAPHY

EMPR ASS RPT *15855
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1990/04/10 CODED BY: GO FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 258**

NATIONAL MINERAL INVENTORY: 092F10 Fe1

NAME(S): **YELLOW KID-TEXADA MINES**, TEXADA MINES-YELLOW KID, LE ROI, MIDWAY, CAMERON (L. 182), YELLOW KID (L. 267), TEXADA IRON MINES

STATUS: Past Producer Open Pit Underground
MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 42 19 N
NORTHING: 5507013
LONGITUDE: 124 32 52 W
EASTING: 388401
ELEVATION: 220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Open pit on Lots 182 (Cameron) and 267 (Yellow Kid), 1.5 kilometres west-southwest of Paxton Lake, 6 kilometres south from the community of Vananda on Texada Island (Open File 1990-3). See also Prescott, Paxton and Lake (092F 106, 107 and 259 respectively).

COMMODITIES: Iron, Copper, Silver, Gold, Magnetite, Zinc

MINERALS

SIGNIFICANT: Magnetite, Chalcopyrite, Sphalerite, Pyrrhotite, Arsenopyrite, Erythrite
COMMENTS: Rare sphalerite; trace arsenopyrite.
ASSOCIATED: Albite
ALTERATION: Garnet, Pyroxene, Amphibole, Diopside, Epidote, Actinolite, Calcite, Scapolite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn, Industrial Min.
TYPE: K03 Fe skarn, K01 Cu skarn
SHAPE: Irregular
MODIFIER: Faulted

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Middle Jurassic			Gillies Stock

ISOTOPIC AGE: 178 Ma
DATING METHOD: Uranium/Lead
MATERIAL DATED: Zircon

LITHOLOGY: Limestone, Skarn, Quartz Monzonite, Marble, Feldspar Porphyry Dike, Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell

CAPSULE GEOLOGY

A Quatsino Formation limestone sequence, 60 to 250 metres thick, forms a 3 kilometre wide belt extending northwest from Gillies Bay to Blubber Bay at the tip of Texada Island. It conformably overlies Karmutsen Formation volcanics and mainly comprises pure, massive to poorly bedded calcareous and dolomitic limestone. Both formations form part of the Upper Triassic Vancouver Group. Exposed contacts between the limestone and underlying volcanic rocks are usually marked by steep faults. The volcanic rocks comprise rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows. A major episode of folding (F1) has been recognized; this resulted in the limestones and, to a lesser degree, the underlying volcanics, being deformed into a series of broad, northwest trending open folds that plunge northwards. Two subparallel, northwest striking lineaments are evident in the area. The Ideal and Holly faults have apparently controlled the emplacement of some Jurassic intrusions and their associated skarn mineralization.

The Middle Jurassic Gillies stock intrudes both the Quatsino and

CAPSULE GEOLOGY

Karmutsen formations. The stock has yielded a zircon U-Pb radiometric age of 178 Ma (Fieldwork, 1989) and is genetically associated with several magnetite-rich skarn deposits (Prescott, Lake, Yellow Kid and Paxton) in an area 1524 by 609 metres. It mainly comprises a grey, medium-grained equigranular quartz monzonite that contains amphibole, biotite and occasional pyroxene phenocrysts. A late potassium feldspar rich phase is also present. The stock and the surrounding limestones are cut by sets of north and east trending feldspar porphyritic dykes that reach 10 metres in thickness and postdate skarn mineralization. The Gillies stock and its associated iron-skarn deposits lie close to the Ideal fault. Locally at the iron mines (Prescott, Lake, Yellow Kid and Paxton), the volcanic-limestone contact is highly deformed and these structures have partly controlled the distribution of the magnetite ore. The Karmutsen volcanics in the vicinity of the Gillies stock are variably metamorphosed, most typically to a chloritized or epidotized basalt; the Quatsino limestone is bleached white and coarsely recrystallized.

Magnetite skarn mineralization at the Yellow Kid mine is generally developed close to or along the margin of the Gillies stock and limestone. Magnetite orebodies adjacent to the stock are generally associated with abundant garnet-pyroxene-amphibole skarn. The massive magnetite occurs with reddish-brown garnet, pyroxene (hedenbergite-diopside), epidote, amphibole (actinolite), calcite and chalcopyrite, pyrite and pyrrhotite. Traces of arsenopyrite and rare sphalerite are also observed (International Geological Congress Guidebook, Day 2-Texada, by A. Sutherland Brown). Contacts between the skarn and unaltered rocks are generally sharp. Mineralogical zoning is recognized and, where fully developed, comprises barren skarn close to the intrusion, grading outwards to magnetite-rich skarn and then into marble. Locally, chalcopyrite and pyrite occur close to the outer margins of the skarn envelope, adjacent to limestone or marble. Pyrite and chalcopyrite veinlets commonly cut magnetite skarn. Early garnet-pyroxene assemblages were followed by the introduction of magnetite and late sulphide mineralization. The Yellow Kid dyke, a large vertical feldspar porphyry dyke, strikes northwest through the northern sections of the Yellow Kid pit. The Yellow Kid ore contains a higher copper content and copper concentrates produced from milling contain recoverable amounts of gold and silver.

The initial discoveries of the four main iron-skarn deposits were from west to east, the Prescott (092F 106), Yellow Kid, Paxton (092F 107) and Lake (092F 259). Subsequent discoveries by underground exploration included the Midway (combined with the Yellow Kid), Le Roi (combined with the Yellow Kid), Lake Extension (combined with the Lake) and Anomaly A (combined with the Prescott).

The Yellow Kid deposit was discovered in 1953-54; in 1955 an open pit operation started and in 1957 milling of magnetite ore began. Underground exploration began in 1959 in an adit driven from the shoreline to explore beneath the Prescott and Yellow Kid open pits. In the course of this underground development, the Midway deposit was discovered between the Prescott and Yellow Kid pits and production from here beginning in 1964 is included with the Yellow Kid. A shaft and 5 levels were established to mine the deposits. A crosscut driven in 1964 to intersect the Lake Extension orebody (an extension of the Lake deposit), discovered another orebody, the Le Roi, which occurs between the Paxton open pit and the Yellow Kid open pit. The Le Roi orebody, due to its proximity to the Yellow Kid deposit, has been included with the Yellow Kid. A decline was started in 1966 from the Lake open pit to mine the Le Roi and Lake Extension orebodies. By 1968 all open pit mining ceased. Some underground development work was done on the Anomaly A orebody in 1969-70, located 440 metres northwest of the Prescott open pit.

The Texada Mines, which encompassed all of the above deposits and orebodies, closed on December 17, 1976 due to depletion of ore reserves. The property is held by Consolidated Van Anda Gold Ltd.

Production from 1957 to 1970 totalled 23,645,219 grams of silver, 887,401 grams of gold, 25,432,020 kilograms of copper and 7,989,280,251 kilograms of iron from 18,181,433 tonnes mined.

BIBLIOGRAPHY

EMPR AR 1876-429; 1888-324; 1897-559,560; 1898-1144; 1899-557,805,806, 816; 1901-1232; 1902-H225-H228,H236; 1903-H205; 1904-G247; 1905-J215; 1906-H203; 1907-L152; 1908-J146,J154; 1912-K197; 1916-K276, K296,K298-K300,K356,K357,K365; 1951-A196; *1952-A218-A221,A338, A339; 1953-A162,A163,A277; 1954-A48,A164,A263; 1955-A46,75; 1956-A48,116,129-131; 1957-A48,67,68,154; 1958-A43,57,121; 1959-A46,130, 131; 1960-A52,89,90; 1961-A47,90,91,240,241,281; 1962-A47,94,95, 246,247,285,287; 1963-A47,96-98,222,224,272; *1964-A53,146-151,334; 1965-224,225; 1966-72,73; 1967-72; 1968-101; 1969-A54; 1970-A53;

BIBLIOGRAPHY

1971-A53; 1972-A53; 1973-A53; 1974-A119; 1975-A93; 1976-A103
EMPR BC METAL MM00189
EMPR BULL 3 (1917); 40, p. 80; 101, pp. 13, 57, 164, Appendix 4A, 6
EMPR FIELDWORK *1989, pp. 257-265
EMPR GEM 1969-213; 1970-282; 1971-251; 1972-269,270; 1973-233,234; 1974-179,180; 1977-E113
EMPR INDEX 4-126
EMPR OF 1988-28; 1990-3
EMPR P 1898-3, pp. 51-53
EMPR PF ((see Prescott - 092F 106), *Robinson, W.C. (1974): Preliminary Report of Texada Mine; Haig-Smillie, L.D. (1973): Sea Water Flotation, Texada Mines Ltd.; Paterson, R.G. (1973): Notes on Ore Reserves; Various maps on surface and underground geology, pit outlines, photographs); Three dimensional map of underground workings; Geology map of Yellow Kid pit; Surface geology map; see Lake - 092F 259, Texada Mines Ltd.-21 Years of Shipments of Iron Ore to Japan)
EMR MP CORPFILE (Texada Mines Ltd.)
GSC BULL *172, pp.56-63
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50; 71-36
GSC SUM RPT 1924 Part A, pp. 106-144
CANMET IR 728, pp. 156-158; 736, pp. 269-273,276-281; 744, pp. 25-31; 763, p. 232
CANMET RPT 47, pp. 21-24
CIM Transactions Vol. LXXVII, pp. 8-13, 1974
CMJ Vol.83, pp. 53-56 (1962)
EG Vol. 79, pp. 869-882
GCNL #217, 1988
W MINER (Vol.39, Nov.1966, pp. 30-36; Vol.36, June 1963, pp. 34-44; Vol.33, Aug.1960, pp. 28-34; Vol.33, Jan.1960, pp. 31-36; Vol.32, Oct.1959, pp. 122-124
Ettlinger, A.D. (1990): A Geological Analysis of Gold Skarns and Precious Metal Enriched Iron and Copper Skarns in British Columbia; unpublished Ph.D. Thesis, Washington State University, 246 pages
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/02 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 259** NATIONAL MINERAL INVENTORY: 092F10 Fe1

NAME(S): **LAKE-TEXADA MINES**, TEXADA MINES (LAKE) , LAKE EXTENSION, EAST GATE (L.53), PRESCOTT, TEXADA IRON MINES

STATUS: Past Producer Open Pit Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 42 09 N NORTHING: 5506675
LONGITUDE: 124 31 42 W EASTING: 389797
ELEVATION: 142 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Open pit on Lot 53 (East Gate), 500 metres south of Paxton Lake, 6.4 kilometres south from the community of Vananda on Texada Island (Open File 1990-3). See also Prescott, Paxton and Yellow Kid (092F 106, 107 and 258 respectively). Production is also included with the Prescott.

COMMODITIES: Silver, Gold, Copper, Magnetite, Iron, Limestone, Zinc, Cobalt

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite, Calcite, Sphalerite, Pyrrhotite, Pyrite, Arsenopyrite, Erythrite
COMMENTS: Rare sphalerite; trace arsenopyrite.
ALTERATION: Garnet, Pyroxene, Amphibole, Diopside, Epidote, Actinolite, Calcite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn, Industrial Min.
TYPE: K03 Fe skarn; K01 Cu skarn; R09 Limestone
SHAPE: Irregular
MODIFIER: Faulted

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	
Middle Jurassic			Gillies Stock

ISOTOPIC AGE: 178 Ma
DATING METHOD: Uranium/Lead
MATERIAL DATED: Zircon

LITHOLOGY: Basalt, Limestone, Skarn, Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: LAKE REPORT ON: Y

CATEGORY: Indicated YEAR: 1956
QUANTITY: 100000 Tonnes

COMMODITY	GRADE	
Limestone	53.4000	Per cent

COMMENTS: Grade given for CaO.
REFERENCE: Bulletin 40, page 80.

CAPSULE GEOLOGY

The Quatsino Formation is represented by a limestone sequence, 60 to 250 metres thick, that forms a 3 kilometre wide belt extending northwest from Gillies Bay to Blubber Bay, at the tip of Texada Island. It conformably overlies Karmutsen Formation volcanics and mainly comprises pure, massive to poorly bedded calcareous and dolomitic limestone. Both formations form part of the Upper Triassic

CAPSULE GEOLOGY

Vancouver Group. Exposed contacts between the limestone and underlying volcanic rocks are usually marked by steep faults. The volcanic rocks comprise rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows. A major episode of folding (F1) has been recognized; this resulted in the limestones and, to a lesser degree, the underlying volcanics, being deformed into a series of broad, northwest trending open folds that plunge northwards. Two subparallel, northwest striking lineaments are evident in the area. The Ideal and Holly faults have apparently controlled the emplacement of some Jurassic intrusions and their associated skarn mineralization.

The Middle Jurassic Gillies stock intrudes both the Quatsino and Karmutsen formations. The stock has yielded a zircon U-Pb radiometric age of 178 Ma (Fieldwork 1989) and is genetically associated with several magnetite-rich skarn deposits (Prescott, Lake, Yellow Kid and Paxton) in an area 1524 by 609 metres. It mainly comprises a grey, medium-grained equigranular quartz monzonite that contains amphibole, biotite and occasional pyroxene phenocrysts. A late potassium feldspar rich phase is also present. The stock and the surrounding limestones are cut by sets of north and east trending feldspar porphyritic dykes that reach 10 metres in thickness and postdate skarn mineralization. The Gillies stock and its associated iron-skarn deposits lie close to the Ideal fault. Locally at the iron mines (Prescott, Lake, Yellow Kid and Paxton), the volcanic-limestone contact is highly deformed and these structures have partly controlled the distribution of the magnetite ore. The Karmutsen volcanics in the vicinity of the Gillies stock are variably metamorphosed, most typically to a chloritized or epidotized basalt; the Quatsino limestone is bleached white and coarsely recrystallized.

Magnetite skarn mineralization at the Lake mine generally occurs 365 metres northeast of the exposed eastern margin of the Gillies stock in volcanic rocks adjacent to its contact with limestone. The volcanic rocks are more or less replaced by skarn and form the hangingwall of the deposit. The structure is a syncline, the south limb of which is overturned to the northeast. Magnetite orebodies have replaced volcanic rock along the axial line of the fold near the limestone contact. The magnetite orebodies are associated with abundant garnet-pyroxene-amphibole skarn. The massive magnetite occurs with reddish-brown garnet, pyroxene (hedenbergite-diopside), epidote, amphibole (actinolite), minor calcite and sporadic chalcopyrite, pyrite and pyrrhotite. Traces of arsenopyrite and rare sphalerite are also observed (International Geological Congress Guidebook, Day 2-Texada, by A. Sutherland Brown).

Copper concentrates produced from milling contain recoverable amounts of gold and silver. Between 1901 and 1921, 35,955 grams of silver and 3,017 grams of gold were recovered from 946 tonnes.

The limestone overlying the orebody is fine to medium grained and is mostly a black colour. A dump adjacent to the Lake pit contains indicated reserves of at least 100,000 tonnes of fairly clean limestone that was stripped off the orebody and dumped separately from other waste materials. A sample of equal sized chips taken at random over the surface of the dump contained 53.4 per cent CaO, 0.02 per cent MgO, 2.30 per cent insolubles, 0.22 per cent R_2O_3, 0.09 per cent Fe_2O_3, 0.005 per cent MnO, 0.008 per cent P_2O_5, 0.03 per cent sulphur, 42.8 per cent ignition loss and 0.08 per cent water (Bulletin 40, p. 80). Several 60 metre long holes drilled in the vicinity encountered very uniform, high calcium limestone averaging greater than 54 per cent CaO, less than 1 per cent MgO and very low manganese (Bulletin 40, p. 80).

The initial discoveries of the four main iron-skarn deposits were from west to east, the Prescott (092F 106), Yellow Kid (092F 258), Paxton (092F 107) and Lake. Subsequent discoveries by underground exploration included the Midway (combined with the Yellow Kid), Le Roi (combined with the Yellow Kid), Lake Extension (combined with the Lake) and Anomaly A (combined with the Prescott).

During the years 1885 to 1903, and 1908, 26,213 tonnes of magnetite ore were reported to be shipped; this was from the Prescott deposit except for approximately 964 tonnes from the Lake deposit. Sporadic activity continued until 1916; at that time the workings at the Prescott mine included a large quarry, shaft, an adit connected to the shaft and four working levels above the adit. No further activity was reported until 1952 when open pit operations began in earnest at the Lake, Paxton and Prescott deposits. Production figures from the Lake and Paxton (092F 107) mines are included with the Prescott. The Yellow Kid deposit (092F 258) was discovered in 1953-54. A crosscut driven in 1964 to intersect the Lake Extension orebody (an extension of the Lake deposit), discovered another orebody, the Le Roi, which occurs between the Paxton open pit and the Yellow Kid open pit. The Le Roi orebody, due to its proximity to the

CAPSULE GEOLOGY

Yellow Kid deposit, has been included with the Yellow Kid. A decline was started in 1966 from the Lake open pit to mine the Le Roi and Lake Extension orebodies. By 1968 all open pit mining ceased. Some underground development work was done on the Anomaly A orebody in 1969-70, located 440 metres northwest of the Prescott open pit.

The Texada Mines, which encompassed all of the above deposits and orebodies, closed on December 17, 1976 due to exhaustion of ore reserves.

The property is held by Consolidated Van Anda Gold Ltd.

BIBLIOGRAPHY

EMPR AR 1876-429; 1888-324; 1897-559,560; 1898-1144; 1899-557,805,806, 816; 1901-1232; 1902-H225-H228,H236; 1903-H205; 1904-G247; 1905-J215; 1906-H203; 1907-L152; 1908-J146,J154; 1912-K197; 1916-K276, K296,K298-K300,K356,K357,K365; 1951-A196; *1952-A218-A221,A338, A339; 1953-A162,A163,A277; 1954-A48,A164,A263; 1955-A46,75; 1956-A48,116,129-131; 1957-A48,67,68,154; 1958-A43,57,121; 1959-A46,130, 131; 1960-A52,89,90; 1961-A47,90,91,240,241,281; 1962-A47,94,95, 246,247,285,287; 1963-A47,96-98,222,224,272; *1964-A53,146-151,334; 1965-224,225; 1966-72,73; 1967-72; 1968-101
EMPR BC METAL MM00126
EMPR BULL 3 (1917); 40, p. 80; 101, pp. 13, 80, 83, 85, 165, Appendix 4A, 6
EMPR FIELDWORK *1989, pp. 257-265
EMPR GEM 1969-213; 1970-282; 1971-251; 1972-269,270; 1973-233,234; 1974-179,180; 1977-E113
EMPR INDEX 3-209
EMPR OF 1990-3; 1988-28
EMPR P 1898-3, pp. 51-53
EMPR PF (In 092F 106 - *Robinson, W.C. (1974): Preliminary Report of Texada Mine; Haig-Smillie, L.D. (1973): Sea Water Flotation, Texada Mines Ltd.; Paterson, R.G. (1973): Notes on Ore Reserves; Various maps on surface and underground geology, pit outlines, photographs); Photographs of Lake pit; Survey map of Lake pit extension; Section map); In 092F 107 - Texada Mines Ltd., 21 Years of Shipments of Iron Ore to Japan)
EMR MP CORPFILE (Texada Mines Ltd.)
GSC BULL *172, pp.56-63
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50; 71-36
GSC SUM RPT 1924 Part A, pp. 106-144
CANMET IR 728, pp. 156-158; 736, pp. 269-273,276-281; 744, pp. 25-31; 763, p. 232
CANMET RPT 47, pp. 21-24
CIM Transactions Vol.LXXVII, pp. 8-13, 1974
CMJ Vol.83, pp. 53-56 (1962)
GCNL #217, 1988
W MINER (Vol.39, Nov.1966, pp. 30-36; Vol.36, June 1963, pp. 34-44; Vol.33, Aug.1960, pp. 28-34; Vol.33, Jan.1960, pp. 31-36; Vol.32, Oct.1959, pp. 122-124

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/02 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 260**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLDEN SLIPPER**, APACHA (L.59)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 42 45 N
LONGITUDE: 124 34 58 W
ELEVATION: 60 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on the south zone slope of Surprise Mountain, just north of Welcome Bay, 5.4 kilometres south-southwest from the community of Vananda on Texada Island (Assessment Report 18672).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5507868
EASTING: 385894

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold Pyrite
ASSOCIATED: Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content, are associated with narrow, steeply dipping shear zones.

The Golden Slipper occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation cut by an east striking shear structure up to 3 metres wide. The shear zone hosts small, pyritic quartz-calcite veinlets mineralized with native gold.

Work done includes an opencut and shaft which followed a small calcite vein 2 to 10 centimetres wide. The vein had a length of 2.7 metres and was exploited to a depth of 21 metres (Geological Survey of Canada Memoir 58, page 93).

BIBLIOGRAPHY

EMPR AR 1897-565; 1916-K357
EMPR ASS RPT 18672
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, pp. 93,94
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/21 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 261**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER TIP (L.44)**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 27 N
LONGITUDE: 124 35 39 W
ELEVATION: 312 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shafts on Lot 44 near the summit of Surprise Mountain, 4.6 kilometres south-southwest from the community of Vananda on Texada Island (Assessment Report 18672).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509183
EASTING: 385101

COMMODITIES: Gold, Silver, Copper, Zinc, Lead

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite, Sphalerite, Galena
ASSOCIATED: Quartz, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 315/75N
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	22.9000	Grams per tonne
Gold	12.2100	Grams per tonne
Copper	1.2400	Per cent

COMMENTS: Sample from shear zone across 0.6 metres.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Silver Tip occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation cut by a shear structure striking 315 degrees and dipping 75 to 80 degrees northeast. It can be traced for 250 metres along strike but appears to be cut off to the northwest by faulting. The shear zone is typically less than 1 metre in width and hosts quartz and quartz-carbonate veins. Mineralization in the veins consists of massive pyrite, chalcopyrite with lesser sphalerite and galena. Locally, the quartz veins exhibit a drusy texture. A 0.6 metre chip sample across the shear assayed 12.21 grams per tonne gold, 22.9 grams per tonne silver and 1.24 per cent copper (Assessment Report 18672). A sample of carbonate vein and altered volcanic from dump material assayed 13.99 grams per tonne gold, 8.5 grams per tonne silver, 0.07 per cent copper, 1.8 per cent zinc and 0.37 per cent lead. Although this material is common in the dump, recent mapping has not revealed any exposures (Assessment Report 18672).

Work done includes two shafts 70 metres apart developed along

CAPSULE GEOLOGY

the shear zone. Some drifting has also taken place.

BIBLIOGRAPHY

EMPR AR 1896-554; 1897-564; 1898-1144; 1921-G223; 1922-N237; 1923-A257; 1927-C359; 1928-C384; 1934-F11
EMPR ASS RPT *18672
EMPR FIELDWORK 1989, pp. 257-270
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58, pp. 94,95
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
N MINER Nov.3, 1986
GCNL #197,#48,#103, 1986

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 262**

NATIONAL MINERAL INVENTORY:

NAME(S): **SURPRISE (L.67)**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 15 N
LONGITUDE: 124 35 14 W
ELEVATION: 260 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on Lot 67 near the summit of Surprise Mountain, 4.6 kilometres south-southwest from the community of Vananda on Texada Island (Assessment Report 18672).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508802
EASTING: 385593

COMMODITIES: Copper Silver Gold Zinc Lead

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Sphalerite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 155/70W
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	105.8000	Grams per tonne
Gold	1.1700	Grams per tonne
Copper	5.7300	Per cent
Lead	0.1000	Per cent

COMMENTS: Sample of mineralized drusy quartz vein.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Surprise occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation cut by a shear structure striking 155 degrees and dipping 70 degrees southwest. The shear zone is 1.2 to 3 metres wide, locally silicified and traceable for 60 metres along strike. The zone hosts irregularly distributed quartz veins mineralized with pyrite, chalcopyrite, sphalerite and galena. A grab sample from a drusy quartz vein in a trench south of a shaft, assayed 5.73 per cent copper, 105.8 grams per tonne silver, 1.17 grams per tonne gold and 0.1 per cent lead (Assessment Report 18672).

Work done includes a shaft with very limited drifting. Several open cuts, pits and trenches occur to the south of the shaft.

BIBLIOGRAPHY

EMPR AR *1897-564,565; 1898-1144; 1924-B368; 1934-F11
EMPR ASS RPT *18672
EMPR FIELDWORK 1989, pp. 257-265

BIBLIOGRAPHY

EMPR OF 1988-28; 1990-3
EMPR PF (Surface plan (1945); Claim location map; *Report by Cummings, J.M. (1936))
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58, p. 94
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 263**

NATIONAL MINERAL INVENTORY:

NAME(S): **COPPER KING (L.149)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 06 N
LONGITUDE: 124 34 55 W
ELEVATION: 236 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on Lot 149, on the southern slopes of Surprise Mountain, 4.8 kilometres south-southwest from the community of Vananda on Texada Island (Assessmesnt Report 18672).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508516
EASTING: 385968

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 340/70E
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1945
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	6.8500	Grams per tonne
Gold	0.6800	Grams per tonne
Copper	0.2000	Per cent

COMMENTS: Sample of sparsely mineralized basalt in trench.
REFERENCE: Minister of Mines Annual Report 1945, page A113.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Copper King occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation cut by a minor shear structure striking 340 to 350 degrees and dipping 70 degrees east. The shear zone hosts minor pyritic quartz veins mineralized with chalcopyrite. A channel sample from a trench exposing slightly mineralized basalt assayed 0.2 per cent copper, 6.85 grams per tonne silver and 0.68 grams per tonne gold across 1.2 metres. A grab sample from dump material near a shallow shaft assayed 5.3 per cent copper (Minister of Mines Annual Report 1945, page A113).

Past work included a shallow shaft and some trenches.

BIBLIOGRAPHY

EMPR AR 1898-1144; *1945-A113
EMPR ASS RPT 18672
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102

BIBLIOGRAPHY

GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/26 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 264**

NATIONAL MINERAL INVENTORY:

NAME(S): **VICTORIA (L.47)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 44 18 N
LONGITUDE: 124 34 42 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on Lot 47, 250 metres east of the east end of Kirk Lake, 2.8 kilometres south-southweset from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510734
EASTING: 386275

COMMODITIES: Gold Copper Lead

MINERALS
SIGNIFICANT: Pyrite Gold Chalcopyrite Galena
ASSOCIATED: Quartz
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 120/70S
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Pillow Basalt Breccia
Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Copper	0.1300	Per cent
Lead	0.7400	Per cent

COMMENTS: Sample from shear zone.
REFERENCE: Assessment Report 18212.

CAPSULE GEOLOGY

The Victoria occurrence area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) pillow basalt breccias and amygdaloidal basalt. It lies close to the Kirk Lake fault and its intersection with the Holly fault to the east.

At the Victoria showing, a steep pyritic shear zone, possibly a part of the Kirk Lake fault, strikes 120 degrees and dips 70 to 80 degrees south. An irregular, lensoidal quartz stringer 0.1 to 0.3 metres wide, occurs in the shear. Wallrock is variably chloritized and pyritic. Grab samples from the shear zone assayed 0.13 per cent copper and 0.74 per cent lead (Assessment Report 18212).

An inclined shaft was developed on one of two pyritic quartz veins, about 18 metres apart, and 10 to 51 centimetres wide. Mineralization consists of minor chalcopyrite, trace galena and native gold. A small amount of gold was recovered (Geological Survey of Canada Memoir 58, page 92).

BIBLIOGRAPHY

EMPR AR 1896-553; *1897-563
EMPR ASS RPT 7939, 9511, *18212
EMPR FIELDWORK 1989, pp. 257-270

BIBLIOGRAPHY

EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, p. 92
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/20 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 265** NATIONAL MINERAL INVENTORY:

NAME(S): **LOYAL**

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 47 41 N NORTHING: 5517038
LONGITUDE: 124 36 05 W EASTING: 384748
ELEVATION: 61 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, in the northeast end of Texada Island, 1.5 kilometres east from the village of Blubber Bay (Open File 1990-3).

COMMODITIES: Copper Gold Silver Lead Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Pyrite Galena Sphalerite Tetrahedrite
ASSOCIATED: Magnetite Quartz Pyrrhotite
ALTERATION: Garnet Epidote Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated Massive
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Mafic Dike
Skarn
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: UNDERGROUND REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1963
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Silver	521.0500	Grams per tonne
Gold	3.5600	Grams per tonne
Copper	13.1000	Per cent
Lead	1.1000	Per cent

COMMENTS: Average content of 5 bulk samples.
REFERENCE: Assessment Report 2918.

CAPSULE GEOLOGY

The area is predominantly underlain by massive limestone of the Upper Triassic Quatsino Formation (Vancouver Group) cut by a suite of elongate hornblende-rich dioritic intrusions that commonly contain mafic xenoliths and occupy major fractures. Mafic diorite dykes exhibit varying degrees of endoskarn alteration but exoskarn halos are generally less than 1 metre thick and, in many places, are totally lacking.

The Loyal occurrence area is underlain by limestone of the Quatsino Formation intruded by north trending, skarn-altered mafic dykes more than 250 metres long. Exoskarn halos associated with these dykes seldom exceed 1 metre in thickness. Mafic intrusions outcrop along the northeast coast of Texada Island, below the Loyal mine dump. The intrusions contain rounded to angular mafic xenoliths of coarse hornblendite and gabbro up to 30 centimetres across.

Mineralization within the skarn-altered dykes and adjacent limestone comprise stringers and disseminations of chalcopyrite, bornite, galena, pyrite and sphalerite with associated garnet, epidote, calcite, quartz and variable amounts of magnetite and

CAPSULE GEOLOGY

pyrrhotite. Argentiferous tetrahedrite has also been identified. Locally the skarn contains lenses and alternating bands of sulphides. The zone ranges from 3 to 9 metres width.

The skarn zone has been intermittently exposed along strike by shafts and trenches for 91 metres and is intersected by underground wokings at 91 metres depth. In 1917 and 1918, a total of 342 grams of gold, 4821 grams of silver, and 4668 kilograms of copper were produced from a total of 54 tonnes mined (Mineral Policy data).

Five bulk samples taken in 1963 yielded an average content of 13.1 per cent copper, 3.56 grams per tonne gold, 521.05 grams per tonne silver and 1.1 per cent lead (Assessment Report 2918).

BIBLIOGRAPHY

EMPR AR 1908-J154; 1945-A114
EMPR ASS RPT 2918, 2919, 5516, *5763, 8206, 9417
EMPR EXPL 1975-E104
EMPR FIELDWORK 1989, pp. 257-265
EMPR GEM 1971-253
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58, pp. 65,66
GSC OF 463
GSC P 68-50, p. 39
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/26 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 266**

NATIONAL MINERAL INVENTORY:

NAME(S): **PARIS**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 47 25 N
LONGITUDE: 124 36 40 W
ELEVATION: 43 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, just east of Blubber Creek, 1 kilometre east-southeast from the village of Blubber Bay on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5516559
EASTING: 384037

COMMODITIES: Copper Gold Silver Zinc

MINERALS
SIGNIFICANT: Magnetite Chalcopyrite Pyrrhotite Pyrite Sphalerite
ASSOCIATED: Arsenic
ALTERATION: Garnet Pyroxene Actinolite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Diorite
Diorite Dike
Marble
Quartz Porphyry Dike
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Georgia Depression
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	22.8000	Grams per tonne
Gold	12.8600	Grams per tonne

COMMENTS: Sample of magnetite-garnet skarn with chalcopyrite.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The area is predominantly underlain by massive limestone of the Upper Triassic Quatsino Formation (Vancouver Group) cut by a suite of elongate hornblende-rich dioritic intrusions that commonly contain mafic xenoliths and occupy major fractures. Mafic diorite dykes exhibit varying degrees of endoskarn alteration but exoskarn halos are generally less than 1 metre thick and, in many places, are totally lacking. Gangue mineralogy consists of garnet, pyroxene, amphibole, epidote and locally minor woolastonite.

The Paris occurrence area is underlain by Quatsino Formation limestone intruded by two small diorite bodies and diorite dykes. A distinct east trending quartz porphyry dyke transects the Paris prospect and is thought to be of Cretaceous age.

Skarn zones comprised in part of garnet, pyroxene and actinolite are developed at the limestone/diorite contacts. The skarns contain massive magnetite with disseminations and stringers of chalcopyrite, pyrrhotite, pyrite and sphalerite. A few shallow shafts have been sunk on some of the magnetite lenses. A rock sample of magnetite-garnet skarn with chalcopyrite assayed 12.86 grams per tonne gold and

CAPSULE GEOLOGY

22.8 grams per tonne silver (Assessment Report 18672).
Crystalline native arsenic has recently been identified by x-ray diffraction in marbles adjacent to the outer margins of the skarn (Fieldwork 1989, page 262).

BIBLIOGRAPHY

EMPR AR 1901-1113; 1916-K357
EMPR ASS RPT *2918, 2919, 5763, 8206, 9417, 14827, *18672
EMPR BULL 40, p. 66
EMPR EXPL 1975-E104; 1976-E118,E119; 1977-E116; 1978-E133,134
EMPR FIELDWORK *1989, pp. 257-265
EMPR GEM 1971-253
EMPR OF 1988-28; 1990-3
EMPR PF (V STOCKWATCH Oct.24, 1989)
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58, p. 66
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 267**

NATIONAL MINERAL INVENTORY:

NAME(S): **CANADA**, CANADA TRENCH

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 47 11 N
LONGITUDE: 124 36 01 W
ELEVATION: 109 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches, 2 kilometres south-southeast from the village of Blubber Bay, on the eastern side of the north tip of Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5516109
EASTING: 384808

COMMODITIES: Copper, Gold, Lead, Zinc

MINERALS

SIGNIFICANT: Pyrite, Bornite, Chalcopyrite, Pyrrhotite, Sphalerite, Galena, Magnetite
ALTERATION: Garnet, Pyroxene, Amphibole, Epidote, Wollastonite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Mafic Diorite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SKARN

REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	15.9400	Grams per tonne

COMMENTS: Sample of massive magnetite with chalcopyrite and pyrite.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The area is predominantly underlain by massive limestone of the Upper Triassic Quatsino Formation (Vancouver Group) cut by a suite of elongate hornblende-rich dioritic intrusions that commonly contain mafic xenoliths and occupy major fractures. Mafic diorite dykes exhibit varying degrees of endoskarn alteration but exoskarn halos are generally less than 1 metre thick and, in many places, are totally lacking.

The Canada showing is underlain by Quatsino Formation limestone cut by a north trending mafic diorite dyke. Mineralization is hosted in the skarn-altered dyke and comprises minor amounts of pyrite, bornite, chalcopyrite, pyrrhotite, sphalerite, galena and magnetite (see Loyal, 092F 265). Rock samples from massive magnetite skarn with chalcopyrite and pyrite assayed up to 15.94 grams per tonne gold (Assessment Report 18672).

BIBLIOGRAPHY

EMPR ASS RPT *5763, 9417, *18672
EMPR EXPL 1975-E104
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58, p. 66

BIBLIOGRAPHY

GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 268**

NATIONAL MINERAL INVENTORY:

NAME(S): **VOLUNTEER (L.131)**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 45 15 N
LONGITUDE: 124 34 07 W
ELEVATION: 113 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on Lot 131, 750 metres south of Sturt Bay, 1 kilometre west from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5512479
EASTING: 387012

COMMODITIES: Gold, Silver, Copper, Iron, Magnetite

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite, Pyrite
ALTERATION: Garnet, Diopside, Epidote, Pyroxene
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn
TYPE: K03 Fe skarn; K01 Cu skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Diorite
Skarn
Marble

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Georgia Depression
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1985

COMMODITY	GRADE	
Silver	20.5600	Grams per tonne
Gold	11.6500	Grams per tonne

COMMENTS: Sample from magnetite-garnet skarn.
REFERENCE: Assessment Report 14814.

CAPSULE GEOLOGY

The Volunteer occurrence area is predominantly underlain by a sequence of weakly bedded, white to mottled grey recrystallized limestone and sandy limestone beds of the Upper Triassic Quatsino Formation. The limestone is intruded by a teardrop-shaped diorite intrusion 1000 metres long and 400 metres wide. Scattered outcrops of thin basaltic flows and breccia also occur.

Magnetite-garnet-diopside skarn has developed adjacent to the diorite/limestone contacts. The skarns appear to be simple replacements along the borders of the diorite and as masses in areas where they are "embayed" by diorite. Gold values are associated with massive magnetite and associated chalcopyrite, which forms the principal mineralization within the skarn. Subordinate pyrite is also evident.

At the Volunteer showing, an embayed skarn is surrounded on three sides by diorite with the thickest zone of magnetite at or very near the nose of the skarnified rock. From the nose of the skarn zone to the portion where diorite lies only to one side, the skarnification wanes to a series of bands of garnet-diopside skarn and marble parallel to bedding. These bands thin out eventually to unaltered limestone. Within the embayed zone of skarn are large

CAPSULE GEOLOGY

patches of massive marble. The best gold and copper values and the highest magnetite content appear to be restricted to the skarn within a few metres of the diorite. Diamond drilling has revealed that considerable epidote occurs on fracture plane surfaces and as a massive flooding in diorite as well as extending into the limestone.

A rock sample of magnetite-garnet skarn assayed 11.65 grams per tonne gold and 20.56 grams per tonne silver (Assessment Report 14814).

In 1924, an 18-tonne shipment of magnetite ore was sent to Seattle for experimental reasons.

BIBLIOGRAPHY

EMPR AR 1897-565; 1900-926; 1904-G302; 1916-K357; 1924-B219
EMPR ASS RPT 5898, *14814, 14827, 18672
EMPR BULL 101, p. 165
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/01 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 269**

NATIONAL MINERAL INVENTORY:

NAME(S): **FLORENCE-SECURITY**, FLORENCE, SECURITY, SECURITY-FLORENCE, VANANDA

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 45 06 N
LONGITUDE: 124 33 18 W
ELEVATION: 43 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shafts, 500 metres south of the community of Vananda on Texada Island, 250 metres west of Vananda Creek (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5512181
EASTING: 387987

COMMODITIES: Copper, Gold, Silver, Cobalt, Iron, Magnetite, Molybdenum

MINERALS

SIGNIFICANT: Magnetite, Chalcopyrite, Pyrite, Chalcocite, Bornite, Molybdenite
ALTERATION: Garnet, Pyroxene, Epidote, Diopside, Wollastonite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn, K03 Fe skarn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone, Diorite, Basalt, Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Georgia Depression
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1987

COMMODITY	GRADE	
Silver	29.3000	Grams per tonne
Gold	23.7200	Grams per tonne
Copper	1.5900	Per cent
Cobalt	0.0310	Per cent

COMMENTS: Sample across 1.2 metres of skarn mineralization.
REFERENCE: Assessment Report 16749.

CAPSULE GEOLOGY

The Florence-Security occurrence area lies close to the faulted and unconformable contact between Upper Triassic Quatsino Formation limestone and underlying Karmutsen Formation amygdaloidal basalt, both of the Vancouver Group. Small mafic, amphibole-porphyritic diorite sills and stocks, that are locally apatite-rich and epidotized, intrude this sequence. The limestones and diorite are intensely altered near their contacts. Alteration mineralogy is comprised of an assemblage of garnet, diopside, epidote and magnetite. Silicification, quartz veining and associated pyrite is also locally developed within the diorite. Prominent faults strike between 115 to 150 degrees. Magnetite with pyrite, malachite and limonite boxworks are evident along minor splays subparallel to the major faults.

Skarn mineralization, which is locally massive, is commonly

CAPSULE GEOLOGY

developed in basal gritty limestones and consists primarily of magnetite with some chalcopyrite, pyrite and chalcocite in a garnet-pyroxene gangue. A rock chip sample across 1.2 metres of skarn mineralization assayed 1.59 per cent copper, 23.72 grams per tonne gold, 29.3 grams per tonne silver and 0.031 per cent cobalt (Assessment Report 16749).

Past development includes trenches and shafts. The property is held by Consolidated Van Anda Gold Ltd.

BIBLIOGRAPHY

EMPR AR 1899-803,805,806; 1901-1112; 1916-K357; 1922-N235
EMPR ASS RPT 14425, 15750, 16104, *16749
EMPR BULL 101, p. 85
EMPR FIELDWORK *1989, pp. 257-265
EMPR OF 1988-28; *1990-3
EMPR P 1989-3, pp. 51-53
EMPR PF (Consolidated Van Anda Gold Ltd. Website (Apr. 1998): Florence/Security Target, 1 p.)
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58, pp. 28,68
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
PR REL Vananda Gold Ltd. November 13, 1987
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/05 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 270** NATIONAL MINERAL INVENTORY: 092F15 Cu1

NAME(S): **MARBLE BAY (L.154)**, MARBLE BAY, MARBLE BAY FR. NO. 2 (L.157)

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 45 24 N NORTHING: 5512742
LONGITUDE: 124 33 30 W EASTING: 387758
ELEVATION: 27 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on the boundary of Lots 154 and 154, on the outskirts of the community of Vananda on Texada Island (Open File 1990-3).

COMMODITIES: Copper Gold Silver Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Silver Molybdenite Gold Tetrahedrite Magnetite Pyrrhotite
ALTERATION: Garnet Diopside Tremolite Calcite Epidote Pyroxene Wollastonite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Hornblende Diorite
Hornblende Porphyritic Diorite Dike
Skarn
Marble

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

CAPSULE GEOLOGY

Northern Texada Island is underlain by Karmutsen Formation pillowed and massive basaltic flows with thick units of pillowed breccias conformably overlain by massive limestone of the Quatsino Formation, both formations of the Upper Triassic Vancouver Group. Various stocks and minor intrusions (Middle Jurassic) ranging in composition from gabbro through diorite to quartz monzonite, intrude the volcanics and limestones, and are locally associated with iron and copper-gold skarn mineralization. A major episode of folding (F1) has resulted in the limestones and, to a lesser extent, the underlying volcanics, being deformed into a series of broad, northwest trending open folds that plunge northwards. Three subparallel northwest striking lineaments are also recognized and coincide with the Ideal, Holly and Marble Bay faults. These faults cut a set of northeast striking faults. The Marble Bay fault, and to a lesser extent the Ideal fault, have apparently controlled the emplacement of some of the Jurassic intrusions and their associated skarn mineralization.

The Marble Bay occurrence area is near the Marble Bay fault and underlain by massive recrystallized limestone of the Quatsino Formation intruded by hornblende diorite stocks and numerous hornblende porphyritic diorite dykes. The limestones are brecciated in places and crossed by a number of fractures with variable strikes. Mineralized skarn often forms irregular pipe-like bodies that plunge moderately, subparallel to the contacts between limestone and intrusive rocks.

The Marble Bay orebodies contain predominantly chalcopyrite, bornite and native silver within extensive, steeply dipping, skarn-altered fracture zones that cut brecciated limestone. The skarn mineralogy is dominated by garnet, diopside, tremolite and calcite;

CAPSULE GEOLOGY

considerable amounts of epidote occurs locally with garnet and diopside. Minor amounts of molybdenite occur throughout the mine. Rare tetrahedrite and native gold have also been reported. Pyrite and pyrrhotite occur in the intrusive rocks in small quantities.

The sulphide and silver mineralization tends to be concentrated along one margin of the fracture zones at the contact between skarn and marble or skarn and unaltered limestone; the other margin is commonly occupied by barren garnet-diopside-epidote-tremolite-calcite skarn. The orebodies pitch to the northwest at an angle of approximately 17 degrees and, although extremely irregular and disjointed, the host garnet-diopside-tremolite skarn is practically continuous from surface down to the 13th mine level, 353 metres below the surface.

The Marble Bay mine has been developed by extensive underground workings and production from 1899 to 1929 totalled 285,028 tonnes of ore yielding 6,789,882 kilograms of copper, 1,555,180 grams of gold, and 12,621,753 grams of silver.

The property is held by Consolidated Van Anda Gold Ltd.

BIBLIOGRAPHY

EMPR AR 1898-1137,1144; 1899-607,804; 1900-926; *1901-1102,1105-1111; 1902-H23,H235; 1903-H204; 1904-G246; 1905-J25,J214; 1906-H26,H202; 1907-L152,L163,L215; 1908-J146,J152-J154; 1909-K149; 1910-K166; 1911-K195,K212; 1912-K197; 1913-K287,K288; 1914-K378-K380; 1915-K368; 1916-K351-K353; 1917-F258; 1918-K275-K277,K306; 1919-N219, N220; 1920-N215,N216; 1921-G222; 1922-N235; 1925-A284; 1929-C393; 1945-A114; 1946-A177
EMPR BC METAL MM00172
EMPR BULL 101, pp. 57, 166
EMPR FIELDWORK *1989, pp. 257-265
EMPR GEM 1970-282
EMPR OF 1988-28; 1990-3
EMPR P 1989-3, pp. 51-53
EMPR PF (Underhill, J.T. (1945): Plan of 400 and 500 Foot Levels; Consolidated Van Anda Gold Ltd. Website (Apr. 1998): Texada Island Mines History, 3 p.)
EMR MP CORPFILE (Marble Bay Mine; Marble Bay Mining Co. Ltd.)
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, pp. 48-56
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
Ettlinger, A.D. (1990): A Geological Analysis of Gold Skarns and Precious Metal Enriched Iron and Copper Skarns in British Columbia; unpublished Ph.D. Thesis, Washington State University, 246 pages
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/08 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 271** NATIONAL MINERAL INVENTORY: 092F15 Cu2

NAME(S): **COPPER QUEEN (L.40)**, COPPER QUEEN, VAN ANDA , VANANDA

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 45 11 N NORTHING: 5512322
LONGITUDE: 124 32 47 W EASTING: 388610
ELEVATION: 84 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on Lot 40, 500 metres south-southeast of the community of Vananda on Texada Island, east of Vananda Creek (Open File 1990-3).

COMMODITIES: Copper Gold Silver Molybdenum Tungsten

MINERALS
SIGNIFICANT: Bornite Chalcopyrite Tetrahedrite Molybdenite Silver Gold Scheelite
COMMENTS: Minor amounts of tetrahedrite, molybdenite, native silver, and native gold.
ASSOCIATED: Garnet Diopside Calcite Epidote Pyroxene
ALTERATION: Garnet Diopside Calcite Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Porphyritic Diorite Dike
Diorite
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

CAPSULE GEOLOGY

Northern Texada Island is underlain by Karmutsen Formation pillowed and massive basaltic flows with thick units of pillowed breccias conformably overlain by massive limestone of the Quatsino Formation, both formations of the Upper Triassic Vancouver Group. Various stocks and minor intrusions (Middle Jurassic) ranging in composition from gabbro through diorite to quartz monzonite, intrude the volcanics and limestones, and are locally associated with iron and copper-gold skarn mineralization. A major episode of folding (F1) has resulted in the limestones and, to a lesser extent, the underlying volcanics, being deformed into a series of broad, northwest trending open folds that plunge northwards. Three subparallel northwest striking lineaments are also recognized and coincide with the Ideal, Holly and Marble Bay faults. These faults cut a set of northeast striking faults. The Marble Bay fault, and to a lesser extent the Ideal fault, have apparently controlled the emplacement of some of the Jurassic intrusions and their associated skarn mineralization.

The Copper Queen occurrence area is underlain by massive, recrystallized limestone of the Quatsino Formation intruded by several porphyritic diorite dykes and an occasional quartz diorite dyke. The Marble Bay fault occurs nearby to the southwest.

Mineralization at the Copper Queen mine consists of irregular pipe-like skarn bodies that plunge moderately, subparallel to the contacts between limestone and intrusive rocks. Two orebodies have been historically exploited by underground development and occur along the contacts of porphyritic diorite dykes and limestone. Mineralization consisting predominantly of bornite and chalcopyrite

CAPSULE GEOLOGY

occurs in a gangue of garnet-diopside-calcite-epidote skarn and within cavities in limestone. The mineralized skarn is also observed to extend into the dykes. Less common minerals include tetrahedrite, molybdenite, native silver and native gold (Geological Survey of Canada Memoir 58, page 61).

The property produced intermittently between 1907 and 1917 during which 749 tonnes of ore yielded 32,417 kilograms of copper, 75,238 grams of silver and 9,891 grams of gold (Mineral Policy Data).

Production from 1902 to 1904 is included with Cornell (092F 112). The property is held by Consolidated Van Anda Gold Ltd.

BIBLIOGRAPHY

EMPR AR 1896-553; *1897-463,560-562; *1898-1135,1136,1144,1160; *1899-607,800-806,816; 1900-925,943; 1901-1102,1105,1109; 1902-H23; 1903-H26,H204; 1904-G27,G246,G247; 1905-J25,J214,J221; 1906-H26; 1907-L164,L215; 1908-J153,J154; 1910-K166; 1913-K324; 1914-K378,K381,K420,K511; 1915-K368; 1916-K353,K431,K519; 1917-F258; 1918-K306; 1919-N254; 1922-N235; 1925-A284,A288-A290; 1928-C384; 1929-C393; 1944-A66,G163,G164
EMPR ASS RPT 5077, 6770
EMPR BC METAL MM00154
EMPR BULL 101, p. 166, Appendix 6
EMPR EXPL 1974-180; 1975-E101,E102
EMPR FIELDWORK 1989, pp. 257-270
EMPR INDEX 3-193
EMPR OF 1988-28; 1990-3
EMPR PF (*Plan maps of underground workings; Consolidated Van Anda Gold Ltd. Website (Apr. 1998): Texada Island Mines History, 3 p.)
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, pp. 60-62
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/06 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 272**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOOD HOPE FR. (L.329)**, GOOD HOPE

STATUS: Past Producer Open Pit Underground
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 44 06 N
LONGITUDE: 124 29 31 W
ELEVATION: 45 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adits on Lot 329 at Raven Bay, 5 kilometres south-southeast from the community of Vananda on Texada Island (Assessment Report 7843).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510236
EASTING: 392492

COMMODITIES: Iron Copper

MINERALS
SIGNIFICANT: Magnetite Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Hydrothermal Epigenetic Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Diorite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Good Hope Fr occurrence is underlain by massive amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) intruded by several diorite dykes.

Magnetite lenses averaging 3.3 metres wide are developed along a well-defined fault in basalt. The lenses also contain minor amounts of pyrite and chalcopyrite.

Mine workings developed to exploit the magnetite lenses include two adits and opencuts. Production and shipments of magnetite ore averaged 907 tonnes annually from 1917 to 1923.

BIBLIOGRAPHY

EMPR AR 1917-F258,F259; *1923-A258
EMPR ASS RPT 3244, 7843, 7219, 18087
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, p. 68
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/14 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 273**

NATIONAL MINERAL INVENTORY:

NAME(S): **CORNET**, MALASPINA

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 43 44 N
LONGITUDE: 124 28 42 W
ELEVATION: 190 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on the north facing slope of Comet Mountain, 6 kilometres south-southeast from the community of Vananda on Texada Island (Assessment Report 17947).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509537
EASTING: 393460

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Magnetite Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Igneous-contact
DIMENSION: 0030 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Magnetite lens.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Unknown	Vancouver	Karmutsen	Unnamed/Unknown Informal

LITHOLOGY: Basalt
Diorite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Cornet occurrence is underlain by massive amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) intruded by diorite dykes.

Mineralization consists of a few magnetite lenses developed in basalt containing pyrite and small quantities of chalcopyrite. A shaft was sunk on the largest lens which measured 30 metres in length.

A tunnel was started on the east coast of Texada Island to intersect the mineralization but was not completed.

BIBLIOGRAPHY

EMPR AR 1908-J147; 1909-K149; 1910-K166; 1911-K194; 1912-K197
EMPR ASS RPT 7219, 7843, 17947, 18087
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, pp. 71,72
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/15 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 274** NATIONAL MINERAL INVENTORY:

NAME(S): **MAGNOLIA**, CAP SHEAF (L.180), MAXIE FR. (L.185), SOVERINE (L.183), EDNA B (L.188), MILNER (L.77), SHAMROCK (L.186), TUCSON, SCOT

STATUS: Prospect Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 42 13 N NORTHING: 5506738
LONGITUDE: 124 29 11 W EASTING: 392823
ELEVATION: 198 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, 2.5 kilometres south from the summit of Comet Mountain and 3 kilometres north of the village of Gillies Bay, on Texada Island (Open File 1990-3).

COMMODITIES: Copper, Gold, Silver, Lead, Zinc, Magnetite, Iron

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite, Pyrite, Pyrrhotite
ASSOCIATED: Quartz
ALTERATION: Garnet, Epidote, Calcite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn, Industrial Min.
TYPE: K03 Fe skarn, K01 Cu skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Basalt, Diorite, Limestone, Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1975
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	171.4000	Grams per tonne
Gold	0.6800	Grams per tonne
Lead	4.0000	Per cent
Zinc	5.0000	Per cent

COMMENTS: Selected high grade samples.
REFERENCE: Assessment Report 5749.

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1975
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	17.1400	Grams per tonne
Gold	18.5100	Grams per tonne
Copper	4.6000	Per cent

COMMENTS: Samples from dump material near shaft.
REFERENCE: Assessment Report 5749.

CAPSULE GEOLOGY

The Cap Sheaf occurrence area is underlain by massive basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) and locally

CAPSULE GEOLOGY

interbedded limestone lenses intruded by diorite.
A massive magnetite lens is developed in a garnet-epidote skarn in the basalt and limestone near the contact with intrusive rock. The skarn as well as the basalt contains veinlets of calcite and quartz throughout. The magnetite lens hosts disseminations and blebs of pyrite and chalcopyrite. Grab samples of dump material around a shaft that was sunk on the lens assayed up to 4.6 per cent copper, 18.51 grams per tonne gold and 17.14 grams per tonne silver (Assessment Report 5749).
Seven hundred metres to the northwest from the Cap Sheaf shaft, grab samples from a showing on the Milner claim (Lot 77) assayed 4 to 16 per cent lead, 5 to 15 per cent zinc, 0.68 to 1.37 grams per tonne gold and 171.4 to 445.64 grams per tonne silver (Assessment 5749).
CanQuest Resource Corporation conducted geological, geochemical and geophysical surveys from 1990 to 1995 on the Magnolia property.

BIBLIOGRAPHY

EMPR AR 1897-563; 1900-926; 1903-H249; 1912-K197
EMPR ASS RPT *5699, *5749, 18246; 20780, 21338, 21960, 22315, 23335
EMPR FIELDWORK 1989, pp. 257-265
EMPR GEM 1975-E100
EMPR OF 1988-28; 1990-3
EMPR PF (Canquest Resource Corporation Website (Mar. 1999): Magnolia Property, 1 p.; Canquest Resource Corporation Corporate Profile Report (circa 2000), p. 9 (in OK file - 092K 008))
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58, pp. 68,69
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
WWW http:/www.canquest.bc.ca/magnolia.htm; http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/22 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 275**

NATIONAL MINERAL INVENTORY:

NAME(S): **VERN**, OLYMPIAN, GRAD

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 41 34 N
LONGITUDE: 124 26 19 W
ELEVATION: 358 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit and open cuts on the south slope of Mount Pocahontas just east of the powerline leading up to the microwave tower, in the central part of Texada Island (Assessment Report 13911).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5505467
EASTING: 396245

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Bornite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Vern occurrence area is underlain by amygdaloidal basalt of the Upper Triassic Karmutsen Formation, Vancouver Group. Finely disseminated chalcopyrite, pyrite and bornite occur in a locally silicified shear zone up to 15 metres wide in places.

BIBLIOGRAPHY

EMPR AR *1922-N238
EMPR ASS RPT *13911
EMPR GEM 1969-214; 1970-283; 1971-250
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/20 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 276**

NATIONAL MINERAL INVENTORY:

NAME(S): **TEX**, BOB

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 37 47 N
LONGITUDE: 124 18 42 W
ELEVATION: 403 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drill hole collar 1.75 kilometres north from the summit of Mount Grant in the southern half of Texada Island (Assessment Report 18671).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5498289
EASTING: 405278

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic Igneous-contact
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Basalt
Quartz Diorite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The region is predominantly underlain by basaltic volcanic rocks of the Upper Triassic Karmutsen Formation (Vancouver Group). The basalts range from feldspar porphyritic to augite porphyritic with amygdaloidal and aphanitic varieties also present. Pillow basalt flows are common. Limestone occurs locally as narrow lenses with limited lateral extent.

The Tex showing is underlain by massive and amygdaloidal basaltic flows of the Karmutsen Formation cut by a quartz diorite-granodiorite intrusion. Related quartz veins are concentrated in the contact zone. Mineralization comprising molybdenite, pyrite and chalcopyrite occur as films in fractures in both intrusive and volcanic rocks and in the quartz veins.

BIBLIOGRAPHY

EM EXPL 2000-25-32; 2001-23-31
EMPR ASS RPT 7559, 10065, 18671
EMPR GEM 1970-283
EMPR GEOLOGY 1975, p. G51
EMPR PF (*Property description by K. Northcote (1975))
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/19 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 277**

NATIONAL MINERAL INVENTORY:

NAME(S): **NIC**, BJ, BLUE JAY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F16W
BC MAP:
LATITUDE: 49 54 16 N
LONGITUDE: 124 26 21 W
ELEVATION: 533 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Nic claims is 1 kilometre west of Haslam Lake.

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5528999
EASTING: 396657

COMMODITIES: Copper, Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite, Molybdenite
ASSOCIATED: Pyrite, Hematite
ALTERATION: Malachite, Epidote
ALTERATION TYPE: Oxidation, Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork, Breccia
CLASSIFICATION: Porphyry
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0400 x 0244 Metres
STRIKE/DIP: 110/
TREND/PLUNGE:
COMMENTS: Cataclastic zone strikes 110 degrees.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Foliated Granodiorite
Cataclastic Rock

HOSTROCK COMMENTS: Age date from Powell Lake area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

CAPSULE GEOLOGY

The Nic occurrence is underlain by weakly foliated granodiorite of the Jurassic to Tertiary Coast Plutonic Complex. Foliation trends 115 degrees and dips 75 degrees north.

Chalcopyrite, malachite, molybdenite, pyrite and hematite occur in quartz stringers within a 244 metre wide cataclastic zone. The quartz stringers trend 060 degrees. The cataclastic zone, which has been exposed for 400 metres, strikes 110 degrees. Within this zone, white and pink feldspathic fragments occur in a streaky chloritic matrix, and some chlorite is replaced by epidote.

BIBLIOGRAPHY

EMPR AR *1967-59; 1968-73
EMPR ASS RPT 1864, 2411
EMPR GEM 1969-190; 1970-229
GSC MAP 1386A; 17-1968
GSC OF 611
GSC P 66-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/07 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 278**

NATIONAL MINERAL INVENTORY:

NAME(S): **HEATHER**, BRENT, JOHN, CATHY

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11W
BC MAP:
LATITUDE: 49 39 59 N
LONGITUDE: 125 18 17 W
ELEVATION: 760 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the Heather claim, on the west side of the Cruickshank River valley, about 2 kilometres upstream from the Eric Creek confluence (Assessment Report 2762).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5504090
EASTING: 333694

COMMODITIES: Copper, Gold, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Chalcocite, Bornite
ALTERATION: Malachite, Limonite, Chlorite, Epidote, Silica
ALTERATION TYPE: Oxidation, Chloritic, Epidote, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 070/80S
TREND/PLUNGE:
COMMENTS: Attitude of shear. Width of shear is 1.5 metres.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1970
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	28.8000	Grams per tonne
Gold	1.5400	Grams per tonne
Copper	4.6000	Per cent

COMMENTS: From a 60 centimetre chip sample.
REFERENCE: Assessment Report 2762.

CAPSULE GEOLOGY

The Heather occurrence area is primarily underlain by basalt of the Upper Triassic Vancouver Group, Karmutsen Formation which consists of flows, pillow breccia, aquagene tuff, and some thin sedimentary layers. This unit was intruded by a granodiorite stock of the Jurassic Island Intrusions and bodies of quartz diorite thought to be related to the Late Eocene to Early Oligocene Mount Washington Intrusive Suite (Massey, N., Personal Communication).

The North showing is located at the foot of a cliff and consists of a quartz-epidote altered zone of sheeted and braided fractures and seams which strike 075 degrees and dip close to vertical. The mineralization comprises seams and veins of near massive chalcopyrite and some pyrite. Locally the vein widths range from 0.6 to 1.8 metres. A sample taken across 0.9 metres assayed 4.6 per cent copper, 0.17 grams per tonne gold and 15.43 grams per tonne silver (Assessment Report 2762).

The South showing, 120 metres to the southeast, is exposed in the floor and south wall of a deep, narrow gully and consists of a mineralized shear zone striking 070 degrees and dipping 80 degrees to the south. The principal exposure consists of 1.5 metres of strongly sheared and chloritized massive to porphyritic basalt containing

CAPSULE GEOLOGY

pods, stringers and disseminations of pyrite, chalcopyrite, chalcocite, minor bornite, malachite and limonite. One 0.6 metre sample assayed 4.6 per cent copper, 1.54 grams per tonne gold and 28.80 grams per tonne silver (Assessment Report 2762).

BIBLIOGRAPHY

EMPR ASS RPT *2762
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1970-282
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
PERS COMM Massey, Nick, Feb. 1990 (with respect to Tertiary intrusion nomenclature)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1990/03/16	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092F 279**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHRIS**, PIPE

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 02 18 N
LONGITUDE: 125 11 46 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: At the head of Pipestem Inlet (Assessment Report 13308, Figure 3).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5434040
EASTING: 339500

COMMODITIES: Copper Zinc Silver Lead

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Galena Pyrite
ALTERATION: Malachite Epidote Silica
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Podiform
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Basalt
Quartz Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1984

COMMODITY	GRADE	
Silver	38.0000	Grams per tonne
Copper	0.7800	Per cent
Zinc	0.3400	Per cent

REFERENCE: Assessment Report 13308.

CAPSULE GEOLOGY

The area of the Chris prospect is underlain by volcanic rocks of the Upper Triassic Vancouver Group, Karmutsen Formation, consisting mainly of basaltic pillow lavas, pillow-breccia and massive basaltic flows. These are overlain by massive beds of limestone of the Quatsino Formation, also of the Vancouver Group. These are in turn overlain by Lower Jurassic Bonanza Group volcanics composed of tuff and/or felsic flows. The strata are in contact to the south with dioritic rock of the pre-Jurassic Westcoast Complex.

A major east trending fault, cutting the stratigraphy along and extending east from the head of Pipestem Inlet, serves as a conduit for various intrusives. A quartz feldspar porphyry intrudes the layered rocks at the inlet's head, in the form of small plugs and related dykes. Near the Quatsino-Karmutsen contact there is a small exposure of diorite. Scattered exposures of basalt dykes intrude the limestone parallel to the fault.

Several zones of skarn mineralization were reported to occur in the rocks at the head of Pipestem Inlet. These showings are from 0.5 to 10 metres in width. Several showings consisting of disseminations, pods and streaks of different combinations of pyrite, chalcopyrite, galena and sphalerite occur in skarn altered limestone and at one location within epidotized and silicified volcanics. Elsewhere a narrow showing of galena and sphalerite occurs in siliceous fine-grained quartz feldspar porphyry near its contact with limestone.

One rock sample contained 0.78 per cent copper, 0.34 per cent

CAPSULE GEOLOGY

zinc and 38.0 grams per tonne silver (Assessment Report 13308).

BIBLIOGRAPHY

EMPR ASS RPT 3062, 8809, *13308
EMPR EXPL 1971-234, 1980-169, 1984-156
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
CJES Vol.24, No.10, 1987, pp. 2047-2064
GCNL #108, 1980
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1990/03/30	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092F 280**

NATIONAL MINERAL INVENTORY:

NAME(S): **LUCKY JACK (L.79)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 46 N
LONGITUDE: 124 32 51 W
ELEVATION: 118 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on Lot 79, 1.5 kilometres south of Priest Lake, 3.2 kilometres south from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509699
EASTING: 388476

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrrhotite Arsenopyrite Bornite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Replacement

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Lucky Jack occurrence is underlain by limestone of the Upper Triassic Quatsino Formation (Vancouver Group) near a splay fault of the Holly fault. Pyrrhotite, arsenopyrite and bornite occur as massive replacements in limestone.

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
PERS COMM (EMPR, Webster, I. (1990))

DATE CODED: 1990/04/05 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 281**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROBIN 1-2**, MANDARIN, KETA, TRI

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06W
BC MAP:
LATITUDE: 49 18 26 N
LONGITUDE: 125 20 30 W
ELEVATION: 115 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Outcrop beside road 100 metres south of Taylor River, 10 kilometres west from the west end of Sproat Lake (Assessment Report 17021).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5464247
EASTING: 329788

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Magnetite Pyrite Chalcopyrite
ASSOCIATED: Tremolite Garnet Diopside Quartz Carbonate
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Basalt
Limestone
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

RELATIONSHIP:

GRADE:

CAPSULE GEOLOGY

The Robin occurrence area is underlain by highly chloritized, massive and commonly porphyritic and amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group). The basalt contains thin interbeds of grey limestone and the sequence is intruded by quartz diorite of the Jurassic Island Plutonic Suite. Contacts between the volcanic and intrusive rocks are usually faults trending north, east or northwest with steep dips. Occasionally tremolite skarn is developed near limestone-quartz diorite contacts with associated carbonate veining. The skarn hosts small (1 to 5 centimetre) sections of magnetite, pyrite and chalcopyrite mineralization. Locally, garnet-diopside skarn is evident. Shear zones within the basalt and quartz diorite, and basalt-quartz diorite contacts host thin (less than 50 centimetres) zones of quartz or carbonate veins with minor pyrite-chalcopyrite mineralization.

BIBLIOGRAPHY

EMPR ASS RPT 2699, 3073, 4926, 5482, 6117, *17021
EMPR EXPL 1975-E99; 1976-E114; 1977-E111; 1978-E129; 1979-131
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR GEM 1970-287; 1971-248; 1974-177
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/20

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 282**

NATIONAL MINERAL INVENTORY:

NAME(S): **KITKAT**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 03 14 N
LONGITUDE: 124 32 15 W
ELEVATION: 640 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5434585
EASTING: 387667

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Magnetite Pyrrhotite
ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote Sericite
ALTERATION TYPE: Chloritic Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Massive
CLASSIFICATION: Volcanogenic Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	

LITHOLOGY: Basalt
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

CAPSULE GEOLOGY

The Kitkat showing is located near the Nitinat River, 20 kilometres east of Alberni Inlet.

The property is underlain by a sequence of basalt, pillowed basalt and pyroclastic rocks of the Devonian Duck Lake Formation. Mineralization consists of massive sulphide lenses containing pyrite, and lesser chalcopyrite, magnetite plus/minus pyrrhotite and anomalous gold values hosted in basaltic rocks. The rocks have been chloritized and epidotized.

BIBLIOGRAPHY

EMPR ASS RPT *13945
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463, 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1986/02/18 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 283**

NATIONAL MINERAL INVENTORY:

NAME(S): **NEL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F09E
BC MAP:
LATITUDE: 49 42 09 N
LONGITUDE: 124 08 15 W
ELEVATION: 76 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drill hole collar on a small peninsula in Bruce Lake on Nelson Island, 11 kilometres northwest from the village of Garden Bay on Sechelt Peninsula (Assessment Report 358).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5506175
EASTING: 417978

COMMODITIES: Iron, Copper

MINERALS
SIGNIFICANT: Magnetite, Pyrite
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn, Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Mesozoic	Vancouver	Karmutsen	Coast Plutonic Complex

LITHOLOGY: Basalt
Quartz Diorite
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Wrangell
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)
GRADE:

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1961
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.1300	Per cent
Iron	54.4600	Per cent

REFERENCE: Assessment Report 358.

CAPSULE GEOLOGY

The Nel occurrence is underlain by quartz diorite of the Mesozoic Coast Plutonic Complex in contact with Upper Triassic Karmutsen Formation (Vancouver Group) basalt. Extensive magnetite-garnet skarn is developed at or near this contact within the volcanic rocks. Diamond drilling intersected altered volcanics with patchy iron skarn development and a more massive magnetite-pyrite body. A drill core sample from the magnetite body assayed 54.46 per cent iron and 0.13 per cent copper (Assessment Report 358).

BIBLIOGRAPHY

EMPR ASS RPT *358
GSC MAP 1386A
GSC OF 611

DATE CODED: 1989/07/14
DATE REVISED: 1990/04/03
CODED BY: LLD
REVISED BY: GO
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 284**

NATIONAL MINERAL INVENTORY:

NAME(S): **KITKAT 2**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 04 19 N
LONGITUDE: 124 33 50 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing A, Assessment Report 13945.

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5436631
EASTING: 385780

COMMODITIES: Gold, Copper, Molybdenum, Cobalt, Zinc

MINERALS
SIGNIFICANT: Pyrite, Pyrrhotite, Magnetite
ASSOCIATED: Quartz
ALTERATION: Pyrite, Sericite, Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Massive, Disseminated
CLASSIFICATION: Volcanogenic, Epigenetic, Hydrothermal
TYPE: I06 Cu±Ag quartz veins; G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Jurassic			Island Plutonic Suite

LITHOLOGY: Hornblende Basalt
Gossan

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1985

COMMODITY	GRADE	
Gold	1.7000	Grams per tonne
Copper	0.0600	Per cent

REFERENCE: Assessment Report 13945.

CAPSULE GEOLOGY

The Kitkat 2 showing is located near the Nitinat River, just north of the Raft showing (092F 311) and northwest of the Kitkat showing (092F 282), about 17 kilometres east of Alberni Inlet.

The area is underlain mainly by basalt, pillowed basalt, basaltic tuff and agglomerate of the Devonian Nitinat Formation and lesser pyroclastics the Upper Devonian McLaughlin Ridge Formation (Myra Formation), both of the Paleozoic Sicker Group. The volcanics have been intruded by Early to Middle Jurassic Island Plutonic Suite. The mafic volcanics contain gabbroic sills.

In this area, discontinuous shearing and fracturing tend to parallel large scale regional structures, specifically the fault zone forming the Nitinat River valley. Gossans are associated with the mineralized shears, which occur mainly in coarse-grained, hornblende-rich basalt. Pyrite occurs as a replacement of hornblende. The basalt is typically chloritized, with lesser alteration minerals consisting of pyrite, sericite and epidote. Areas of intense shearing contain quartz veins with pods of massive sulphides (mainly pyrite).

Two zones of massive sulphides, showings A and B, occur in hornblende basalt. Showing A contains massive pyrite and minor pyrrhotite and magnetite, with samples assaying over 1 per cent copper. One hundred metres to the north, Showing B contains patches

CAPSULE GEOLOGY

and disseminations of pyrite in vuggy quartz veins and sheared basaltic rock. A sample assayed 1.7 grams per tonne gold and 0.06 per cent copper and another sample assayed 0.24 per cent molybdenite, 0.1 per cent cobalt and 0.1 per cent zinc (Assessment Report 13945).

BIBLIOGRAPHY

EMPR ASS RPT *13945
EMPR BULL 37
EMPR EXPL 1985-135-136
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 285**

NATIONAL MINERAL INVENTORY:

NAME(S): **LIZARD LAKE**, KEN, LIZARD, CRINOSAURUS, DINOSAUR, DIPLODOCUS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 07 59 N
LONGITUDE: 124 39 55 W
ELEVATION: 860 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Discovery showing (Assessment Report 8981).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5443582
EASTING: 378525

COMMODITIES: Gold, Silver, Copper

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Malachite, Epidote, Calcite, Ankerite, Silica
ALTERATION TYPE: Silicific'n, Oxidation, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Massive, Shear
CLASSIFICATION: Hydrothermal, Epigenetic, Exhalative
SHAPE: Irregular
MODIFIER: Sheared, Faulted

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Tuffaceous Chert
Volcanic Rock

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
COMMENTS: Located in the Cowichan Uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: DISCOVERY
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1980

COMMODITY	GRADE	
Silver	24.0000	Grams per tonne
Gold	4.4600	Grams per tonne
Copper	0.1300	Per cent

COMMENTS: 2 metre sample.
REFERENCE: Assessment Report 8981.

CAPSULE GEOLOGY

The Lizard Lake showing is located slightly east of the lake, 15 kilometres southeast of Port Alberni.

Basaltic flows and pillowed basalt of the Triassic Karmutsen Formation of the Vancouver Group are underlain by a complexly inter-layered succession of volcanics and sediments of the Sicker and Buttle Lake Groups. These include limestones and marbles of the Lower Permian to Upper Pennsylvanian Mount Mark Formation and basaltic flows, agglomerates, bedded tuffs and andesite of the Upper Devonian McLaughlin Ridge Formation.

Chalcopyrite and some malachite occur in quartz-carbonate stringers within epidotized shears in fractured, silicified, carbonate altered andesite. Massive sulphides occur in a tuffaceous pyritic chert layer (pyritic-dacitic-cherty-tuff-exhalative-horizon) below the quartz vein-bearing andesite.

Gold mineralization is associated with quartz veining and cross-cutting small fault structures. The north trending Williams Creek fault occurs in the area. The faults are associated with siliceous,

CAPSULE GEOLOGY

calcareous and ankeritic alteration zones which average 3-4 metres in width and sometimes contain up to 3 per cent pyrite.

The Discovery showing assayed 4.46 grams per tonne gold, 24 grams per tonne silver and 0.13 per cent copper over 2.0 metres (Assessment Report 8981). A diamond-drill hole (DDH 84-5) intersected the chert horizon with sections assaying up to 1.13 grams per tonne gold and 3.6 grams per tonne silver over 1.8 metres (Assessment Report 14880). A chip sample (#62556), just east of the discovery showing, across 0.4 metres of a quartz splay vein and gouge assayed 0.24 per cent copper, 0.26 per cent zinc, 0.21 per cent lead, 130 grams per tonne silver and 1 gram per tonne gold (Assessment Report 18314).

BIBLIOGRAPHY

EMPR ASS RPT 7719, 8568, *8981, 10401, 10890, 12664, 13214, 14880, 16890, *18314
EMPR BULL 37
EMPR EXPL 1978-127; 1979-128-129; 1980-166-167; 1982-142-143; 1983-195; 1984-153; 2002-29-40
EMPR FIELDWORK 1988 pp. 61-74
EMPR GEM 1971-233
EMPR Mining Exploration Review 1984-30
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Laanela, H. (1966): Report, Gunnex Ltd., mineral occurrence #49)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #62, 1985
Today's Market Line #064, 1985

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/02/26 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 286**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAM**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 10 58 N
LONGITUDE: 125 15 26 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: About 2.5 kilometres northwest of Effingham Lake (Prospectus: Alberni Mines).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5450227
EASTING: 335512

COMMODITIES: Copper Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Sphalerite Pyrite Pyrrhotite
ALTERATION: Unknown
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive Shear
CLASSIFICATION: Skarn Hydrothermal Epigenetic
TYPE: K02 Pb-Zn skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Andesite
Limestone
Rhyolite
Amphibolite Dike
Skarn

HOSTROCK COMMENTS: Mineralization occurs in both formations. Bonanza volcanics may be involved.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE:

CAPSULE GEOLOGY

The area is underlain by volcanic rocks of the Upper Triassic Vancouver Group, Karmutsen Formation, consisting mainly of basaltic pillow lavas, pillow-breccia and massive basaltic flows. These are overlain by massive beds of limestone of the Quatsino Formation, also of the Vancouver Group. These are in turn overlain by Lower Jurassic Bonanza Group intermediate to felsic volcanics. Rhyolite and amphibolite dykes are intrusive into andesite and rhyolite flows. Granitic rock of the Early to Middle Jurassic Island Intrusions disrupts the strata.

Disseminated pyrite is the most common sulphide, occurring in andesite, rhyolite and amphibolite dykes, but most commonly in the rhyolite. Massive pyrrhotite, pyrite, sphalerite and chalcopyrite outcrop in a stream bed and chalcopyrite and sphalerite are found in skarn zones, up to 60 centimetres in width, along the base of a limestone cliff. Chalcopyrite also occurs as disseminations in occasional amphibolite dykes and in shear zones in andesite, particularly to the west of the massive sulphide showing.

The showings are reported to occur within an area of about 300 by 600 metres, over a vertical distance of about 150 metres.

BIBLIOGRAPHY

EMPR GEM 1971-234
EMPR PF (*Prospectus: Alberni Mines Ltd., January 21, 1965;
Prospectus: Alberni Mines Ltd., May 5, 1971)
GSC MAP 17-1968; 1386A
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50; 72-44

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/03

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 287**

NATIONAL MINERAL INVENTORY:

NAME(S): **PJ**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 40 51 N
LONGITUDE: 124 27 00 W
ELEVATION: 183 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pit, 2.75 kilometres east of the village of Gillies Bay, 2 kilometres south-southwest from the summit of Mount Pocahontas, on Texada Island (Assessment Report 10573).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5504155
EASTING: 395398

COMMODITIES: Gold Silver Lead Zinc

MINERALS
SIGNIFICANT: Galena Sphalerite
ASSOCIATED: Quartz Pyrite Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0045 Metres STRIKE/DIP: 335/75E TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Porphyritic Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1982

COMMODITY	GRADE	
Silver	77.8100	Grams per tonne
Gold	31.9400	Grams per tonne
Lead	3.0800	Per cent
Zinc	3.0100	Per cent

COMMENTS: Sample from core of quartz vein.
REFERENCE: Assessment Report 10573.

CAPSULE GEOLOGY

The PJ occurrence area is underlain by strongly jointed porphyritic basalts of the Upper Triassic Karmutsen Formation, Vancouver Group. The basalts host a fracture-related, narrow quartz vein striking 335 degrees and dipping 75 degrees east. The vein ranges from 0.1 to 0.5 metres in width and is exposed over a strike length of 45 metres by several pits. It is crudely banded with minor carbonate and passes laterally to a rusty shear. Minor pyrite is present. The core of the vein, 7 centimetres wide, contains disseminated sphalerite and galena which occasionally forms thin lenses.

A grab sample from the core of the vein assayed 31.94 grams per tonne gold, 77.81 grams per tonne silver, 3.08 per cent lead and 3.01 per cent zinc (Assessment Report 10573).

BIBLIOGRAPHY

EMPR ASS RPT *10573, 11383
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50

DATE CODED: 1990/02/19 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 288**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOORE**, COBALT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E
BC MAP:
LATITUDE: 49 51 29 N
LONGITUDE: 125 33 45 W
ELEVATION: 440 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location, Assessment Report 3445.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5525998
EASTING: 315823

COMMODITIES: Copper, Iron, Cobalt

MINERALS

SIGNIFICANT: Chalcopyrite, Magnetite, Cobaltite, Niccolite, Erythrite, Annabergite
COMMENTS: The presence of the last four are questionable.
ALTERATION: Epidote, Malachite, Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated, Shear
CLASSIFICATION: Replacement, Epigenetic, Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	
Jurassic			Island Plutonic Suite

LITHOLOGY: Pillow Lava
Amygdaloidal Basalt
Brecciated Volcanic
Limestone
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1971

COMMODITY	GRADE	
Copper	1.0000	Per cent

COMMENTS: 5.5 metres.
REFERENCE: Assessment Report 3445.

CAPSULE GEOLOGY

Volcanics of the Karmutsen Formation are overlain by limestone of the Quatsino Formation, both of the Upper Triassic Vancouver Group. These rocks are cut by the Quinsam granodiorite of the Early to Middle Jurassic Island Plutonic Suite. The volcanics consist of massive amygdaloidal and pillow basalts. The volcanics are cut by a 73 degree trending altered shear zone.

Magnetite and chalcopyrite occur as fillings in the amydaloidal basalt and as minor blebs, disseminations and fracture fills in the basalt. Malachite occurs in shears and fracture planes. Also reported (Assessment Report 7193), (but suspect, in their presence) are cobaltite, niccolite, erythrite and annabergite.

A 5.5 metre chip sample assayed 1 per cent copper (Assessment Report 3445).

BIBLIOGRAPHY

EMPR ASS RPT *3445, 5075, 7193, 13003
EMPR EXPL 1970-272; 1974-182; 1977-114; 1978-131; 1979-133-134
GSC MAP 2-1965; 17-1968
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/29 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 289**

NATIONAL MINERAL INVENTORY:

NAME(S): **PAM 11**, BRUCE 2,5, COOT

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 092F16W
BC MAP:
LATITUDE: 49 56 16 N
LONGITUDE: 124 17 35 W
ELEVATION: 305 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of the "main trenchs" near the boundary of Bruce 1,2,5 and 6 claims is 0.5 kilometres southeast of Dodd Lake (Property File 1970 Prospectus, Caracas Mining Co. Ltd.).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5532514
EASTING: 407212

COMMODITIES: Copper Zinc

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Pyrite Pyrrhotite Magnetite Sphalerite
ALTERATION: Quartz Pyrite Sericite Biotite
ALTERATION TYPE: Sericitic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry
SHAPE: Tabular
DIMENSION:
STRIKE/DIP: 070/90N
TREND/PLUNGE:
COMMENTS: Mineralized joints strike 070 to 080 degrees, dip steeply north.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Granodiorite
Brecciated Granodiorite
Feldspar Porphyry Dike
Quartz Feldspar Porphyry Dike
Porphyritic Granodiorite
Quartz Diorite
Andesite Dike
Basalt Dike

HOSTROCK COMMENTS: Age date from Powell Lake area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING

TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1967
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.2500	Per cent

COMMENTS: 16.5 metres of drill core; diamond-drill hole 2.
REFERENCE: Caracas Mining Co., 1970, page 18.

CAPSULE GEOLOGY

The Pam 11 occurrence is underlain by Cretaceous hornblende diorite and quartz diorite of the Coast Plutonic Complex which have been intruded by later phases of granodiorite. The granodiorite has in turn, been intruded by quartz feldspar porphyry and feldspar porphyry dykes. A few narrow andesite to basalt dykes cut all other rock types.

The granodiorite has been sericite-altered and hosts biotite, quartz sericite and pyrite. Silicification is associated with a quartz vein stockwork in the granodiorite as well as in an area containing lenses of quartz within brecciated granodiorite, parallel to

CAPSULE GEOLOGY

a feldspar porphyry dyke.

Veins, joints and dykes are controlled by a 070 to 080 degree trending fracture system that dips steeply north.

Pyrite and chalcopyrite, with minor pyrrhotite, magnetite and sphalerite occur as disseminations within silicified granodiorite and in the quartz vein stockwork. The intensity of fracturing decreases away from the Main showing but pyrite-coated joints are still well developed 300 metres away. Pods and irregular masses of chalcopyrite also occur at the Main showing, trending 110 to 150 degrees and crosscutting the jointing. Diamond drilling in 1967, mostly in the vicinity of the main trench, included 16.5 metres of 0.25 per cent copper. Two samples from the main trench taken over a distance of 30 metres averaged 2.40 per cent copper (Caracas Mining Co., 1970 Prospectus, page 18).

About 150 to 200 metres east of this showing, and on strike with it, chalcopyrite occurs as irregular masses near strongly silicified porphyritic granodiorite and quartz diorite.

BIBLIOGRAPHY

EMPR AR 1967-59
EMPR ASS RPT *3549, 3550, 5587, 5588, 5589
EMPR GEM 1971-254; 1972-272; 1973-236; 1975-E105
EMPR PF (Caracas Mining Company Ltd.: Prospectus - Oct.6, 1970, Jun.8, 1971)
GSC MAP 17-1968; 1386A
GC OF 611
GSC P 66-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/29 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 290**

NATIONAL MINERAL INVENTORY:

NAME(S): **CLAIM POST**, CYPRESS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 16 25 N
LONGITUDE: 125 50 08 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the west coast of Bedwell Sound, east of Quait Bay.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5461742
EASTING: 293751

COMMODITIES: Zinc Copper Lead

MINERALS
SIGNIFICANT: Pyrite Sphalerite Galena
ASSOCIATED: Silica Sericite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Layered Stratabound
CLASSIFICATION: Volcanogenic Syngenetic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Felsic Ash Tuff
Intermediate Ash Tuff
Rhyodacite Tuff
Lapilli Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Zinc	0.9000	Per cent

COMMENTS: From an 81 centimetre core length.
REFERENCE: Assessment Report 16742, page 23.

CAPSULE GEOLOGY

The area is underlain by a thick succession of Paleozoic Sicker Group volcanics and sediments that have been intruded by numerous dykes, sills and plugs ranging from gabbro to granodiorite in composition. See H-W (092F 330) for a discussion of recent revisions of Paleozoic stratigraphy.

The Sicker rocks comprise predominantly pyroclastic mafic to felsic volcanics with minor intercalations of chert, argillite and siltstone. The pyroclastics range from coarse lapilli (rarely breccia) tuffs to dusts tuffs. Generally, the strata has an average strike of 150 degrees and dip of 50 degrees. Stocks of mafic intrusives belonging to the pre-Jurassic Westcoast Complex disrupt area strata.

Mineralization in the area occurs in three principal modes:
1) Disseminated sulphides, primarily pyrite with rare chalcopyrite.
2) Fine lamellae to bands of massive to submassive sulphides.
3) Disseminated magnetite and/or ilmenite.

The Claim Post showing exhibits the second type of mineralization and is found in intercalated felsic to intermediate (rhyodacite) ash and lapilli tuffs. The surface exposure consists typically of one or more sulphide bands contained within an ash unit which may be separated from another ash tuff layer with sulphide bands by a thin lapilli tuff unit. The sulphide bands range from 1 millimetre to 5 centimetres in thickness and consist of 30 to 75 per cent pyrite, 1 to 7 per cent sphalerite and minor chalcopyrite and galena in a highly siliceous and sericitic matrix.

CAPSULE GEOLOGY

In 1987 five diamond-drill holes tested the zone at three drill sites for a total of 805 metres. Hole CYP87001 intersected the zone from 4.10 to 4.91 metres in depth. The core assayed 0.9 per cent zinc, 0.016 per cent lead, 0.016 per cent copper and 0.7 grams per tonne silver (Assessment Report 16742, p. 23).

BIBLIOGRAPHY

EMPR ASS RPT 14003, 15563, *16742, 17359
EMPR EXPL 1985-C150, 1987-C146, 1988-C86
EMPR FIELDWORK 1988, pp. 61-74
EMPR OF 1999-2
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1990/01/03 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 291**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEE**, BEE 7,8, DEE 1,2

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 092F16W
BC MAP:
LATITUDE: 49 55 09 N
LONGITUDE: 124 21 23 W
ELEVATION: 411 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Diamond-drill hole 13 in Assessment Report 3350 is 4.0 kilometres east of Haslam Lake and 4.0 kilometres southwest of Dodd Lake.

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5530525
EASTING: 402630

COMMODITIES: Copper, Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite, Molybdenite
ASSOCIATED: Quartz, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Porphyry
SHAPE: Regular
DIMENSION: 0030 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Quartz Diorite
Aplite Dike
Feldspar Porphyry Dike

HOSTROCK COMMENTS: Age date from Powell Lake area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

CAPSULE GEOLOGY

The Bee occurrence is underlain by quartz diorite and quartz monzonite of the Jurassic to Tertiary Coast Plutonic Complex.

Mineralization occurs in quartz diorite that has been intruded by small aplite stringers, feldspar porphyry dykes and several irregular masses of quartz up to 2.4 metres wide. Quartz-filled joints in the quartz diorite strike 070 to 090 degrees. The mineralization occurs over an area of 30 metres in or near the porphyry dykes and the quartz lenses. It consists of disseminated chalcopyrite and molybdenite, and veinlets and small irregular lenses of chalcopyrite and pyrite.

BIBLIOGRAPHY

EMPR ASS RPT 3489, 3549, *3550
EMPR GEM 1972-272; 1973-236
GSC MAP 17-1968; 1386A
GSC OF 611
GSC P 66-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/27 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 292**

NATIONAL MINERAL INVENTORY: 092F16 Cu1

NAME(S): **HI-MARS**, MARS, HI,
HI HO

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 092F16W
BC MAP:
LATITUDE: 49 56 26 N
LONGITUDE: 124 21 33 W
ELEVATION: 427 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of Hi and Mars claims in Assessment Report 3489 is 1.3 kilometres southwest of Lewis Lake, 3.0 kilometres west of the south end of Dodd Lake.

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5532907
EASTING: 402474

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
ASSOCIATED: Quartz Pyrite Magnetite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Granodiorite
Quartz Diorite

HOSTROCK COMMENTS: Age date from Powell Lake area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

INVENTORY

ORE ZONE: HI HO REPORT ON: Y

CATEGORY: Inferred YEAR: 1978
QUANTITY: 82000000 Tonnes

COMMODITY	GRADE	
Copper	0.3000	Per cent

REFERENCE: George Cross News Letter No.49 (March 10), 1978.

CAPSULE GEOLOGY

The Hi-Mars occurrence is underlain by granodiorite and quartz diorite of the Jurassic to Tertiary Coast Plutonic Complex which grades into diorite.

Jointing in the rocks strikes northeast and dips 90 degrees south, and locally contains quartz veinlets.

Fractures contain pyrite, chalcopyrite, molybdenite and limonite. Quartz-filled fractures host chalcopyrite and molybdenite. Disseminated pyrite and magnetite are present in the granodiorite and quartz diorite host rock. Up to 0.5 per cent copper and minor molybdenite are reported (Assessment Report 3549, page 14).

Inferred reserves of 82,000,000 tonnes grading 0.3 percent copper are reported for the Hi-Mars occurrence (George Cross News Letter No.49 (March 10), 1978). This calculation may include adjacent occurrences (see 092F 369 and 092F 371).

BIBLIOGRAPHY

EMPR ASS RPT 3489, 3549, *3550, 5798, 6092, 6433
EMPR GEM 1972-272; 1973-236; 1976-E119; 1977-E117

BIBLIOGRAPHY

EMR MIN BULL MR 223 B.C. 100
EMR MP CORPFILE (Golden Granite Mines Limited; Newvan Resources Limited)
GSC MAP 1386A; 17-1968
GSC OF 611
GSC P 66-1
GCNL #49, 1978

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/26 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 293**

NATIONAL MINERAL INVENTORY:

NAME(S): **CENTENNIAL**, NO. 5

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E
BC MAP:
LATITUDE: 49 20 42 N
LONGITUDE: 125 03 22 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Figure 22, Geology, Exploration and Mining 1974. Coordinates are for Centennial showing. The No. 5 showing occurs one kilometre to the east along a road cut on the east side of the north ridge of Little Thunder Mountain.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5467842
EASTING: 350657

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Chalcopyrite	Pyrrhotite	Pyrite
ASSOCIATED:	Magnetite	Calcite	
ALTERATION:	Silica	Limonite	Epidote
ALTERATION TYPE:	Silicific'n	Oxidation	Epidote
MINERALIZATION AGE:	Unknown		

DEPOSIT

CHARACTER:	Shear	Disseminated	Vein
CLASSIFICATION:	Hydrothermal	Epigenetic	

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Andesite
Felsic Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1974
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	8.2800	Per cent

COMMENTS: Gold and silver assayed trace only.
REFERENCE: Geology, Exploration and Mining 1974, page 178.

CAPSULE GEOLOGY

The Centennial showing is on the northwest slopes of Little Thunder Mountain. The host is massive porphyritic andesite or basalt of the Upper Triassic Karmutsen Formation, Vancouver Group.

On the northeast side of small gully a shear zone striking 070 degrees and dipping 53 degrees south forms the hangingwall of a small zone of shearing, alteration, and mineralization. The footwall is covered and the exposed thickness is 3 metres. The zone is 6 metres long, terminating abruptly at both ends. Within the zone the rock is silicified and abundantly mineralized with chalcopyrite and pyrrhotite, both partly weathered to limonite. One report also includes the presense of magnetite and pyrite but not pyrrhotite. A grab sample assayed 8.28 per cent copper with a trace of gold and silver (Geology, Exploration and Mining in B.C. 1974).

The No.5 showing is exposed in a road cut along the east side of the north ridge of Little Thunder Mountain. Karmutsen rock is cut by a 13 centimetre wide calcite vein containing minor chalcopyrite and bornite. A 46 centimetre wide felsic dyke occurs about a metre northeast of the vein and contains sparsely disseminated chalcopyrite. For about 1.5 metres on either side of the calcite vein the rock is intensely epidotized and contains a few specks of sulphide.

BIBLIOGRAPHY

EMPR AR *1967-76; 1968-104
EMPR GEM *1974-177,178
GSC MAP 17-1968
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1985/07/24
DATE REVISED: 1990/03/26

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 294**

NATIONAL MINERAL INVENTORY:

NAME(S): **JACK S1**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W 092F04E
BC MAP:
LATITUDE: 49 08 07 N
LONGITUDE: 125 29 52 W
ELEVATION: 240 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the east side of Sand River about 2.0 kilometres north of Kennedy Lake (Minister of Mines Annual Report 1968, page 103).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5445498
EASTING: 317810

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite Magnetite
ALTERATION: Garnet Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Tuff
Chert

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Jack S1 showing is located on the west side of the Sand River which flows along a north trending fault. The area is underlain by tuffaceous rocks and minor chert of the Upper Triassic Karmutsen Formation, Vancouver Group.

Lenses of massive pyrite, pyrrhotite, and chalcopyrite up to 60 centimetres wide and a few metres long are exposed for a length of approximately fifty metres along a road. A 10 metre drill hole completed in 1984 intersected massive and disseminated iron and copper sulphides and garnet throughout its length. The last 60 centimetres of core is composed mainly of massive magnetite.

BIBLIOGRAPHY

EMPR AR 1968-103
EMPR ASS RPT *11621, *13591
EMPR BULL 55
EMPR EXPL 1983-203; 1885-C143
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/11/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 295**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHARLES DICKENS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 45 13 N
LONGITUDE: 124 33 31 W
ELEVATION: 45 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, 250 metres south of the community of Vananda on Texada Island, just north of the main road to Blubber Bay (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5512402
EASTING: 387731

COMMODITIES: Copper Zinc

MINERALS
SIGNIFICANT: Chalcocite Sphalerite Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Disseminated Massive
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Georgia Depression
GRADE:

CAPSULE GEOLOGY

The Charles Dickens occurrence area is underlain by massive limestone of the Upper Triassic Quatsino Formation (Vancouver Group). A major fault, the Marble Bay, cuts through the showing area. A small lens of chalcocite mineralization within limestone has been explored by a shallow shaft. Sphalerite, chalcopyrite and pyrite also occur.

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; *1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, p. 72
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24
DATE REVISED: 1990/03/05
CODED BY: GSB
REVISED BY: GO
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 296**

NATIONAL MINERAL INVENTORY:

NAME(S): **SMUGGLER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 34 N
LONGITUDE: 124 35 56 W
ELEVATION: 220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Surface workings on the northern slopes of Surprise Mountain, 4.8 kilometres south-southwest from the community of Vananda on Texada Island (Geological Survey of Canada Memoir 58, page 95).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509406
EASTING: 384765

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group) overlain by a 15 metre thick subhorizontal unit of columnar jointed basalt. Mineralized quartz and quartz-carbonate veins with variable sulphide content, are associated with narrow, steeply dipping shear zones.

The Smuggler occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation. A south-southwest trending silicified shear zone hosts minor chalcopyrite and pyrite mineralization.

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, p. 95
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/22 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 297**

NATIONAL MINERAL INVENTORY:

NAME(S): **LORINDALE (L.146)**, LAURENDALE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 55 N
LONGITUDE: 124 34 40 W
ELEVATION: 162 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit on Lot 146, 750 metres south of Kirk Lake, 3.2 kilometres south-southwest from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510022
EASTING: 386300

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Gold Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Lorindale occurrence is underlain by amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) cut by a fault. Quartz veining occurs within fracture zones. Mineralization consists of local native gold and minor amounts of chalcopyrite and pyrite with silver values.

Past workings include an adit and shaft developed on one of three quartz veins ranging from a few to 40 centimetres in width.

BIBLIOGRAPHY

EMPR AR 1896-554; *1897-564; 1916-K357
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, p. 93
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/20 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 298**

NATIONAL MINERAL INVENTORY:

NAME(S): **MT. CON REID**, GOLDEN HINDE, BUTTLE LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12W
BC MAP:
LATITUDE: 49 42 28 N
LONGITUDE: 125 46 37 W
ELEVATION: 720 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location centered on surface trace of the limestone band as shown on Preliminary Map of Buttle Lake area, 1963.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5509843
EASTING: 299794

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Brachiopods/Fusulinids

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: Limestone strikes northward and dips 8 to 46 degrees west.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	

DATING METHOD: Fossil
MATERIAL DATED: Brachiopods/Fusulinids

LITHOLOGY: Limestone
Basaltic Flow
Volcanic Breccia
Tuff
Argillite

HOSTROCK COMMENTS: Azure Lake Formation is the new name for Buttle Lake Formation limestone within Buttle Lake uplift.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Situated along the northern margin of the Buttle Lake uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The occurrence consists of a band of Pennsylvanian to Permian limestone of the Azure Lake Formation, Buttle Lake Group, at the northern margin of the Buttle Lake uplift. It extends northeast from El Piveto Mountain and along the southeast slope of Mount Con Reid for 8.9 kilometres, approximately 11 kilometres west of Buttle Lake. In the vicinity of El Piveto Mountain the band bends to the southeast, extending 7.6 kilometres to Golden Hinde Peak.

The unit generally strikes north and dips up to 46 degrees west. It is overlain by flows of the Upper Triassic Vancouver Group, Karmutsen Formation and underlain by volcanic breccia, tuff and argillite. In the vicinity of Mount Con Reid the band is segmented by a series of northwest trending faults. See H-W (092F 330) for a discussion of the revised nomenclature of Buttle Lake uplift stratigraphy.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 12 (in Ministry Library))
EMPR MAP (Buttle Lake, 1963)
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 9,10; 79-30, p. 18
GSC SUM RPT 1930A, pp. 59,60

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 299**

NATIONAL MINERAL INVENTORY:

NAME(S): **CYPRUS**, GOOD FRIDAY, CYPRESS, GOLD

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 15 43 N
LONGITUDE: 125 56 41 W
ELEVATION: 180 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location of arsenopyrite showing, northwest of Knocker Point (Assessment Report 17098).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5460749
EASTING: 285761

COMMODITIES: Gold, Lead, Zinc, Copper

MINERALS

SIGNIFICANT: Arsenopyrite, Pyrite, Sphalerite, Galena, Chalcopyrite, Pyrrhotite
ALTERATION: Clay, Chlorite
ALTERATION TYPE: Argillic, Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated
CLASSIFICATION: Unknown
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1987

COMMODITY	GRADE	
Gold	3.4000	Grams per tonne
Copper	0.4000	Per cent
Zinc	2.1000	Per cent

COMMENTS: From a 2.4 metre chip sample.
REFERENCE: Assessment Report 17098.

CAPSULE GEOLOGY

The area of the Cyprus showing is underlain predominantly by a northwest trending sequence of mafic volcanics and sediments mapped by Muller (GSC Open File 463) as part of the Paleozoic Sicker Group. The Sicker Group, however, is undergoing redefinition in the Cowichan and Buttle Lake uplifts, with a new Upper Paleozoic Buttle Lake Group being created from what were mainly sediments from the upper part of the Sicker Group. See the H-W occurrence (092F 330) for a summary of revisions.

These rocks are intruded by Paleozoic or Triassic diabasic sills and feldspar porphyritic dykes of possible Tertiary age. In gradational contact are gneisses, hornfelsic basalts and amphibolites of the pre-Jurassic West Coast Complex.

The showing occurs along a major north trending creek, possibly coinciding with a major regional fault. On the steep east bank a series of shears striking 020 degrees are traced for over 30 metres. The host rock is clay and chlorite altered, destroying the original textures. Scattered pyrite, sphalerite, galena and arsenopyrite are recognized in hand specimens. A 2.4 metre long chip sample assayed 3.4 grams per tonne gold, 2.1 per cent zinc and 0.4 per cent copper (unpublished report by McIntyre, 1968, quoted in Assessment Report 17098). A grab sample of massive arsenopyrite assayed 6.60 grams per tonne gold, 9.9 grams per tonne silver, 10 per cent arsenic, 0.074

CAPSULE GEOLOGY

per cent lead, 0.045 per cent zinc and 0.037 per cent copper (Assessment Report 17098).

An area of andesite with several showings of chalcopyrite occurs about 460 metres to the northeast of the arsenopyrite showing, at about the same elevation. Minor chalcopyrite and pyrrhotite occur up slope about 425 metres to the northwest of the arsenopyrite showing. Scattered showings of chalcopyrite also exist between these showings and the Good Hope occurrence (092F 154), (Assessment Report 4177, Plate 1, Map #5).

BIBLIOGRAPHY

EMPR ASS RPT 4177, 4688, *17098
EMPR EXPL 1986-C86
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1969-217, 1972-266, 1973-231
EMPR PF (*Prospectus: Thunder Valley Mines Ltd., Aug. 24, 1971; Prospectus: Suntac Minerals Corporation, July 11, 1988)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 300**

NATIONAL MINERAL INVENTORY:

NAME(S): **DE OAR**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 44 01 N
LONGITUDE: 124 30 13 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Outcrops of magnetite lenses, 250 metres west from Raven Bay just south of Rumbottle Creek, 4.6 kilometres south-southwest from the community of Vananda on Texada Island (Assessment Report 14474, Figure 4).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510098
EASTING: 391648

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Magnetite Pyrite Chalcopyrite
ALTERATION: Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The De Oar occurrence is underlain by amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group), just north of the Marble Bay fault. A line of limestone inclusions up to 1 metre across, possibly related to a fault system, crosscut the basalts. Bordering these inclusions are a few small magnetite lenses with minor disseminated pyrite and chalcopyrite.

BIBLIOGRAPHY

EMPR ASS RPT 14474
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, p. 69
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/15 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 301**

NATIONAL MINERAL INVENTORY:

NAME(S): **STURT 1**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 45 39 N
LONGITUDE: 124 34 28 W
ELEVATION: 45 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches, on the south side of the head of Sturt Bay just north of the main road to Blubber Bay, 1.5 kilometres west-northwest from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5513229
EASTING: 386608

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
ALTERATION: Garnet Diopside
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Unknown	Vancouver	Quatsino	Unnamed/Unknown Informal

LITHOLOGY: Limestone
Felsic Dike
Diorite
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Georgia Depression
GRADE:

CAPSULE GEOLOGY

The Sturt 1 occurrence is underlain by limestone of the Upper Triassic Quatsino Formation (Vancouver Group) near the contact with the north tip of a teardrop-shaped diorite intrusion. Trenches have exposed fine-grained garnet-diopside skarn developed in limestone near an altered, light green felsic dyke. Some malachite staining is evident in the skarn.

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
PERS COMM (EMPR-Webster, I. (1990))

DATE CODED: 1990/04/05 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 302**

NATIONAL MINERAL INVENTORY:

NAME(S): **SNOWFALL**, SUNSHINE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 59 47 N
LONGITUDE: 124 37 07 W
ELEVATION: 769 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of claim group, 15 kilometres north from the town of Powell River, 3 kilometres northwest of the summit of Mount Porteous (Claim Map 92F15E (1967)).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5539485
EASTING: 383993

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Magnetite Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Garnet Epidote Tremolite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Mesozoic			Coast Plutonic Complex

LITHOLOGY: Limestone
Basalt
Quartz Diorite
Diorite
Skarn

HOSTROCK COMMENTS: Limestone in Karmutsen Formation plutonic rock are mineralized.

GEOLOGICAL SETTING

TECTONIC BELT: Coast Crystalline
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)
TERRANE: Plutonic Rocks
Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:

CAPSULE GEOLOGY

The Snowfall occurrence is underlain by Mesozoic quartz diorite and diorite of the Coast Plutonic Complex which intrudes Upper Triassic Karmutsen Formation (Vancouver Group) basalt flows containing some interbeds of limestone. Skarn, consisting of coarse dark brown garnet, epidote, quartz and tremolite, occurs in and near the limestone interbeds. The skarn hosts small stringers and blebs of magnetite with minor amounts of pyrite and rare chalcopyrite. The quartz diorite also contains finely disseminated pyrite and chalcopyrite.

BIBLIOGRAPHY

EMPR AR *1966-56
GSC MAP 17-1968; 1386A
GSC OF 611

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/04 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 303**

NATIONAL MINERAL INVENTORY:

NAME(S): **POTOSA**, POTASA

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 44 02 N
LONGITUDE: 124 38 01 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quartz vein exposed on beach 250 metres south of Favada Point on the west coast of Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510325
EASTING: 382282

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Potosa occurrence is underlain by amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group). A fault zone hosts a small quartz vein mineralized with native gold. A small shipment of 0.9 tonnes was made in 1896 and reported to have yielded eight hundred dollars in gold (Geological Survey of Canada Memoir 58, page 95).

Recent mapping indicates a limestone lense and a hornblende porphyry dyke outcrop nearby.

BIBLIOGRAPHY

EMPR AR *1897-560; 1899-806
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM *58, p. 95
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/21 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 304**

NATIONAL MINERAL INVENTORY:

NAME(S): **BUTTERFLY**, WOODPECKER, WOOD PECKER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 44 35 N
LONGITUDE: 124 32 00 W
ELEVATION: 133 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, between Spratt Bay and Emily Lake on Texada Island, 300 metres northwest from the Imperial Limestone quarry (092F 394).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5511191
EASTING: 389528

COMMODITIES: Iron Copper

MINERALS
SIGNIFICANT: Magnetite Chalcopyrite
ASSOCIATED: Pyrite
ALTERATION: Epidote Garnet Calcite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Skarn
DIMENSION: 0018 x 0001 Metres
COMMENTS: Magnetite lens.

Industrial Min.
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Georgia Depression
RELATIONSHIP:
GRADE:

CAPSULE GEOLOGY

The Butterfly occurrence is underlain by Upper Triassic Quatsino Formation (Vancouver Group) limestone. A shaft and open cuts have been developed on magnetite lenses up to 18 metres long and 1.8 metres wide. The magnetite contains considerable pyrite and some irregularly distributed chalcopyrite. A skarn mineral assemblage is present and consists of epidote, garnet and calcite.

BIBLIOGRAPHY

EMPR AR 1897-563; 1898-1145; 1919-N371; 1915-451
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1988-28; 1990-3
GSC MAP 1386A; 17-1968
GSC MEM *58, p. 71
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/22 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 305**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROSE AND BELLE**, CONNOISSEUR

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 40 18 N
LONGITUDE: 124 21 48 W
ELEVATION: 427 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches, near the headwaters of Staaf Creek, just east of a swampy area at the base of a hill (locally called Black Mountain), in the central part of Texada Island (Assessment Report 17995).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5503018
EASTING: 401632

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate Ankerite Magnetite Pyrite Arsenopyrite Hematite Garnet
COMMENTS: Also diopside and epidote.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt
Quartz Diorite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock

YEAR: 1988

COMMODITY	GRADE	
Gold	0.5900	Grams per tonne

COMMENTS: Sample from quartz-carbonate (on kerite) zone.
REFERENCE: Assessment Report 17995.

CAPSULE GEOLOGY

The Rose and Belle occurrence area is underlain by chloritic amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group), locally cut by a quartz-carbonate (ankerite) shear zone. A steeply dipping quartz diorite dyke intercepts this zone.

Mineralization within the quartz-carbonate zone comprises magnetite, pyrite, chalcopyrite, arsenopyrite and hematite. Minor gangue minerals are garnet, diopside and epidote. A rock sample from the zone assayed up to 0.59 grams per tonne gold (Assessment Report 17995).

BIBLIOGRAPHY

EMPR AR 1912-K197; 1913-K324
EMPR ASS RPT *17995
EMPR BULL 40, p. 55
GSC MAP 1386A; 17-1968
GSC MEM 58, pp. 69,70
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/19 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 306**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOOKHOUT**, H.M.

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E
BC MAP:
LATITUDE: 49 18 56 N
LONGITUDE: 125 04 21 W
ELEVATION: 770 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized outcrop near tiny lake (PMD) close to the head of Bookhout Creek between Great Central and Sproat lakes, 22.5 kilometres west from the town of Port Alberni (Assessment Report 3651).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5464602
EASTING: 349377

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein Stockwork Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION:
STRIKE/DIP: 320/80S
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Granodiorite Dike
Quartz Diorite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEINS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1970
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	9.9400	Grams per tonne
Copper	1.4500	Per cent

COMMENTS: Sample of mineralized, small quartz veins.
REFERENCE: Property File (092F 230) - Report by J.A. Mitchell (1970).

CAPSULE GEOLOGY

The Bookhout occurrence area is underlain by basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) crosscut by a number of northwest trending granodiorite or quartz diorite dykes. The basalt hosts small quartz veins which occur in a silicified and altered shear zone that appears to strike 320 degrees and dip 80 degrees southwest. Mineralization consists of pyrite and chalcopyrite. A rock sample assayed 1.45 per cent copper and 9.94 grams per tonne silver (Property File (092F 230, Ark)-Report by J.A. Mitchell). In the same general area fractures in basalt striking 065 degrees and 305 degrees and dipping steeply north contain chalcopyrite.

Approximately 900 metres east of this mineralization, a narrow silicified and carbonate altered shear in basalt hosts chalcopyrite and 100 metres higher in elevation chalcopyrite also occurs in streaks and weak disseminations.

BIBLIOGRAPHY

EMPR ASS RPT *3651, 15147
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74

BIBLIOGRAPHY

EMPR PF (See 092F 230 - *Rpt. by J.A. Mitchell; see 092F 230 - *Prospectus, Great Central Mines Ltd. April 10, 1972)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50
GCNL #45, 1974

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/25 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 307** NATIONAL MINERAL INVENTORY:

NAME(S): **IDEAL**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E
BC MAP:
LATITUDE: 49 16 55 N
LONGITUDE: 125 01 45 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Ideal vein in road cut, 1 kilometre east of Brookhout Creek and 250 metres north of Highway 4, 16 kilometres west from the town of Port Alberni (Assessment Report 17040).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5460780
EASTING: 352426

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Arsenopyrite
COMMENTS: Trace arsenopyrite.
ALTERATION: Silica Clay Sericite Malachite Azurite
ALTERATION TYPE: Oxidation Silicific'n Argillic Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated Massive
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0110 Metres STRIKE/DIP: 125/62N TREND/PLUNGE:
COMMENTS: Ideal vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Andesite
Pillow Andesite Flow
Andesite Flow
Andesite Tuff
Quartz Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	10.5900	Grams per tonne

COMMENTS: Sample across 0.4 metre quartz vein.
REFERENCE: Assessment Report 17040.

CAPSULE GEOLOGY

The Ideal occurrence area is underlain by propylitically altered pillowed to massive andesite flows and tuffs of the Upper Triassic Karmutsen Formation (Vancouver Group) intruded by quartz diorite of the Early to Middle Jurassic Island Plutonic Suite. A series of sub-parallel shear/fault zones strike northwest. Locally, small highly deformed shale/slate bands occur between pillows and several of the bands are cut by a stockwork of carbonate veinlets. The propylitic alteration assemblage in the pillow lavas comprise chlorite, local carbonate and pyrite.

Several shear zone structures host quartz veins and appear to be east trending as opposed to the dominant northwest direction. Strong silicification, argillization and local sericitization haloes are noted in some shear zones and larger (greater than 10 centimetre) quartz veins. The primary vein showing, the Ideal vein, occurs in andesitic volcanics and strikes 125 degrees and dips 62 degrees

CAPSULE GEOLOGY

northeast for a semi-continuous length of 110 metres. Vein widths range from 20 to 50 centimetres and pinches and swells regularly. The andesite is locally well brecciated within the vein channel with no distinctive alteration. Mineralization is concentrated in the quartz and occurs as sulphide pods and disseminations and comprises predominantly pyrite with lesser chalcopyrite and trace arsenopyrite. Malachite and azurite are noted with chalcopyrite. A rock sample from the vein assayed up to 10.59 grams per tonne gold across 0.4 metres (Assessment Report 17040). Rock sampling from other quartz veins on the property assayed up to 0.68 grams per tonne gold.

BIBLIOGRAPHY

EMPR ASS RPT 13539, *17040
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR PF (Prospectus: Metaxa Resources Ltd., Feb. 6, 1989)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1990/04/26 CODED BY: GO FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 308**

NATIONAL MINERAL INVENTORY:

NAME(S): **LUPUS 1**, LAKE, ROAD

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14E
BC MAP:
LATITUDE: 49 46 57 N
LONGITUDE: 125 12 11 W
ELEVATION: 213 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Lake showing is located in gravel pit on west side of road, about one kilometre northwest of Wolf Lake (Assessment Report 13426).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5516777
EASTING: 341409

COMMODITIES: Gold Silver Zinc Copper Lead

MINERALS
SIGNIFICANT: Pyrite Arsenopyrite Sphalerite Chalcopyrite Galena
ASSOCIATED: Quartz
ALTERATION: Clay
ALTERATION TYPE: Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic Epithermal
TYPE: l06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1986

COMMODITY	GRADE	
Silver	20.5700	Grams per tonne
Gold	4.4200	Grams per tonne
Copper	0.1500	Per cent
Lead	1.5900	Per cent
Zinc	0.6000	Per cent

COMMENTS: From a 90 centimetre chip.
REFERENCE: Assessment Report 15034.

CAPSULE GEOLOGY

The Lake showing occurs about 800 metres northwest of the north end of Wolf Lake. The area is underlain primarily by basaltic to andesitic lavas of the Upper Triassic Karmutsen Formation, Vancouver Group. These rocks are mostly massive flows and pillow lavas of partly amygdaloidal basalts, with minor tuffs, volcanic breccias and agglomerates.

The showing was exposed in a rock quarry in 1983. The showing is made up of a vein, up to 9 centimetres wide, that plunges 30 degrees toward 080 degrees. The vein consists of a core of massive sulphides lined with quartz. Sulphides include pyrite, arsenopyrite, sphalerite, minor chalcopyrite and galena. The vein is enveloped by a narrow clay zone that contains broken sulphide-quartz material. This zone is enveloped by a dark grey alteration zone which grades into a more bleached zone which in turn grades into unaltered green Karmutsen volcanics.

A sample of the zone material taken across 0.90 metres assayed 4.42 grams per tonne gold, 20.57 grams per tonne silver, 0.60 per cent zinc, 0.15 per cent copper, 1.59 per cent lead and 0.01 per cent arsenic (Assessment Report 15034). Various selected samples and samples taken across narrower widths contained significantly higher

CAPSULE GEOLOGY

grades of all the above elements.
At the Road showing, 750 metres west-southwest of the Lake showing, a 6 centimetre wide quartz vein contains chalcopyrite and pyrite. A grab sample assayed 21.94 grams per tonne gold, 30.86 grams per tonne silver, and 0.66 per cent copper (Assessment Report 15034).

BIBLIOGRAPHY

EMPR ASS RPT *13426, *14442, *15034
EMPR EXPL 1984-168; 1986-C183,C184
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 80-16

DATE CODED: 1986/09/17 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/03/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 309**

NATIONAL MINERAL INVENTORY:

NAME(S): **ELNORA**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W
BC MAP:
LATITUDE: 49 46 39 N
LONGITUDE: 125 21 53 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located in Piggott Creek, about 7 kilometres south of Oyster River (Assessment Report 14684, Figure 2).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5516576
EASTING: 329754

COMMODITIES: Silver, Gold, Lead, Zinc, Copper

MINERALS

SIGNIFICANT: Galena, Sphalerite, Chalcopyrite, Anglesite, Tetrahedrite, Tennantite, Argentite, Covellite, Silver
ASSOCIATED: Quartz
ALTERATION: Silica, Ankerite, Carbonate
ALTERATION TYPE: Silicific'n, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Breccia
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Undefined Group	Karmutsen	

LITHOLOGY: Basalt, Pillow Lava, Breccia, Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: ELNORA VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1985

COMMODITY	GRADE	
Silver	111.0600	Grams per tonne
Gold	0.4100	Grams per tonne
Lead	0.5300	Per cent
Zinc	0.1600	Per cent

REFERENCE: Assessment Report 14684.

CAPSULE GEOLOGY

The area is underlain by block faulted Upper Triassic Karmutsen Formation volcanics (Vancouver Group) which are unconformably overlain by Upper Cretaceous Comox Formation sediments (Nanaimo Group). The Karmutsen rocks consist of very gently dipping thick amygdaloidal basaltic flows with interbedded pillow lavas, pillow breccias and very minor intercalated tuffaceous beds. The Comox rocks are composed of fairly flat lying conglomerates and sandstones with interbedded siltstone and shale. Tertiary intrusions disrupt the strata to the east of the occurrence area.

The Elnora vein conforms to bedding, is sheared and overlain by gently flexed Karmutsen volcanics. The showing is a siliceous (drusy quartz), carbonatized (ankeritic) breccia. It is mineralized with 1 to 2 centimetre wide pods of galena and sphalerite, with lesser amounts of chalcopyrite, anglesite and tetrahedrite, along with traces of tennantite, argentite, covellite and native silver. A sample of silicified vein assayed 110.06 grams per tonne silver, 0.41 grams per tonne gold, 0.53 per cent lead and 0.16 per cent zinc. (Assessment Report 14684).

BIBLIOGRAPHY

EMPR ASS RPT *13598, *14684
EMPR EXPL 1985-C157; 1986-C185
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1985/12/09 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/03/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 310**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROARING**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07W
BC MAP:
LATITUDE: 49 25 23 N
LONGITUDE: 124 52 36 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Several showings (Samples HRN 9, 28, 31) found north of Roaring Creek and west of Rosewall Creek (Assessment Report 16141). One showing found east of Rosewall Creek (HRN 32).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5476180
EASTING: 363906

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
ASSOCIATED: Quartz
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Hydrothermal Epigenetic Epithermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Lapilli Tuff
Quartz Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area of the Roaring occurrence is underlain by volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. These rocks consist mainly of pillow basalts and pillow breccia and minor tuffs.

An extensive altered area, reported as calc-silicate alteration, occurs having a relatively flat dip and an approximate thickness of between 25 and 100 metres (Assessment Report 16141). Quartz stringers with pyrite and chalcopyrite cross cut the silicified matrix and clasts of a volcanic breccia. Elsewhere thin quartz veins (2-5 centimetres) with a near vertical dip and southeast trend cut rusty weathered lapilli tuff. These veins contained molybdenite, chalcopyrite and pyrite. Molybdenite was also observed in a quartz-eye porphyry dyke a few hundred metres east of this.

Angular float containing cinnabar, native mercury, and stibnite were located, as were pieces containing sphalerite and galena. Mercury and antimony are generally anomalous in the area. Malachite was found in a similarly altered area across the Rosewall Creek valley, about 1 kilometre to the east of the above occurrences.

BIBLIOGRAPHY

EMPR ASS RPT *16141
EMPR EXPL 1987-C151,C152
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/03/21 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 311**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAFT**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 02 39 N
LONGITUDE: 124 35 35 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized shear zone (Assessment Report 14993).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5433588
EASTING: 383585

COMMODITIES: Copper Zinc Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Epidote Chlorite Saussurite
ALTERATION TYPE: Chloritic Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Disseminated Shear
CLASSIFICATION: Volcanogenic Syngenetic Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1986

COMMODITY	GRADE	
Copper	2.0800	Per cent

REFERENCE: Assessment Report 14993.

CAPSULE GEOLOGY

The Raft showing is located about 18 kilometres east of Alberni Inlet and 23 kilometres southeast of Port Alberni.

The area is underlain mainly by basalt, pillowed basalt, basaltic tuff and agglomerate of the Devonian Duck Lake Formation, Sicker Group. The basaltic rocks are intruded by numerous white feldspar porphyritic sills. As well, small bodies of diorite, quartz diorite and granodiorite of the Early to Middle Jurassic Island Plutonic Suite occur in the area. The volcanics have been folded into a north-northwest trending syncline-anticline pair and are cut by a major similar trending regional shear zone up to 400 metres wide.

A quartz filled shear zone in the basalt contains massive pyrite and minor chalcopyrite. A sample assayed 2.08 per cent copper (Assessment Report 14993). A massive sulphide zone, measuring 0.7 metres wide and 8 metres long, occurs in the basalt, 800 metres north of the mineralized shear zone. It comprises siliceous bands with pyrite and minor chalcopyrite. A grab sample assayed 0.138 per cent copper (Assessment Report 13954). The basalts, which are locally saussuritized, epidotized and chloritized, also contain disseminations and stringers of pyrite. Two outcrop samples assayed 0.15 per cent copper and 0.657 per cent zinc respectively (Assessment Report 13954). These are located 800 metres southeast of the massive sulphide zone. Disseminated pyrite also occurs in dacite sills with associated quartz veins intruding the basalts. A sample assayed 0.43 per cent copper and 5.6 grams per tonne silver (Assessment Report 14993). Gold values have been obtained from float samples.

BIBLIOGRAPHY

EMPR ASS RPT 11315, 12444, *13954, 14376, *14993
EMPR BULL 37
EMPR EXPL 1983-194-195; 1985-140; 1986-166
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6; 1999-2
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #218, 1984; #161, #176, 1986
N MINER Oct. 13, 1986
World Investment News Jan. 1987

DATE CODED: 1986/11/19 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 312** NATIONAL MINERAL INVENTORY:

NAME(S): **NORTH WELLINGTON**, WELLINGTON NO. 1 SLOPE, WELLINGTON NO. 9, NORTHFIELD, WELLINGTON SHAFTS 1-6, LOUDON, CARRUTHERS, STRONACH, BIGGS, CANADIAN COLLIERIES, NO. 9, DUNSMUIR, ADIT, OLD ADIT, ISLAND COLLIERIES, KING & FOSTER

STATUS: Past Producer Underground
MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 12 00 N
NORTHING: 5450200
LONGITUDE: 124 01 47 W
EASTING: 424986
ELEVATION: 88 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The mines are located in the North Wellington area, southwest of Wellington (Geological Survey of Canada Paper 47-22). Production is included with Wellington (092GSW048).

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: The main Wellington seam generally strikes northwest and dips gently towards the northeast/east.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Extension	

LITHOLOGY: Coal
Shale
Conglomerate
Sandstone

HOSTROCK COMMENTS: The coal is part of the Wellington Seam of the Early Campanian Northfield Member, Extension Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: HVol Bituminous

CAPSULE GEOLOGY

The main Wellington Seam (No. 1 seam) occurs in the Early Campanian Northfield Member at the base of the Extension Formation (Nanaimo Group) and generally dips northeast to east and strikes northwest. The seam is underlain by sandstone and overlain by sandy shale, sandstone or conglomerate. Two sets of faults striking north-northeast and west-northwest are prominent in the area. The largest continuous area of the Wellington Seam is in the Wellington Field where the Wellington Mines (Wellington Mine No. 1 Slope, Wellington No. 9 Mine, Northfield Mine and Wellington Colliery Shafts No. 1 to No. 6 (092GSW048) are located. Refer to the Bebans mine (092GSW026) for an explanation on the Wellington Seam in the Nanaimo Coalfield.

The seam occasionally shows sharp rolls and thickness varies from 0.9 metres to 3.0 metres. The great variability in seam thickness results from minor folds, faults and shale bands in the roof, while the floor is fairly regular. The seam consists of very finely striated humic coal with a semi-bright appearance (dull clarain with few vitrain bands or stringers) of high volatile bituminous rank.

Three upper seams are present in the Wellington No. 1 area and include the Wellington No. 2 or Little Wellington, Wellington No. 3 and Wellington No. 4. These seams are normally less than 0.6 metres thick and occur at intervals of 10.7 metres, 18.3 metres and 22.9

CAPSULE GEOLOGY

metres respectively above the Wellington No. 1 seam. The Wellington No. 9 mine exploits the Little Wellington seam over some of the Wellington mine workings.

Production from the North Wellington mines is included with Wellington (092GSW048).

BIBLIOGRAPHY

EMPR AR (See Wellington, 092GSW048 for references)
EMPR COAL ASS RPT *92
EMPR FIELDWORK 1987 pp. 441-450; 1988 pp. 553-558
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P *70-53; *47-22; 68-50
CANMET Hacquebard, P.A. et al (1967): Symposium on Science-Technology of Coal 1967, pp. 84-97

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1986/05/13 REVISED BY: EVFK FIELD CHECK: N

MINFILE NUMBER: **092F 313**

NATIONAL MINERAL INVENTORY:

NAME(S): **HAMILTON LAKE**, BEAUFORT

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11E
BC MAP:
LATITUDE: 49 34 59 N
LONGITUDE: 125 03 35 W
ELEVATION: 468 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5494312
EASTING: 351118

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Faulted
COMMENTS: The strata generally strikes west-southwest to northwest and dips predominantly north.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	

LITHOLOGY: Coal
Mudstone
Shale
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: HVol Bituminous
COMMENTS: The rank is high volatile bituminous A.

INVENTORY

ORE ZONE: HAMILTON LAKE
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1986
QUANTITY: 11124673 Tonnes

COMMODITY	GRADE
Coal	100.0000 Per cent

COMMENTS: High volatile bituminous A coal (Blocks A and B); overburden ratio is 7.38:1.
REFERENCE: Coal Assessment Reports 49, 56.

CAPSULE GEOLOGY

At Hamilton Lake, four major coal seams which average 3.6 and 2.6 metres (clean coal) in thickness, in Block A and Block B respectively, are present in the Upper Cretaceous Comox Formation, Nanaimo Group (approximately 91 metres thick) interbedded with shale and sandstone. Blocks A and B are areas which contain coal seams mineable by open cut mining methods. The coal is of high volatile bituminous A rank. Some of the seams are split as a result of faulting and stress. The direction of sedimentation is towards the southeast and individual seams may thin and splay in this direction.

Indicated reserves are 8,522,204 tonnes and 2,602,469 tonnes in Blocks A and B respectively. Total reserves are 11,124,673 tonnes with an overburden ratio of 7.38:1 (Coal Assessment Reports 49, 56).

The structure in the area is dominated by northwest and north-east trending normal faults which down fault the Comox Formation sediments against the older Upper Triassic Karmutsen Formation volcanics. A major north trending fault extends from Brown's River through the east boundary of Comox Lake and south through Allen Lake to the Trent River. Beyond this a downthrow of 61 metres occurs. The strata generally strikes west-southwest to northwest and dips

CAPSULE GEOLOGY

predominantly north.

BIBLIOGRAPHY

EMPR AR 1874-21-29; 1902-262; 1909-187
EMPR COAL ASS RPT *49, *56, 57, 92, 810
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1986/05/01 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 314**

NATIONAL MINERAL INVENTORY:

NAME(S): **ASH RIVER**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E
BC MAP:
LATITUDE: 49 27 09 N
LONGITUDE: 125 04 15 W
ELEVATION: 315 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The property is located east of Elsie Lake and approximately 19 kilometres south-southwest of Cumberland.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5479821
EASTING: 349916

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: The structure is dominated by a northwest trending, southeast plunging syncline, which varies from broad in the south to tighter and more compressed in the north.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Extension	
Upper Cretaceous	Nanaimo	Comox	

LITHOLOGY: Coal
Carbonaceous Shale
Sandstone
Conglomerate

HOSTROCK COMMENTS: The Wellington Seam occurs in the Extension Formation and the Douglas and Newcastle seams occur in the Pender Formation both Nanaimo Group.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP:

PHYSIOGRAPHIC AREA: Georgia Depression
GRADE: HVol Bituminous

CAPSULE GEOLOGY

At Ash River, coal occurs in the Upper Cretaceous Comox, Pender and Extension formations of the Nanaimo Group. The older Comox Formation contains eight seams, of which seam No. 1 (0.76 to 2.10 metres), seam No. 2 (1.06 metres to 1.20 metres) and seam No. 4 (0.90 to 2.10 metres) are of economic interest and occur over a stratigraphic interval of 30.5 metres. The coals are extremely dirty containing in some cases up to 75 per cent shaly material. The seams are discontinuous and tend to "shale out" throughout the property.

The Douglas and Newcastle seams of the younger Pender Formation and the Wellington seam (refer to 092GSW026) of the Extension Formation are also present in the area. They are of poor quality, with as much as 65 to 80 per cent shale interbedded with the coal. The seams are thin and discontinuous. The coal seams in both formations are interbedded with shale, carbonaceous shale and sandstone.

The Comox Formation is separated from the Pender and Extension formations by the Haslam Formation, Nanaimo Group (85 to 300 metres thick) which consists of sandy shales and shaly sandstones.

The structure in the area is dominated by a northwest trending syncline which is cut off to the northwest by west-northwest trending normal faults which downthrow the Nanaimo Group into contact with the Upper Triassic Karmutsen Formation. The syncline plunges southeast at 3 to 5 degrees and is broad in the south (west limb dips 10 to 15 degrees and the east limb dips 20 to 30 degrees) and tighter and more compressed in the north (west limb dips 10 to 15 degrees while dips on the east limb have increased to 37 to 55 degrees).

BIBLIOGRAPHY

EMPR COAL ASS RPT 40
EMPR FIELDWORK 1987 pp. 441-450; 1988 pp. 553-558
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1986/05/01 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 315** NATIONAL MINERAL INVENTORY:

NAME(S): **COMOX**, CUMBERLAND, NO. 1-8,
CANADIAN COLLIERIES, COMOX COLLIERY, SCOTT'S SLOPE,
UNION COLLIERY, NO. 8, NO. 5,
NO. 4, NO. 3, NO. 2,
NO. 6, NO. 7

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 37 53 N NORTHING: 5499643
LONGITUDE: 125 02 17 W EASTING: 352830
ELEVATION: 150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: No. 5 mine; the Comox coalfield is located along a northwest strike both northwest and southeast of the No. 5 mine, and east of Comox Lake.

COMMODITIES: Coal Fireclay

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary Industrial Min.
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Faulted Other
COMMENTS: The seams generally strike northwest and dip approximately 6 degrees northeast. The structure of the area consists of a number of fault blocks containing gently tilted strata.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	

LITHOLOGY: Coal
Shale
Clay
Sandstone
Conglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: HVol Bituminous

INVENTORY

ORE ZONE: COMOX REPORT ON: Y

CATEGORY: Inferred YEAR: 1973
QUANTITY: 279685230 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: High volatile bituminous coal. Possible in-situ reserves.
REFERENCE: B.C. Hydro, 1973.

ORE ZONE: COMOX REPORT ON: Y

CATEGORY: Indicated YEAR: 1973
QUANTITY: 3466029 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: High volatile bituminous coal. Probable in-situ reserves.
REFERENCE: B.C. Hydro, 1973.

CAPSULE GEOLOGY

Four seams of coal, of which three are workable (No. 1, No. 2 and No. 4), occur in the Upper Cretaceous Nanaimo Group, Comox Formation interbedded predominantly with sandstone and minor conglomerate. The coal bearing strata rest unconformably on Upper

CAPSULE GEOLOGY

Triassic Vancouver Group, Karmutsen Formation volcanic rocks and some of the lower seams are pinched out against basement topographic highs. The coal is often associated with shale and may contain thin interbeds of carbonaceous shale or bone coal. The lowest seam tends to contain more of the above than seams higher in the succession and in places becomes extremely shaley. The roofs and floors of the seams are predominantly sandstone.

The seams strike generally northwest and dip approximately 6 degrees northeast. The area contains a number of northwest to south-east trending normal faults which subdivide the area into (tilted) fault blocks. A second set of more east-west trending faults are also present.

The coal is high volatile bituminous "A" in rank. The lowest (stratigraphically) seam, the No. 4 seam, varies from 0.9 to 2.1 metres in thickness and generally consists of clean coal. This seam has been the most extensively mined in the Comox (Cumberland) area. Mines No. 1, No. 2, No. 3, No. 4, No. 6 and No. 7, with the No. 4 mine being the most productive. The next most productive seam, the No. 2 seam, occurs 36.6 metres above the No. 4 seam and has been mined in mines No. 5 and No. 8. The seam is approximately 1.1 metres thick. The uppermost seam, the No. 1 seam, varies from 0.8 metres to 2.1 metres thick and has been mined at mines No. 5 and No. 6, and to a small extent at the No. 2 slope.

The coal in the Cumberland area contains 0.45 to 4.30 per cent moisture, 6.80 to 27.22 per cent ash, 28.09 to 37.70 per cent volatile matter, 42.44 to 55.95 per cent fixed carbon, 0.20 to 3.92 per cent sulphur and has a value of 10,148 to 14,246 BTU per pound (as received except for G.C.V. which is on a dry basis).

The Cumberland area has produced approximately 18 millions tons of coal (1969). In-situ reserves (1973, B.C. Hydro) are estimated to be 3,821,000 tons probable and 308,329,000 tons possible, making a total of 312,150,000 tons. This is considered high by A.R.C. James (1974).

BIBLIOGRAPHY

EMPR AR 1878-384; 1880-433; 1882-368; 1888-329,336,342;
1889-294,300,306; 1890-381,387,394; 1891-578,586,593;
1892-548,556,563; 1893-1093,1100-1101,1108; 1894-759,765-767,772;
1895-713,720-721;727; 1896-584,590,596; 1897-620,626-628,632;
1898-1177-1179; 1899-835; 1900-962-963,967; 1901-1207-1209;
1902-270; 1903-222; 1904-278-280; 1905-230; 1906-229-231;
1907-183-185; 1908-209-210; 1909-237-238; 1910-205-211;
1911-250-256; 1912-272-276; 1913-359-365; 1914-457-463;
1915-399-403; 1916-468-473; 1917-402-406; 1918-422-427;
1919-317-320; 1920-265,299-303; 1921-277,302-307; 1922-284,
313-316; 1923-311,338-342; 1924-301,327-331; 1925-336,382-384;
1926-341,384-387; 1927-370,418-421; 1928-392,452-455;
1929-404,459-462; 1930-318,391-394; 1931-178,220-221;
1932-228,266-267; 1933-277,330-331; 1934-G2,G22-G23;
1935-G2,G20-21; 1936-G4,G35-G37; 1937-G5,G24-G26;
1938-G4,G26-G29; 1939-115,136-139; 1940-101,123-125;
1941-96,116-118; 1942-94,114-116; 1943-89,111-113;
1944-86,118-121; 1945-137,159-161; 1946-216,236-238;
1947-236,244,253-255; 1948-202,204,221; 1949-276,278,297-298;
1950-242,260-262; 1951-247,249,270; 1952-284,286,306-307;
1953-224,226
EMPR COAL ASS RPT *49, *53, *54, *92, 854
EMPR P 1986-3, p. 30
EMPR PF (James, A.R.C. (1974), letter to J.T. Fyles)
GSC MAP 47-22; 17-1968; 1386A
GSC OF 463
GSC P *70-53; 68-50
RBCM DISCOVERY Vol. 27, No. 3, Sept. 1999
Times Colonist Islander, September 6, 1998, pages 8,9

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1986/05/16 REVISED BY: EVFK FIELD CHECK: N

MINFILE NUMBER: **092F 316** NATIONAL MINERAL INVENTORY:

NAME(S): **CHUTE CREEK**

STATUS: Developed Prospect MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 52 32 N NORTHING: 5527580
LONGITUDE: 125 24 36 W EASTING: 326846
ELEVATION: 579 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on test pit (Coal Assessment Report 701, Figure 5.3).

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Flora

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	

LITHOLOGY: Coal
Sandstone
Carbonaceous Shale
Shale
Siltstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: HVol Bituminous

INVENTORY

ORE ZONE: SEAM REPORT ON: Y

CATEGORY: Combined YEAR: 1985
QUANTITY: 3344600 Tonnes

COMMODITY	GRADE
Coal	100.0000 Per cent

COMMENTS: Open pit and underground mineable reserves (measured, indicated and inferred) of high volatile B bituminous rank thermal coal.
REFERENCE: Coal Assessment Report 701, page 48.

CAPSULE GEOLOGY

The Chute Creek coal prospect is situated 17 kilometres southwest of Campbell River, 5 kilometres southeast of the Quinsam coal mine (092F 319).

Four coal seams (Seams A, B, C and D) developed in an 8 to 10.6 metre thick zone of interbedded sandstone, siltstone, shale and carbonaceous shale of the Upper Cretaceous Comox Formation (Nanaimo Group) underlie a 1000 metre by 2000 metre area between Chute Creek and Woodhus Creek. The seams likely correlate with the number three seam (zone) of the Quinsam mine. The strata dip gently northward, similar to the prevailing slope of the local topography. The deposit is cut by three steep normal faults with displacements of between 10 and 36 metres. The four seams range in thickness from 0.36 to 1.15 metres with the upper most seam being the thickest (0.89 to 1.15 metres). Open pit and underground mineable reserves (measured, indicated and inferred) are as follows (Coal Assessment Report 701, page 48) (in tonnes):

Seam	Reserves
A	1,928,500
B	529,400

CAPSULE GEOLOGY

C 414,800
D 471,900

This thermal coal is of high volatile B bituminous rank, with a dry, ash free heat content of 8038 calories per gram. Sulphur in the four seams varies from 0.47 per cent to 5.63 per cent, with the A Seam containing 0.88 per cent to 4.54 per cent sulphur. Free swelling indices range from 0.5 to 4.

This deposit was discovered by Sulpetro Minerals in 1982. Nuspar Resources Ltd. carried out mapping, trenching and 1013 metres of rotary and core drilling in 1984 and 1985.

In 1985, combined (measured, indicated and inferred) reserves at Chute Creek were approximately 3,344,600 tonnes of high volatile B bituminous rank thermal coal (Coal Assessment Report 701, page 48).

BIBLIOGRAPHY

EMPR AR 1964-157
EMPR BULL 1941-14
EMPR COAL ASS RPT 43, 44, *45, 67, *701
EMPR INF CIRC 1989-5; 1989-22
EMPR FIELDWORK 1987, pp. 435-450; 1988, pp. 543-552,559-563
EMPR OF 1992-1
EMPR P 1989-1
GSC BULL 172
GSC MAP 49-159; 2-1965; 17-1968; 1386A
GSC OF 9; 61; 463
GSC P 66-1; 68-50; 70-53; 71-36; 72-44; 89-4; 89-1E, p. 197
GSC RPT 1871, 1872
GSC SUM RPT 1924 Part A, pp. 106-144; 1925 Part A
Jambor, J.L. (1960): Vanadium Bearing Interlava Sediment from the Campbell River Area, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1986/05/01 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1990/05/21 REVISED BY: PSF FIELD CHECK: Y

MINFILE NUMBER: **092F 317**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANDERSON LAKE**, BROWNS LAKE

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11E
BC MAP:
LATITUDE: 49 42 29 N
LONGITUDE: 125 10 35 W
ELEVATION: 562 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508445
EASTING: 343088

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Faulted
COMMENTS: The beds appear to strike approximately northwest and dip towards the northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	

LITHOLOGY: Coal
Sandstone
Shale
Conglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: HVol Bituminous

INVENTORY

ORE ZONE: ANDERSON LAKE
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1986
QUANTITY: 3301844 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: High volatile bituminous coal; Areas A and B combined.
REFERENCE: Coal Assessment Reports 37, 49, 54.

CAPSULE GEOLOGY

At Anderson Lake, up to 10 coal seams are present in the Upper Cretaceous Comox Formation (Nanaimo Group). The coal occurs in seams approximately 0.4 to 5.0 metres thick which are interbedded with shale and sandstone. Seam thicknesses are laterally variable and splitting occurs in places as a result of faulting. Average seam thicknesses in areas A and B (seams greater than 0.3 metres) are 0.92 and 0.87 metres respectively. Average overburden thicknesses are 11.9 and 9.0 metres respectively.

The dominant structures in the area are faults which range from north-northeast trending through approximately north to west-northwest trending, and are predominantly normal faults. In many areas Comox Formation sediments are uplifted in association with lateral and radial faults close to Tertiary intrusions. A number of the upper coal beds have been subsequently eroded from these areas. Strata appears to generally strike northwest and dip towards the northeast.

Two zones of economic interest, Areas A and B, were designated and contain indicated reserves of 1,814,200 tonnes and 1,487,644 tonnes of high volatile bituminous coal, respectively. Total indicated reserves (Areas A and B) are 3,301,844 tonnes coal.

BIBLIOGRAPHY

EMPR COAL ASS RPT *37, *49, *54
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1986/05/15 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 318**

NATIONAL MINERAL INVENTORY:

NAME(S): **OYSTER RIVER**, OYSTER-TSOLUM CREEK, TSOLUM CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W
BC MAP:
LATITUDE: 49 53 11 N
LONGITUDE: 125 17 05 W
ELEVATION: 430 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5528502
EASTING: 335882

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	

LITHOLOGY: Coal
Shale
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Georgia Depression
RELATIONSHIP: Post-mineralization
GRADE: HVol Bituminous

CAPSULE GEOLOGY

Within the Oyster River to Tsolum River area four formations and numerous members of the Nanaimo Group may be recognized. The basal Comox Formation contains three members. Coals of economic interest are concentrated in the middle Cumberland member. Towards the north of the area a shallow synclinal feature, striking northwest, is observed in the sediments. Coal seams outcrop along higher elevations to the southwest where they dip to the northeast at 10-15 degrees and reach depths of 600 metres in the area of the eastern coastline. To the east, near the coast, the sediments dip at 0-3 degrees. A major wrench fault with lateral and downward movement has been identified along the western edge of the area. Several high angle east-dipping faults have been identified by a high-resolution seismic program and by drilling. The contact of the Nanaimo Group with underlying pre-Cretaceous basement rocks, the Karmutsen Formation, is unconformable and in places is marked by substantial relief.

The presence of four seams has been identified by drillholes in the area. The number 1 seam occurs near the top of the Dunsmuir Member of the Upper Cretaceous Comox Formation. In this area it consists mainly of carbonaceous shale and is 0.5 - 0.8 m thick. The middle Cumberland Member contains seams 2, 3 and 4. The underlying Benson Member consists chiefly of conglomerate and sandstone.

The Cumberland Member consists mainly of carbonceous mudstone and siltstone with thick coal beds and occasional channel-sands. Coals in the Cumberland Member range in thickness from 0.8 m to 3.3 m for seam 2; 1.5 to 3.3 m for seam 3; and up to 1.4 m for seam 4. Seam 4 may be missing entirely. Seams 2 and 3 contain thick shale partings in the thicker seam intervals. In the Oyster River - Tsolum River area the Cumberland Member is 50 to 95 m thick, thickening to the southwest and thinning to the northeast. Thickness of this member is controlled mainly by the paleotopography and by postdepositional erosion at its contact with the overlying Dunsmuir Member.

Samples of coal from outcrop along the Oyster River had float/sink tests performed. A specific gravity of 1.4 produced a coal of less than 10 per cent ash and less than 1 per cent sulfur with heating values over 7,000 cal/gm and yields of about 70 per cent. Positive seam identification was not possible. The number 2 seam from drillcore adjacent to the Oyster River had float/sink tests with a

CAPSULE GEOLOGY

specific gravity of 1.45, ash of less than 10 per cent and sulfur of 1 per cent. Heating value was over 7300 cal/gm (high volatile B bituminous coal) with a yield of 85 per cent, and an F.S.I. of 2 1/2.

BIBLIOGRAPHY

EMPR COAL ASS RPT *50, 62, *92, 822, 835
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1986/05/15 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1990/05/01 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 319** NATIONAL MINERAL INVENTORY:

NAME(S): **QUINSAM**, HILLSBOROUGH, COMOX NO. 1, COMOX NO. 3, QUINSAM COAL

STATUS: Producer Open Pit Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W 092F13E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 56 07 N NORTHING: 5534401
LONGITUDE: 125 29 15 W EASTING: 321499
ELEVATION: 1050 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Middle Quinsam Lake area is located 10 kilometres west-southwest of Campbell River.

COMMODITIES: Coal Fireclay Clay

MINERALS
SIGNIFICANT: Coal Kaolinite
MINERALIZATION AGE: Upper Cretaceous
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Flora

DEPOSIT
CHARACTER: Massive Stratabound
CLASSIFICATION: Fossil Fuel Sedimentary Industrial Min.
TYPE: A04 Bituminous coal E07 Sedimentary kaolin
B06 Fireclay
SHAPE: Tabular
MODIFIER: Faulted
COMMENTS: A series of downfaulted blocks trend northwest and a series of secondary east trending faults are also present. The strata trends northwest and dips 3 to 17 degrees northeast.
A series of downfaulted blocks trend northwest and a series of secondary east trending faults are also present. The strata trends

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	

DATING METHOD: Fossil

LITHOLOGY: Coal
Claystone
Shale
Mudstone
Carbonaceous Siltstone
Siltstone
Sandstone
Conglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: HVol Bituminous
COMMENTS: High volatile bituminous A rank coal.

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Possible YEAR: 1995
QUANTITY: 140000000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Estimated geologic resource.
REFERENCE: Northern Miner - May 29, 1995.

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Proven YEAR: 2000
QUANTITY: 33300000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Reserves at January 1, 2000.
REFERENCE: Information Circular 2001-1, page 6.

CAPSULE GEOLOGY

The Quinsam area is underlain by the Upper Cretaceous Nanaimo Group (Comox Formation) and contains three separate sedimentary basins containing coal-bearing strata. The basins are termed Middle Quinsam Lake area, Lower Quinsam Lake area and the Chute Creek area. The latter is described separately as Chute Creek (092F 316).

Structurally, the area consists of a series of downfaulted blocks of Comox Formation sediments which trend northwest and dip 3 to 17 degrees northeast. Several secondary, west trending transverse faults branch off the main southeast trending faults. Minor high-angle reverse faulting occurs on the western margin of the basin where the Comox Formation is in contact with granites of the Early to Middle Jurassic Island Plutonic Suite.

The most important of the coal bearing strata is in the Middle Quinsam Lake area. In the Middle Quinsam area, three coal seams of high volatile bituminous A rank coal occur interbedded with mudstone, siltstone and sandstone. Two lagoonal cycles of deposition have been identified. The lower cycle, with a total thickness of 30.5 to 48.8 metres, contains the #1 coal seam and extends up towards the base of the #2 seam. The second cycle contains the #2 seam and the #3 seam.

The #1 seam shales out along high points in the underlying, irregular paleosurface. The seam consists of a zone 3.0 to 4.9 metres thick containing 2.0 to 3.7 metres of coal separated by two or three mudstone partings and bone layers, all less than 0.3 metre thick. The #1 seam is thickest in the central part and gradually thins and pinches out along a northern depositional margin. In the south-central part of the area, a thin rider seam, 0.5 to 0.8 metre wide, lies 0.3 to 3.7 metres above the #1 seam.

The #2 seam occurs 18.2 to 24.4 metres above the #1 seam and comprises a zone with a maximum thickness of 1.8 metres that contains between 0.3 and 1.4 metres of coal, averaging 0.6 metre. The seam is generally split by a thin mudstone parting. The upper part of the seam increases in thickness towards the north of the occurrence.

The #3 seam lies 30.5 to 39.6 metres above the #2 seam and consists of a zone 3.7 to 4.6 metres thick which contains 1.8 to 3.0 metres of coal. The coal occurs in 4 bands separated by mudstone partings. The #3 seam has extreme lateral variability, and was explored mainly in the area south of Quinsam River.

Average analyses for the #1, #2 and #3 seams in the northern part of the area near Middle Quinsam Lake are 2.63, 2.58 and 2.19 per cent moisture, 16.13, 16.44 and 23.01 per cent ash, and 0.56, 3.99 and 3.51 per cent sulphur respectively. The dry, ash-free heat value of the coal averages 33.5 megajoules per kilogram (Geological Survey of Canada Paper 89-4, page 33).

At Middle Quinsam, measured geological (proven) in-place reserves of coal are 18,350,633 tonnes. At Quinsam East, combined (proven and probable) in-place reserves are 8,934,935 tonnes (Coal Assessment Report 67, page 3).

The coal in this area is dirty and split into three major tongues. Average analyses range from 9.05 to 14.73 per cent ash and 0.65 to 2.91 per cent sulphur and contains an average heat value of 28.64 megajoules per kilogram (Paper 1986-3).

Proven and probable reserves of thermal coal at Quinsam exceed 37 million tonnes. An additional geologic resource is estimated at 140 million tonnes (Northern Miner - May 29, 1995).

Quinsam Coal Corporation produced about 600,000 tonnes of thermal coal in 1995, up from 550,000 tonnes in 1994. Production in 1996 was 903,000 tonnes. The wash plant expansion originally scheduled for mid-1996, is currently in progress as a result of the strong demand from Asia Pacific countries. A successful exploration and drilling program in 1995 has increased reserves to more than 40 million tonnes from the previous level of 35 million tonnes (Information Circular 1996-1, page 8).

In the first six months of 1997, Hillsborough Resources produced 730,000 tonnes of raw coal and 535,000 tonnes of clean coal.

In 1997 Quinsam Coal Corporation produced approximately 1.1 million tonnes of clean coal. The company spent approximately $440,000 on exploration in the vicinity of the 4 South and 2 North mining leases. The definition of existing reserves was improved. A few drill holes were completed to delineate new reserves; results are being evaluated. Coal is being shipped from the Middle Point loadout, north of Campbell River. This facility can store 12,000 tonnes of coal and load at the rate of 1800 tonnes per hour. Quinsam Coal Corporation is 63 per cent owned by Hillsborough Resources Ltd.

In April 1998, Balaclava Enterprises Limited gained control of Hillsborough Resources Limited which, in turn, controls Quinsam Coal Corporation. The operation has a resource of approximately 44 million tonnes (Exploration in BC 1998, page 48). It had planned to produce 1.2 million tonnes in 1998, however it encountered stability problems underground and also faced deteriorating economic conditions

CAPSULE GEOLOGY

in Asia. By year's end, the mine had produced 702,450 tonnes of clean coal, of which approximately 88 per cent had come from the 2N production block. The remainder came from 4S area.

Z.D. Hora of the B.C. Geological Survey Branch has determined that a 1-metre thick seam of gritty claystone (mudstone) occurring at the footwall of the main #1 coal seam has properties of moderate to high grade refractory clay. The laboratory testing on sample material proved the following properties (Letter by Z.D. Hora, August 7, 1987):

1) XRD (x-ray diffraction)- kaolinite > quartz > pyrite > minor chlorite > trace calcite (where ">" means greater than);
2) calcined specimen in reduction environment at 900 degrees Celsius- porous, non-vitrified, tan-colour;
3) calcined specimen in oxydation environment at 1200 degrees Celsius- vitrious yellow with brown spots;
4) PCE (pyrometric cone equivalent - refractoriness)- 31 1/2 (1699 degrees Celsius or 3090 degrees Farenheit), coffee brown colour.

Quinsam Coal shut down the mine on May 20, 1999 and reopened June 15, 1999.

Reserves at January 1, 2000 are 33.3 million tonnes (Information Circular 2001-1, page 6).

In 2001, Hillsborough Resources Ltd. discovered additional reserves of low sulphur coal as a result of a 10 hole drill program. The reserve are to the southeast of the 2N mining area but separated from it by the valley of the Quinsam River; this area is termed the 7-South Area.

BIBLIOGRAPHY

EMPR AR 1964-157
EMPR ASS RPT 18870, 24628
EMPR BULL 1941, p. 14
EMPR COAL ASS RPT 64, *66, *67, 92, 815, 821, 830
EMPR ENG INSP Annual Report 1989, 1990
EMPR EXPL 1975-E216; 1978-E303; 1992-6,49; 1993-9,55; 1994-68,69; 1995-8,75; 1996-A11,F5-F6; 1997-57; 1998-48-49
EMPR FIELDWORK *1976, pp. 23-25; *1978, p. 66; *1987, pp. 435-450; *1988, pp. 543-552,559-563; 1989, pp. 431-437; 1993, pp. 215-224
EMPR INF CIRC 1989-5; 1992-31, p. 6; 1993-1, p. 6; 1993-13, p. 9; 1994-1, p. 9; 1994-19, p. 8; 1995-1, p. 8; 1995-9, p. 8; 1996-1, p. 8; 1997-1, p. 11; 1998-1, p. 11; 2000-1, p. 6
EMPR MAP 65 (1989)
EMPR MIN STATS 1990, pp. 40,46,57; 1980-1992, p. 20; 1980-1993, p. 30; 1980-1994, p. 34
EMPR MINING 1986-1987, p. 75; 1988, p. 76
EMPR OF 1992-1; *1994-16
EMPR P *1986-3, pp. 30-31
EMPR PF (Eastwood, G.E.P. (1977?): Draft Report on Quinsam Area in General File, (092F); *Letter from Z.D. Hora, August 7, 1987)
GSC BULL 172
GSC MAP 49-159; 2-1965; 17-1968; 1386A
GSC OF 9; 61; 463
GSC P 66-1; 68-50; 71-36; 89-4; 89-1E, p. 197
GSC RPT 1871; 1872
GSC SUM RPT 1924 Part A, pp. 106-144; 1925 Part A
GCNL #110(Jun.7), 1990; #44(Mar.3), 1992; #92 (May13), 1994; #62 (Apr.1), #225 (Nov.24), 1997; #15 (Jan.22), #64 (Apr.1), #98 (May 22), #140(July 22), #157(Aug.17), #178(Sept.16), #221 (Nov.18), 1998; #64(Apr.1), 1999; #208(Oct.31), 2000
MIN REV Fall 1998, p. 57
N MINER Jul.16, 1990; Apr.8, 1991; Feb.17, Mar.9, June 1, 1992; May 29, 1995; Aug.18, 1997; Feb.2, Aug.24, Sept.14, Nov.23, 1998; May 31, June 21, Sept.13, 1999; June 5, 2000
STOCKWATCH Oct.4, 2001
WWW http://infomine.com/index/properties/QUINSAM_COAL.html; http://hillsboroughresources.com
Hillsborough Resources Limited, 1995, 1996, 1997 Annual Reports
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 129,160,165
Times Colonist, January 17,18, June 13, November 21, 1998; June 15, 1999

DATE CODED: 1986/05/15 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1998/11/13 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 320**

NATIONAL MINERAL INVENTORY:

NAME(S): **BENSON MOUNTAIN**

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E
BC MAP:
LATITUDE: 49 07 29 N
LONGITUDE: 124 02 15 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Centre of north and south blocks.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5441839
EASTING: 424305

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: The area consists mainly of gently east dipping strata within a number of gently folded and tilted fault blocks. Two sets of faults trending northwest and northeast are downthrown to the northeast and southeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Extension	

LITHOLOGY: Coal
Sandstone
Conglomerate
Shale

HOSTROCK COMMENTS: The coal is part of the Wellington Seam in the Early Campanian Northfield Member, Extension Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: HVol Bituminous
COMMENTS: High volatile bituminous A.

INVENTORY

ORE ZONE: BENSON MOUNTAIN
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1986
QUANTITY: 4768000 Tonnes

COMMODITY	GRADE
Coal	100.0000 Per cent

COMMENTS: High volatile bituminous A rank coal. Total indicated reserves.
REFERENCE: Coal Assessment Report 169.

CAPSULE GEOLOGY

At the Benson Mountain occurrence, six coal seams are present in the lower part (the Early Campanian Northfield Member) of the Upper Cretaceous Extension Formation, Nanaimo Group. Only one seam, the Wellington seam, is of any significance. The seam averages 2.56 metres in thickness and the coal is high volatile bituminous A in rank. The seam occurs on Wolf Mountain and has been mined (092F 322) out in the Whisky Lake area. Mining has also been carried out in the McKay Lake area. The roof and floor of the Wellington seam in this area is a coarse sandstone. In addition to the Wellington seam, 5 other seams occur in the area. They are thin and tend to be of poor quality. Rapid lateral thickness changes are common. Refer to Bebans mine (092GSW026) for an explanation on the Wellington Seam in the Nanaimo Coalfield.

Total indicated resources at Benson Mountain (Wellington seam) are 4.768 million tonnes of high volatile bituminous A rank coal; 2.944 million tonnes south of the fault and 1.824 million tonnes north of the fault (Coal Assessment Report 169). The coal is low in

CAPSULE GEOLOGY

sulphur (0.33 to 0.56 per cent), has ash contents ranging from 5.85 to 20.65 per cent, fixed carbon from 46.18 to 57.04 per cent, volatile matter 31.40 to 36.49 per cent and a calorific content ranging from 11,401 to 13,416 BTU per pound. The resource potential of the north block and the remainder of the south block is very limited.

Structurally, the area is characterized by gently dipping (mainly to the east) strata within a number of gently warped and tilted fault blocks. Faults are the most prominent structural elements in the area. They trend northwest and northeast and are generally downthrown to the northeast and southeast respectively. The northwest trending faults are considered to be longitudinal normal faults (Muller and Jeletzky, 1970).

Few folds are present in the area. A large open southeast trending syncline, east of Boomerang Lake and a minor open anticline to the east are the only folds within the north block. In the south block a southeast trending faulted syncline is present in the Whisky Lake area. To the east of the syncline is the large northwest trending extension anticline.

BIBLIOGRAPHY

EMPR COAL ASS RPT 168, *169
EMPR FIELDWORK 1987 pp. 441-450; 1988 pp. 553-558
GSC MAP 17-1968; 1386A
GSC MEM *51
GSC OF 463
GSC P 68-50

DATE CODED: 1986/05/14 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1986/05/14 REVISED BY: EVFK FIELD CHECK: N

MINFILE NUMBER: **092F 321**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOLLY (L.56)**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 56 N
LONGITUDE: 124 34 04 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pit in the southeast corner of Lot 56, 1 kilometre south of Priest Lake, 3 kilometres south-southwest from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510038
EASTING: 387021

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Pyrite Gold Chalcopyrite
COMMENTS: Rare native gold.
ASSOCIATED: Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Basalt
Diorite Dike
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Bulk Sample

YEAR: 1987

COMMODITY	GRADE	
Gold	1.1600	Grams per tonne

COMMENTS: Average grade over 1.7 metres.
REFERENCE: Assessment Report 16702.

CAPSULE GEOLOGY

The Holly occurrence is underlain to the east by massive limestone of the Upper Triassic Quatsino Formation in fault contact (Holly fault) with pillow basalt breccias and amygdaloidal basalt of the Upper Triassic Karmutsen Formation, both of the Vancouver Group. Diorite dykes intrude along fracture and fault zones.

Mineralization consists of gold-bearing pyritic quartz and quartz-calcite vein structures which comprise predominantly northwest but also northeast to east striking, steeply dipping complex zones in fractured, brecciated and sheared basalt. Within these structures are generally one main and up to two or three narrower intervals where the basalt is intensely brecciated and quartz-flooded with pyrite, rare native gold and occasionally chalcopyrite. Silver values up to 15.76 grams per tonne have also been reported from drill core assays (Assessment Report 13731).

Trenching has exposed a major vein structure for 90 metres along strike and is 2.5 to 13 metres wide. The main interval of quartz flooding varies from 0.13 to 4.65 metres wide with an average width of 1.2 metres. A secondary vein structure is 50 metres northeast of and subparallel to the main structure and has been exposed for 100 metres along strike. It varies from 0.5 to 7.4 metres wide.

A 453 tonne bulk sample of the southeastern most 21 metres of the major vein structure averaged 1.16 grams per tonne gold over 1.7

CAPSULE GEOLOGY

metres (Assessment Report 16702).

BIBLIOGRAPHY

EMPR ASS RPT *13731, *16702
EMPR FIELDWORK 1989, pp. 257-270
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
IPDM May/June 1985
GCNL #38, 1985
N MINER Feb.28, July 4, 1985

DATE CODED: 1986/05/22 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/03/19 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 322** NATIONAL MINERAL INVENTORY:

NAME(S): **WOLF MOUNTAIN**

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 08 47 N NORTHING: 5444238
LONGITUDE: 124 01 40 W EASTING: 425047
ELEVATION: 780 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Wolf Mountain is located approximately 4.5 kilometres south-southeast Mount Benson.

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Flora

DEPOSIT
CHARACTER: Massive Stratabound
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Tabular

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Extension	

DATING METHOD: Fossil
MATERIAL DATED: Flora

LITHOLOGY: Coal
Sandstone
Shale

HOSTROCK COMMENTS: The coal is part of the Wellington seam in the Early Campanian Northfield Member, Extension Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: HVol Bituminous

INVENTORY

ORE ZONE: WOLF MOUNTAIN REPORT ON: Y

CATEGORY: Measured YEAR: 1982
QUANTITY: 3160000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Total in-situ resource from seam W.1.
REFERENCE: Coal Assessment Report 177.

CAPSULE GEOLOGY

The Wolf Mountain deposit is underlain by the Upper Cretaceous Nanaimo Group (Extension Formation). The main Wellington coal seam, in the Early Campanian Northfield Member, is of high volatile bituminous rank and was mined at Wolf Mountain. Seam thickness is variable. Rolls, small faults, shale partings and other irregularities are common. Refer to Bebans mine (092GSW026) for a detailed description of the Wellington seam.

The seam occurs in a northwest trending synclinal structure near the base of the formation and is underlain by sandstone and overlain by shale and fine conglomerate.

Measured resources are 3.16 million tonnes of total in-situ coal from seam W.1 (Coal Assessment Report 177).

Wolf Mountain produced 83,900 tonnes of thermal coal from 1982 to 1986.

BIBLIOGRAPHY

EMPR BULL 37
EMPR COAL ASS RPT 177, 703, 708
EMPR FIELDWORK 1987, pp. 441-450; 1988, pp. 553-558

BIBLIOGRAPHY

EMPR IR 1986-1, p. 104
EMPR MAP 65 (1989)
EMPR MIN STATS 1985, p. 42
EMPR MINING 1981-1985, p. 78; 1986-1987, p. 76
EMPR OF 1988-24; 1989-6; 1992-1
EMPR P 1987-1, p. 223; 1988-1, p. 81; 1989-1, p. 61
GSC MAP 27-1963; 49-1963; 17-1968; 1386A
GSC OF 9; 61; *463; *1272
GSC P 47-22; 66-1; 68-50; 79-30; 89-4; 89-1E, p. 197
GSC SUM RPT 1911
CIM Transactions No.50, 1947

DATE CODED: 1986/05/14 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/08/15 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 323**

NATIONAL MINERAL INVENTORY:

NAME(S): **CIH**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07W
BC MAP:
LATITUDE: 49 26 57 N
LONGITUDE: 124 51 30 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the northeast slopes of Mount Curran (Assessment Report 18747).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5479049
EASTING: 365307

COMMODITIES: Gold Copper Zinc

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Arsenopyrite Sphalerite Stibnite Erythrite Cinnabar
ASSOCIATED: Calcite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Massive Disseminated
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins
COMMENTS: Mineralized felsic dykes.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Felsic Dike

HOSTROCK COMMENTS: Mineralization occurs in felsic dykes cutting Karmutsen basalt.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1984

COMMODITY	GRADE	
Gold	7.5400	Grams per tonne
Copper	0.2000	Per cent

REFERENCE: Assessment Report 18747.

CAPSULE GEOLOGY

The area is underlain by basalts, breccias, diabase and gabbro of the Upper Triassic Karmutsen Formation, Vancouver Group. A fault zone, cutting through the strata, has resulted in the formation of a canyon 5 metres wide and 15 metres deep, with a creek flowing within. In this canyon an intrusive stockwork is found, ranging from felsite to rhyolite in composition. The width of the stockwork varies from 2.4 to 5 metres and outcrops in the canyon for about 100 metres. It is cut off at one end by a fault and at the other end by a "dyke of alteration rock".

This stockwork is mineralized with scattered to massive pyrite, chalcopyrite, arsenopyrite, sphalerite, calcite, quartz, stibnite, erythrite and cinnabar. The "dyke of alteration rock" also carries scattered pyrite, chalcopyrite and cinnabar. One sample assayed 7.54 grams per tonne gold, 0.2 per cent copper, and 23 per cent arsenic (Assessment Report 18747).

BIBLIOGRAPHY

EMPR ASS RPT *14441, *18747
EMPR EXPL 1986-C175
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

BIBLIOGRAPHY

Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1986/09/22 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/03/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 324** NATIONAL MINERAL INVENTORY:

NAME(S): **LANTZVILLE**, LANTZVILLE COLLIERIES, NO. 1, LILA, DIAMOND JUBILEE

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F08E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 15 17 N NORTHING: 5456335
LONGITUDE: 124 04 53 W EASTING: 421309
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The mine is located west-northwest of Lantzville and the Nanoose mine (092F 326), on the south shore of Nanoose Bay.

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: The area is cut off to the south and west by a northwest trending fault. The strata dips approximately 10 degrees northeast, are cut by some small faults, and are folded on a minor scale.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Extension	

LITHOLOGY: Coal
Sandstone
Shale

HOSTROCK COMMENTS: The coal is part of the Wellington Seam in the Early Campanian Northfield Member, Extension Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage

CAPSULE GEOLOGY

The Wellington seam, in the Early Campanian Northfield Member of the Upper Cretaceous Extension Formation (Nanaimo Group), is the main coal seam in the area. The seam varies from 0.9 to 1.2 metres in thickness and contains an irregular shale parting 0.6 to 1.5 metres thick. The Little Wellington seam (average thickness of approximately 55 centimetres) occurs approximately 11 metres above the main seam. The coal seams, although thin, are of good quality, and are interbedded with shale and sandstone. Refer to the Bebans mine (092GSW026) for a detailed description of the Wellington seam.

The outcrop area is bounded to the south and west by a northwest trending fault (down thrown to the northeast). The strata dips gently northeast approximately 10 degrees.

BIBLIOGRAPHY

EMPR AR 1927-370,430; 1928-392,464; 1929-404,464; 1930-318,399;
1931-178,219; 1932-228,264; 1933-277,327; 1934-G2,G24;
1935-G2,G22; 1936-G4,G37; 1937-G5,G27; 1938-G4,G31;
1939-A115,A135; 1940-A101,A122; 1941-A96,A115; 1942-A94,A113;
1943-A111
EMPR COAL ASS RPT *92
EMPR FIELDWORK 1987 pp. 441-450; 1988 pp. 553-558
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P *47-22; *70-53; 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1986/05/09 REVISED BY: EVFK FIELD CHECK: N

MINFILE NUMBER: **092F 325** NATIONAL MINERAL INVENTORY:

NAME(S): **LITTLE ASH**, JORDAN

STATUS: Past Producer Open Pit Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 11 59 N NORTHING: 5450182
LONGITUDE: 124 02 35 W EASTING: 424014
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The mine is located 2.4 kilometres west-southwest of Wellington, to the west of the North Wellington mines (092F 312).

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: Beds generally strike northwest and dip northeast but are locally folded. Strata are cut by northwest and north-northeast trending faults.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Extension	

LITHOLOGY: Coal
Shale
Sandstone

HOSTROCK COMMENTS: The coal is part of the Wellington Seam in the Early Campanian Northfield Member, Extension Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: HVol Bituminous

CAPSULE GEOLOGY

The coal mined from the Little Ash mine is from the main Wellington Seam which occurs at the base (in the Early Campanian Northfield Member) of the Upper Cretaceous Extension Formation, Nanaimo Group. The seam is on average 2 metres thick, is underlain by sandstone and overlain by sandy shale, sandstone or conglomerate. Variations in thickness and quality of the seams are common. Refer to the Bebans mine (092GSW026) for a description of the Wellington seam.

The beds generally strike northwest to southeast and dip towards the northeast, however, locally at the Little Ash mine, the Wellington seam exhibits some small folds. The mine slope/adit is located at the northwest end of a faulted syncline which is separated from another syncline to the northeast by a narrow anticline. Two main sets of faults trend northwest and north-northeast.

BIBLIOGRAPHY

EMPR AR 1928-392,469-470; 1929-404,466; 1930-318,398; 1931-178,219
EMPR FIELDWORK 1987 pp. 441-450; 1988 pp. 553-558
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P *47-22; 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1986/05/13 REVISED BY: EVFK FIELD CHECK: N

MINFILE NUMBER: **092F 326** NATIONAL MINERAL INVENTORY:

NAME(S): **NANOOSE**, LANTZVILLE, WELLINGTON, NANOOSE-WELLINGTON

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F08E 092F01E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 15 05 N NORTHING: 5455954
LONGITUDE: 124 04 17 W EASTING: 422032
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The mine is located slightly west of Lantzville and southeast of the Lantzville mine (092F 324).

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: The coal seam strikes predominantly west-northwest and dips approximately 10 degrees north-northeast. The area contains a number of small north-northwest trending faults and minor folds.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Extension	

LITHOLOGY: Coal
Sandstone
Shale

HOSTROCK COMMENTS: The coal is part of the Wellington Seam in the Early Campanian Northfield Member, Extension Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage

CAPSULE GEOLOGY

The coal was mined from the Wellington Seam in the Early Campanian Northfield Member of the Upper Cretaceous Extension Formation (Nanaimo Group). The seam is very irregular and is split into a lower and an upper portion by a rock parting ranging from 0 to 2.2 metres (average 1 metre) in thickness. The upper coal averages 25 centimetres thick while the lower portion of the seam averages 55 centimetres thick. The Wellington Seam is underlain by east Wellington sandstone and is overlain by conglomerate. Refer to the Bebans mine (092GSW026) for a description of the Wellington Seam.

The seam dips approximately 10 degrees north-northeast striking west-northwest, and extends approximately 1.2 kilometres along strike and 0.55 kilometres downdip. A further 0.8 to 1.2 kilometres of Wellington seam extends beneath the sea.

The area contains a number of small north-northwest trending faults.

BIBLIOGRAPHY

EMPR AR 1874-16; 1897-626; 1916-467; 1917-399-400; 1918-420-421;
1919-315; 1920-265,281-283; 1921-277,289-290; 1922-284,298-299;
1923-311,323-324; 1924-301,313-314; 1925-336,393-394; 1926-341,399
EMPR COAL ASS RPT *92
EMPR FIELDWORK 1987 pp. 441-450; 1988 pp. 553-558
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P *47-22; *70-53; 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1986/05/09 REVISED BY: EVFK FIELD CHECK: N

MINFILE NUMBER: **092F 327**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANGEL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09E 092F09W
BC MAP:
LATITUDE: 49 34 39 N
LONGITUDE: 124 15 03 W
ELEVATION: 605 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Diamond-drill hole 1 collar (1985), in the southern half of Texada Island 5.5 kilometres south-southeast from the summit of Mount Davies, adjacent to a main road bisecting the middle of the island (Assessment Report 14916).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5492408
EASTING: 409574

COMMODITIES: Gold, Copper, Silver

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite
ASSOCIATED: Quartz, Limonite, Carbonate
ALTERATION: Silica, Quartz, Limonite, Carbonate, Ankerite, Chlorite, Hematite, Malachite
COMMENTS: Epidote
ALTERATION TYPE: Silicific'n, Carbonate, Chloritic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 150/80W
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Basalt Breccia
Amygdaloidal Basalt
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
YEAR: 1988

COMMODITY	GRADE	
Gold	15.9200	Grams per tonne

COMMENTS: Sample over 1.3 metres.
REFERENCE: Assessment Report 18671.

CAPSULE GEOLOGY

The region is predominantly underlain by basaltic volcanic rocks of the Upper Triassic Karmutsen Formation (Vancouver Group). The basalts range from feldspar porphyritic to augite porphyritic with amygdaloidal and aphanitic varieties also present. Pillow basalt flows are common. Limestone occurs locally as narrow lenses with limited lateral extent.

Several structural features are evident. A wide shear zone trends 120 degrees with related shears at 120 to 130 degrees. A major set of crosscutting lineaments strike 090 to 110 degrees. Rocks adjacent to major shears are often strongly foliated, sheared, jointed, altered and occasionally mineralized.

Locally, chloritic alteration is common in basalts in the Angel occurrence area. Carbonatization (ankerite) is evident along faults or fractures and near limestone. Epidote is pervasive and occurs most often as stringers with/without quartz or as fracture-fillings. Hematite is most evident with manganese staining in sheared basalt

CAPSULE GEOLOGY

and is accompanied by coarse pyrite and by quartz-pyrite mineralization. Silicification occurs as several distinct types. The first is a microscopic silica flood as blebs and veinlets of quartz found over wide areas, usually in the vicinity of major structural features. More intense silica flooding is seen in strongly foliated rocks or within fragments of silicified volcanics in areas of quartz-carbonate breccia. Very late-stage quartz veining crosscuts all earlier types of alteration and mineralization.

The Angel showing is a limonite/silicified basalt breccia with irregular patches of more intense silicification and quartz flooding containing disseminated pyrite. This alteration assemblage is crosscut by quartz veins with traces of malachite and chalcopyrite and a fine fracture coating of carbonate with sparse malachite stain. Areas of unaltered basalt occur within the shear zone and in adjacent outcrops. Shearing is observed at an average orientation of 150 degrees; several subparallel shears also occur. Mineralization appears to cross this trend at 115 to 130 degrees. The mineralized zones lie within one broad shear zone and are not continuous but more likely form an anastomosing network of shear structures.

A trench channel sample over 1.3 metres assayed 15.92 grams per tonne gold (Assessment Report 18671).

BIBLIOGRAPHY

EMPR ASS RPT 14916, 17685, *18671
EMPR EXPL 1986-C176,C177
EMPR PF (GCNL #183,#192,#225, 1989; V STOCKWATCH Sept.12, Oct.3, Nov. 22, 1989)
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

DATE CODED: 1986/11/20 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/02/13 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 328**

NATIONAL MINERAL INVENTORY:

NAME(S): **OKAY MOUNTAIN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 12 29 N
LONGITUDE: 124 19 35 W
ELEVATION: 490 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The licences are located approximately 20 kilometres southwest of Parksville.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5451431
EASTING: 403391

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	

LITHOLOGY: Coal
Sandstone
Siltstone
Shale
Conglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

At the Okay Mountain occurrence, one coal seam, approximately 30 centimetres thick, was encountered in 1 of 5 holes drilled in the area. The coal is interbedded with shale and sandstone of the Upper Cretaceous Comox Formation (Nanaimo Group) and appears to have limited continuity. A sample taken from the drillhole intersection of coal is composed entirely of wood fragments (65 per cent structured wood fragments and 35 per cent charcoal) and probably represents a deposit of rafted wood in a delta plain situation. The coal is ash-rich and contains high silica, sulphur, calcium, titanium, nickel and copper.

The structure in the area is complex and consists of a series of northwest and northeast trending normal faults. Strata trends northeast and dips 3 to 12 degrees southeast in the west and centre of the property. In the south, bedding trends northwest and dips northeast 5 to 12 degrees. At the southeast edge of the property strata strikes north-northeast and dips 5 to 6 degrees northwest. The variations in strike may be fault related or may represent a shallow northeast trending, northeast plunging faulted syncline.

BIBLIOGRAPHY

EMPR COAL ASS RPT *176
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1986/05/08 REVISED BY: EVFK FIELD CHECK: N

MINFILE NUMBER: **092F 329**

NATIONAL MINERAL INVENTORY:

NAME(S): **JO ANNE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11W
BC MAP:
LATITUDE: 49 43 26 N
LONGITUDE: 125 21 19 W
ELEVATION: 1075 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near Divers Lake and on the northwest slope of Mount Brooks (Assessment Report 17046).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510595
EASTING: 330247

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite Chalcopyrite Arsenopyrite
ASSOCIATED: Quartz Calcite Chlorite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Massive
CLASSIFICATION: Epithermal Hydrothermal Epigenetic
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Quartz Diorite Breccia
Diorite
Sandstone
Siltstone
Hornfels

HOSTROCK COMMENTS: Mineralization occurs in both intrusive and sedimentary rocks.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Plutonic Rocks Overlap Assemblage

INVENTORY

ORE ZONE: BRECCIA
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	1.6600	Grams per tonne

REFERENCE: Assessment Report 17096.

CAPSULE GEOLOGY

Upper Cretaceous Nanaimo Group, Comox Formation sediments unconformably overlie Upper Triassic Vancouver Group, Karmutsen Formation basalt. Diorites of the Late Eocene to Early Oligocene Mount Washington Intrusive Suite have intruded along this contact resulting in some hornfelsing of the sediments and the development of diatreme breccias.

Disseminated to massive pyrrhotite, pyrite and chalcopyrite occur in hornfelsed Comox sandstones and siltstones. Crackled quartz diorite locally contains pyrite, arsenopyrite and chalcopyrite disseminated within the porous matrix of the sill-breccia complex, in association with chlorite, quartz and calcite. This cavity filling mineralization is considered to be epithermal in origin and similar in nature to the gold-bearing mineralization at nearby Mt. Washington (See 092F 116).

A sample of siliceous breccia from the Cliff Breccia zone assayed 1.66 grams per tonne gold and greater than 1 per cent arsenic (Assessment Report 17096).

BIBLIOGRAPHY

EMPR ASS RPT 13952, 14595, *14889, 15116, 16542, *17096
EMPR EXPL 1985-C155; 1986-C181; 1987-C154; 1988-C91
EMPR FIELDWORK 1988, pp. 81-91

BIBLIOGRAPHY

GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
PERS COMM Massey, Nick, Feb. 1990 (with respect to Tertiary intrusive nomenclature)
Carson, D.J.T. (1960): Geology of Mount Washington, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
McGuigan, P.J. (1975): Certain Breccias of Mount Washington Property, Vancouver Island, B.Sc. Thesis, University of British

DATE CODED: 1986/11/20 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/03/14 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 330** NATIONAL MINERAL INVENTORY: 092F12 Zn4

NAME(S): **MYRA FALLS (H-W)**, H-W (MYRA FALLS), MYRA FALLS, H-W, H-W MINE, GAP, BATTLE, RIDGE EAST, H-W EXTENSION, 43 BLOCK, 42 BLOCK, GOPHER, GNU, EXTENSION, 6 LEVEL

STATUS: Producer Underground
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12E
BC MAP:
LATITUDE: 49 34 23 N
LONGITUDE: 125 35 30 W
ELEVATION: 0326 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of H-W zone is located 2 kilometres west of the south end of Buttle Lake (Western Miner, May 1983). See also Lynx (092F 071), Myra (092F 072), and Price (092F 073). The H-W includes Lynx production after 1985.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5494390
EASTING: 312633

COMMODITIES: Copper, Zinc, Lead, Gold, Silver, Cadmium

MINERALS

SIGNIFICANT: Chalcopyrite, Sphalerite, Galena, Pyrite, Tennantite, Bornite, Pyrrhotite, Barite
ALTERATION: Sericite, Quartz, Pyrite
ALTERATION TYPE: Sericitic, Silicific'n, Pyrite
MINERALIZATION AGE: Upper Devonian
ISOTOPIC AGE: 370 Ma DATING METHOD: Rubidium/Strontium MATERIAL DATED: Whole rock

DEPOSIT

CHARACTER: Stratiform, Massive
CLASSIFICATION: Exhalative, Volcanogenic, Syngenetic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
SHAPE: Tabular
COMMENTS: Age date from Juras, 1987, page 109 (Ph.D. Thesis).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	Myra	
ISOTOPIC AGE:	370 Ma		
DATING METHOD:	Rubidium/Strontium		
MATERIAL DATED:	Whole rock		
Upper Devonian	Sicker	Price	
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	166 Ma +/- 8 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		
Tertiary			Mount Washington Intrus. Suite
ISOTOPIC AGE:	39 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		

LITHOLOGY: Pyroclastic Rock, Argillite, Andesitic Flow, Breccia, Quartz Feldspar Rhyolite Tuff, Pillow Basalt, Feldspar Pyroxene Andesite Flow, Granitic Dike, Dacite, Rhyolite

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Paper 72-44 and Juras, 1987. Sicker Group is possibly as young as Pennsylvanian.

GEOLOGICAL SETTING

TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional Plutonic Rocks RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Buttle Lake uplift.

INVENTORY

ORE ZONE: MYRA FALLS REPORT ON: Y

CATEGORY: Combined YEAR: 2000
QUANTITY: 7716000 Tonnes

COMMODITY	GRADE	
Copper	1.3000	Per cent
Zinc	6.6000	Per cent

COMMENTS: Proven and probable reserves.
REFERENCE: Boliden Annual Report 2000.

CAPSULE GEOLOGY

The Myra Falls Operation includes the Lynx (092F 071), Myra (092F 072), Price (092F 073) and H-W (092F 330) deposits and associated zones. The H-W volcanogenic massive sulphide deposit occurs within the southern part of the Buttle Lake uplift. This discreet belt of Upper Paleozoic rocks is bounded on the east by Upper Triassic Karmutsen Formation volcanics (Vancouver Group) and on the west by the Early to Middle Jurassic Island Plutonic Suite. The geology of the uplift has recently undergone reinterpretation and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and the new Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, Personal Communication, 1990).

The new Buttle Lake Group consists of: (1) the Lower Permian(?) Henshaw Formation composed of conglomerate, epiclastic deposits and vitric tuffs; and (2) the Lower Permian to Pennsylvanian Azure Lake Formation (formerly Buttle Lake Formation) consisting of crinoidal limestone and minor chert.

The Sicker Group consists of: (1) the Mississippian or Pennsylvanian(?) Flower Ridge Formation largely comprising coarse mafic pyroclastic deposits; (2) the Lower Mississippian(?) Thelwood Formation, a bedded sequence of siliceous tuffaceous sediments, subaqueous pyroclastic deposits and mafic sills; (3) the Upper Devonian Myra Formation consisting of basaltic to rhyolitic flows and volcaniclastic rocks, lesser epiclastic sediments, argillites and cherts, and massive sulphide mineralization; and (4) the Upper Devonian or older Price Formation comprising feldspar-pyroxene porphyritic andesite flows, flow breccias and minor pyroclastic deposits.

The Price Formation correlates roughly with the Nitinat Formation (Sicker Group) in the Cowichan uplift area. The Myra Formation lies at the boundary of the Fourth Lake (formerly Cameron River Formation) and Nitinat formations (Buttle Lake and Sicker groups respectively), and may thus represent the McLaughlin Ridge Formation in the Cowichan uplift (Juras, 1987, page 15). The Flower Ridge and Thelwood formations correlate chronologically but not lithologically with the Fourth Lake Formation, and the Azure Lake Formation correlates with the Mount Mark Formation (Buttle Lake Group).

The Buttle Lake uplift stratigraphy indicates deposition in a rift basin in an island arc environment. It has been intruded by granitic dykes related mainly to the Island Plutonic Suite. A 1-kilometre wide stock of Tertiary intrusives lies about 1 kilometre to the north. This stock (formerly called Catface Intrusions) probably has closest affinity to the new Mount Washington Intrusive Suite of Late Eocene to Early Oligocene age (Nick Massey, Personal Communication, May 1990).

The major occurrences in the uplift lie along a northwest striking, 65 degree southwest to steeply northeast dipping zone that is approximately 6 kilometres long. The rocks have been metamorphosed to lower greenschist facies, and have been deformed along northwest trending subhorizontal open folds. Several west-northwest to north trending faults, with a maximum lateral displacement of 850 metres, are of regional importance. The faults are considered to be post-Mesozoic, and are possibly related to Late Cretaceous uplift. The contact between the Myra Formation and the overlying Thelwood formation is marked by a 2.0 to 40.0 metre wide zone of strong schistosity that may represent an Upper Paleozoic low angle fault.

The Myra Formation, dated at 370 million years (Juras, 1987, page 109) contains all of the massive sulphide horizons of the camp. The Lynx (092F 071), Myra (092F 072) and Price (092F 073) deposits lie at the same stratigraphic level (the "Mine Sequence" of Juras). The H-W horizon lies below them, at the base of the Myra Formation, forming a 200 metre thick unit of dacitic to rhyolitic flows and domes, pyroclastic deposits, argillite and massive sulphide mineralization. Westmin Resources' Myra Falls Operations has developed these deposits as four mines. In 1990, the Lynx and H-W mines fed a 4000-tonne per day mill, the Myra mine is depleted and the Price deposit has yet to go into production.

CAPSULE GEOLOGY

Rocks in the feeder zone below the massive sulphide horizon have undergone sericitization and silicification. Pyrite alteration is evident from disseminated pyrite and pyrite stringer zones.

The lenses of massive sulphides comprise banded chalcopyrite, galena, sphalerite, pyrite and barite, with minor tennantite, bornite and pyrrhotite, and contain gold, silver, and cadmium. The lenses are up to 30 metres thick and pinch out along strike; average thickness is about 18 metres. Pyrite content is much higher than at the other deposits in the area, and averages 70 per cent in the ore grade portion of the mine.

Mineralization in the massive sulphide zone is strongly zoned laterally, with a massive pyrite core containing high copper-zinc to zinc ratios and barite-rich margins with low copper-zinc ratios. The marginal phase contains higher silver and lead than the core zone.

A significant new discovery of massive sulphides (Gap Lens) located underground between the H-W and Lynx mines is believed to be in upper H-W mine stratigraphy. The zone exhibits good stratabound volcanogenic massive sulphide-style and is structurally complicated. Ore mineralogy is very complex (i.e. sphalerite, galena, barite (locally greater than 30 per cent), pyrite, tennantite, chalcocite, bornite and visible electrum). The Gap Lens is 200 by 30 by 60 metres in dimension and is correlative to the HW North Lens trend. Some of the massive sulphide mineralization is caught up in fault slices. The Gap Lens lies stratigraphically above the Battle Lens and is suspected to be a distal facies of the Battle Lens. The Gap Lens is to be reached from the 18-level and mined from existing H-W workings. Drill indicated reserves (4th quarter of 1992) for the Gap Lens are 1.15 million tonnes grading 2.9 grams per tonne gold, 175.5 grams per tonne silver, 2.1 per cent copper, 1.2 per cent lead and 13.9 per cent zinc (Memorandum from T. Schroeter (Senior Geologist, Vancouver), February 10, 1993 - MEG notes "Geology and Exploration of the Battle-Gap Massive Sulphide Lenses", speaker Georgina Price).

Diamond drilling approximately 200 metres southeast of the Gap Lens intersected high-grade material. The discoveries are thought to be separate from Gap Lens ore and are probably part of new, flat-lying, H-W style lenses. This lens has been named the Battle (George Cross News Letter No. 243, 1991).

The Battle Lens is correlative to the H-W Main Lens trend. The Battle Lens is cutoff at the south end by a fault. There is a 330 metre right-lateral offset of the Battle-Gap lenses from the HW orebody (along the Schaft fault). The dimensions of the Battle Lens are 750 by 30 by 250 metres (dip) with drill indicated reserves (4th quarter of 1992) of 3.7 million tonnes grading 1.2 grams per tonne gold, 24.5 grams per tonne silver, 2.7 per cent copper, 0.5 per cent lead and 12.9 per cent zinc (Memorandum from T. Schroeter (Senior Geologist, Vancouver), February 10, 1993 - MEG notes "Geology and Exploration of the Battle-Gap Massive Sulphide Lenses", speaker Georgina Price).

The H-W deposit was brought into production in 1985 and to the end of 1988 and according to Westmin Resources, has contributed 34.8 per cent, or 3,191,370 tonnes, of a total of 9,170,609 tonnes milled at Westmin's Myra Falls Operations. The overall grade of the total ore milled is 2.16 grams per tonne gold, 81.0 grams per tonne silver, 1.83 per cent copper, 0.78 per cent lead and 6.58 per cent zinc. In 1988, the H-W mine contributed 90.5 per cent, or 1,135,887 tonnes, of a total 1,255,124 tonnes of ore sent to the mill that year. The remaining 9.5 per cent came from the Lynx mine (Westmin Resources Limited Annual Report for 1988, page 8).

Production statistics of the H-W mine have been combined with those of the Lynx and Myra mines. Since start-up at the Myra Falls Operations to the end of 1988, the combined milled production totalled 9,162,835 tonnes containing 15,205,759 grams of gold, 615,419,293 grams of silver, 153,750 tonnes of copper, 56,670 tonnes of lead, 525,606 tonnes of zinc and 1,348 tonnes of cadmium.

Proven and probable geological reserves at the Myra Falls operations as of January 1, 1993 are:

Name	Tonnes	Grades				
		Gold g/t	Silver g/t	Copper %	Lead %	Zinc %
H-W Mine	8,955,100	2.2	39.6	1.7	0.4	4.3
Lynx Mine	315,300	3.0	94.0	1.7	1.1	10.0
Price Mine	185,000	1.5	66.4	1.4	1.3	10.4
Gap Zone	634,400	3.2	151.5	1.8	1.1	13.3
Battle Zone	2,013,700	1.1	24.2	2.6	0.5	12.7
Extension (W37) Zone	231,100	1.2	60.4	1.7	0.4	3.8
Trumpeter Zone	61,200	3.2	68.9	6.3	0.3	4.6
6 Level	120,500	1.3	91.4	0.4	0.9	6.0
Total	12,516,100	2.1	45.6	1.9	0.5	6.3

CAPSULE GEOLOGY

Compiled from George Cross News Letter No. 30 (February 12), 1993.

Reserves at January 1, 1994 were estimated by the company at 12.5 million tonnes grading 1.9 per cent copper, 0.5 per cent lead, 6.3 per cent zinc, 45.6 grams per tonne silver and 2.1 grams per tonne gold. Proven, probable and mineable reserves in the Battle zone are 2.5 million tonnes grading 2.0 per cent lead, 10.6 per cent zinc, 1.0 gram per tonne gold and 20.3 grams per tonne silver (Northern Miner - May 22, 1995). The nearby Gap zone contains additional proven and probable reserves of 714,000 tonnes grading 1.5 per cent copper, 0.9 per cent lead, 10.6 per cent zinc, 2.5 grams per tonne gold and 121.2 grams per tonne silver (Information Circular 1995-1, page 6).

During 1994, the Myra Falls mine re-opened in September after a 16-month mining hiatus due to a labour dispute. Reserves estimated by the company at January 1, 1995 were 9,717,800 tonnes grading 1.7 per cent copper, 6.6 per cent zinc, 1.6 grams per tonne gold and 35.6 grams per tonne silver. Reserves in the Battle zone, which is currently being developed and mined, are 2.5 million tonnes grading 2 per cent copper, 10.6 per cent zinc, 1.0 gram per tonne gold and 20.3 grams per tonne silver. There are two other high grade zinc zones closely associated with the Battle - the Gopher and Gnu, which together total about 700,000 tonnes. The Gopher zone is the source of development ore which has been going to the mill since April 1995 (Information Circular 1996-1, page 6).

The Trumpeter zone (H-W horizon) was discovered in early 1992, through surface drilling in Thelwood valley. The drill program leading to discovery was conceived as a test of the postulated fault offset position of 42 and 43 Blocks, across the Myra-Price fault. Drilling in Thelwood valley had been suspended for some 10 years and it took an extensive public information and government approval process to re-establish the program. This program encompassed a number of initiatives to ensure protection of the environment.

The Trumpeter zone, a copper-rich pyritic massive sulphide lens, is believed to be the faulted-off continuation of H-W 42 Block. The zone lies at the same elevation as the H-W mine workings, but approximately 1500 metres towards the southeast.

Drilling in 1994 and early 1995 on the Trumpeter zone successfully tested the mine west strike extension of the zone. Three stratigraphically distinct mineralized intervals were found within the H-W horizon in this area (Upper zone, 43 Block and Trumpeter Upper/Lower). The Upper zone mineralization consists of one to five metre wide intervals along the hangingwall of the H-W horizon and contains 3-15 per cent stringer and disseminated sphalerite and pyrite in rhyolite lapilli tuff deposits. Mineralization in 43 Block is a transported ore type consisting of up to 30 per cent massive sulphide clasts (pyrite, sphalerite, chalcopyrite) in a coarse rhyolite dominant clastic deposit. The zone, up to 8 metres thick, occurs in mid-H-W horizon stratigraphy, west of the original Trumpeter discovery drillholes. Trumpeter Upper/Lower represents typical massive sulphide mineralization along the base of the H-W horizon (on top of the Footwall Andesite unit). The intersections, from 0.5 to 8.5 metres thick, vary from chalcopyrite-rich (up to 30 per cent) to mixed chalcopyrite (7-20 per cent) - sphalerite (5-10 per cent) - pyrite assemblages. The Upper/Lower designation refers to repetition due to faulting. Results of this new drilling has increased proven and probable geological reserves for the Trumpeter zone to 227,935 tonnes grading 3.1 grams per tonne gold, 66.7 grams per tonne silver, 4.1 per cent copper, 0.3 per cent lead and 4.4 per cent zinc (Assessment Report 24617).

Total reserves (proven and probable) as of January 1, 1996 were estimated at 11,150,400 tonnes grading 1.5 grams per tonne gold, 27.5 grams per tonne silver, 1.6 per cent copper, 6.1 per cent zinc and 0.3 per cent Lead (Information Circular 1997-1, page 8). Zinc recovery in 1996 was up dramatically to 88.3 per cent while maintaining a concentrate grade of 50.5 per cent. Copper production was lower because of a reduction in head grade. The higher grade Battle zone supplied a larger portion of the ore as the year progressed, starting with 9 per cent in January 1996 and finishing with 30 per cent in December (T. Schroeter, personal communication, 1997).

As of December 31, 1996, geological reserves in the Extension zone stood at 316,940 tonnes grading 0.9 gram per tonne gold, 35.4 grams per tonne silver, 1.1 per cent copper and 3.2 per cent zinc. The latest drill results indicate an improved potential for this zone of up to 1 million tonnes of copper-zinc ore with significantly increased grade. The large thickness of the massive sulphide is greater than in the Battle zone and similar to the western end of the

CAPSULE GEOLOGY

H-W deposit, from which it may be a fault offset (Northern Miner, December 8, 1997).

Total geological reserves (proven and probable) as of December 31, 1996 were 12.3 million tonnes at 1.9 grams per tonne gold, 40.4 grams per tonne silver, 1.8 per cent copper and 7.8 per cent zinc (WWW http://westmin-resources.com/myrafall.htm, December 1997).

Mineable reserves estimated by the company, as of January 1, 1997, were 9,098,407 tonnes grading 1.6 per cent copper, 6.1 per cent zinc, 1.5 grams per tonne gold and 27.5 grams per tonne silver, sufficient for 8 years of production. In addition nearly 2 million tonnes of possible geological reserves have been outlined in several zones on the property. Battle zone ore, with head grades rising to 1.64 per cent copper and 5.4 per cent zinc, now makes up approximately 30 per cent of mill feed. The H-W zone accounts for approximately 70 per cent of current production (Information Circular, 1998-1, page 9).

In 1997, Westmin also drilled eleven core holes (aggregate depth of 5287 metres) from surface at the mine site to delineate the northwestern extension of the main H-W lens southeast of the Battle zone. The extension area had previously been drilled from underground but intercepts were poorly located for developing a reserve. The surface holes show that the H-W extension zone is far richer in zinc than had previously been thought. Its average grade is likely to be closer to that of the Gopher zone than the main H-W lens. One intercept is reported to have assayed 10.9 per cent zinc, 2.3 per cent copper, 1.3 per cent lead, 1.0 grams per tonne gold and 49.3 grams per tonne silver over 16.9 metres. As of December 1997, aggregrate proven and probable mining reserves were 8,057,756 tonnes grading 1.6 per cent copper, 7.5 per cent zinc, 0.4 per cent lead, 1.4 grams per tonne gold and 33.5 grams per tonne silver (Exploration in BC 1997, page 56). This reserve, plus measured and indicated resources totals 11,051,000 tonnes grading 1.79 per cent copper, 8.51 per cent zinc, 0.49 per cent lead, 1.81 grams per tonne gold and 46.4 grams per tonne silver (Boliden Limited 1997 Annual Report, page 52).

In January 1998, Westmin Resources Limited was taken over by Boliden Limited. The property is operated by Boliden Westmin Ltd., Myra Falls Operation. In December 1998, Boliden suspended production in order to rehabilitate underground workings and conduct maintenance work. The mill continued at half-capacity to process waste rock for backfill. Production resumed March 24, 1999.

As of January 1999, Myra Falls had a fully diluted mining reserve of 6,785,800 tonnes grading 7.9 per cent zinc, 1.5 per cent copper, 0.5 per cent lead, 1.5 grams per tonne gold and 36.8 grams per tonne silver (Exploration and Mining in BC 1998, page 48).

Total proven and probable reserves stand at 6.7 million tonnes averaging 7.7 per cent zinc, 1.5 per cent copper and 0.4 per cent lead, 1.4 grams per tonne gold and 34.9 grams per tonne silver. This includes a 28 per cent dilution factor. Of that amount, 1.9 million tonnes grading 3.3 per cent zinc, 1.5 per cent copper, 0.3 per cent lead, 1.7 grams per tonne gold and 25.4 grams per tonne silver are in the H-W deposit. The Battle deposit contains 3.5 million tonnes averaging 10.1 per cent zinc, 1.5 per cent copper, 0.4 per cent lead, 0.9 gram per tonne gold and 27.2 grams per tonne silver. The Gap zone contains 553,000 tonnes averaging 11.7 per cent zinc, 1.7 per cent copper, 1 per cent lead, 2.9 grams per tonne gold and 107.8 grams per tonne silver. Other deposits within the lower H-W horizon include: the Extension zone, which contains 211,000 tonnes averaging 4 per cent zinc, 1.1 per cent copper, 0.4 per cent lead, 0.8 gram per tonne gold and 33.8 grams per tonne silver; and the 43-Block zone, which holds 575,000 tonnes averaging 4.9 per cent zinc, 1.5 per cent copper, 0.4 per cent lead, 2.3 grams per tonne gold and 43.4 grams per tonne silver. Total measured and indicated reserves stand at 5.3 million tonnes averaging 7.7 per cent zinc, 1.6 per cent copper, 0.7 per cent lead, 2 grams per tonne gold and 56 grams per tonne silver (Northern Miner, June 28, 1999). Resources in the Marshall zone (092F 071), situated on the H-W horizon, stand at 320,000 tonnes averaging 7.6 per cent zinc, 0.7 per cent copper, 0.7 per cent lead, 2.5 grams per tonne gold and 105.6 grams per tonne silver. The zone remains open to the east, west and to the north (Northern Miner, June 28, 1999).

Boliden resumed production in March 2002; the mine was closed since December 2001 due to low metal prices.

BIBLIOGRAPHY

EMPR AR 1918-268; 1919-220; 1920-207; 1921-222; 1922-241; 1923-254, 388; 1925-283; 1927-349; 1928-378; 1929-384,385; 1930-301; 1952-211; 1961-103; 1962-107-110; 1963-105; *1964-157,166; 1965-234; 1966-77; 1967-77,78; 1968-105
EMPR ASS RPT 459, 533, 607, 5184, 7089, 7090, 24617

BIBLIOGRAPHY

EMPR BC METAL MM00011
EMPR BULL 40
EMPR ENG INSP Annual Report 1989, 1990
EMPR EXPL 1978-E130; 1979-133; 1992-5,47,48; 1993-6,54; 1994-4,6,68; 1995-6,74; 1996-A8-A9,F4-F5; 1997-56-57; 1998-5,48; 1999-25-32; 2002-29-40; 2001-23-31
EMPR GEM 1969-218; 1970-284; 1971-252; 1972-271; 1973-235; 1974-181
EMPR INF CIRC 1991-21, p.5; 1992-1, p.5; 1992-31, p.5; 1993-1, p.5; 1993-13, p.6; 1994-1, p.6; 1994-19, p.6; 1995-1, p.6; 1995-9, p.6; 1996-1, p.6; 1997-1, p.8; 1998-1, pp. 8, 9; 2000-1, p. 5
EMPR IR 1984-2, pp.99,100; 1984-3, pp.105,106; 1984-4, p.20; 1984-5, pp.113,114; 1986-1, pp.109,110
EMPR MAP 65 (1989)
EMPR MIN STATS 1985, pp.47,48; 1987, pp.35,37; 1990, pp.25,29,32; 1980-1994, pp.20,24
EMPR MINING Vol.1 1975-1980, p.1; 1981-1985, pp.2,30; 1986-1987, 44-45; 1988, pp.41-42
EMPR OF 1992-1; 1994-1; 1998-10; 1999-2
EMPR P 1987-1, p. 223; 1988-1, p. 81; 1989-1, p. 75; 1991-4, pp. 102,104,105,111,112
EMPR PF (in 092F 071 (Lynx), 092F 072 (Paramount) and 092F 073 (Price): Various maps and reports; *Westmin Resources Limited, Annual Report for 1989 - Debbie file (092F 079); Jeffery, W.G. 92F06W, 92F12W , 92F06NE/12E Draft Maps; Jeffery, W.G. (1964): An Assessment of the Economic Mineral Potential within a Part of Strathcona Provincial Park; Various Correspondence on Strathcona Park; Eastwood, G.E.P. (c.1975): Mineral Resource Considerations Raised by Proposed Changes to Strathcona Park-Conclusions and Recommendations; *Pearson, C.A. (1992): New Ore Discoveries at Myra Falls Operations, Buttle Lake, Vancouver Island, BC, CIM District 6 Meeting, October 1-3, 1992, Campbell River, BC; *International Symposium-World Zinc '93, Mining Zinc-Rich Massive Sulphide Deposits on Vancouver Island, British Columbia, C.A. Pearson; Geological notes and field notes; Memorandum regarding red chert or jasper, J.C. Stephen, 1984; Westmin Resources Limited Website (May 1998): Myra Falls Operations, 1 p.; Laudrum David, Madison Enterprises Corp., Vancouver MEG Abstract: (Jan.5,2000): Exploration Strategy at Myra Falls, Campbell River, BC)
EMR MP CORPFILE (Western Mines Limited; Westmin Resources)
EMR RES FILE (Paramount, Myra, Claw, Lynx)
GSC MAP 196A; 2-1965; 17-1968; 1386A
GSC OF 9; 61; 463; *2167, pp. 145-161
GSC P 66-1; 68-50; *71-36; 72-44; 79-30
GSC SUM RPT 1930 Part A, p. 56
CIM '97 Vancouver Program, April 27-30, 1997, p. 112
CIM BULL Dec.1980, pp.71-90
CIM Vol.73, No.824, p.86; Vol.80, No.899, p.134; Transactions Vol.83, pp.115-130
CMH 1976-77, p.331; 1989-90, p.470
CMJ Oct., 1981; Nov., 1985, Sep., 1986
GCNL #92, 1970; #214, 1971; Feb.7, 1973; #76, 1973; #35,#95,#160,#222, 1974; #87,#95,#204,#205,#220, 1975; #41,#91,#105,#218,#220,#246, 1976; #39,May 16,#87,#221, 1977; #43,#150,#217, 1978; #33,#88,#92, #144,#186,#198,#231,#242,#246, 1979; #19,#32,#34,#54,#55,#68,#90, #101,#108,#128,#154,#159, 1980; #152, 1982; #101,#151,#153, 1983; #41,#103, 1984; #149, 1985; #42, 1986; #85, 1987; #113(June 12), #116(June 17),#125(June 28),#132(Jul.10),#136(Jul.16), #156(Aug.14),#194(Oct.8),#200(Oct.17),#243(Dec.19), 1991; #47(Mar.6),#49(Mar.10),#52(Mar.13),#60(Mar.25),#62(Mar.27),#70 (Apr.8),#73(Apr.13),#77(Apr.21),#80(Apr.24),#83(Apr.29), #93(May 13), #94(May 14),#99(May 22),#114(June 12),#138(July 17), #139(July 20),#141(July 22),#144(July 27),#152(Aug.7), #165(Aug.26),#168(Aug.31),#173(Sept.8),#176(Sept.11),#189(Sept.3), #191(Oct.2),#193(Oct.6),#210(Oct.30),#236(Dec.8), 1992; *#30(Feb.12), 1993; #36(Feb.20), 1997
MIN REV Fall 1998, pp. 32-33
MINING IN CANADA Mar. 1967, p.16
N MINER Apr.26, 1973; Apr.25, 1974; May 5,Jun.2, 1977; Mar.2,Apr.20, May 4,Aug.10, 1978; Feb.15, 1979; Feb.21,Apr.3, 1980; Apr.23,May 21,Oct.29,Nov.12,26, 1981; Apr.15,29,Nov.4, 1982; Jan.20,Feb.17, Apr.7,21,Aug.11, 1983; Mar.29,May 31,Dec.27, 1984; Feb.28,Apr.25, 1985; Aug.30, 1984; Sept.30, 1985; Mar.17,May 12,Jun.16,Sep.1,Nov. 24, 1986; Jun.1, 1987; Aug.21, 1989; Aug.27, 1990; June 3,17,24, July 15,22, Aug.5,26, Oct.14,28, 1991; Jan.6, Feb.17, Mar.2, 30, Apr.20, 1992; May 4, June 1, Aug.31, Sept.14, Oct.19, 1992; May 22, June 12, 1995; Dec.1,8, 1997; Jan.26, Feb.2, May 18, Nov.23, 1998; Apr.29, May 3, Jun.14,28, Aug.2, 1999; Mar.6, 2000
NW PROSP Dec.1986/Jan.1987
PERS COMM Hampton, R.O. (Dec. 16, 1974); Massey, N. (May 1990)

BIBLIOGRAPHY

PR REL Westmin Resources Limited, Nov. 28, 1997; Boliden Limited, Mar.17, July 22, Oct. 27, 1999
W MINER Oct.1963, pp.64-65; Aug.1965, pp.37-42; Oct.1970; May 1977, p.62; Apr.1978, p.122; Mar.1979, p.46; Mar.1980, p.60; Jun.,Dec. 1981; Apr. 1982; Mar.,*May, 1983; Apr.,Dec. 1984
WIN May 1987
WWW http://www.boliden.ca; http://www.infomine.com/
Boliden Limited 1997 Annual Report
Boliden Westmin Ltd., 1998 Myra Falls Exploration Forum, July 23-25, 1998
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
Carvalho, I.G. (1979): Geology of the Western Mines District, Vancouver Island, British Columbia, Ph.D. Thesis, University of Western Ontario
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 164
*Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia
*Pearson, C.A. (1993): Mining Zinc-Rich Massive Sulphide Deposits on Vancouver Island, British Columbia, International Symposium - World Zinc 1993, pages 75-84
Province Newspaper Feb.19, Apr.15, Nov.15,27, Dec.17, 1974
Times Colonist Newspaper Aug.28, Dec.19, 1974
Vancouver Sun Newspaper Apr.19, May 14,15, Aug.15, Nov.7, Dec.16, 1974
Yole, R.W. (1965): A Faunal and Stratigraphic Study of Upper Paleozoic Rocks of Vancouver Island, British Columbia, Ph.D. Thesis, University of British Columbia
Westmin Resources Limited 1995 Annual Report; 1996 Annual Report

DATE CODED: 1989/08/23 CODED BY: WV FIELD CHECK: N
DATE REVISED: 1997/04/02 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 331**

NATIONAL MINERAL INVENTORY:

NAME(S): **900**, DEBBIE, BIF, LINDA 1

STATUS: Developed Prospect Underground
MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 10 14 N
NORTHING: 5447755
LONGITUDE: 124 40 05 W
EASTING: 378414
ELEVATION: 650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of 900 zone.

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Gold Pyrite Arsenopyrite
ASSOCIATED: Quartz Jasper Carbonate Magnetite
ALTERATION: Ankerite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein Shear Layered
CLASSIFICATION: Epigenetic Hydrothermal Exhalative
TYPE: I01 Au-quartz veins I04 Iron formation-hosted Au
SHAPE: Regular
MODIFIER: Faulted Folded
DIMENSION: 180 x 150 x 120 Metres
STRIKE/DIP: 360/
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Devonian	Sicker	Nitinat	

LITHOLOGY: Aphyric Pillow Basalt
Bedded Chert
Cherty Iron Formation

HOSTROCK COMMENTS: Veins and stockworks crosscut the stratigraphy and are younger, possibly Tertiary in age.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan Uplift.

INVENTORY

ORE ZONE: 900
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1989
QUANTITY: 28285 Tonnes

COMMODITY	GRADE	
Gold	11.6500	Grams per tonne

COMMENTS: Geological mineral inventory or volume of mineralized rock.
REFERENCE: Northern Miner - December 18, 1989.

CAPSULE GEOLOGY

The area is underlain by andesitic to basaltic flows, pillowed basalts, tuff, agglomerates, cherty tuffs and chert of the Devonian Duck Lake and Nitinat formations of the Paleozoic Sicker Group. The north-northeast striking Mineral Creek fault cuts the volcanic sequence, which trends 140 degrees (subparallel to the fault) and dips 20 to 40 degrees east. A volcaniclastic interval overlies and is in sharp contact with mainly aphyric and amygdaloidal basalt units. The volcanic rocks are intruded by an andesitic porphyry body.

The 900 zone is located 1300 metres southwest of the Mineral Creek zone (092F 079 - Debbie) and 200 metres west of the Mineral Creek fault. A lean iron formation with a magnetite-rich base is locally isoclinally folded. Beneath and crosscutting the chert horizon is a quartz vein stockwork which may be younger (Tertiary?) in age. Native gold, pyrite, magnetite and arsenopyrite occur in

CAPSULE GEOLOGY

quartz veinlets in the chert and jasper and also in narrow carbonate veinlets. The 900 zone contains gold in magnetite-jasper-sulphide-bearing bedded chert, in quartz veins and in stockworks cutting ankeritic aphyric pillow basalt. The mineralized area strikes north for 180 metres, is 150 metres wide and over 120 metres deep. The 900 zone is a pipe-like body which occurs in a flexure resulting from the offset of the north-northeast 900 fault by a west-northwest fault.

Three different geological environments host gold 1) the cherty iron formation which is generally flat and folded 2) a north trending, steeply west dipping fault which contains a quartz stockwork and 3) the intersections of a series of moderately altered east trending faults with the north trending faulted quartz stockwork underlying the cherty iron formation.

Drilling on the 900 zone in 1988 intersected quartz stockworks with visible gold, and a series of northerly trending narrow quartz veins south of the stockwork which contained native gold. Trenching to expose high grade gold veins and diamond drilling to test the strike projection was proposed for 1989.

Inferred reserves (geological mineral inventory or volume of mineralized rock) for the 900 zone are estimated at 28,285 tonnes grading 11.65 grams per tonne gold (Northern Miner - December 18, 1989).

Several old trenches and an old shaft explore the mineralized zone.

White Hawk Ventures Inc. has shipped 894 tonnes of ore from the 900 zone to Bow Mine's mill at Greenwood. From there, 7478 kilograms of concentrate has been shipped to Cominco for refining (GCNL #219 (Nov.14), 1997).

BIBLIOGRAPHY

EMPR ASS RPT 6153, 7984, 9111, 9986, 13758, 14876, 15023, 17552
EMPR BULL 37
EMPR EXPL 1986-A70,C161; 1987-A74,*B28-B34; 1993-56-57
EMPR FIELDWORK 1988, pp. 61-74
EMPR INF CIRC 1990-1, p.38; 1991-1, p.74
EMPR MAP 65 (1989)
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Nexus Resource Corporation Statement of Material Facts, Jul.22, 1987; Angle Resources Ltd. Statement of Material Facts, Dec.16, 1987; Report on Debbie and Yellow Projects c. 1988 (in 092F 079); Nexus resources Corp. Annual Report 1988 (in 092F 079))
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68, p. 50; 79, p. 30
CIM Vol.83, No.935, March 1990 pp. 125-135
GCNL #160,#210,#227, 1986; #10,#39,#41,#71,#121,#123,#136,#141,#153, #197,#230, 1987; #3,#8,#21,#30,#210, 1988; #27,#35,#231, 1989; #79, 1990; #219(Nov.14), 1997
N MINER Mar.9,Oct.26,Nov.23,Dec.7, 1987; Feb.8,Nov.14, 1988; Mar.6, Apr.17,Sept.12, Dec.18, 1989
N MINER Advertising Supplement March 1989
NW PROSPECTOR Jan.87; Dec.87/Jan.88; Oct/Nov.88; Mar/Apr.89
PR REL Nexus Resource Corp. Aug. 3, 1989
V STOCKWATCH Nov.28, 1986; Apr.15,Jun.23,Jul.15,16,Aug.12,Oct.14,Nov. 30, 1987; Jan.13, 1988; Aug. 9, 1989
WWW http://www.infomine.com/index/properties/DEBBIE_GROUP=DEBBIE.html
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 138
The Vancouver Sun Dec.10, 1987, p. E6

DATE CODED: 1988/03/02 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/14 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 332**

NATIONAL MINERAL INVENTORY:

NAME(S): **GC**, BOX CANYON

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E
BC MAP:
LATITUDE: 49 19 45 N
LONGITUDE: 125 13 27 W
ELEVATION: 640 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized outcrop on wall of creek which is a west tributary to a main creek, 1.75 kilometres north of the summit of Mount Porter between Great Central and Sproat lakes (Assessment Report 15354).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5466428
EASTING: 338400

COMMODITIES: Copper Gold Lead

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Galena
COMMENTS: Trace galena.
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Pillow Basalt Breccia
Pillow Basalt
Lapilli Tuff
Volcanic Sediment/Sedimentary
Feldspar Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	18.2000	Grams per tonne
Copper	0.3200	Per cent

COMMENTS: Sample from rubble at base of cliff with quartz-carbonate stockwork.
REFERENCE: Assessment Report 15354.

CAPSULE GEOLOGY

The GC occurrence area is primarily underlain by Upper Triassic Karmutsen Formation (Vancouver Group) massive basalt, pillow basalt, pillow basalt breccia, lapilli tuff, a volcanic sediment unit and an occasional feldspar porphyry dike.

Mineralization consists of disseminated and locally massive pyrite and chalcopyrite and trace galena in a quartz-carbonate stockwork within a highly fractured and altered basalt. Quartz-carbonate stockworks are also evident in basalt breccia and are mineralized with pyrite and trace chalcopyrite. A rock sample from rubble at the base of a cliff (Box Canyon showing) assayed 0.32 per cent copper and 18.2 grams per tonne gold (Assessment Report 15354).

BIBLIOGRAPHY

EMPR ASS RPT *15354, 15498
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50

DATE CODED: 1987/02/19 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1990/04/20 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 333** NATIONAL MINERAL INVENTORY:

NAME(S): **TSABLE RIVER**, COMOX, T'SABLE RIVER, HILLSBOROUGH, CANADIAN COLLIERIES, BAYNES SOUND, BAYNES COAL

STATUS: Past Producer Underground MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F10W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 31 47 N NORTHING: 5488119
LONGITUDE: 124 55 17 W EASTING: 360965
ELEVATION: 270 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Tsable River area is located 14.4 kilometres along strike of the Cumberland coalfield (092F 315).

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: The western basin consists of a broad northwest trending syncline cut by northwest trending normal(?) faults. The eastern basin is heavily faulted.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	

LITHOLOGY: Coal
Shale
Siltstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: HVol Bituminous
COMMENTS: High volatile bituminous A.

INVENTORY

ORE ZONE: TSABLE RIVER REPORT ON: Y

CATEGORY: Combined YEAR: 1997
QUANTITY: 38477900 Tonnes

COMMODITY	GRADE
Coal	100.0000 Per cent

COMMENTS: In-situ reserves in all categories.
REFERENCE: Information Circular 1997-1, page 24.

CAPSULE GEOLOGY

The Tsable River area is separated from the Cumberland section of the Comox coalfield by an area of barren sediments. The Tsable River coalfield is divided into two basins separated by a buried ridge of pre-Cretaceous rocks. The northwest or west portion consists of a broad, northwest trending synclinal basin cut by two northwest trending fault systems. A seam (#2 seam?) ranging from 1.8 to 3.2 metres of predominantly clean coal was mined in this area (Tsable River mine). Some parts of the seam are unworkable due to high numbers of interbedded rock bands. Rock bands are of variable thicknesses. The seam pinches out to the southeast towards the unconformable pre-Cretaceous basement. In addition to the mined seam, four quite distinct seams are present and correlatable.

The mine workings extended 2.4 kilometres down the axis of the syncline and up to 1.2 kilometres along strike. The roof consists of sandy shale and sandstone of the Upper Cretaceous Comox Formation (Nanaimo Group). Discovered in 1945, production began by Canadian Collieries (Dunsmuir), Ltd. in 1946. Production from the Tsable

CAPSULE GEOLOGY

River mine between 1946 and September 1966 was 1,976,817 tonnes of coal. Average contents of the Tsable River coal are 1.20 to 1.70 per cent moisture, 10.72 to 34.58 per cent ash, 29.60 to 36.25 per cent volatile matter, 38.60 to 53.68 per cent fixed carbon, 0.80 to 2.78 per cent sulphur and calorific content of 11,139 to 13,470 BTU per pound (as received basis except for the G.C.V. which is on a dry basis). Canadian Collieries Resources Limited operated the mine from 1947 to 1960 and Comox Mining Company Limited operated from 1960 to 1966. Baynes Sound Coal Mines operated from 1875 to 1877.

The southeast or east basin appears to be heavily faulted and the coal that occurs there has not been mined. Seams of mineable thickness are reported to be present.

The structure consists of gently warped, tilted fault blocks cut by northwest trending normal faults. The strata are folded in the western area by a northwest trending syncline and heavily faulted in the eastern area. A series of east trending faults and oblique, approximately northeast trending faults are also present. Strata generally strikes northwest and dips predominantly northeast at 5 to 7 degrees.

Measured geological resources are 54,996,565 tonnes and indicated resources are 119,936,760 tonnes of high volatile bituminous A rank coal (Coal Assessment Reports 53, 54, 92).

The 1996 Quinsam Coal Corporation and Marubeni Corporation conducted an exploration program south of Tsable River, about 5 kilometres south of the old mine. The drilling program plan was for 7000 metres of drilling in 27 holes. The program succeeded in increasing in-situ reserves in all categories to 38,477,900 tonnes (Information Circular 1997-1, page 24). The reserve lies in a northeasterly trending sedimentary basin on the southeastern side of a prominent palaeotopographic high. The coal in the basin shales out to the south, south of Cougar Smith Creek, but it remains open to the northeast, north of the Tsable River. The company is currently assessing the coal quality; environmental and mine plan studies are in progress. Quinsam Coal Corporation is 63 per cent owned by Hillsborough Resources Ltd. In 1995, Hillsborough created a subsidiary company, T'Sable River Coal Corporation. A decline into the lowermost or No. 1 coal seam, from a site north of Cowie Creek, is planned.

BIBLIOGRAPHY

EM EXPL 1996-A25,F8; 1997-58, 1998-49
EMPR AR *1874-21-29; 1875-622; 1876-425,428; 1877-407,410; 1878-382; 1879-250; 1880-433; 1920-299; 1921-303; 1945-161; 1946-216,218,238; 1947-236,238,255; 1948-202,204,221; 1949-276, 278,298; 1950-242,244,262; 1951-247,249,276-278; 1952-284,307-309; 1953-224,226,243-245; 1954-212,214,232-233; 1955-130,132,148-149; 1956-196,198,213; 1957-120,121,134; 1958-134,135,146; 1959-252, 253,265; 1960-217,218,228,229; 1961-252,265; 1962-257,258,269; 1963-238,239,256-257; 1964-307,318; 1965-390,401; 1966-375,385-386
EMPR COAL ASS RPT 49, *53, *54, *92, 866, 867, 868
EMPR INF CIRC 1997-1, p. 24; 1998-1, p. 23; 1999-1, p. 12
GSC MAP 47-22; 17-1968; 1386A
GSC OF 463
GSC P *70-53; 68-50
CIM TRANS *McKenzie, J.D. (1922), pp. 382-411
GCNL #62(Apr.1), 1997; #64 (Apr.1), 1998
N MINER Sept. 14, 1998
Hillsborough Resources Limited, 1995, 1996, 1997 Annual Reports
Times Colonist June 13, 1998

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1997/03/14 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 334**

NATIONAL MINERAL INVENTORY:

NAME(S): **LAZY**, LAZEO-KLEIN, LAZY K

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 24 23 N
LONGITUDE: 125 53 04 W
ELEVATION: 60 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Along and adjacent Cotten Creek, a west flowing creek that drains in Moyeha Bay at the head of Herbert Inlet (Assessment Report 17728).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5476635
EASTING: 290760

COMMODITIES: Gold, Copper, Lead, Zinc

MINERALS

SIGNIFICANT: Chalcopyrite, Sphalerite, Pyrite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Quartz, Carbonate, Pyrite
ALTERATION TYPE: Silicific'n, Carbonate, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Basalt
Andesite
Dacite
Quartz Feldspar Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEINS — REPORT ON: N

CATEGORY: Assay/analysis — YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	4.2900	Grams per tonne

REFERENCE: Assessment Report 17728.

ORE ZONE: VEIN — REPORT ON: N

CATEGORY: Assay/analysis — YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	0.6900	Grams per tonne
Copper	0.8400	Per cent
Lead	0.5700	Per cent
Zinc	0.4200	Per cent

COMMENTS: From a 3.0 centimetre quartz vein.
REFERENCE: Assessment Report 16224.

CAPSULE GEOLOGY

The oldest rocks in the area are mapped as part of the Middle to Upper Paleozoic Sicker Group. The Sicker Group, however, is undergoing redefinition in the Cowichan and Buttle Lake uplifts, with a new Upper Paleozoic Buttle Lake Group being created from what were mainly sediments from the upper part of the Sicker Group. See the H-W occurrence (092F 330) for a summary of revisions.

These rocks are bounded on the west by Herbert Inlet while on the north, south and east they are overlain by mafic to intermediate volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group.

CAPSULE GEOLOGY

These volcanics are cut by andesitic dykes ranging from 0.1 to 10 metres in width. A small area of diorite belonging to the Early to Middle Jurassic Island Intrusions is exposed along the east side of Herbert Inlet.

A zone (Trench "A") of north-south trending quartz-carbonate veins occur in shear zones that cut quartz-feldspar dykes and minor mafic to intermediate volcanics. Intense quartz-carbonate alteration exists in the wallrock for up to 1 metre from the veins. The zone of veining has been traced for 50 metres. A sample of vein material assayed 2.21 grams per tonne gold (Assessment Report 17728).

A second zone (Trench "B") was located about 500 metres west-southwest from the first zone, along the north flowing "Ridge Creek", 200 metres south of the west flowing Cotter Creek. The zone consists of east-west trending quartz carbonate veins. One trench sample assayed 4.29 grams per tonne gold (Assessment Report 17728). Assays for silver, lead and zinc were reported to be locally anomalous.

Similar veins and mineralization were found 200 metres east of the Ridge Creek zone in "Canyon Creek" where veins in north trending shears are reported to contain pyrite, galena and chalcopyrite. Several east-west veins crosscut the zone and are also mineralized. These veined shears occur mainly in dark green massive basalts (Karmutsen). The volcanics are pervasively carbonatized and disseminated pyrite is widespread, especially near veins. One 3 centimetre quartz vein contains 5 to 7 per cent galena and less than 1 per cent chalcopyrite. It assayed 0.69 grams per tonne gold, 2.3 grams per tonne silver, 0.84 per cent copper, 0.57 per cent lead and 0.42 per cent zinc (Assessment Report 16224).

BIBLIOGRAPHY

EMPR AR 1935-F40
EMPR ASS RPT 12791, 14535, *16224, *17228
EMPR EXPL 1984-163; 1985-150, 1987-C147, 1988-C86
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 463
GSC P 68-50; 79-30; 80-16
PERS COMM: Nick Massey
V STOCKWATCH *Sept.3, 1987
W MINER May, 1983
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1987/11/25 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/01/15 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 335**

NATIONAL MINERAL INVENTORY:

NAME(S): **HERBERT**, LAZY, LAZEO-KLEIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 24 09 N
LONGITUDE: 125 56 00 W
ELEVATION: 1 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the western shore of Herbert Inlet about 2.0 kilometres south of the inlets head (Assessment Report 16224).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5476339
EASTING: 287197

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.4800	Per cent

REFERENCE: Assessment Report 16224.

CAPSULE GEOLOGY

A quartz vein, up to 60 centimetres wide with nearby smaller veins, cuts granodiorite of the Early to Middle Jurassic Island Plutonic Suite. Up to 5 per cent chalcopyrite and abundant malachite occur in the quartz vein. A 2 metre chip sample contained 0.48 per cent copper and 0.02 grams per tonne gold (Assessment Report 16224, page 29 and Figure 6).

BIBLIOGRAPHY

EMPR ASS RPT 12791, 14535, *16224
EMPR EXPL 1984-163; 1985-150, 1987-C147
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 463
GSC P 68-50; 79-30; 80-16
W MINER May, 1983
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1987/11/25 CODED BY: GP FIELD CHECK: N
DATE REVISED: 1990/01/15 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 336**

NATIONAL MINERAL INVENTORY:

NAME(S): **SNOW**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06W
BC MAP:
LATITUDE: 49 18 29 N
LONGITUDE: 125 24 52 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drill location (Assessment Report 17574).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5464506
EASTING: 324501

COMMODITIES: Gold, Silver, Lead, Copper, Zinc

MINERALS

SIGNIFICANT: Pyrite, Galena, Chalcopyrite, Sphalerite, Arsenopyrite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Clay, Epidote, Sericite, Chlorite
ALTERATION TYPE: Argillic, Sericitic, Epidote, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Middle Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Basalt
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
Plutonic Rocks

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1988

COMMODITY	GRADE	
Silver	69.9400	Grams per tonne
Gold	38.4000	Grams per tonne
Lead	3.6000	Per cent
Zinc	2.7800	Per cent

COMMENTS: A 62 centimetre drill section.
REFERENCE: Assessment Report 17574.

CAPSULE GEOLOGY

The Snow prospect consists of mineralized veins occurring chiefly in chloritized basalt of the Upper Triassic Karmutsen Formation, Vancouver Group. Lesser veining occurs in quartz diorite of the Early to Middle Jurassic Island Plutonic Suite. Faults and fractures are numerous in the occurrence area, particularly in the volcanics, and act as hosts for vein emplacement.

A series of parallel veins striking at 140 degrees and varying in width from a few centimetres to up to 90 centimetres were exposed by a road cut in 1986. The veins are composed of quartz or quartz carbonate and may contain traces, or up to 40 per cent pyrite and galena with lesser amounts of chalcopyrite and rarely sphalerite. Gold and silver values are high with the sulphides. Minor argillic, sericitic, and epidote alteration is associated with veining. The vein structure is about 300 metres and extends for 1000 metres along the valley.

A 62 centimetre drill section made up of quartz diorite and quartz veining contained 38.40 grams per tonne gold, 69.94 grams per tonne silver, 3.60 per cent lead and 2.78 per cent zinc. A similar, adjacent, 52 centimetre interval assayed 7.99 grams per tonne gold, 168.69 grams per tonne silver, 7.75 per cent lead and 4.92 per cent zinc (Assessment Report 17574).

CAPSULE GEOLOGY

Snowfield Resources Ltd. worked the property in 1998. They plan to drill 10 to 12 holes for a total of 933.9 metres.

BIBLIOGRAPHY

EM EXPL 1998-47-55
EMPR ASS RPT *16208, *17269, *17574, 17575
GSC MAP 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44
GCNL #18 (Jan.27), #90 (May11), #101(May 27), #156(Aug.14), 1998
N MINER Apr. 27, 1998
V STOCKWATCH Nov. 18, Sept. 15, 1987
WWW http://www.infomine.com/
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Times Colonist, June 3, 1998, p. B8

DATE CODED: 1987/12/03 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/04/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 337**

NATIONAL MINERAL INVENTORY:

NAME(S): **TOBY 1**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 04 59 N
LONGITUDE: 124 42 05 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5438083
EASTING: 375766

COMMODITIES: Gold, Silver

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION: Ankerite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Shear
CLASSIFICATION: Epigenetic, Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEINS

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1987

COMMODITY	GRADE	
Silver	99.5000	Grams per tonne
Gold	6.9500	Grams per tonne

REFERENCE: Assessment Report 15957.

CAPSULE GEOLOGY

The Toby 1 showing is located about 16 kilometres southeast of Port Alberni, between Museum and Corrigan creeks.

The area is underlain by Upper Triassic Karmutsen basalts of the Vancouver Group intruded by Early to Middle Jurassic Island Plutonic Suite diorites. Narrow pyritic quartz veins occur along a shear zone cutting the diorite intrusive. Ankerite alteration is associated with this zone. Gold and silver values from these quartz veins are reported to be high. One sample ran 6.95 grams per tonne gold and 99.5 grams per tonne silver (Assessment Report 15957).

BIBLIOGRAPHY

EMPR ASS RPT 12809, 14873, *15957, 17948
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR EXPL 1984-155; 1986-167
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 1272; 463
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1987/12/04
DATE REVISED: 1990/05/09

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 338**

NATIONAL MINERAL INVENTORY:

NAME(S): **TOBY 2**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 04 29 N
LONGITUDE: 124 42 05 W
ELEVATION: 840 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5437156
EASTING: 375745

COMMODITIES: Copper, Iron, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Magnetite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Epidote, Magnetite, Ankerite
ALTERATION TYPE: Skarn, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic, Skarn, Industrial Min.
SHAPE: Irregular
MODIFIER: Faulted, Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Copper	6.2900	Per cent
Iron	38.5700	Per cent

REFERENCE: Assessment Report 15957.

CAPSULE GEOLOGY

The Toby 2 showing is located just south of the Toby 1 showing (092F 337), approximately 16.5 kilometres southeast of Port Alberni.

The area is underlain by Upper Triassic Karmutsen basalts of the Vancouver Group, intruded by diorite of the Early to Middle Jurassic Island Plutonic Suite. The basalts range from fine-grained to gabbroic in texture.

Mineralization is hosted in basalts and is considered to be of skarn origin. Chalcopyrite, magnetite and epidote generally occur along faults and shears. Best assays from one rock sample are 6.29 per cent copper and 38.57 per cent iron (Assessment Report 15957). Gold is slightly anomalous but is not significant in the skarn mineralization. However, a narrow pyritic quartz vein along a shear, apparently unassociated with the skarn event, assayed 2.88 grams per tonne gold and is genetically related to the Toby 1 showing (092F 337).

Soil sampling in 1988 indicated a limited extent to anomalous gold values. Mapping and sampling resulted in a few erratic high gold values associated with ankeritic shear zones and with minor quartz-pyrite veinlets in granitic rocks.

BIBLIOGRAPHY

EMPR ASS RPT 12809, 14873, *15957, *17948

BIBLIOGRAPHY

EMPR BULL 37
EMPR EXPL 1984-155; 1986-167
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 1272, 463
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1987/12/04 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 339**

NATIONAL MINERAL INVENTORY:

NAME(S): **COLUMBIA II**, COLUMBIA , MAIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 00 59 N
LONGITUDE: 124 34 29 W
ELEVATION: 350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Main zone (Assessment Report 16167).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5430472
EASTING: 384861

COMMODITIES: Copper, Silver, Gold

MINERALS

SIGNIFICANT:	Chalcopyrite	Pyrite	Malachite	Azurite
ASSOCIATED:	Pyrite	Quartz	Epidote	Carbonate
ALTERATION:	Silica	Carbonate	Epidote	
ALTERATION TYPE:	Silicific'n	Carbonate	Epidote	
MINERALIZATION AGE:	Unknown			

DEPOSIT

CHARACTER: Vein, Disseminated, Shear
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Sheared, Faulted
DIMENSION: 2000 x 0050 Metres
STRIKE/DIP:
TREND/PLUNGE: 335/
COMMENTS: Main zone of discontinuous mineralized veins.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Altered Basalt
Basaltic Flow
Basalt
Chert
Jasper

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan Uplift.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	2.7000	Grams per tonne
Gold	0.0620	Grams per tonne
Copper	0.9600	Per cent

COMMENTS: Sample (#18283) containing semi-massive sulphides in altered basalt. Sample also contained 0.01 grams per tonne platinum and palladium.
REFERENCE: Assessment Report 17769.

CAPSULE GEOLOGY

The Columbia II showing is located 27 kilometres southeast of Port Alberni.

The area is underlain by Sicker Group rocks of the Devonian Nitinat Formation and the Upper Devonian McLaughlin Ridge Formation which occur along the western part of the Cowichan uplift.

The dark coloured volcanics consist of massive and pillowed basalt and agglomeratic flow-breccia with minor chert and jasper. Small patches of epidote, and lesser amounts of quartz are common throughout the sequence, as is a pervasive "uralization" alteration, which is distinctive of the Nitinat Formation. This gives the rocks a dark spotted appearance due to the pseudomorphing of diopside by actinolite. These rocks are steeply dipping and become younger to

CAPSULE GEOLOGY

the west. The metamorphic grade is usually low greenschist.
Quartz veins up to 20 centimetres wide with subordinate amounts of epidote and carbonate occur in a silicified shear zone. This shear zone (Main zone) is about 50 metres wide and trends north-northwest through basalts for 2 kilometres. Chalcopyrite and pyrite is found disseminated and in fractures locally within these veins and in silicified wallrock. A grab sample containing semi-masive sulphides in altered basalt assayed 0.96 per cent copper, 2.7 grams per tonne silver, 0.062 grams per tonne gold, and 0.01 grams per tonne platinum and palladium (Assessment Report 17769).

BIBLIOGRAPHY

EMPR ASS RPT *16167, *17769
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2, 1988-24, *1989-6
EMPR PF (in 092F 463: Payton Ventures Inc. Prospectus March 31, 1987)
GSC MAP 49-1963, 17-1968
GSC OF 463, 1272
GSC P 68-50; 72-44; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1987/12/08 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/04/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 340**

NATIONAL MINERAL INVENTORY:

NAME(S): **PATERSON LAKE**, ADIT ZONE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E 092F07W
BC MAP:
LATITUDE: 49 20 59 N
LONGITUDE: 125 00 20 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Map 1, Assessment Report 16239.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5468268
EASTING: 354343

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz
ALTERATION: Chlorite Quartz Azurite Malachite Limonite
ALTERATION TYPE: Chloritic Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt
Tuffaceous Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: ADIT

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1987

COMMODITY	GRADE	
Copper	5.9100	Per cent

REFERENCE: Assessment Report 16239.

CAPSULE GEOLOGY

This area is underlain by Upper Triassic Karmutsen Formation volcanics of the Vancouver Group. The rock is a massive dark green basalt with occasional chlorite and epidote filled amygdules.

Two short adits, of unknown history, occur along a major east-west linear trend (occupied by a creek) east of Mud Lake. Tuffaceous basalt is sheared, brecciated and silicified along a strike of 255 degrees and dip of 53 degrees north. A 1.5 metre wide quartz veins occurs in a heavily chloritized shear zone with associated limonite, azurite, malachite, chalcopyrite and bornite. A sample of this material assayed 5.91 per cent copper, 0.44 grams per tonne gold and 12.8 grams per tonne silver (Assessment Report 16239).

BIBLIOGRAPHY

EMPR ASS RPT *16101, *16239
EMPR EXPL 1987-C148
EMPR PF (Christopher, P.A. (1987): Report, in Prospectus, Della Terra Resources Ltd.)
GSC MAP 17-1968
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1987/12/09 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/03/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 341**

NATIONAL MINERAL INVENTORY:

NAME(S): **R**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07W
BC MAP:
LATITUDE: 49 16 49 N
LONGITUDE: 124 59 19 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized outcrop in a road cut on a north road from Highway 4, 2 kilometres south of Ward Lake, 13 kilometres west from the town of Port Alberni (Property File - Prospectus, Progress Mines Ltd.).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5460516
EASTING: 355370

COMMODITIES: Copper, Silver

MINERALS

SIGNIFICANT:	Chalcopyrite	Pyrite		
ASSOCIATED:	Carbonate	Silica	Limonite	
ALTERATION TYPE:	Carbonate	Silicific'n		Oxidation
MINERALIZATION AGE:	Unknown			

DEPOSIT

CHARACTER:	Shear	Stockwork	Disseminated
CLASSIFICATION:	Hydrothermal	Epigenetic	

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Basalt
Granodiorite
Granite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1971

COMMODITY	GRADE	
Silver	2.3900	Grams per tonne
Copper	0.7000	Per cent

REFERENCE: Property File - Prospectus, Progreess Mines Ltd.

CAPSULE GEOLOGY

The R occurrence area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) basalt to andesite intruded by granite-granodiorite rocks. A limonitic, carbonate altered and silicified sheared contact zone between andesite and granodiorite contains chalcopyrite and pyrite in fractures and as disseminations. The gossanous contact zone is about 30 metres wide. A grab sample assayed 0.7 per cent copper and 2.39 grams per tonne silver (Property File-Prospectus, Progress Mines Ltd.).

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR GEM 1972-269
EMPR PF (*Prospectus, Progress Mines Ltd.-October 25, 1971)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/25 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 342**

NATIONAL MINERAL INVENTORY:

NAME(S): **ISLAND**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04W
BC MAP:
LATITUDE: 49 14 32 N
LONGITUDE: 125 54 26 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Saranac Island (about 500 metres northwest of Meares Island).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5458451
EASTING: 288405

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Saranac Island is underlain by rocks of the Paleozoic Sicker Group (GSC Open File 463). Pyrrhotite and chalcopyrite in gabbro are reported to occur on the Island (Geology, Exploration and Mining in B.C. 1972, page 265).

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1969-217, *1972-265
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/02 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 343**

NATIONAL MINERAL INVENTORY:

NAME(S): **BAY CREEK**, CYPRESS, WHITECLIFF

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 16 39 N
LONGITUDE: 125 53 29 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the north shore of Cypress Bay, west of Bedwell Sound (Assessment Report 14003).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5462328
EASTING: 289707

COMMODITIES: Silver, Gold, Copper, Lead, Zinc

MINERALS
SIGNIFICANT: Pyrrhotite, Pyrite, Chalcopyrite
ALTERATION: Silica, Sericite
ALTERATION TYPE: Silicific'n, Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated, Layered
CLASSIFICATION: Syngenetic, Volcanogenic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Schistose Felsic Rock
Rhyolite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1885

COMMODITY	GRADE	
Silver	228.0000	Grams per tonne
Gold	0.4100	Grams per tonne
Copper	0.0610	Per cent
Lead	0.6200	Per cent
Zinc	0.0170	Per cent

REFERENCE: Assessment Report 14003, Figure 3.

CAPSULE GEOLOGY

The area is underlain by a thick succession of Paleozoic Sicker Group volcanics and sediments that have been intruded by numerous dykes, sills and plugs ranging from gabbro to granodiorite in composition.

The Sicker rocks comprise predominantly pyroclastic mafic to felsic volcanics with minor intercalations of chert, argillite and siltstone. The pyroclastics range from coarse lapilli (rarely breccia) tuffs to dusts tuffs. Generally, the strata has an average strike of 150 degrees and dip of 50 degrees. Stocks of mafic intrusives belonging to the pre-Jurassic Westcoast Complex disrupt area strata.

Mineralization in the area occurs in three principal modes:
1) Disseminated sulphides, primarily pyrite with rare chalcopyrite.
2) Fine lamellae to bands of massive to submassive sulphides.
3) Disseminated magnetite and/or ilmenite.

An occurrence of massive sulphide with a 4 metre surface width is hosted by silicified and sericitized schistose felsic rock (rhyolite) on the north shore of Cypress Bay. The showing is composed of up to 80 per cent pyrite and minor pyrrhotite. A sample assayed 228.00 grams per tonne silver, 0.41 grams per tonne gold, 0.62 per cent lead, 0.061 per cent copper and 0.017 per cent zinc (Assessment Report 14003, Fig.4).

CAPSULE GEOLOGY

Mineralization consisting of scattered zones of chalcopyrite and pyrrhotite are also reported to occur on the north shore of Cypress Bay between sea level and 30 metres elevation (Geology, Exploration and Mining in British Columbia 1972, p. 267).

BIBLIOGRAPHY

EMPR ASS RPT *14003, 15563, 16742, 17359
EMPR EXPL 1985-C150, 1987-C146, 1988-C86; 2002-29-40
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1969-217, *1972-267
EMPR OF 1999-2
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1990/01/04	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092F 344**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOT**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 16 57 N
LONGITUDE: 125 54 27 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5462929
EASTING: 288557

COMMENTS: North-south fissure on cancelled Hot 10 claim adjacent to the west and north of Indian Reserve 20. East-west fissures and mineralized gabbro on cancelled Hot 9 claim which existed adjacent to the east and north of Indian Reserve 20 (Assessment Report 3443). This reserve is located on the northern shore of Cypress Bay.

COMMODITIES: Copper, Gold, Silver

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite, Chlorite, Epidote
ALTERATION TYPE: Oxidation, Chloritic, Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear, Discordant
CLASSIFICATION: Hydrothermal, Epigenetic
COMMENTS: Mineralized fissures trend north-south and east-west.

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Undefined Formation	
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Meta Andesite
Gabbro

HOSTROCK COMMENTS: Mineralization occurs in both rock types.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1971

COMMODITY	GRADE	
Silver	17.1400	Grams per tonne
Gold	0.6900	Grams per tonne
Copper	2.3600	Per cent

REFERENCE: Assessment Report 3443.

CAPSULE GEOLOGY

The area is underlain by a thick succession of Paleozoic Sicker Group volcanics and sediments that have been intruded by numerous dykes, sills and plugs ranging from gabbro to granodiorite in composition.

The Sicker rocks comprise predominantly pyroclastic mafic to felsic volcanics with minor intercalations of chert, argillite and siltstone. The pyroclastics range from coarse lapilli (rarely breccia) tuffs to dusts tuffs. Generally, the strata has an average strike of 150 degrees and dip of 50 degrees. Stocks of mafic intrusives belonging to the pre-Jurassic Westcoast Complex disrupt area strata.

North striking fissures in meta-andesites measure from 30 to 60 centimetres in width and are reported to contain chalcopyrite, malachite, chlorite and epidote. A grab sample of this material assayed 2.36 per cent copper, 17.14 grams per tonne silver and 0.69 grams per tonne gold (Assessment Report 3443).

Nearby east-west striking fractures assayed up to 1.72 per cent copper (Assessment Report 3443). In the same area an altered gabbro

CAPSULE GEOLOGY

with epidote, actinolite and quartz is reported to contain chalcopyrite and malachite.

BIBLIOGRAPHY

EMPR ASS RPT *3106, *3443, *3444, 14003, 15563, 16742, 17359
EMPR EXPL 1985-C150, 1987-C146, 1988-C86
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1971-246, 1972-246
EMPR PF (*Prospectus: Thunder Valley Mines Ltd., Aug. 24, 1971)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 345** NATIONAL MINERAL INVENTORY:

NAME(S): **DUNSMUIR**, NANAIMO

STATUS: Past Producer Open Pit MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 11 49 N NORTHING: 5449924
LONGITUDE: 124 05 34 W EASTING: 420388
ELEVATION: 274 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quarry is 3.2 kilometres southwest of the powerline at Brannen Lake (Geology, Exploration and Mining in British Columbia 1974, page 377).

COMMODITIES: Shale

MINERALS
SIGNIFICANT: Shale
MINERALIZATION AGE: Upper Cretaceous
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Ammonites

DEPOSIT
CHARACTER: Massive Stratabound
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R01 Cement shale
SHAPE: Tabular
DIMENSION: 240 x 240 x 5 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Quarry dimensions in 1970.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Haslam	

DATING METHOD: Fossil
MATERIAL DATED: Ammonites

LITHOLOGY: Shale

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Bulletin 21.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Overlap Assemblage

CAPSULE GEOLOGY

The Dunsmuir occurrence is underlain by the Upper Cretaceous Nanaimo Group (Haslam Formation). The poorly-bedded shale is dark blue-grey when fresh, and weathers to a brown colour. It has a silty texture, and contains abundant pelecypods, ammonites and other fossils. The shale is brittle and shatters readily into 0.5 to 5.0 centimetre fragments.

Two samples of the shale were analyzed: sample 1 consisted of equal-sized chips picked at random from oxidized rock that formed the muck pile at the working face of the quarry; sample 2 consisted of equal-sized chips gathered at random from the freshest accessible exposures of the unweathered shale. The samples analyzed as follows (Geology, Exploration and Mining in British Columbia 1970, page 496):

	Sample 1 (values in per cent)	Sample 2
SiO2	52.88	53.64
Al2O3	17.01	16.06
Fe2O3	8.14	3.02
FeO	2.51	7.33
TiO2	1.50	1.56
CaO	0.54	1.14
MgO	2.04	2.59
Na2O	2.81	2.65
K2O	1.99	2.20
H2O	3.88 (-105 degrees Celsius)	2.48
H2O	6.11 (+105 degrees Celsius)	6.69

The shale was quarried for use in cement manufacture and is presently being quarried by Dunsmuir Quarries Ltd. (Mineral Market Update, July, 1991).

BIBLIOGRAPHY

EMPR ENG INSP Annual Report 1990

BIBLIOGRAPHY

EMPR GEM *1970-496; 1971-460; 1972-584; 1973-544; 1974-377
EMPR MAP 65 (1989)
EMPR Mineral Market Update July, 1991
EMPR MINING 1986-1987, p. 83; 1988, p. 82
EMPR OF 1992-1; 1992-9
GSC BULL 21
GSC MAP 27-1963; 49-1963; 17-1968; 1386A
GSC OF 9; 61; *463; *1272
GSC P 66-1; 68-50; 72-44; 79-30; 89-1E, p. 197
Sutherland Brown, A. (1988): Mineral Resources of the Alberni Region, British Columbia, Geoscience Research Program (RG87-26)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/10 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 346**

NATIONAL MINERAL INVENTORY:

NAME(S): **TT**, TT JT Y

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F16W
BC MAP:
LATITUDE: 49 54 11 N
LONGITUDE: 124 19 47 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location, from Geology, Exploration and Mining in British Columbia, 1972, is at Nanton Lake, approximately 14 kilometres north of Lang Bay.

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5528700
EASTING: 404513

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Molybdenite
ASSOCIATED: Pyrite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Quartz Diorite
Granodiorite
Tonalite

HOSTROCK COMMENTS: Age date from Powell Lake area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

CAPSULE GEOLOGY

The TT occurrence is underlain by quartz diorite, granodiorite and tonalite of the Jurassic to Tertiary Coast Plutonic Complex. Locally, mineralization is comprised of fracture coatings of chalcopyrite, bornite, molybdenite, pyrite and pyrrhotite.

BIBLIOGRAPHY

EMPR GEM 1972-273
GSC MAP 17-1968; 1386A
GSC OF 611
GSC P 66-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/26 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 347**

NATIONAL MINERAL INVENTORY:

NAME(S): **BB AND M**, RITA, GOLDEN DEER

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 26 23 N
LONGITUDE: 125 43 03 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Assumed to be located on the BB and M group, 150 metres from the main highway on the north side of Bedwell River and 10 kilometres from Bedwell Sound. However, work was reported by the same company at two other locations, one 11.67 kilometres from Bedwell Sound and 800 metres north of Bedwell River, the other at a point 8 kilometres from Bedwell Sound and 150 metres south of the Highway (Minister of Mines Annual Report 1942). The ore may have been shipped from any of the three locations.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5479890
EASTING: 303002

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Quartz Diorite
Granodiorite
Basalt
Andesite

HOSTROCK COMMENTS: Unknown but area is dominated by these types.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group) which are intruded by granitic rock of the Jurassic Island Plutonic Suite. In the Bedwell River area the Karmutsen rocks consist of fine-grained andesites and black or dark green basalts. The plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

Three tonnes of ore was mined in 1942 and 156 grams of gold was produced (Mineral Policy data). It is reported that over 15 metres of tunneling was completed in that year (Minister of Mines Annual Report 1942). No description of the deposit was recorded however and the exact location is also unknown.

BIBLIOGRAPHY

EMPR AR *1942-66
EMPR BULL 8; 13; 20
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 348**

NATIONAL MINERAL INVENTORY:

NAME(S): **BDQ**, PT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 06 35 N
LONGITUDE: 124 42 35 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location unknown, inferred to be located near the junction of Franklin River and Museum Creek on the present day PT claims.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5441061
EASTING: 375224

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Granodiorite
Diorite
Granite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
COMMENTS: Located in the Cowichan Uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE: Greenschist

CAPSULE GEOLOGY

The location of the BDQ showing is unknown, but it is inferred to occur near the junction of Franklin River and Museum Creek on the present day PT claims. Work done in 1940 reportedly produced 62 grams of gold, 156 grams of silver and 11 kilograms of copper (Annual Report 1940, page A27). The area is underlain by granodioritic, dioritic and granitic rocks of the Early to Middle Jurassic Island Plutonic Suite and volcanic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group.

During the 1988 mapping program by the B.C. Geological Survey, a moss-matt sediment sample was taken near this location, the values for base and precious metals were low (Open File 1989-6). There is no other geological information available for this showing.

BIBLIOGRAPHY

EMPR AR *1940-A27
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR INDEX 3-188
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/08 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 349**

NATIONAL MINERAL INVENTORY:

NAME(S): **MT. MCBRIDE**, BUTTLE LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12E
BC MAP:
LATITUDE: 49 41 36 N
LONGITUDE: 125 39 38 W
ELEVATION: 1590 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location centered on the surface trace of the widest limestone band as shown on Preliminary Map, Buttle Lake area, 1963.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5507933
EASTING: 308127

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Brachiopods/Fusulinids

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Irregular
MODIFIER: Folded
DIMENSION: 9000 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Folded into a north trending syncline.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	

DATING METHOD: Fossil
MATERIAL DATED: Brachiopods/Fusulinids

LITHOLOGY: Limestone
Volcanic Breccia
Tuff
Argillite
Basaltic Flow

HOSTROCK COMMENTS: Within the Buttle Lake uplift the Azure Lake Formation was previously known as the Buttle Lake Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Situated on the north end of the Buttle Lake uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The occurrence consists of two beds of limestone of the Pennsylvanian to Permian Azure Lake Formation, Buttle Lake Group, at the northern margin of the Buttle Lake uplift. The beds are folded into a north trending syncline which outcrop along the southeast slope of Mount McBride for 9 kilometres, just west of Buttle Lake.

The limestone beds are intercalated with and underlain by volcanic breccia, tuff and argillite. The uppermost bed is overlain by basaltic flows of the Upper Triassic Vancouver Group, Karmutsen Formation. The two beds are segmented by numerous northwest trending faults. See H-W (092F 330) for a discussion of the revised nomenclature of Buttle Lake uplift stratigraphy.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 12 (in Ministry Library))
EMPR MAP (Buttle Lake, 1963)
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 9,10; 79-30, p. 18
GSC SUM RPT 1930A, pp. 5960

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 350**

NATIONAL MINERAL INVENTORY:

NAME(S): **AVON**, CASTLE, BRAW, BURMONT

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 24 15 N
LONGITUDE: 125 45 30 W
ELEVATION: 150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the western bank of Bedwell River about 5 kilometres upstream from the river's mouth. Zones identified from Bulletin 8 and Assessment Report 3629. Showings range in elevation from 150 metres (or lower) to 400 metres elevation.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5476045
EASTING: 299898

COMMODITIES: Gold, Silver, Copper, Lead

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Magnetite, Galena
ASSOCIATED: Quartz, Calcite
ALTERATION: Clay, Magnetite
ALTERATION TYPE: Argillic, Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic, Skarn
TYPE: I06 Cu±Ag quartz veins, K01 Cu skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Fine Grained Volcanic
Andesite
Basalt
Limestone
Quartz Diorite
Granodiorite
Dacite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1939

COMMODITY	GRADE	
Silver	65.1400	Grams per tonne
Gold	8.9100	Grams per tonne

COMMENTS: A 20 centimetre chip.
REFERENCE: Bulletin 8, page 32.

CAPSULE GEOLOGY

The area is underlain mainly by volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. In the Bedwell River area, these consist of fine grained andesites and black or dark green basalts. Some lenses of recrystallized limestone also occur. Large areas to the immediate west of the head of Bedwell Sound and a few kilometres to the north are underlain by rock of the Early to Middle Jurassic Island Plutonic Suite. These plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

Three veins occur west of Bedwell River from about 150 to 400 metres elevation (Bulletin 8). Skarn mineralization has also been reported to occur in the vein area.

The "A" vein is exposed at about 150 metres elevation and to the west again at about 335 metres elevation. The host rock is a fine

CAPSULE GEOLOGY

grained volcanic, locally amygdaloidal, which towards the western end is intruded by irregular masses of granitic rock. The wall rock is locally crushed and sheared. The strike of the vein is a little north of east; the dip ranges from 35 to 60 degrees northward. The western section is exposed for 18 metres, the eastern section for 30 metres. The two sections are separated by a distance of approximately 200 metres. The vein, occurring as lenses or as fillings of joints in the walls, generally ranges from about 4 to 40 centimetres in width. Gouge, up to 75 centimetres in width also occurs in the zone. The vein itself consists of quartz with some calcite mineralized with sparse amounts of pyrite, chalcopyrite and galena. A 20 centimetre chip sample taken across the vein assayed 8.91 grams per tonne gold and 65.14 grams per tonne silver (Bulletin 8).

From a point about 100 metres southwest from the western end of the "A" vein, old cuts and strippings follow the "B" vein for 38 metres. The average strike is east of north and the dip is 45 degrees west. At its south end the vein cuts a dacite dyke that occurs at the contact of limestone, on the east, and quartz diorite, on the west. Farther north the vein diverges to the west, leaving the contact zone and occurring entirely within the quartz diorite. The vein, ranging from 2.5 to 13 centimetres in width, is composed of quartz and contains similar mineralogy as the "A" vein. One sample assayed 85.71 grams per tonne gold and 41.14 grams per tonne silver (Bulletin 8).

The "C" vein lies about 350 metres north-northwest from the "B" vein, outcropping along quartz diorite bluffs. It strikes approximately northwest and dips about 45 degrees to the southwest. The vein was poorly exposed when examined but showed evidence of being at least 34 metres long. Quartz vein, pyrite and galena were observed in the zone. A 25 centimetre sample contained 15.09 grams per tonne gold (Bulletin 8). A shaft near the northwest end of the exposure is presumed to have been sunk in 1898 or 1899.

About 200 metres north of the western exposure of the "A" vein an old shaft and adit crosscut are found. The adit was driven west for about 80 metres passing through volcanics, cut by masses of quartz diorite and dacite dykes, and 50 metres of limestone, ending at a contact with quartz diorite. The shaft is located about 38 metres east of the adit portal. Mineralization found there consists of magnetite with chalcopyrite, pyrite and some calcite.

In 1969 eight tonnes of copper-iron ore were shipped from a deposit on the Braw 1 mineral claim. The deposit consists of a northeast trending zone (presumably skarn in limestone) 0.9 metres wide which can be traced for a length of 30 metres (Assessment Report 3629). From this shipment 31.10 grams of gold, 435.40 grams of silver and 861 kilograms of copper were produced (Minister of Mines Annual Report 1966). The Braw 1 claim is located immediately west of Bedwell River and appears to either cover, or be adjacent to, the eastern part of the "A" vein.

A parallel zone was located 460 metres to the west of the copper-iron zone within a limestone horizon that trends to the northeast and has been traced for over 460 metres. Magnetite and chalcopyrite are exposed over widths of 3 metres (Assessment Report 3629). An intrusive contact was observed 30 metres to the west of the limestone.

BIBLIOGRAPHY

EMPR AR 1898-1133, 1899-606,790, 1900-923, 1966-A49
EMPR ASS RPT 2997, *3629, 7439, 13571, 14067
EMPR BULL *8, pp. 28-35; 13, p. 30
EMPR EXPL 1975-E97, 1979-130, 1985-C149, 1988-C85
EMPR GEM 1971-246
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50, p. 38; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/25 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 351**

NATIONAL MINERAL INVENTORY:

NAME(S): **MARBLE PEAK**, BUTTLE LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12E
BC MAP:
LATITUDE: 49 39 44 N
LONGITUDE: 125 34 01 W
ELEVATION: 720 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location centered on surface trace of eastern limestone band, as shown on Preliminary Map Buttle Lake area, 1963.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5504240
EASTING: 314759

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Brachiopods/Fusulinids

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 9999 x 1100 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Folded into a north plunging syncline. Deposit dimensions are 13300 by 1100 metres.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	

DATING METHOD: Fossil
MATERIAL DATED: Brachiopods/Fusulinids

LITHOLOGY: Limestone
Basaltic Flow
Volcanic Breccia
Tuff
Argillite

HOSTROCK COMMENTS: Within the Buttle Lake uplift the Azure Lake Formation was previously known as Buttle Lake Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Situated on the northern margin of the Buttle Lake uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

At the northeast margin of the Buttle Lake uplift a bed of Pennsylvanian to Permian limestone of the Azure Lake Formation, Buttle Lake Group is folded into a northwesterly plunging syncline. On the east limb the bed outcrops as a band up to 1100 metres wide that extends northeastward from Marble Peak to the west shore of Buttle Lake for 13.3 kilometres. On the west limb the bed forms a narrow, discontinuous band that is extensively faulted.

Overlying basaltic flows of the Upper Triassic Vancouver Group, Karmutsen Formation are preserved along the axis of the syncline. The limestone is underlain by volcanic breccia, tuff and argillite. See H-W (092F 330) for a discussion of the revised nomenclature of Buttle Lake uplift stratigraphy.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 12 (in Ministry Library))
EMPR MAP (Buttle Lake, 1963)
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 9,10; 79-30, p. 18
GSC SUM RPT 1930A, pp, 59,60

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 352**

NATIONAL MINERAL INVENTORY:

NAME(S): **WHITE RIDGE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13W
BC MAP:
LATITUDE: 49 46 10 N
LONGITUDE: 125 57 32 W
ELEVATION: 1280 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location centered on surface trace of limestone, as shown on Geological Survey of Canada Map 17-1968.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5517199
EASTING: 286948

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: Limestone trends northwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Basaltic Flow

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Formed on a shallow marine platform of ocean rift volcanics.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

A northwest trending mass of Upper Triassic Vancouver Group, Quatsino Formation limestone occurs just west of the Strathcona Park Boundary, 58 kilometres southwest of the town of Campbell River. The mass is up to 1000 metres wide, outcropping for 5 kilometres along the top of White Ridge. The limestone is underlain by basaltic flows of the Upper Triassic Vancouver Group, Karmutsen Formation.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 12 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/13 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 353**

NATIONAL MINERAL INVENTORY:

NAME(S): **QUINSAM LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E 092F14W
BC MAP:
LATITUDE: 49 51 01 N
LONGITUDE: 125 31 14 W
ELEVATION: 884 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location centered on surface trace of limestone band, as shown on Geological Survey of Canada Map 17-1968.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5525031
EASTING: 318809

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 6000 x 1250 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone strikes northwest, dips northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Basaltic Flow
Granodiorite
Clastic Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Formed on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

A band of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 1.25 kilometres wide, extends southeastward from the east shore of Upper Quinsam Lake for 6 kilometres to the headwaters of the Iron River, 28 kilometres southwest of the town of Campbell River. The limestone dips to the northeast. It is segmented by a series of north to northwest trending faults. The band is bounded to the northeast by granodiorite of the Jurassic Island Intrusions and clastic sediments of the Cretaceous Comox Formation. Underlying basaltic flows of the Upper Triassic Vancouver Group, Karmutsen Formation outcrop to the southwest. The Argonaut magnetite deposit (092F 075), is hosted in the northwestern end of this limestone band.

BIBLIOGRAPHY

EMPR BULL 23, p. 91; 40, p. 84
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 12 (in Ministry Library))
EMPR P 1984-3
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 14,15
GSC SUM RPT 1930A, pp. 61,62

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/13 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 354**

NATIONAL MINERAL INVENTORY:

NAME(S): **BROOKLYN (L.701)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 24 02 N
LONGITUDE: 125 45 31 W
ELEVATION: 220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The position is reported relative to the Seattle (L.700) occurrence (092F 054) which would place it on the Brooklyn (L.701) crown grant (Bulletin 8, page 27).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5475645
EASTING: 299863

COMMODITIES: Gold Lead

MINERALS
SIGNIFICANT: Pyrite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Fine Grained Volcanic
Andesite
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1939

COMMODITY	GRADE	
Gold	10.9700	Grams per tonne

REFERENCE: Bulletin 8, page 27.

CAPSULE GEOLOGY

The area is underlain mainly by volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. In the Bedwell River area these consist of fine grained andesites and black or dark green basalts. Some lenses of recrystallized limestone also occur. Large areas to the immediate west of the head of Bedwell Sound and a few kilometres to the north are underlain by rock of the Early to Middle Jurassic Island Intrusions. These plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

A surface cut running at 030 degrees exposes a northward dipping fracture, as well as other fractures branching off that strike almost due east and dip southward at moderate angles. The fractures are filled with quartz which carries some pyrite and a little galena. The main vein is up to 10 centimetres in width near the central part of the exposure but is only about 1 centimetre wide at the north end. Branching veins swell to 20 centimetres near the southern end of the exposure. The host rock is reported to be a fine grained volcanic.

A sample taken from the main vein where it has a 9 centimetre width assayed 10.97 grams per tonne gold and a trace of silver. A sample taken from a branch vein where it has a 13 centimetre width contained 41.83 grams per tonne gold and a trace of silver (Bulletin 8).

BIBLIOGRAPHY

EMPR AR 1899-792; 1902-232; 1903-192; 1928-372; 1929-375

BIBLIOGRAPHY

EMPR ASS RPT 3629, 7439, 13571, 14067
EMPR BULL *8, p. 27; 13
EMPR EXPL 1985-C149, 1988-C85
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (Sketch of Seattle group showing position of tunnels and open cuts (located in Seattle (092F 054) file)
GSC MAP 17-1968; 1386A
GSC MEM 204, p. 25
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/01/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 355**

NATIONAL MINERAL INVENTORY:

NAME(S): **DECEMBER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 44 03 N
LONGITUDE: 124 31 40 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drill hole collars, 1.5 kilometres south of Emily Lake just south of the Imperial Limestone quarry (092F 394), 3 kilometres south-southeast from the community of Vananda on Texada Island (Assessment Report 612).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510195
EASTING: 389908

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Magnetite
ALTERATION: Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Porphyritic Dike
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:
PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The December occurrence is underlain by limestone of the Upper Triassic Quatsino Formation (Vancouver Group). The Marble Bay fault is just to the north.

Diamond drilling has revealed that the limestone contains numerous skarn zones which have been cut by porphyritic dykes. Chalcopyrite and magnetite occur in veinlets and as minor disseminations.

BIBLIOGRAPHY

EMPR ASS RPT 612
EMPR FIELDWORK 1989, pp. 257-265
EMPR GEM *1973-234
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/15 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 356**

NATIONAL MINERAL INVENTORY: 092F6 Cu2

NAME(S): **B**, DEDE, EM

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E
BC MAP:
LATITUDE: 49 17 01 N
LONGITUDE: 125 06 28 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of B 13 claim on claim map 92F/6E (1973) close to the north shore of Sproat Lake, 21.5 kilometres west from the town of Port Alberni.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5461122
EASTING: 346714

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Basalt
Granitic Rock
Granite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The B occurrence area is underlain by basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) intruded by granitic rocks. A short adit exposes a shear zone in the basalt close to the intrusive rocks and a major northwest trending fault. The shear zone contains quartz with chalcopyrite mineralization.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR GEM 1972-268; 1973-233
EMPR PF (*NMI-National Mineral Inventory card)
EMR MP CORPFILE (McLeod Copper Ltd.)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/25 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 357**

NATIONAL MINERAL INVENTORY:

NAME(S): **RETRIEVER (L.150)**

STATUS: Past Producer Underground
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 42 50 N
LONGITUDE: 124 34 33 W
ELEVATION: 138 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit on Lot 150, on the southern slopes of Surprise Mountain, 5.4 kilometres south-southwest from the community of Vananda on Texada Island (Assessment Report 18672).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508012
EASTING: 386398

COMMODITIES: Copper Lead Zinc Silver Gold

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Galena Sphalerite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: PIT

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Silver	37.1000	Grams per tonne
Gold	0.6100	Grams per tonne
Copper	0.9700	Per cent
Lead	2.2500	Per cent
Zinc	6.4600	Per cent

COMMENTS: Sample from pit.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group) overlain by a 15 metre thick subhorizontal unit of columnar jointed basalt. Mineralized quartz and quartz-carbonate veins with variable sulphide content, are associated with narrow, steeply dipping shear zones.

The Retriever occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation cut by north trending and later(?) east trending shear structures. The shear zones host two quartz veins 30 metres apart. The northerly vein strikes in an east direction with 65 degree dips to the south and averages 60 centimetres wide. The second vein is 30 metres south and averages 91 centimetres wide. Mineralization consists of pyrite, chalcopyrite, galena and sphalerite. A grab sample from a pit assayed 0.97 per cent copper, 2.25 per cent lead, 6.46 per cent zinc, 37.1 grams per tonne silver and 0.61 grams per tonne gold (Assessment Report 18672).

Past work includes 2 shafts sunk on the veins and an adit which intersects both veins and connects with the shafts. Some limited production was recorded.

BIBLIOGRAPHY

EMPR AR *1916-K358; 1917-F258,F294; 1934-F11

BIBLIOGRAPHY

EMPR ASS RPT *18672
EMPR FIELDWORK 1989, pp. 257-270
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/22 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 358**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLUE GROUSE**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13E
BC MAP:
LATITUDE: 49 59 43 N
LONGITUDE: 125 32 27 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located near Reginald Lake, just east of the northern end of Upper Cambell Lake (Minister of Mines Annual Report 1956).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5541199
EASTING: 317898

COMMODITIES: Copper Silver Lead

MINERALS
SIGNIFICANT: Chalcopyrite Sphalerite
COMMENTS: These minerals are not reported, but only assumed.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Rhyolite
Dioritic Rock

HOSTROCK COMMENTS: These are the two dominant units in the area. The host unit is unknown.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area of Reginald Lake is underlain by Lower Jurassic Bonanza Group volcanics intruded by, and in fault contact with, plutonic rock of the Early to Middle Jurassic Island Plutonic Suite. The Bonanza rocks are composed mainly of lava, tuff and breccia, usually of basaltic and rhyolitic composition. Intercalated beds and sequences of marine argillite and greywacke also occur. The composition of the Island Intrusions on Vancouver Island may vary from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

Little is known of this occurrence except that in 1956 a shipment of crude ore totalling 19 tonnes was shipped from the vicinty of Reginald Lake under the name of Blue Grouse (Minister of Mines Annual Report 1956). From this ore came 560 grams of silver, 2,190 kilograms of copper and 13 kilograms of lead (Mineral Policy data).

Better Resources Ltd. (Press Release June 14, 2002) conducted a geochemical and geophysical survey in 1999-2000.

BIBLIOGRAPHY

EM EXPL 1999-25-32; 2002-29-40
EMPR AR *1956-A48
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 80-16
PR REL Better Resources Ltd., June 14, 2002
WWW http://www.infomine.com/index/properties/BLUE_GROUSE.html

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/25 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 359**

NATIONAL MINERAL INVENTORY:

NAME(S): **GEM (L.441)**, NUTCRACKER

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 44 07 N
LONGITUDE: 124 34 32 W
ELEVATION: 152 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on Lot 441, 500 metres southeast of Kirk Lake, 2.8 kilometres south-southwest form the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510390
EASTING: 386468

COMMODITIES: Gold, Silver, Lead, Copper

MINERALS
SIGNIFICANT: Pyrite, Gold, Galena, Chalcopyrite
ASSOCIATED: Quartz, Calcite, Pyrrhotite, Arsenopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Stockwork
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	5.4500	Grams per tonne

COMMENTS: Sample of quartz-calcite vein.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Gem occurrence is underlain by amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) close to the intersection of the Kirk Lake and Holly faults.

A fault zone in basalt hosts steeply dipping quartz veinlets and an occasional massive vein with subordinate amounts of calcite. The zone ranges in width from 0.6 to 1.2 metres. Mineralization consists of pyrite, local native gold, galena, occasional chalcopyrite and minor pyrrhotite and arsenopyrite. High, but erratic gold with minor silver values occur along the length of the vein system. A sample of a brecciated, pyritic quartz-calcite vein mineralized with chalcopyrite and minor galena assayed 5.45 grams per tonne gold (Assessment Report 18672).

Past development included shafts and drifting on two levels. Although production records report 2 tonnes of ore mined, the workings at the mine site indicate considerably more mining took place (Assessment Report 18672).

BIBLIOGRAPHY

EMPR AR 1896-554; 1897-564; 1898-1145; 1903-H205; 1914-K381; 1916-K357; 1923-A259; 1924-B248,B249; *1925-A284-A286; 1926-A315,A316; 1927-358; 1928-C383,C384
EMPR ASS RPT *6414, *18672
EMPR FIELDWORK 1989, pp. 257-270
EMPR GEM 1977-E113
EMPR OF 1988-28; 1990-3
GSC EC GEOL 3, pp. 86-102

BIBLIOGRAPHY

GSC MAP 1386A; 17-1968
GSC MEM 58, p. 93
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/19 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 360**

NATIONAL MINERAL INVENTORY:

NAME(S): **COUS CREEK**, SKARN A, SKARN, A, VEZINA, OTTER, AL, PORT

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 12 17 N
LONGITUDE: 124 54 59 W
ELEVATION: 560 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Formerly A South and A North. Skarn mineralization occurs for over one kilometre along a northwest trend (Assessment Report 16918, Map 1). Centre of zone. This skarn altered belt extends off the Skarn claims to the northwest and southeast.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5451982
EASTING: 360410

COMMODITIES: Copper, Gold, Silver, Iron

MINERALS

SIGNIFICANT: Pyrrhotite, Pyrite, Chalcopyrite, Bornite, Magnetite
ALTERATION: Garnet, Epidote, Malachite, Azurite
ALTERATION TYPE: Skarn, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Disseminated, Massive
CLASSIFICATION: Skarn, Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone, Andesite, Skarn

HOSTROCK COMMENTS: Skarn mineralization occurs in both limestone and volcanics.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE:
COMMENTS: Skarn mineralization.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	1.1600	Grams per tonne
Copper	0.1500	Per cent

COMMENTS: Sample R-13.
REFERENCE: Assessment Report 16918, page 22.

CAPSULE GEOLOGY

The Cous Creek prospect is located 9.4 kilometres southwest of Port Alberni, 4.6 kilometres south of the east end of Stirling Arm on Sproat Lake.

A narrow band of limestone of the Upper Triassic Quatsino Formation (Vancouver Group) strikes northwest under a saddle, between Karmutsen Formation (Vancouver Group) andesite on the northeast and Bonanza Group volcanics on the southwest. A few exposures of Parson Bay (Vancouver Group) sedimentary rocks occur between the Quatsino and Bonanza rocks. Dioritic to granodioritic intrusions of the Jurassic Island Intrusions are exposed to the north and east of the mineralized area.

Aquila Energy Corp. entered into a 4-year, 70 per cent interest option agreement in May 2002.

The limestone is intruded by irregular bodies of andesite which has been locally altered to garnet-epidote skarn. Several types of mineralization occur within Karmutsen volcanics irregular alteration

CAPSULE GEOLOGY

to skarn and irregular mineralization consisting of chalcopyrite, lesser bornite and superficial malachite and azurite. Pockets and disseminations of chalcopyrite and bornite occur in skarn and limestone in an area where the limestone is intruded by andesite. Massive magnetite appears, midway along the ridge flank, containing bands and pockets of pyrrhotite with some chalcopyrite. The most common are veins, pods or lenses of massive sulphides, up to 1 metre wide and at least 6 metres in length, containing mainly massive pyrrhotite and pyrite, with lesser amounts of chalcopyrite and bornite. Assay values from these range from 0.01 to 3.95 per cent copper and 1.36 to 55.20 grams per tonne silver (George Cross News Letter).

A sample of sulphide rich material assayed 1.16 grams per tonne gold, 1.6 grams per tonne silver and 0.15 per cent copper (Assessment Report 16918).

BIBLIOGRAPHY

EMPR ASS RPT 5981, 6393, 6956, 12872, 15780, *16918, 17441
EMPR BULL 3, 1917
EMPR FIELDWORK 1976-31, 1988, pp. 61-74
EMPR GEM *1974-173, 1976-E112 1977-E110
EMPR OF 1988-28
EMPR P 1989-3
EMPR PF (*Two reports by G.E.P. Eastwood of the B.C. Geological Survey, 1974)
GSC BULL 172
GSC EC GEOL 3, Vol.1, pp. 226-228
GSC MAP 49-1963; 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 71-36; 72-44
CANMET RPT #47
GCNL *#217, 1983
PR REL Aquila Energy Corp., May 23, 2002
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1996/11/13 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 361**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUMMIT**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 13 17 N
LONGITUDE: 124 55 36 W
ELEVATION: 560 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near Fosseli Creek (Assessment Report 5650).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5453853
EASTING: 359708

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite Azurite
ASSOCIATED: Quartz
ALTERATION: Malachite Azurite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia
CLASSIFICATION: Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Bonanza	Undefined Formation	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Volcanic
Limestone

HOSTROCK COMMENTS: Mineralized volcanics near Quatsino limestone.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1974

COMMODITY	GRADE	
Copper	0.0200	Per cent

REFERENCE: Assessment Report 5650.

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Bonanza Group volcanics and limestone of the Upper Triassic Quatsino Formation, Vancouver Group. A pyrite stained outcrop consisting of a mixture of soft brown volcanic rock and quartz, and mineralized in a narrow zone with malachite and azurite, is thought to be a breccia. A few hundred metres to the north mineralized volcanic is reported to contain 0.02 per cent copper (Assessment Report 5650). Float containing chalcopyrite was also reported.

BIBLIOGRAPHY

EMPR ASS RPT *5650, 12242, 15137, 17441
GSC MAP 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1990/04/23
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 362**

NATIONAL MINERAL INVENTORY:

NAME(S): **BUCK 1**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 12 21 N
LONGITUDE: 124 58 05 W
ELEVATION: 520 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: About 4 kilometres south of Two Rivers Arm, Sproat Lake (Assessment Report 17152, Map 1). See rock sample R20 and R21, Appendix I, pages 2 and 3.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5452202
EASTING: 356650

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ALTERATION: Kaolinite
ALTERATION TYPE: Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic Porphyry
Dacitic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1987

COMMODITY	GRADE	
Copper	0.2500	Per cent

COMMENTS: A 30 centimetre chip sample.
REFERENCE: Assessment Report 17152.

CAPSULE GEOLOGY

Chalcopyrite is hosted by a pyritic, slightly kaolinized, volcanic outcrop of the Upper Triassic Karmutsen Formation, Vancouver Group. A 30 centimetre wide sample of this material contained 0.25 per cent copper (Assessment Report 17152).

A 30 centimetre wide dacitic dyke intrudes volcanic porphyry about 100 metres to the west of the above sample. The dyke strikes 045 degrees and dips 80 degrees to the west. The dyke and the country rock contain about 2 to 3 per cent pyrite. A 30 centimetre chip sample assayed 0.62 grams per tonne gold and 0.1 per cent arsenic (Assessment Report 17152).

BIBLIOGRAPHY

EMPR ASS RPT 15169, *17152
EMPR PF (Prospectus: Stonewall Resources Inc., Aug. 12, 1988)
GSC MAP 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1990/04/24
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 363**

NATIONAL MINERAL INVENTORY:

NAME(S): **WILL**, RAVEN, TEXADA LIME

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 52 N
LONGITUDE: 124 31 19 W
ELEVATION: 101 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Test quarry on Will 3 claim as shown in Assessment Report 5793, Maps 1 and 5.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509847
EASTING: 390322

COMMODITIES: Limestone Copper

MINERALS
SIGNIFICANT: Calcite Chalcopyrite
ALTERATION: Pyrite Silica
ALTERATION TYPE: Pyrite Silicific'n
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Tabular
DIMENSION: 900 x 600 x 100 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Will deposit.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Andesitic Dike
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: WILL REPORT ON: Y

CATEGORY: Inferred YEAR: 1970
QUANTITY: 136000000 Tonnes

COMMODITY	GRADE	
Limestone	95.0000	Per cent

COMMENTS: Minimum average grade. Grade given is for CaCO3.
REFERENCE: Industrial Mineral File - O'Connor, J.T. (1970).

ORE ZONE: BLOCK B REPORT ON: Y

CATEGORY: Indicated YEAR: 1954
QUANTITY: 295000 Tonnes

COMMODITY	GRADE	
Limestone	55.3300	Per cent

COMMENTS: Grade given for CaO.
REFERENCE: Industrial Mineral File - Dolmage, D.R. (1954).

ORE ZONE: BLOCK A REPORT ON: Y

CATEGORY: Measured YEAR: 1954
QUANTITY: 500000 Tonnes

COMMODITY	GRADE	
Limestone	54.4000	Per cent

COMMENTS: Grade given for CaO.
REFERENCE: Industrial Mineral File - Dolmage, D.R. (1954).

CAPSULE GEOLOGY

The Will quarry lies near the eastern edge of a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation

CAPSULE GEOLOGY

limestone up to 3 kilometres wide that is preserved along the axis of a broad northwest plunging syncline. Moderately west dipping basaltic flows of the underlying Upper Triassic Vancouver Group, Karmutsen Formation outcrop just east of the quarry. The deposit lies within the lower high calcium limestone member of the formation. The unit is estimated to be at least 150 metres thick in this vicinity.

Diamond drilling within and around the test quarry between 1973 and 1975 encountered dark grey to black, fine-grained, massive limestone with some coarse-grained, medium to light grey limestone down to a depth of at least 65.5 metres. The cored limestone is cut by some pyrite and calcite veins and intruded by a few andesitic dykes. On surface, seven diorite dykes trending northwest and northeast and varying up to 9 metres in width, outcrop south of the quarry. Narrow zones of silicification and pyritization are present in addition to the occasional schist inclusion. The limestone is locally brecciated.

Diamond drilling in 1979, 100 metres northeast of the test quarry, encountered amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group). Some fracture-related chalcopyrite mineralization was intersected and a sample assayed over 2 per cent copper (Assessment Report 7843).

The Will deposit contains inferred reserves of 136 million tonnes of limestone over a 900 metre by 600 metre area down to a depth of 100 metres, with a minimum grade of 95 per cent $CaCO_3$, less than 1 per cent MgO and less than 2 per cent SiO_2 (J.T. O'Connor (1970), page 10; J.W. MacLeod (1978), page 5). Diamond drilling and surface sampling was carried out in two areas, Block A and Block B, up to 1954. Block A, located 150 to 300 metres north of the quarry, contains measured geological reserves of 500,000 tonnes of limestone averaging 54.40 per cent CaO, 0.25 per cent MgO, 2.27 per cent insolubles, 0.23 per cent Al_2O_3, 0.260 per cent Fe_2O_3, less than 0.015 per cent MnO_2, less than 0.050 per cent P_2O_5, 0.060 per cent sulphur, 0.56 per cent carbonaceous matter and 41.780 per cent CO_2 (Dolmage (1954), page 6). Block B, located just east of the quarry contains indicated reserves of 295,000 tonnes of limestone averaging 55.33 per cent CaO, 0.32 per cent MgO, 1.6 per cent insolubles, 0.160 per cent Al_2O_3, 0.160 per cent Fe_2O_3, less than 0.006 per cent MnO_2, 0.046 per cent P_2O_5, 0.053 per cent sulphur, 0.290 per cent carbonaceous matter and 42.22 per cent CO_2 (Dolmage (1954), page 6).

BIBLIOGRAPHY

EM EXPL 2001-23-31
EMPR ASS RPT 3244, *4903, *5793, 7219, 7843, 14474
EMPR BULL 40, pp. 52-58
EMPR GEM 1971-250; 1973-548, 1974-383
EMPR OF 1992-18, pp. 26-27
EMPR PF (*Reports on Raven Bay Property by Dolmage, D.R. (1954), O'Connor, J.T. (1970), MacLeod, J.W. (1978); Drill core logs from 1973 drilling by Texada Lime)
GSC MAP 1386A; 17-1968
GSC MEM 58, pp. 90,99
GSC OF 463
GSC P 68-50, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/18 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 364**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOLIVAR**

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 45 38 N
LONGITUDE: 124 35 26 W
ELEVATION: 61 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pit, 1 kilometre west from the head of Sturt Bay and 1 kilometre north of Spectacle Lake, 2.5 kilometres west from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5513223
EASTING: 385447

COMMODITIES: Gold, Silver, Copper, Zinc

MINERALS

SIGNIFICANT: Gold, Chalcopyrite, Sphalerite
ASSOCIATED: Graphite, Pyrite, Pyrrhotite, Quartz
ALTERATION: Epidote
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Stockwork, Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins; K01 Cu skarn
DIMENSION: 0041 x 0015 x 0003 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Ore zone.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Basalt
Basaltic Dike
Marble
Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: PIT
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Bulk Sample
YEAR: 1987

COMMODITY	GRADE	
Gold	5.1400	Grams per tonne

COMMENTS: Initial millfeed from ore mined.
REFERENCE: George Cross News Letter #89, 1987.

CAPSULE GEOLOGY

The Bolivar occurrence area is underlain by Upper Triassic Quatsino Formation limestone in an interdigitating contact with Karmutsen Formation basalt, both formations of the Vancouver Group. An irregular wedge, thinning to the northwest, of siliceous skarnified rock follows a structure that roughly parallels the limestone/basalt contact. Some disseminated pyrite and minor chalcopyrite occurs within this unit and along the contact with the basalt and limestone. The basalts are thick bedded, amygdaloidal and massive flows which locally are epidotized and cut by quartz veins. The quartz veins range from a fraction of a centimetre to 50 centimetres or more in width and commonly contain pyrite and lesser amounts of pyrrhotite and chalcopyrite. Local intense zones of epidotization are accompanied by some silicification with associated pyrite, pyrrhotite and chalcopyrite. The limestone is mainly fine-grained and grey and cut by numerous basaltic dykes. Local zones within the limestone show varied intensity of recrystallization to marble. Black carbonaceous (graphitic) material occurs in

CAPSULE GEOLOGY

pockets, along sinuous partings and along the outer margins of the recrystallized zones.

Native gold occurs as streaks and disseminations along subparallel graphitic slips in a sheeted zone of variably recrystallized limestone. Pyrite is also present but is most abundant in the carbonaceous material. The gold-bearing zone is 41 metres long, 3 metres wide and extends to a depth of 15 metres. Diamond drilling has indicated north dipping stratigraphy and a mylonitic contact zone with footwall basaltic volcanics. A sludge sample of drill core assayed up to 1.9 grams per tonne gold with minor values in silver (Assessment Report 11826).

Diamond drilling has also revealed that silver values are associated with stringer-type sphalerite veinlets, pyrrhotite and minor chalcopyrite in a graphitic shear zone in limestone elsewhere on the property.

A 1734 tonne bulk sample from the Bolivar pit returned a total of 1031.14 grams of gold (Assessment Report 16702). Ore has subsequently been mined from the Bolivar pit where initial mill feed graded 5.14 grams per tonne gold (George Cross Newsletter #89, 1987).

BIBLIOGRAPHY

EM EXPL 2000-25-32
EMPR ASS RPT 5019, 5693, 6842, *11826, 14827, 16702
EMPR EXPL 1978-E133; 1977-E115,E116; 1975-E103
EMPR FIELDWORK 1989, pp. 257-265
EMPR GEM *1974, pp. 183-188
EMPR OF 1988-28; 1990-3
EMPR PF (*Various sketches, maps, drill sections, drill logs, assays, photographs and report on the Bolivar property)
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
GCNL #89, 1987; #59, 1985; #18, 1984
NAGMIN Feb.15, 1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/27 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 365**

NATIONAL MINERAL INVENTORY:

NAME(S): **OYSTER**, PYRRHOTITE CREEK, MWC 226

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W
BC MAP:
LATITUDE: 49 46 49 N
LONGITUDE: 125 18 03 W
ELEVATION: 1036 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Oyster breccia is located 3 kilometres north of Mount Washington peak; Pyrrhotite Creek is an adjacent mineralized epithermal structure (Assessment Report 17193).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5516742
EASTING: 334363

COMMODITIES: Gold, Silver, Copper, Lead, Molybdenum

MINERALS

SIGNIFICANT: Arsenopyrite, Molybdenite, Chalcopyrite, Pyrite, Realgar, Orpiment
ASSOCIATED: Quartz, Chlorite, Carbonate
ALTERATION: Limonite, Kaolinite, Silica
ALTERATION TYPE: Oxidation, Argillic, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia, Vein
CLASSIFICATION: Epithermal, Hydrothermal, Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Cretaceous	Nanaimo	Comox	
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Quartzite
Basalt
Diorite

HOSTROCK COMMENTS: The breccia zone with accompanying sulphide occurs with clasts of all three units.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1987

COMMODITY	GRADE	
Silver	31.8800	Grams per tonne
Gold	14.5000	Grams per tonne
Lead	1.0400	Per cent

REFERENCE: Assessment Report 17193.

CAPSULE GEOLOGY

The Mount Washington area is underlain by sediments of the Upper Cretaceous Nanaimo Group (Comox Formation), which unconformably overlie mafic volcanic rocks of the Upper Triassic Vancouver Group (Karmutsen Formation). Intruding both formations is an Oligocene quartz diorite stock of the Mount Washington Intrusive Suite, dated at 35 million years (+/- 6 million years). Several later breccias zones follow the Karmutsen-Comox unconformity and cut all rock units. They have recently been interpreted as stacked thrust faults or de-collements and have been mineralized by a later Tertiary epithermal gold-copper-arsenic event (see 092F 116).

The Karmutsen Formation comprises basaltic, massive and pillow lavas that are commonly porphyritic. The lavas grade into pillow breccias and aquagene tuffs. The overlying Comox Formation comprises fine-grained sandstone and greywacke, with interbedded siltstone. A basal conglomerate of the Comox Formation known as the Benson member consists of rounded clasts of Karmutsen Formation rocks.

CAPSULE GEOLOGY

The Tertiary quartz diorite stock is variably porphyritic and forms the core of Mount Washington. Several sills and dykes of quartz diorite and quartz diorite porphyry are related to the stock.

The Oyster breccia is a roughly circular feature that measures in excess of 350 metres in diameter and is thought to be a collapse breccia. The rocks surrounding the breccia "pipe" are mainly massive and/or amygdaloidal Karmutsen basalts. The breccia structure outcrops are composed mainly of Comox quartzite and minor porphyritic diorite. However, the fragment composition changes with depth from sediments to Karmutsen volcanics and intrusives. The matrix is often vuggy, the interstices lined with crystalline quartz and filled with limonite and fine fragments of limonitic quartzite.

A diamond-drill hole was put down on the centre of the zone in 1975 to a depth of 184 metres. This hole was deepened in 1988 to a depth of 542 metres. In the drill hole above 212 metres, the breccia is vuggy, bleached and intensely kaolinized. Below 212 metres, the breccia is very siliceous, glassy over short sections, with all interstices filled with quartz crystals and/or carbonate. The quartz matrix may also be lined with chlorite. The hole intersected small amounts of vein or matrix hosted molybdenite, arsenopyrite, and chalcopyrite, pyrite, realgar and orpiment is indicative of an epithermal overprint. Gold and silver content of core below 184 metres was negligible; assays for core above 184 metres were not reported.

The Pyrrhotite Creek breccia zone is an epithermal-type structure that occurs along a creek near the southern perimeter of the Oyster breccia. The structure consists of a lenticular zone of partially silicified and kaolinized bleached and brecciated basalt, mineralized across a width of about 1 metre and dipping toward the Oyster zone. Sulphide minerals present in decreasing order of abundance are pyrite, arsenopyrite, chalcopyrite, orpiment and realgar. The chalcopyrite sections of drill core were coincident with quartz veining and visible arsenopyrite.

A grab sample of silicified fault breccia assayed 14.50 grams per tonne gold, 31.88 grams per tonne silver, 1.04 per cent lead and 0.05 per cent zinc (Assessment Report 17193). A 43 centimetre section of core assayed 2.78 grams per tonne gold, 6.86 grams per tonne silver, 0.07 per cent copper and 3.67 per cent arsenic (Assessment Report 17193).

BIBLIOGRAPHY

EMPR AR 1956-119; 1957-69; 1959-135; 1960-111; 1961-102; 1962-105; 1963-103; 1964-155,157; 1965-235; 1966-71; 1968-101
EMPR ASS RPT 839, 1120, 1142, 1145, 1691, 4471, 4505, 5146, 5267, *5604, 5979, 5980, 6407, 6930, 9445, 11946, 11995, 11996, 12604, 12605, 14085, 14705, 15228, 15395, 15526, 15776, 15825, 15826, 15857, 15765, 16762, 17123, 17181, *17193, *18473
EMPR EXPL 1975-E102; 1976-E116; 1977-E115; 1978-E131; 1980-175; 1983-209; 1984-166,168; 1985-C156; 1986-B29,C181,C184; 1987-C156-158; 1988-C92,C93
EMPR EXPL REVIEW 1986, p. 70
EMPR FIELDWORK *1988, pp. 81-91
EMPR GEM 1969-212; 1970-281; 1973-236; 1974-183
EMPR PF (Various related reports located in Domineer file (92F 116))
EMR MP CORPFILE (Mount Washington Copper Company Limited; Noranda Exploration Company; Qualicum Mines Limited; Cumberland Mining Company Limited)
GSC BULL 172
GSC MAP 49-1959; 2-1965; 17-1968; 1386A
GSC OF 9; 61; 463
GSC P 66-1; 68-50, p. 39,42; 71-36; 72-44
GSC SUM RPT 1924A, pp. 106-144; 1925A; 1930A-64
CIM Transactions #72, p. 116
CIM Special Volume #15, 1976, Table I
CMJ Jan., 1965
GCNL Sept.17, Dec.30, 1975; Sept.22, #210, 1976; May 25, Oct.26, 1977; #7, 1978; #121,#206, 1979; #128,#155, 1984; #107,#129, #142,#150,#176,#178,#194,#198,#214, 1986; #14,#91,#107, #114,#135,#175,#176,#191,#195,#212,#225, 1987; #11,#114, #144,#177,#187,#222, 1988; #13,#149,#178, 1989; #5, 1990
N MINER Aug 11, Oct.27, Nov.17,24, 1986; Feb.2, May 18, Sep.28, Oct. 19, Nov.16, 1987; July 4, 1988
NW PROSP Oct./Nov., 1988
PERS COMM *Paul Wilton (District Geologist), March 1990
V STOCKWATCH Sep.15, Jul.30, Sept.30, Oct.6, Oct.13, Nov.5, 9, 24, 1987; Jan.19, 1988; Aug.3, Sept.12, 1989
W MINER Nov. 1965, p. 35; Nov. 1967, pp.35-40
Better Resources Limited (1987): Mount Washington Precious Metals Project, Vancouver Island, Coreshack, Cordilleran Roundup

BIBLIOGRAPHY

Better Resources Limited, News Release Jan.16, 1987, Jul.26, 1988
Better Resources Limited, Annual Report 1987; Corporate Profile (not dated); 1989 Snapshot Review; Statement of Material Facts dated Aug.1, 1984
Carson, D.J.T., (1960): Geology of Mount Washington, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia
Carson, D.J.T., (1968): Metallogenic Study of Vancouver Island with Emphasis on the Relationship of Plutonic Rocks and Mineral Deposits, Ph.D. Thesis, Carleton University
McGuigan, P.J., (1975): Certain Breccias of Mount Washington Property, Vancouver Island, B.Sc. Thesis, University of British
Mount Washington Copper Company Limited, (1971): Statement of Material Facts dated May 26, 1971
Schroeter, T., EMPR District Geologist, Monthly Reports Jan.1987, Mar. 1988
Vancouver Market Report, February, 1987

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/08 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 366**

NATIONAL MINERAL INVENTORY:

NAME(S): **LEWIS**, BEACH

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F16W
BC MAP:
LATITUDE: 49 58 20 N
LONGITUDE: 124 20 18 W
ELEVATION: 686 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Beach claim in Assessment Report 9948 is located 1.35 kilometres west of Dodd Lake, 6 kilometres northwest of Horseshoe Lake.

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5536401
EASTING: 404032

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
ASSOCIATED: Pyrite Magnetite
ALTERATION: Chlorite Biotite
ALTERATION TYPE: Potassic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Diorite
Quartz Diorite
Andesite Dike
Alaskite Dike

HOSTROCK COMMENTS: Age date from Powell Lake Area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

INVENTORY

ORE ZONE: TRENCHES REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.1200	Per cent

COMMENTS: Average of samples from trenches.
REFERENCE: Assessment Report 9948, page 3.

CAPSULE GEOLOGY

The Lewis occurrence is underlain by Mesozoic diorite of the Coast Plutonic Complex which has been intruded by a 500 metre wide quartz diorite phase of the same age. Northeast and northwest striking andesite dykes cut the intrusive rocks.

Chlorite alteration is pervasive. Secondary biotite is present in a north-northeast striking zone of shearing that projects through the area of mineralization. Alaskite dykes up to one metre wide occur near the shear zone.

Mineralization is present in three locations, the Central zone, and the East and South zones, 250 metres east and southwest of the Central zone, respectively.

Mineralization consists of disseminated and fracture-filling chalcopyrite in the Central zone, and chalcopyrite with molybdenite in the East and South zones. Disseminated pyrite and magnetite are reported near the andesite dykes.

Maximum values of 0.74 per cent copper over 1.8 metres, and 0.026 per cent molybdenite over 1.5 metres have been reported, but the

CAPSULE GEOLOGY

average value from all trenches was 0.12 per cent copper (Assessment Report 9948, page 3).

BIBLIOGRAPHY

EMPR ASS RPT 5844, 6989, *9948
EMPR EXPL 1975-E105; 1978-E134
GSC MAP 1386A; 17-1968
GSC OF 611
GSC P 66-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/04 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 367**

NATIONAL MINERAL INVENTORY:

NAME(S): **KEEGAN**, SKARN, GEM,
ROAD, WEST, COOMBS COPPER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 15 21 N
LONGITUDE: 124 30 56 W
ELEVATION: 650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches and pits near a south flowing tributary to French Creek, 6.5 kilometres southeast from Cameron Lake (Property File - Report by H. Laanela).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5457001
EASTING: 389719

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Magnetite Chalcopyrite Bornite Pyrite
ALTERATION: Epidote Garnet Clay
ALTERATION TYPE: Skarn Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Limestone
Basalt
Limy Tuff
Granodiorite
Skarn
Volcanic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Georgia Depression

RELATIONSHIP:

GRADE:

INVENTORY

ORE ZONE: SKARN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1976

COMMODITY	GRADE	
Silver	49.3000	Grams per tonne
Copper	7.1500	Per cent

REFERENCE: Assessment Report 6305.

CAPSULE GEOLOGY

The Keegan occurrence area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) basalt in contact with Jurassic Island Plutonic Suite granodiorite. The Karmutsen volcanic rocks occasionally contain limestone interbeds and thin bedded limy tuffs. Granodiorite dykes locally cut the volcanic rocks. The volcanic-intrusive contacts are normally hornfelsed with some epidote development and minor pyrite and pyrrhotite mineralization.

At the main showing (Gem), trenching has exposed epidote-garnet skarn developed in limestone over a length of 81 metres. The skarn zone is cut by two dominant fracture sets; one set strikes 040 degrees and the second set at 060 degrees. Mineralization consists of heavily disseminated to massive magnetite, variable chalcopyrite, minor bornite and pyrite. Clay minerals are also evident in the skarn zone; strong oxidation is locally developed. A chip sample assayed 7.15 per cent copper and 49.3 grams per tonne silver (Assessment Report 6305). At the Road showing, 129 metres east and slightly north of the main showing, massive magnetite, pyrite and sparse chalcopyrite occurs in a highly oxidized and hornfelsed zone

CAPSULE GEOLOGY

in basalt. At the West showing, 111 metres west of the main showing, pits expose epidote altered volcanic breccia variably mineralized with magnetite and chalcopyrite.

BIBLIOGRAPHY

EMPR ASS RPT 6042, *6305, 18762
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR GEM 1976-E114; 1977-E112
EMPR PF (Maps of magnetic and EM surveys; see Maureenah-Louishman (092F 387), Rpt. and map by H. Laanela; Price, B.J. (1993): Geological Summary Report in Filing Statement for SLN Ventures Corporation)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/18 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 368** NATIONAL MINERAL INVENTORY:

NAME(S): **GLADYS C - CADET**, GLADYS C (L.135), CADET (L.138)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 45 02 N
LONGITUDE: 124 33 53 W
ELEVATION: 91 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shafts on Lot 135, just north of Priest Lake, 1 kilometre south from the community of Vananda on Texada Island (Assessment Report 14827).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5512072
EASTING: 387284

COMMODITIES: Copper Gold Zinc Lead

MINERALS
SIGNIFICANT: Magnetite Sphalerite Chalcopyrite Galena
ASSOCIATED: Garnet Pyroxene Quartz Pyrite
ALTERATION: Garnet Pyroxene
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Diorite
Diorite Dike
Amygdaloidal Basalt
Mafic Diorite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Georgia Depression
GRADE:

INVENTORY

ORE ZONE: SKARN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	6.3100	Grams per tonne

COMMENTS: Sample of garnet-pyroxene skarn with chalcopyrite.
REFERENCE: Assessment Reprot 18672.

CAPSULE GEOLOGY

The Gladys C-Cadet occurrence area is underlain by a complex northwest trending sequence of Upper Triassic Quatsino Formation recrystallized limestone and Karmutsen Formation amygdaloidal basalt, both of the Vancouver Group. Several small diorite bodies are evident with mafic diorite dykes and diorite dykes. A teardrop-shaped diorite intrusive occurs on the adjoining Volunteer claim (092F 268) to the northwest. The stratigraphy is strongly sheared in a north-northwest direction and is often faulted in the same direction. Intrusive bodies are commonly emplaced along these faults.

A prominent fault on the Gladys C claim (Lot 135) forms a contact between basalt and limestone. Mineralization is localized in small patchy magnetite-garnet-pyroxene skarns developed in and near the fault. The magnetite skarns are variably mineralized with sphalerite, some chalcopyrite and to a lesser extent, galena and pyrite. A rock sample from a garnet-pyroxene skarn with chalcopyrite assayed 6.31 grams per tonne gold (Assessment Report 18672). Occasional chalcopyrite is also found in quartz stringers in basalt.

Three hundred and fifty metres west of the Gladys C claim, on

CAPSULE GEOLOGY

the Cadet claim (Lot 138), garnet-pyroxene skarn encloses a magnetite-garnet core developed near a diorite intrusive. Rock samples of a magnetite-garnet skarn assayed 1.58 grams per tonne gold and samples from a garnet-pyroxene skarn with chalcopyrite assayed 8.64 grams per tonne gold (Assessment Report 18672).

BIBLIOGRAPHY

EMPR ASS RPT 5517, 5898, 6842, *7414, 10600, 14827, *18672
EMPR EXPL 1976-E117; 1978-E132; 1979-134
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/02 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 369**

NATIONAL MINERAL INVENTORY: 092F16 Cu1

NAME(S): **SPRING LAKE**, HO 2 HO 2, TINHAT, HI-MARS

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F16W
BC MAP:
LATITUDE: 49 57 39 N
LONGITUDE: 124 22 54 W
ELEVATION: 579 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: C zone of Assessment Report 6433 is 1.5 kilometres east of Haslam Lake; part of the Hi-Mars property (092F 292).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5535191
EASTING: 400901

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite
ASSOCIATED: Quartz Pyrite Magnetite
ALTERATION: Chlorite Epidote Malachite Azurite Limonite
ALTERATION TYPE: Oxidation Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry
DIMENSION: 0500 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Four zones occur over 500 metres.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Granodiorite
Felsic Dike
Mafic Dike
Siliceous Granodiorite

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Map 1386A.

GEOLOGICAL SETTING

TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Amphibolite

PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

INVENTORY

ORE ZONE: C REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1977
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.4600	Per cent
Molybdenum	0.0050	Per cent

COMMENTS: C zone sample.
REFERENCE: Assessment Report 6433, page 14.

CAPSULE GEOLOGY

The area of the Spring Lake occurrence is underlain by multi-phased granodioritic intrusions of the Mesozoic Coast Plutonic Complex. Locally, the granodiorite is chloritized with epidote-coated fractures. Several west-northwest trending leucocratic felsic dykes, of the same general age as the host rock, and late mafic dykes are present.

Mineralization occurs in four zones located within 500 metres of each other. In zone A, disseminated chalcopyrite and pyrite occur in siliceous granodiorite. Minor mineralization is also present as fracture coatings. A sample assayed 0.32 per cent copper and 0.014 per cent molybdenite (sample number 7606165 in Assessment Report 6433, page 15).

Zone B contains molybdenite and magnetite in thin quartz veinlets. A sample assayed 0.71 per cent copper and 0.47 per cent

CAPSULE GEOLOGY

molybdenum (Assessment Report 6433, page 14).

Zone C, considered the most significant, contains finely disseminated chalcopyrite and pyrite in a felsic dyke. Chalcopyrite, molybdenite and magnetite are also present in quartz veinlets in granodiorite near a felsic dyke. Locally, the zone contains azurite and malachite on fracture surfaces. A sample assayed 0.46 per cent copper and 0.005 per cent molybdenite (Assessment Report 6433, page 14).

Zone D contains disseminated molybdenite and minor chalcopyrite and pyrite in a leucocratic felsic dyke. Some rusty pyrite occurs on fractures. A sample assayed 0.07 per cent copper and trace molybdenite (Assessment Report 6433, page 14).

Reserves of 82 million tonnes grading 0.3 per cent copper are reported for the Hi-Mars occurrence (see 092F 292) in the National Mineral Inventory card 92F/16 Cu1. This calculation may include the Spring Lake occurrence and the Ho 5 occurrence (see 092F 371).

BIBLIOGRAPHY

EMPR ASS RPT 5798, 6092, *6433
EMPR GEM 1973-236; 1976-E119; 1977-E117
EMR MP CORPFILE (Golden Granite Mines Limited; Newvan Resources Limited)
GSC MAP 1386A; 17-1968
GSC OF 611
GSC P 66-1
GCNL #49, 1978

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/05 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 370**

NATIONAL MINERAL INVENTORY:

NAME(S): **COTTER 4**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 24 25 N
LONGITUDE: 125 51 00 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the north side of west-flowing Cotter Creek, about 3.5 kilometres east of its mouth in Moyeha Bay at the head of Herbert Inlet.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5476601
EASTING: 293260

COMMODITIES: Gold, Copper, Zinc

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Sphalerite
ASSOCIATED: Quartz
ALTERATION: Sericite, Silica
ALTERATION TYPE: Sericitic, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Hydrothermal, Epigenetic
DIMENSION:
STRIKE/DIP: 180/75W
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	6.3100	Grams per tonne

COMMENTS: Sample of a 23 centimetre wide quartz vein.
REFERENCE: Assessment Report 17732.

CAPSULE GEOLOGY

The south side of Cotter Creek is underlain by metasedimentary and metavolcanic rocks of the Sicker Group (Myra Formation?), while the north and southeast sides of the valley are underlain by Upper Triassic Karmutsen Formation (Vancouver Group) volcanics. In the Cowichan uplift, the primarily upper sedimentary package of the Myra Formation has been reassigned to the newly created Mississippian to Pennsylvanian Fourth Lake Formation of the Buttle Lake Group; the lower section is now known as the Upper Devonian McLaughlin Ridge Formation (Sicker Group).

Mineralization consists of pyrite with minor chalcopyrite and sphalerite which occur within quartz veins and surrounding sericitized and silicified Karmutsen andesites and basalts. Within the veins, the sulphides range in content from less than 1 per cent to approximately 3 per cent. Veins, ranging in width from 10 to 36 centimetres, occur within north trending sericitized shear zones.

The principle vein, averaging 23 centimetres in width, strikes due north and dips 75 degrees to the west. One sample taken across 23 centimetres contained 6.31 grams per tonne gold. The highest value, 20.98 grams per tonne gold, was obtained from a 10 centimetre quartz vein sample (Assessment Report 17732).

BIBLIOGRAPHY

EMPR ASS RPT *17732

BIBLIOGRAPHY

EMPR EXPL 1988-C86
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Prospectus: Stoney Creek Mines Ltd., March 15, 1989)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30; 80-16
PERS COMM: Nick Massey
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/01/15 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/05/24 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 371**

NATIONAL MINERAL INVENTORY: 092F16 Cu1

NAME(S): **HO 5**, HI-MARS

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F16W
BC MAP:
LATITUDE: 49 57 11 N
LONGITUDE: 124 21 40 W
ELEVATION: 472 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of trench in southeast corner of HO 5 claim from Assessment Report 5798, is 0.5 kilometres west of Lewis Lake.

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5534299
EASTING: 402360

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Quartz Diorite

HOSTROCK COMMENTS: Age date from Powell Lake Area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING
TECTONIC BELT:
TERRANE:

INVENTORY

ORE ZONE: TRENCH REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1975
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0300	Per cent
Molybdenum	0.0460	Per cent

COMMENTS: Sample across 1.5 metres in trench.
REFERENCE: Assessment Report 5798, Figure 3.

CAPSULE GEOLOGY

The Ho 5 occurrence is underlain by quartz diorite of the Mesozoic Coast Plutonic Complex.

Molybdenite and chalcopyrite occur in narrow quartz veins. A sample across 1.5 metres from a trench on the southeast corner of Ho 5 claim assayed 0.03 per cent copper and 0.046 per cent molybdenite (Assessment Report 5798).

Reserves of 82 million tonnes grading 0.3 percent copper are reported for the Hi-Mars occurrence (092F 292) in the National Mineral Inventory card 92F/16 Cu1. This calculation may include the Ho 5 and Spring Lake occurrences (092F 369).

BIBLIOGRAPHY

EMPR ASS RPT *5798, 6092, 6433
EMPR GEM 1973-236; 1976-E119; 1977-E117
EMR MP CORPFILE (Golden Granite Resources Limited; Newvan Resources Limited)
GSC MAP 1386A; 17-1968
GSC OF 611
GSC P 66-1
GCNL #49, 1978

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/04 REVISED BY: WV FIELD CHECK: N

MINFILE NUMBER: **092F 372**

NATIONAL MINERAL INVENTORY:

NAME(S): **PRIDE OF THE WEST (L.538)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 02 03 N
LONGITUDE: 125 20 00 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Crown Grant Lot 538, on a north trending shoreline, along the north shore of Toquort Bay (Assessment Report 6146).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5433877
EASTING: 329457

COMMODITIES: Silver Gold Copper

MINERALS
SIGNIFICANT: Pyrite Malachite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
COMMENTS: The strike is 096 degrees; dip is almost vertical.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1976
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	329.1500	Grams per tonne
Gold	1.0300	Grams per tonne

COMMENTS: The gold and silver assays may be from different samples.
REFERENCE: Assessment Report 6146.

CAPSULE GEOLOGY

A quartz vein, up to 90 centimetres in width, is hosted by basalt of the Upper Triassic Karmutsen Formation, Vancouver Group. It strikes 096 degrees and dips 80 degrees (no direction given). The vein contains large amounts of pyrite and some heavy copper stains (malachite) were reported. A tunnel was driven on the vein around the turn of the century and has a measured length of 76 metres; a 12 metre winze is also evident. A sample of vein material assayed 329.15 grams per tonne silver and 1.03 grams per tonne gold (Assessment Report 6146).

BIBLIOGRAPHY

EMPR AR 1902-307
EMPR ASS RPT 5387, *6146
EMPR EXPL 1975-E96, 1976-E112
EMPR PF (Starr, C.C. (1938): Report of Brief Examination of the Pride of the West and Hampton Claims, 3 p.; Letters from C.C. Starr to Cariboo Consolidated Mining Co. Ltd., May and November, 1939; Map of Workings, 1939; Tunnel Section, 1936)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1985/07/24
DATE REVISED: 1990/03/29

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 373**

NATIONAL MINERAL INVENTORY:

NAME(S): **SANDY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 42 58 N
LONGITUDE: 124 32 19 W
ELEVATION: 163 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pits, 1 kilometre northwest of Paxton Lake, 4.6 kilometres south from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508204
EASTING: 389086

COMMODITIES: Lead Zinc

MINERALS
SIGNIFICANT: Galena Sphalerite Pyrite Arsenopyrite Tetrahedrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Feldspar Porphyry Dike
Hornblende Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Sandy occurrence area is underlain by limestone of the Upper Triassic Quatsino Formation (Vancouver Group) cut by a set of north trending feldspar porphyry dykes and a set of northwest trending hornblende porphyry dykes. The Holly fault and major and minor splay faults intersect at the showing.

Mineralization is hosted in faulted, fractured and bleached limestone and consists of veinlets and fracture-fillings of galena, sphalerite, pyrite, arsenopyrite and tetrahedrite.

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 257-270; 1976, p. 36
EMPR GEM 1976-E115
EMPR GEOLOGY *1976, pp. 46,47
EMPR OF 1990-3; 1988-28
EMPR PF (*Property description and maps)
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/26 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 374**

NATIONAL MINERAL INVENTORY:

NAME(S): **OKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 45 50 N
LONGITUDE: 124 34 09 W
ELEVATION: 27 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit, on the north shore of Sturt Bay 500 metres west of Hodgson Point, 1 kilometre north-northwest from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5513561
EASTING: 386995

COMMODITIES: Gold Silver Copper Zinc Lead

MINERALS
SIGNIFICANT: Chalcopyrite Sphalerite Galena Gold Silver Tetrahedrite
ASSOCIATED: Quartz Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Mafic Dike
Limestone
Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Quatsino Formation (Vancouver Group) limestone intruded to the east by a small plug of quartz monzonite-granodiorite.

The Oke occurrence is underlain by Quatsino Formation limestone intruded by mafic dykes that are generally parallel to the contact with a small quartz monzonite intrusion to the east. The dykes have been sheared, altered, mineralized and faulted. Chalcopyrite and sphalerite occur in quartz veinlets in dyke rock and with pyrite and minor galena in the adjacent limestone. A short distance east, an irregular mafic dyke trending 340 degrees either turns abruptly or is cut by another dyke trending 080 degrees. The first segment and flanking limestone are mineralized with chalcopyrite, and the second segment with chalcopyrite, sphalerite and tetrahedrite. Three hundred metres to the north of a short adit at the Oke showing, a few parallel quartz veins with some dyke material cut limestone. One quartz vein is 20 to 25 centimetres wide and is impregnated with galena, chalcopyrite and rare native gold and silver.

BIBLIOGRAPHY

EMPR EXPL 1976-E118; *1978-E132
EMPR FIELDWORK *1976, p. 37; 1989, pp. 257-265
EMPR GEOLOGY 1976, pp. 52,53
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/26 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 375**

NATIONAL MINERAL INVENTORY:

NAME(S): **NANAIMO LAKES**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E
BC MAP:
LATITUDE: 49 06 00 N
LONGITUDE: 124 11 23 W
ELEVATION: 243 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pits and trenches near the base of a hill between Nanaimo Lakes, 18 kilometres west from the town of Nanaimo (Property File - Report by D. Bryden).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5439254
EASTING: 413156

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Bornite Magnetite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Porphyritic Basalt
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) porphyritic andesitic to basaltic rocks in contact with Paleozoic Sicker Group argillites and intruded by diorite of the Jurassic Island Intrusions.

The Nanaimo Lakes occurrence is underlain by Karmutsen Formation porphyritic basalt cut by numerous faults near the contact with argillite of the Sicker Group. Pits and trenches expose small quartz veins and veinlets in a fault zone in the basalt. Wallrock is schistose. The veins dip 45 degrees south. Mineralization consists of minor amounts of pyrite, chalcopyrite, bornite and magnetite.

BIBLIOGRAPHY

EMPR ASS RPT 10373
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR PF (*Rpt. by D. Bryden, B. Buse, B. Gardner (1972); see Moly, 092F 159 for Rpt. by Laanela)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/11 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 376**

NATIONAL MINERAL INVENTORY:

NAME(S): **KARLSSON**, AJ

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 06 19 N
LONGITUDE: 124 27 35 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: From description (Property File-Laanela, H. (1965))

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5440185
EASTING: 393459

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Bornite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
DIMENSION:
STRIKE/DIP: 055/40E
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Volcanic
Feldspar Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
Plutonic Rocks

CAPSULE GEOLOGY

The Karlsson showing is located approximately 2 kilometres south of Labour Day Lake. An inlier of volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group) within feldspar porphyry of the Tertiary Mount Washington Intrusive Suite (Labour Day Lake pluton, Personal Communication - N. Massey, May 1990) contains minor chalcopyrite, pyrite, and bornite as fracture-fillings. The 055 degree trending, vertically dipping fracture is 1.2 metres long and 5 centimetres wide.

BIBLIOGRAPHY

EMPR ASS RPT 7768, 8571, 10390, 10391, 12128
EMPR BULL 37
EMPR EXPL 1980-164; 1981-278
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Laanela, H. (1965): *Gunnex Limited)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #90, 1980; #111, #219, 1981
PERS COMM (N. Massey, May 1990)

DATE CODED: 1985/07/24
DATE REVISED: 1990/05/09
CODED BY: GSB
REVISED BY: LDJ
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 377**

NATIONAL MINERAL INVENTORY:

NAME(S): **LITTLE QUALICUM FALLS**, QUALICUM

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 18 19 N
LONGITUDE: 124 35 05 W
ELEVATION: 550 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Along a roadcut, north of the east end of Cameron Lake (Laanela, H. 1965).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5462601
EASTING: 384802

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcocite
ALTERATION: Malachite Azurite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Igneous-contact

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Lower Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Diabase
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1965

COMMODITY	GRADE	
Copper	0.9300	Per cent

REFERENCE: Property File (Report by Laanela, 1965).

CAPSULE GEOLOGY

At the Little Qualicum Falls occurrence, fine-grained granite and granodiorite of the Lower Jurassic Island Plutonic Suite intrude basalts and related diabase dykes of the Upper Triassic Karmutsen Formation, Vancouver Group.

A 3 by 23 metre altered, sheared and brecciated zone occurs in the volcanics, in contact with diabase (diorite). Mineralization in the altered zone consists of disseminated chalcocite, malachite and azurite. A sample assayed 0.93 per cent copper and 3.4 grams per tonne silver (Laanela, 1965).

A few other small copper occurrences are in the area.

BIBLIOGRAPHY

EMPR ASS RPT *16559
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
EMPR PF (*Laanela, H. (1965): Little Qualicum Falls Chalcopyrite Showing, Mineral Occurrence #29, Gunnex Ltd.)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50, p. 38; 72-44; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Sutherland Brown, A. (1988): Mineral Resources of the Alberni Region, EMPR, British Columbia Geoscience Research Program

BIBLIOGRAPHY

(RG87-26)

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/26

CODED BY: GSB
REVISED BY: LDJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 378** NATIONAL MINERAL INVENTORY:

NAME(S): **FOX ISLAND**, QUADRA STONE

STATUS: Past Producer Open Pit MINING DIVISION: Vancouver
REGIONS: British Columbia
NTS MAP: 092F09E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 43 29 N NORTHING: 5508727
LONGITUDE: 124 12 35 W EASTING: 412810
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quarries on the south shore of Fox Island, south of Hardy Island (Fieldwork, 1986).

COMMODITIES: Granite Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Commodity is granodiorite.
ASSOCIATED: Feldspar Quartz Biotite Hornblende
MINERALIZATION AGE: Jurassic

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Magmatic Industrial Min.
TYPE: R03 Dimension stone - granite
SHAPE: Regular
MODIFIER: Fractured
DIMENSION: 30 x 11 x 3 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Quarry.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Coast Plutonic Complex

LITHOLOGY: Medium Grained Equigranular Granodiorite

HOSTROCK COMMENTS: Coast Plutonic Complex ranges from Jurassic to Tertiary in age.

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Plutonic Rocks

CAPSULE GEOLOGY

A small granite quarry was developed on the south shore of Fox Island, just south of Hardy Island in Jervis Inlet, around the turn of the century.

The Fox Island granodiorite, of the Jurassic to Tertiary Coast Plutonic Complex, is visibly lighter in appearance than Kelly Island (092F 196) stone and slightly coarser. It is medium-grained, light grey in colour on fresh surfaces, and weathers black. Knots of dark mafic minerals (biotite and hornblende) are up to 10 by 20 centimetres and less than 0.5 per cent of total volume.

The quarry consists of an opening approximately 30 metres long by 3.5 to 11 metres high developed along the shore of Fox Island. Three sets of steeply dipping joints are recognized: east-northeast dipping north; east-northeast dipping south; and south-southeast dipping east. Over 90 per cent of the joints and fractures measured, were greater than 50 centimetres apart and almost 80 per cent were greater than 100 centimetres apart. Potential reserves extend for at least 30 metres northeast of the face.

The stone was used primarily in the construction of the Winch Building in Vancouver.

There has been small-scale, steady production from this quarry since 1990. Production statistics are unavailable.

Quadra Stone Company Ltd. operates the quarry.

BIBLIOGRAPHY

EMPR AR 1923-A268; 1929-C437; 1935-G32; 1939-A113; 1942-A92;
1949-A247; 1953-A185
EMPR FIELDWORK *1986, pp. 329, 331
EMPR INF CIRC *1988-6, p. 15; 1990-1, p. 40; 1994-15
EMPR OF 1991-20; 1994-1
GSC MAP 17-1968
GSC OF 463, 611

BIBLIOGRAPHY

GSC P 68-50; 90-1F, pp. 95-107
CANMET RPT *452, Vol 5, pp. 88, 91; 846, pp. 161, 162
WWW http://www.home.iSTAR.ca/~qstone/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/03/08 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 379**

NATIONAL MINERAL INVENTORY:

NAME(S): **BONELL CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01E 092F08E
BC MAP:
LATITUDE: 49 14 48 N
LONGITUDE: 124 12 16 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adits on the west bank of Bonell Creek, 1.75 kilometres south from the village of Nanoose Bay (Assessment Report 16041).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5455575
EASTING: 412341

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Felsic Volcanic Rock
Shale
Schist
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1987

COMMODITY	GRADE	
Silver	11.6000	Grams per tonne
Copper	0.8500	Per cent

COMMENTS: Sample of quartz-carbonate vein.
REFERENCE: Assessment Report 16041.

CAPSULE GEOLOGY

The Bonell Creek occurrence area is underlain by Paleozoic Sicker Group rocks which may be correlative with the Devonian McLaughlin Ridge Formation. These are intruded by fine to coarse-grained diorite and unconformably overlain by Upper Cretaceous Comox Formation (Nanaimo Group) fossiliferous sandstone and conglomerate. The Sicker rocks comprise black shale, felsic volcanic rocks, maroon and grey schist and andesite.

An east trending quartz-carbonate vein up to a metre wide occurs in Sicker rocks. Minor chalcopyrite and pyrite are evident with significant malachite staining. A chip sample assayed 0.85 per cent copper and 11.6 grams per tonne silver (Assessment Report 16041).

Past work included two adits and a pit.

BIBLIOGRAPHY

EMPR ASS RPT *16041
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR PF (*092F General File - Rpt. by H. Laanela (1966): Gunnex Ltd., Occurrence #41)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272

BIBLIOGRAPHY

GSC P 68-50

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/09

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 380**

NATIONAL MINERAL INVENTORY:

NAME(S): **TAP I**, PAR II, PARSONS CREEK, LOFSTROM

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 01 24 N
LONGITUDE: 124 42 55 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Old adit, central to several showings, approximate center of Tap I claim (Assessment Report 16119).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5431467
EASTING: 374601

COMMODITIES: Copper, Silver, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated, Massive
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 065/
TREND/PLUNGE:
COMMENTS: One of main controlling fracture zones.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Altered Andesite
Volcanic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	34.3000	Grams per tonne
Gold	0.5500	Grams per tonne
Copper	6.7500	Per cent

COMMENTS: Sample R2 over 30 centimetres of rusty sheared and altered volcanic rock.
REFERENCE: Assessment Report 16119.

CAPSULE GEOLOGY

The area is underlain by volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group). Diorite of the Early to Middle Jurassic Island Intrusions lie to the northeast and northwest.

Mineralized quartz veins hosted in andesite and volcanic breccia occur within two main fracture zones. One of these zones strikes at 065 degrees and the other at 005 degrees. Mineralization consists of disseminated pyrite, chalcopyrite and malachite. The extent of the mineralization appears to be controlled by the fracture zones.

A grab sample across 30 centimetres of rusty, sheared and altered andesite assayed 0.55 grams per tonne gold, 34.3 grams per tonne silver and 6.75 per cent copper (Assessment Report 16119).

BIBLIOGRAPHY

EMPR ASS RPT 12735, 14520, 14987, *16119
EMPR BULL 37
EMPR EXPL 1984-153; 1986-162
EMPR FIELDWORK 1988 pp. 61-74

BIBLIOGRAPHY

EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Laanela, H. (1966): *Report, Gunnex Limited)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/06 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 381** NATIONAL MINERAL INVENTORY:

NAME(S): **CANON**, MOUNT OLSEN, MT. OLSEN

STATUS: Showing MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 01 45 N NORTHING: 5432007
LONGITUDE: 124 38 55 W EASTING: 379489
ELEVATION: 760 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 13857).

COMMODITIES: Gold Silver Zinc Copper Lead

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Sphalerite
ASSOCIATED: Quartz
ALTERATION: Quartz Epidote
ALTERATION TYPE: Silicific'n Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0025 Metres STRIKE/DIP: 040/60E TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Diorite

HOSTROCK COMMENTS: Corrigan Creek pluton.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Plutonic Rocks Wrangell

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	42.5000	Grams per tonne
Gold	73.5000	Grams per tonne
Copper	0.0700	Per cent
Lead	0.0760	Per cent
Zinc	2.2600	Per cent

COMMENTS: Eight centimetre sample.
REFERENCE: Assessment Report 13875.

CAPSULE GEOLOGY

The Canon showing is located on the slopes of Mount Olsen, about 24 kilometres southeast of Port Alberni.

Tholeiitic basalts of the Upper Triassic Karmutsen Formation (Vancouver Group) are intruded by diorite to quartz diorite and minor feldspar porphyry of the Early to Middle Jurassic Island Plutonic Suite (Corrigan Creek pluton). An intraformational layer of limestone and narrow band of dacite occur within the volcanics. A northeast trending joint or fracture system cuts all rock types.

A northeast trending mineralized quartz vein, averaging 5 centimetres in width and up to 25 metres long, is hosted in diorite. The vein, which trends 040 degrees and dips 60 degrees southeast, occurs along a major fracture system. It contains masses and blebs of pyrite, pyrrhotite, sphalerite, and lesser chalcopyrite, covellite, malachite and azurite. Alteration of the diorite on either side of the vein include silicification and epidotization. An 8 centimetre chip sample of the vein assayed 73.5 grams per tonne gold, 42.5 grams per tonne silver, 0.07 per cent copper, 2.26 per cent zinc and 0.076 per cent lead (Assessment Report 13875).

BIBLIOGRAPHY

EMPR ASS RPT 12696, 13668, *13723,*13857, 14928, 14930
EMPR BULL 37
EMPR EXPL 1985-137,138
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Laanela, H. (1966): Report, Gunnex Ltd.)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #84,#97,Dec.10, 1986

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 382**

NATIONAL MINERAL INVENTORY:

NAME(S): **CAMPBELL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 11 55 N
LONGITUDE: 124 48 21 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit, south of Follinsbee Creek, about 400 metres from Alberni Inlet (Laanela, 1965).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5451104
EASTING: 368446

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
COMMENTS: Copper stain reported.
ASSOCIATED: Quartz Magnetite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Volcanic
Basalt
Diorite

HOSTROCK COMMENTS: Host rocks are volcanics near diorite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SKARN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1965
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.3200	Per cent

COMMENTS: A 1.5 metre chip sample.
REFERENCE: Property File - Laanela, H. (1965).

CAPSULE GEOLOGY

The west half of Hankin Mountain is underlain by volcanics (mainly basalt) of the Upper Triassic Karmutsen Formation, Vancouver Group. The east side of the mountain is underlain by diorite of the Jurassic Island Plutonic Suite.

The Campbell showing is located near the north-northwest base of Mount Hankin in Karmutsen volcanics. Mineralization in an old adit is reported to consist of a siliceous band of rock, about 1.5 metres in width, that contains abundant copper stain. The material contains 0.19 per cent copper (Laanela, 1965).

About 500 metres east of the adit, at 240 metres elevation, a minor copper skarn occurs in volcanics. A 1.5 metre chip sample assayed 0.32 per cent copper (Laanela, 1965). Fifty metres north of this skarn is a 30 centimetre wide quartz vein with magnetite and minor copper. The country rocks are volcanics with some bands of diorite.

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Laanela, H. (1965): Mount Hankin Copper Showings (Mineral Occurrence #48), Gunnex Limited)
GSC MAP 49-1963; 17-1968; 1386A

BIBLIOGRAPHY

GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/17

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 383**

NATIONAL MINERAL INVENTORY:

NAME(S): **BELL (L.136G)**, BK136G, COUS CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 11 36 N
LONGITUDE: 124 50 21 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Bell Crown Grant (Lot 136G), located 750 metres west from Alberni Inlet, on Cous Creek.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5450576
EASTING: 366003

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Sphalerite may be present.
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic Rock

HOSTROCK COMMENTS: Type of volcanic not reported.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Copper mineralization is present in altered volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. Mineralization consisting of chalcopyrite, malachite and possibly sphalerite is confined to a north trending, steeply dipping shear, not more than 1.5 metres in width. The altered volcanics have notable amounts of quartz. An estimate of the copper grade was reported to be about 1 per cent. An adit has been driven on the occurrence for at least 9 metres.

BIBLIOGRAPHY

EM EXPL 1999-25-32; 2002-29-40
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Douglas, D.C. (1966): Mineral Occurrence #53, Cous Creek Showing, Gunnex Limited)
GSC MAP 49-1963; 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/18 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 384**

NATIONAL MINERAL INVENTORY: 092F1 Au2

NAME(S): **VILLALTA**

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 05 24 N
LONGITUDE: 124 28 25 W
ELEVATION: 850 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Hematite zone.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5438506
EASTING: 392412

COMMODITIES: Gold, Silver, Iron, Zinc, Copper, Lead

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Hematite, Pyrrhotite, Arsenopyrite, Marcasite, Galena, Magnetite
ASSOCIATED: Siderite, Calcite, Quartz, Ilvaite
ALTERATION: Serpentine, Goethite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound, Massive, Disseminated
CLASSIFICATION: Replacement, Epigenetic
TYPE: B10 Gossan Au-Ag; B09 Karst-hosted Fe, Al, Pb-Zn
SHAPE: Regular
DIMENSION: 110 x 30 x 14 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

LITHOLOGY: Limestone, Chert, Tuff, Argillite, Volcanic Breccia, Andesite, Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VILLALTA
REPORT ON: Y

CATEGORY: Unclassified
YEAR: 1991
QUANTITY: 22677 Tonnes

COMMODITY	GRADE	
Iron	35.0000	Per cent
Gold	4.1100	Grams per tonne

COMMENTS: Tonnage ranges from 13,606 to 22,677 tonnes grading from 2.39 to 4.11 grams per tonne gold.
REFERENCE: MDAP- Prospectus, June 1991, C.F. Millar.

CAPSULE GEOLOGY

The Villalta occurrence area is underlain by volcanics, clastic sediments and limestone of the Paleozoic Sicker and Buttle Lake groups. Poorly sorted conglomerates and hematitic mudstones of the Upper Cretaceous Comox Formation (Nanaimo Group) unconformably overlie the limestones. Tertiary porphyritic dacite intrudes the conglomerates to the north.

The Sicker Group rocks include volcanic breccia, tuff, andesite, argillite and chert of the Devonian Nitinat and McLaughlin Ridge formations. The overlying crinoidal limestone, with minor chert and tuff, likely belongs to the Upper Pennsylvanian to Lower Permian Mount Mark Formation (Buttle Lake Group). These rocks are tightly folded with an axial trend of 135 degrees and 20 degree plunge to the northwest.

Extensive areas of powdery to massive hematite with gold values,

CAPSULE GEOLOGY

occur at the top of the limestone unit, in a well-developed paleokarst topography. The stratabound hematite measures 110 by 30 by 14 metres and appears to lie in a north-northeast trending depression, which is possibly fault-bounded. Randomly distributed massive sulphide bodies, comprised of pyrite, pyrrhotite, chalcopyrite, arsenopyrite, marcasite and minor galena and magnetite, which occur in the limestone, are the likely source for the hematite zone. Other minerals include siderite, calcite, quartz, serpentine, goethite and minor ilvaite.

A 1980 drill hole assayed 126 grams per tonne gold, 19.2 grams per tonne silver, 7.65 per cent zinc and 0.76 per cent copper over 30 centimetres (Assessment Report 8458). Unclassified reserves are 22,677 tonnes grading 4.11 grams per tonne gold and 35 per cent iron. Tonnage ranges from 13,606 to 22,677 tonnes grading from 2.39 to 4.11 grams per tonne gold (MDAP - Prospectus, June 1991, C.F. Millar). Drilling to the north intersected 10.7 metres of 2.06 grams per tonne gold and 9.9 grams per tonne silver, including 1.0 metre of 8.5 grams per tonne gold and 22.3 grams per tonne silver (Vancouver Stockwatch July 13, 1987).

BIBLIOGRAPHY

EMPR ASS RPT 7792, 7953, 8458, 8687, *10789, 12128, *13236, 13945, 15939, *16719
EMPR BULL 37
EMPR EXPL 1977-109; 1978-126; 1979-128; 1980-164-165; 1982-141; 1984-150,151
EMPR FIELDWORK *1980, pp. 112-114; 1988 pp.61-74
EMPR MAP 65 (1989)
EMPR OF 1987-2; 1988-24; *1989-6; 1992-1
EMPR P 1989-3
EMR MIN BULL MR 223 B.C. 92
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM Vol.83 No.935, March 1990 pp.125-135
GCNL #43, 1985; #96,#115,#146, 1986; #156, 1987; #135, 1988; #138(Jul.18), 1990
N MINER Sept.10, 1981; Aug.2, 1984; Jun.9,16, 1986
V STOCKWATCH Jul.13, 1987
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 132
Today's Market Line #066,#140,#180, 1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/04/19 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 385**

NATIONAL MINERAL INVENTORY:

NAME(S): **SOL B**, HAVILAH

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 07 14 N
LONGITUDE: 124 36 20 W
ELEVATION: 1220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of 2 drill holes in middle zone of 3 mineralized zones.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5442099
EASTING: 382851

COMMODITIES: Gold, Silver, Copper, Lead, Zinc, Molybdenum

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Chalcopyrite, Galena, Sphalerite, Molybdenite
ASSOCIATED: Quartz, Garnet, Epidote
ALTERATION: Chlorite, Kaolin
ALTERATION TYPE: Sericitic, Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Andesite
Quartz Feldspar Porphyry
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: NORTH

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1975

COMMODITY	GRADE	
Silver	3.1000	Grams per tonne
Gold	1.4000	Grams per tonne
Copper	0.1000	Per cent
Molybdenum	0.0060	Per cent

COMMENTS: Composite chip sample of typical mineralized zone.
REFERENCE: Assessment Report 5354.

CAPSULE GEOLOGY

The Sol B showing is located about 6 kilometres southeast of the Debbie deposit, near the Havilah mine workings (092F 437), 25 kilometres southeast of Port Alberni.

The area is underlain by Devonian Sicker Group (Duck Lake Formation) volcanic rocks which are cut by diorite of the Early to Middle Jurassic Island Plutonic Suite and quartz-feldspar porphyry of the Tertiary Mount Washington Intrusive Suite (Personal Communication - N. Massey, May 1990). The volcanic rocks include massive andesite and purple fragmental volcanics. A northeast trending fracture system appears to have controlled intrusion of the quartz-feldspar porphyries and mineralized quartz veins and veinlets.

Three low-grade mineralized zones contain pyrite, pyrrhotite and minor chalcopyrite and locally minor molybdenite, sphalerite and galena as disseminations and in quartz veins and fractures. The andesites and porphyry dykes are the common host for the mineralization. Sericite and kaolin alteration occur in the quartz-feldspar porphyry and epidote, garnet and chlorite occur in

CAPSULE GEOLOGY

the andesite.
The middle zone contains a 38 centimetre wide vein assaying 2.4 grams per tonne gold, 85.7 grams per tonne silver, 0.24 per cent copper, 1.95 per cent lead and 1.1 per cent zinc (Assessment Report 5354). This vein is likely a northern extension of the same mineralized shear zone that the Gillespie vein (092F 082) occurs in. A composite chip sample from the north zone, which lies 350 metres north of the middle zone, assayed 1.4 grams per tonne gold, 3.1 grams per tonne silver, 0.1 per cent copper and 0.006 per cent molybdenum (Assessment Report 5354). The south zone lies about 700 metres southeast of the middle zone.

BIBLIOGRAPHY

EMPR ASS RPT *5354, 6138, 6643, 7600, 9126, 10194, 12538, 12564, 14880, 17222, 18400, 19695
EMPR BULL 37
EMPR EXPL 1975-95; 1976-111; 1977-110; 1981-230
EMPR FIELDWORK 1988 pp. 61-74
EMPR GEM 1974-172-173
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 17A; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
PERS COMM (N. Massey, May 1990)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 386**

NATIONAL MINERAL INVENTORY:

NAME(S): **MUSEUM**, BEAR CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 06 35 N
LONGITUDE: 124 40 48 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of sampling area and location of sample #812 on Bear Creek (Assessment Report 18689).

MINING DIVISION: Alberni
Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5441012
EASTING: 377393

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Ankerite Epidote Chlorite Quartz
ALTERATION TYPE: Carbonate Chloritic Epidote Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein Shear
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION:
STRIKE/DIP: 175/63E
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt Flow
Diabase Flow
Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0157	Per cent

COMMENTS: Sample of ankeritized shear zone containing quartz and calcite.
REFERENCE: Assessment Report 18689.

CAPSULE GEOLOGY

The Museum showing is located on Bear Creek, 20 kilometres southeast of Port Alberni. The area is underlain by pillowed and massive basaltic flows and breccias of the Upper Triassic Karmutsen Formation, Vancouver Group.

A rock sampling program was undertaken along Bear Creek in 1988 in an effort to test the southern strike projection of the Williams Creek/Mineral Creek fault. The Mineral Creek fault hosts the Mineral Creek deposit (092F 079) on the Debbie property 5 kilometres to the north. The samples contained disseminated pyrite, minor pyrrhotite and trace chalcopyrite. In this area, mineralization is associated with pyrite in fracture controlled zones of strong epidote-carbonate-chlorite-quartz alteration within basaltic to diabasic flows (Panther showings 092F 439-442).

A 1.5 metre channel sample of the ankeritized shear zone, striking 175 degrees and dipping 63 degrees east, assayed 0.0157 per cent copper, 0.0109 per cent zinc, and 0.013 grams per tonne gold (Assessment Report 18689).

BIBLIOGRAPHY

EMPR ASS RPT *18689
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1990/05/11 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/05/24 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 387**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAUREENAH-LOUISHMAN**, LOUISHMAN-MAUREENAH

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 15 04 N
LONGITUDE: 124 30 46 W
ELEVATION: 660 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adits on both banks of a north flowing tributary of French Creek, 7 kilometres southeast from Cameron Lake (Property File - Report by H. Laanela).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5456472
EASTING: 389911

COMMODITIES: Copper, Silver, Gold

MINERALS
SIGNIFICANT: Magnetite, Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear, Massive, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1965

COMMODITY	GRADE	
Silver	17.1000	Grams per tonne
Gold	0.6800	Grams per tonne
Copper	3.6100	Per cent

COMMENTS: Sample of surface showing above adits.
REFERENCE: Property File (Laanela, H. (1965): Report).

CAPSULE GEOLOGY

The Maureenah-Louishman occurrence area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) basaltic volcanic rocks in contact with diorite of the Early to Middle Jurassic Island Plutonic Suite. Massive magnetite and minor chalcopyrite occurs in shear zones in the basalts. A grab sample from a surface showing above adits driven along the shear zone assayed 3.61 per cent copper, 17.1 grams per tonne silver and 0.68 grams per tonne gold (Property File - Report by H. Laanela).

BIBLIOGRAPHY

EMPR ASS RPT 6042, 6305, 18762
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR PF (*Rpt. by H. Laanela (1965); Rpt. by D.C. Douglas (1968))
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1985/07/24
DATE REVISED: 1990/04/18

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 388**

NATIONAL MINERAL INVENTORY:

NAME(S): **CUP**, RA

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 15 40 N
LONGITUDE: 124 32 10 W
ELEVATION: 940 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Mineralized outcrops on the northwest slope of a hill between the heads of French and Lockwood creeks, 4.75 kilometres southeast from the east end of Cameron Lake (Geology in British Columbia, page G50).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5457618
EASTING: 388235

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Hornblende Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Cup occurrence is underlain by hornblende diorite of the Early to Middle Jurassic Island Plutonic Suite in contact with a siliceous volcanic rock of the Upper Triassic Karmutsen Formation (Vancouver Group). The diorite is sparsely and irregularly mineralized with chalcopyrite and locally pyrite and pyrrhotite. The chalcopyrite forms discrete blebs or clots and occasionally is found as a discontinuous vein or veinlet.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR GEOLOGY *1975, pp. G50,G51
EMPR PF (Rpt. by G.E.P. Eastwood)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/18 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 389**

NATIONAL MINERAL INVENTORY:

NAME(S): **COR 14**, STAR OF THE WEST

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W 092F02E
BC MAP:
LATITUDE: 49 05 49 N
LONGITUDE: 124 45 15 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Old adit location (Assessment Report 6676).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5439715
EASTING: 371948

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Arsenopyrite
ASSOCIATED: Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Andesite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1977

COMMODITY	GRADE	
Gold	0.9000	Grams per tonne
Copper	0.0900	Per cent

REFERENCE: Assessment Report 6676.

CAPSULE GEOLOGY

The Cor 14 showing is located 4.5 kilometres east of Alberni Inlet, 16 kilometres south of Port Alberni.

The area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) volcanics which are intruded by biotite-granodiorite of the Early to Middle Jurassic Island Plutonic Suite. The volcanics consist of greenstones, andesites and basalts. Quartz-carbonate veins mineralized with minor pyrite and chalcopyrite, cut both rock types (volcanics and intrusives) but are more common in the andesite.

A quartz-carbonate vein, up to 50 centimetres wide, occurs in brecciated greenstone. Pyrite, chalcopyrite and minor arsenopyrite are disseminated in the vein. The best assays from vein samples taken from this area were 0.9 grams per tonne gold and 0.09 per cent copper (Assessment Report 6676).

The vein has been exposed by trenching and a small adit, which are likely connected to work on the Star of the West showing (092F 215).

BIBLIOGRAPHY

EMPR AR 1895-647,653,654; 1897-569
EMPR ASS RPT *5400, *6676, 16522
EMPR BULL 1, 1896, p. 5; 37
EMPR EXPL 1975-94; 1977-109-110
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Phelps, G.B. (1974): Report in Prospectus, Focus Resources

BIBLIOGRAPHY

Ltd.; *Report (1975), in Prospectus-Focus Resources Ltd.)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #31,#224, 1975

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 390**

NATIONAL MINERAL INVENTORY:

NAME(S): **COPPER MOUNTAIN**, S.S., MOUNT HANKIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 10 53 N
LONGITUDE: 124 48 21 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: On the west side of Hankin Mountain about half way up (Minister of Mines Annual Report 1895).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5449190
EASTING: 368400

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic Rock
Basalt

HOSTROCK COMMENTS: Assumed to be Karmutsen volcanics, as shown by regional mapping.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

An old tunnel was driven on an outcropping of chalcopyrite on the west side of Hankin Mountain, about half way up. A high-grade zone is reported to contain up to 15 per cent copper ore.

The west side of the mountain is underlain by volcanics (mainly basalt) of the Upper Triassic Karmutsen Formation, Vancouver Group. The east side of the mountain is underlain by diorite of the Jurassic Island Intrusions.

BIBLIOGRAPHY

EMPR AR *1895-653; *1901-1097; 1903-191
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 49-1963; 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 391**

NATIONAL MINERAL INVENTORY:

NAME(S): **CENTRAL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06W
BC MAP:
LATITUDE: 49 20 09 N
LONGITUDE: 125 19 22 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches on the west bank of a major west tributary of a creek flowing out of Doran Lake, one kilometre south of the shoreline of Great Central Lake (Assessment Report 16046).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5467385
EASTING: 331258

COMMODITIES: Gold, Copper, Lead

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Galena, Azurite
ASSOCIATED: Quartz, Limonite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Quartz Diorite
Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: TRENCHES

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock

YEAR: 1987

COMMODITY	GRADE	
Gold	3.9400	Grams per tonne
Copper	0.1000	Per cent

COMMENTS: Samples from trenches.
REFERENCE: Assessment Report 16046.

CAPSULE GEOLOGY

The Central occurrence is underlain by massive basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) intruded by Jurassic Island Plutonic Suite quartz diorite. Trenches are developed on an east trending shear zone which dips 55 to 60 degrees south in quartz diorite. The shear hosts limonitic quartz veins mineralized with pyrite and minor amounts of chalcopyrite and galena with some azurite also evident. A rock sample assayed up to 3.94 grams per tonne gold and 0.1 per cent copper (Assessment Report 16046).

BIBLIOGRAPHY

EMPR ASS RPT *16046, 18591
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1990/04/20
DATE REVISED: / /

CODED BY: GO
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 392**

NATIONAL MINERAL INVENTORY:

NAME(S): **GUPPY**, WESTRIM, WESTERING

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 08 31 N
LONGITUDE: 125 25 57 W
ELEVATION: 60 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft (Assessment Report 16473).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5446084
EASTING: 322595

COMMODITIES: Gold Copper Zinc

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Arsenopyrite Sphalerite
ASSOCIATED: Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1987

COMMODITY	GRADE	
Gold	13.5000	Grams per tonne

COMMENTS: Vein material over a 3 metre width.
REFERENCE: Assessment Report 16473.

CAPSULE GEOLOGY

The area is underlain by massive fine-grained andesitic flows of the Upper Triassic Karmutsen Formation, Vancouver Group. Northeast striking, steeply dipping joints are widespread and are frequently dilated and infilled with auriferous quartz veinlets. The veinlets dip steeply and vary from 0.1 to 10 centimetres wide. Individual veins comprise coarsely crystalline quartz, about 10 per cent calcite and up to 2 per cent sulphides, which include pyrrhotite, pyrite, chalcopyrite, arsenopyrite and sphalerite.

A zone of sporadic quartz veins occurs over a 200 by 800 metre area. An earlier 7 metre deep shaft was driven on a 30 centimetre wide quartz vein. A chip sample over the vein assayed 1.44 grams per tonne gold (Assessment Report 16473). One hundred sixty-five metres northwest of the shaft is a zone, referred to as the Guppy showing, with a vein density of 3.8 per cent over 16.6 metres. Five composite samples of vein material collected over the 16.6 metres ranged from 0.53 to 13.5 grams per tonne gold (Assessment Report 16473).

BIBLIOGRAPHY

EMPR ASS RPT 12304, *16473; *16729
EMPR EXPL 1983-203
GSC MAP 17-1968
GSC OF 463
GSC P 68-50

DATE CODED: 1988/03/07
DATE REVISED: 1989/11/30

CODED BY: LDJ
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 393**

NATIONAL MINERAL INVENTORY:

NAME(S): **VAUXHALL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 36 N
LONGITUDE: 124 31 59 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized outcrop, 3.6 kilometres south from the community of Vananda on Texada Island, one kilometre west of Rumbottle Creek (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509369
EASTING: 389511

COMMODITIES: Zinc

MINERALS
SIGNIFICANT: Pyrite Sphalerite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Replacement

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Vauxhall occurrence is underlain by limestone of the Upper Triassic Quatsino Formation (Vancouver Group). Pyrite and sphalerite form massive replacements in limestone.

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
PERS COMM (EMPR, Webster, I. (1990))

DATE CODED: 1990/04/05 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 394** NATIONAL MINERAL INVENTORY:

NAME(S): **IMPERIAL**, IMPERIAL LIMESTONE, MCKAY QUARRY

STATUS: Producer Open Pit MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 44 27 N NORTHING: 5510936
LONGITUDE: 124 31 40 W EASTING: 389923
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centered on quarry on Lot 500 as shown in Open File 1990-3.

COMMODITIES: Limestone, Zinc, Silver, Lead, Copper, Gold, Aggregate, Building Stone

MINERALS
SIGNIFICANT: Calcite Sulphide
MINERALIZATION AGE: Upper Triassic
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Various fossils

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
COMMENTS: Limestone is gently warped into north trending folds.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Basaltic Flow
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell

INVENTORY

ORE ZONE: IMPERIAL LIMESTONE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1956
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	54.9000	Per cent

COMMENTS: Sample of black limestone. Grade given for CaO.
REFERENCE: Bulletin 40, page 79 (Sample 2).

CAPSULE GEOLOGY

The Imperial Limestone quarry is located near the centre of Lot 500, 1.25 kilometres southwest of Spratt Bay near the north end of Texada Island. Limestone has been quarried here since 1951.

The quarry is developed near the eastern edge of a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 3 kilometres wide that is situated along the axis of a broad northwest plunging syncline. The limestone is produced from the lowest member of the Quatsino Formation, consisting of a 100 metre thick bed of exclusively high calcium limestone. Several steeply dipping, west striking faults are exposed in the quarry. A few hundred metres to the southwest the limestone is in fault contact with basaltic flows of the Karmutsen Formation.

The deposit consists of irregular masses of white limestone in black limestone, with gradational and sharp contacts separating the two types. Both types are fine-grained. Samples of randomly collected chips of white limestone (sample 1) and black limestone (sample 2) contained (Bulletin 40, page 79, Sample 1 & 2):

	Sample 1 (values in per cent)	Sample 2
CaO	54.7	54.9
MgO	0.47	0.36

CAPSULE GEOLOGY

Insolubles	0.78	0.68
R2O3	0.06	0.06
Fe2O3	0.04	0.11
MnO	0.003	0.002
P2O5	0.018	0.010
Sulphur	0.01	0.02
Ignition loss	43.6	43.7
H2O	0.12	0.12

This deposit was initially quarried by Don McKay between 1951 and 1958. Imperial Limestone acquired the property in 1959 and has continued operating the quarry to the present day. Between 1952 and 1987, 4.56 million tonnes of limestone have been quarried. The majority of the current production is barged to Seattle.

Recent sampling by quarry personnel of sulphide mineralization, at the edge of the quarry, returned values in zinc, silver, lead, copper and gold (I. Webster, personal communication).

BIBLIOGRAPHY

EMPR AR 1952-259; 1953-192,193; 1954-182; 1955-96; 1956-153; 1957-88; 1958-97; 1959-175; 1960-146; 1961-149; 1962-155; 1963-145; 1964-186; 1965-267; 1966-268; 1967-310; 1968-321
EMPR ASS RPT 6770
EMPR BULL *40, pp. 52-58,79,80
EMPR FIELDWORK 1989, pp. 260,261
EMPR GEM 1969-397; 1970-499; 1971-464,465; 1972-599; 1973-548; 1974-382
EMPR MINING 1975-1980 p. 45; 1981-1985 p. 63; 1986-1987 p. 90; 1988 p. 90
EMPR OF 1990-3; 1992-18, pp. 24, 26; 1994-1
GSC MAP 17-1968; 1386A
GSC MEM 58, pp. 90,99
GSC OF 463
GSC P 68-50, pp. 14,15
CANMET IR 811, Part 5, p. 155
N MINER Oct. 19, 1998

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/12 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092F 395** NATIONAL MINERAL INVENTORY:

NAME(S): **GILLIES BAY**, IDEAL CEMENT, HOLNAM WEST, W.S. BEAL BLACK ROCK QUARRIES

STATUS: Producer Open Pit MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 43 08 N NORTHING: 5508550
LONGITUDE: 124 33 51 W EASTING: 387251
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on quarry on Lot 25 (Open File 1990-3).

COMMODITIES: Limestone Aggregate Railroad Ballast Building Stone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
COMMENTS: Strata strikes northwest; dips 12 to 15 degrees northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell

INVENTORY

ORE ZONE: IDEAL CEMENT REPORT ON: Y

CATEGORY: Possible YEAR: 1991
QUANTITY: 265000000 Tonnes

COMMODITY	GRADE	
Limestone	97.0000	Per cent

COMMENTS: Grade given for CaCO3.
REFERENCE: Peter Styles, personal communication, 1989.

CAPSULE GEOLOGY

The quarry is located on the north end of Texada Island, 4 kilometres south of Vananda.

The Ideal Cement deposit is situated near the western margin of a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 3 kilometres wide that is preserved along the axis of a broad northwest plunging syncline. Underlying basaltic flows of the Upper Triassic Vancouver Group, Karmutsen Formation outcrop to the southwest. The strata strikes northwest and dips 12 to 15 degrees northeast. Limestone is quarried from the upper portion of the lowest member of the Quatsino Formation, consisting of at least 200 metres of exclusively high calcium limestone. Within the quarry the limestone is cut by 0.3 to 4.5 metre wide dykes that commonly trend 015 degrees and dip vertically. A second set of 0.3 to 0.9 metre wide dykes strike 135 degrees.

The deposit is comprised of uniform fine-grained, black to medium grey, light grey weathering limestone with minor veinlets containing silica and pyrite. A sample taken across 9.45 metres of strata exposed in the face of the north quarry in 1956 contained 54.3 per cent CaO, 0.24 per cent MgO, 0.78 per cent insolubles, 0.22 per cent R2O3, 0.07 per cent Fe2O3, 0.003 per cent MnO, 0.004 per cent P2O5, 0.01 per cent sulphur, 43.7 per cent ignition loss and 0.14 per cent water (Bulletin 40, page 78, Sample 4). Possible reserves are currently estimated at 265 million tonnes averaging 97 per cent CaCO3 (Peter Styles, personal communication, 1989).

Limestone was initially produced periodically from three small quarries by Stanley Beale between 1945 and 1956. Since 1958, Ideal

CAPSULE GEOLOGY

Cement has been producing limestone from one large quarry. Between 1952 and 1988, 29.8 million tonnes of limestone have been quarried.

The Manto occurrence (see 092F 534) was discovered during quarrying operations. A mineralized area with sulphide fracture-fillings is apparently hosted in a fault zone.

Gillies Bay (Holnam West) and Blubber Bay (Ashgrove Cement) (092F 479) ship about 5 million tonnes annually. About 1 million tonnes of waste rock is sold from Texada Island as construction aggregate.

BIBLIOGRAPHY

EM EXPL 1996-A13; 1998-47-55
EMPR AR 1949-256; 1958-96,97; 1959-174,175; 1960-146; 1961-149; 1962-155; 1963-145; 1964-186; 1965-267; 1966-268; 1967-309,310; 1968-321
EMPR ASS RPT 6770, 17040
EMPR BULL 23, p. 86; *40, pp. 52-58,78,79
EMPR ENG INSP 1989, 1990
EMPR GEM 1969-396,397; 1970-500; 1971-465; 1972-600; 1973-548; 1974-383
EMPR INF CIRC 1995-1, p. 9; 1996-1, p. 9; 1997-1, p. 12; 1998-1, p. 13
EMPR MINERAL MARKET UPDATE July, 1991
EMPR MINING 1975-1980 Vol.I, p. 46; 1981-1985, p. 64; 1986-1987, p. 90; 1988, p. 89
EMPR OF 1992-1; 1992-9; 1992-18, pp. 23-24; 1994-1
EMPR PF (Notes by Z.D. Hora; Pamphlets by Ideal Cement)
GSC MAP 17-1968; 1386A
GSC MEM 58, pp. 90,99
GSC OF 463
GSC P 68-50, pp. 14,15
N MINER Oct. 19, 1998
W MINER Nov. 1972, p. 59; Jan. 1975, pp. 10-16; Nov. 1977, pp. 26,27

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/12 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092F 396** NATIONAL MINERAL INVENTORY:

NAME(S): **LAFARGE LIMESTONE**, VANANDA , VANANDA QUARRIES, BEALE QUARRIES, LAFARGE CEMENT, LAFARGE-BEALE

STATUS: Past Producer Open Pit MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E 092F10E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 45 01 N NORTHING: 5511989
LONGITUDE: 124 31 46 W EASTING: 389825
ELEVATION: 50 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on open pit as shown in Open File 1990-3.

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: STRIKE/DIP: 145/40S TREND/PLUNGE:
COMMENTS: Limestone in east end of No. 2 quarry.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Basaltic Dike
Granitic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell

INVENTORY

ORE ZONE: NO. 2 QUARRY REPORT ON: Y

CATEGORY: Inferred YEAR: 1989
QUANTITY: 40000000 Tonnes

COMMODITY	GRADE
Limestone	90.0000 Per cent

COMMENTS: The limestone is contaminated by 50 per cent granitic dykes at the bottom of the quarry, decreasing to 20 per cent near the top.
REFERENCE: R. Gue, personal communication, 1989.

CAPSULE GEOLOGY

The Vananda quarries are located on Lots 7, 8 and 499 along the east coast of Texada Island, 1.5 kilometres south-southeast of the town of Vananda. Limestone has been produced here since 1933.

This deposit is situated on the east margin of a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 3 kilometres wide, that is preserved along the axis of a broad northwest plunging syncline. The limestone at this location has been quarried from the upper portion of the lower high calcium limestone member and the lower portion of the middle calcium limestone member of the Quatsino Formation. Bedding strikes 145 degrees and generally dips southwest from 20 to 40 degrees. In the No. 1 quarry and the western portion of the No. 2 quarry, the strata are intensely folded and faulted, likely due to the intrusion of an adjacent stock of quartz diorite just west of the quarries. This stock trends northwest along the shore for 760 metres. The limestone is commonly cut by basaltic dykes ranging from a few centimetres to 12 metres wide but averaging 1.2 metres in width. They tend to strike 070 degrees and dip 70 to 80 degrees southeast. About 50 per cent of the rock exposed near the bottom of the No. 2 quarry is comprised of dyke material. Near the top of the quarry the amount of dyke rock decreases to 20 per cent.

CAPSULE GEOLOGY

The limestone is generally fine grained and dark grey. It becomes medium to coarse grained and light grey in colour within 600 metres of the quartz diorite stock. The lower high calcium member is quite uniform in composition while the middle member displays alternating beds of magnesian and calcium limestone, with the calcium limestone being predominant. The middle member is commonly cut by calcite and dolomite veinlets. Eleven chip samples taken in succession over a total length of 142 metres across the face of the No. 2 quarry in 1944, averaged 55.36 per cent CaO, 0.76 per cent MgO, 0.33 per cent insolubles, 0.21 per cent R_2O_3, 0.05 per cent Fe_2O_3, 0.010 per cent MnO, 0.008 per cent P_2O_5, 0.02 per cent sulphur and 43.14 per cent ignition loss (Bulletin 40, page 76).

In 1985, production from the No. 2 quarry (main quarry) averaged 52.94 per cent CaO, 1.0 per cent MgO, 2.59 per cent SiO_2, 1.23 per cent Al_2O_3, 0.45 per cent Fe_2O_3, 0.13 per cent Na_2O, 0.09 per cent K_2O and 42.59 per cent ignition loss (Randy Gue, personal communication, 1989). Remaining inferred reserves are 40 million tonnes of limestone (Randy Gue, personal communication, 1989).

Limestone was first quarried here by F.J. Beale and Beale Quarries Ltd. from two larger quarries on the coast (No. 1 and 2) and three smaller quarries to the west and south (No. 3, 4 and 5). In 1956, Lafarge Cement acquired the operation and continued production from the No. 2 quarry on Lot 499, up to 1987. Between 1933 and 1987, 22 million tonnes of limestone were quarried for cement manufacturing.

BIBLIOGRAPHY

EMPR AR 1933-344; 1936-F65; 1937-F38; 1938-F71; 1941-93; 1947-217; 1949-256; 1951-220; 1952-259; 1953-192; 1954-182; 1955-95,96; 1956-153; 1958-96; 1959-174; 1960-145,146; 1961-149; 1962-155; 1963-145; 1964-186; 1965-267; 1966-268; 1967-309; 1968-321
EMPR ASS RPT 6770, 9300
EMPR BULL *23, pp. 81-85; *40, pp. 51-58,74-77
EMPR EXPL 1986-A78
EMPR GEM 1969-396; 1970-500; 1971-465; 1972-600; 1973-549; 1974-383
EMPR MAP 65, 1989
EMPR MINING Vol.1 1975-1980; 1981-1985; 1986-1987
EMPR OF 1990-3; 1992-1; 1992-9; 1992-18, pp. 24, 25
EMPR PF (Report on Dykes Evaluation, Vananda Quarry, 1983; Consolidated Van Anda Gold Ltd. Website (Apr.1998): Beale Quarries, 4 p.)
GSC MAP 1386A; 17-1968
GSC OF 463
GSC P 68-50, pp. 14,15
CANMET RPT 811, Part 5, pp. 153-155

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/18 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092F 397**

NATIONAL MINERAL INVENTORY:

NAME(S): **HIESHOLT**, DOMTAR QUARRY , QUARRY 4, QUARRY 5, BLUBBER BAY

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 46 17 N
LONGITUDE: 124 35 42 W
ELEVATION: 55 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of open pit within Lot 305, 3 kilometres northwest from the community of Vananda on Texada Island, just west of the main road to Blubber Bay (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5514434
EASTING: 385152

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil

LITHOLOGY: Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1956
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	55.1700	Per cent

COMMENTS: Average across 54 metres. Grade given for CaO.
REFERENCE: Bulletin 40, page 65, Samples 5,6.

CAPSULE GEOLOGY

Limestone was quarried 2.5 kilometres south of Blubber Bay in the centre of Lot 305, on the north end of Texada Island.

The quarries are situated on the west flank of a northwest plunging syncline that is preserved along a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 3 kilometres wide along its axis. The quarries are developed in the lower member of the Quatsino Formation, consisting of a hundred metres of high calcium limestone. Four steeply dipping dykes, 3 to 6 metres wide, are exposed for approximately 100 metres each in the number 4 quarry (south quarry). One of these strikes west, while the rest trend north. A few faults and zones of shattering and shearing are present.

The limestone is generally a uniform fine-grained, massive, black rock. Two 4.6 to 6 metre wide, nearly vertical zones of interbanded black and white limestone are exposed in the walls of the number 4 quarry. Two chip samples taken in succession along a face near the north end of the number 4 quarry in 1956, across a total length of 54 metres, averaged 55.17 per cent CaO, 0.02 per cent MgO, 0.65 per cent insolubles, 0.06 per cent R2O3, 0.06 per cent Fe2O3, 0.004 per cent MnO, 0.011 per cent P2O5, 0.03 per cent sulphur and 43.62 per cent ignition loss (Bulletin 40, page 65 - Samples 5 and 6).

Limestone has been produced from two adjoining quarries, the number 4 and 5 quarries, between 1948 and 1966 by Pacific Lime Ltd. and Domtar Ltd. Total production amounted to 5.5 million tonnes.

BIBLIOGRAPHY

EMPR AR 1948-189; 1952-259; 1955-96; 1956-153; 1959-175; 1960-147; 1961-149,150; 1962-155; 1963-145,146; 1964-186; 1965-267; 1966-268; 1967-310
EMPR BULL 23; *40, pp. 52-58,63-66
EMPR OF 1990-3; 1992-18, pp. 24, 25-26
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, pp. 14,15
Ogilvy, A.G. (1963): A Petrographic Investigation of the Stratigraphic Significance of "Insul" & Magnesia in Domtar Chemicals Ltd., Limestone Quarry, Blubber Bay, British Columbia, Unpub. B.A.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/17 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092F 398**

NATIONAL MINERAL INVENTORY:

NAME(S): **TAN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 05 44 N
LONGITUDE: 124 34 48 W
ELEVATION: 680 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trench #1 (Assessment Report 16072).

MINING DIVISION: Victoria
Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5439280
EASTING: 384658

COMMODITIES: Silver

MINERALS
SIGNIFICANT: Pyrite
COMMENTS: Mineralogy not specified.
ASSOCIATED: Quartz
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 0070 x 0002 Metres STRIKE/DIP: 150/45E TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Devonian	Sicker	Nitinat	
Jurassic			Island Plutonic Suite

LITHOLOGY: Tuff
Agglomerate
Flow
Basaltic Pyroclastic
Chert
Argillite
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Situated in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	2.1000	Grams per tonne

COMMENTS: Sample 19169 from shear zone also assayed 0.06 grams per tonne gold, and in per cent 0.16 arsenic, 33.39 iron, 0.05 molybdenum, 0.01 copper
REFERENCE: Assessment Report 16072.

CAPSULE GEOLOGY

The Tan showing is located 24 kilometres southeast of Port Alberni, slightly east of the B&K (092F 081) and Golden Eagle (092F 080) occurrences.

The area, located in the Cowichan uplift, is underlain by volcanics and minor sediments of the Upper Devonian McLaughlin Ridge Formation (formerly the Myra Formation) and the Devonian Nitinat Formation, both of the Sicker Group. Diorite of the Early to Middle Jurassic Island Plutonic Suite occurs to the south.

The showing occurs in basaltic pyroclastics of the McLaughlin Ridge Formation which comprised of tuff, agglomerate, flows with minor interbedded chert and argillite. A quartz-sulphide mineralized shear zone strikes 150 degrees and dips 45 degrees east. The zone has been traced along strike for 70 metres and is 1.8 metres wide. The sulphides, with the exception of pyrite, have not been specified.

CAPSULE GEOLOGY

A grab sample from a trench (#1) on the shear zone assayed 0.06 grams per tonne gold, 2.1 grams per tonne silver, 0.05 per cent molybdenum, 0.01 per cent copper, 0.16 per cent arsenic and 33.39 per cent iron (Assessment Report 16072).

BIBLIOGRAPHY

EMPR ASS RPT 12150, 13670, 14431, *16072, *18355
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF ((Laanela, H. (1965): Report by Gunnex Limited, see 092F 081)
GSC MAP 17-1968; 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
N MINER #223, 1983; #182, *Sept. 30, 1985; #73, 1987; #79, 1988

DATE CODED: 1990/04/06 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/04/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 399**

NATIONAL MINERAL INVENTORY:

NAME(S): **COR 6**, STAR OF THE WEST

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E 092F02W
BC MAP:
LATITUDE: 49 05 39 N
LONGITUDE: 124 44 55 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Old adit location (Assessment Report 6676).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5439396
EASTING: 372346

COMMODITIES: Copper Gold Lead

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Galena
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 0200 x 0001 Metres
STRIKE/DIP: 055/40S
TREND/PLUNGE:
COMMENTS: Vein at adit.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Biotite Granodiorite
Greenstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1977
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	2.0000	Grams per tonne
Copper	0.2000	Per cent

REFERENCE: Assessment Report 6676.

CAPSULE GEOLOGY

The Cor 6 showing is located 5 kilometres east of Alberni Inlet, just southeast of the Cor 14 showing (092F 389) and 16 kilometres south of Port Alberni.

The area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) volcanics which are intruded by biotite-granodiorite of the Early to Middle Jurassic Island Plutonic Suite. The volcanics consist of greenstones, andesites and basalts. Quartz-carbonate veins, carrying minor pyrite and chalcopyrite, cut both rock types (volcanics and intrusives) but are more common in the andesite.

An adit at the 400 metre elevation follows a quartz-carbonate vein striking 055 degrees and dipping 040 degrees southeast within greenstone. The vein which extends for about 200 metres and is up to 1 metre wide, contains disseminated pyrite, galena and minor chalcopyrite. The best assay for gold was 2 grams per tonne and for copper, 0.20 per cent (Assessment Report 6676).

A similar vein occurrence lies about 200 metres to the east. An assay of duFmp material from an old adit assayed 0.51 per cent copper (Assessment Report 6676). A further 200 metres to the east, a lens of massive pyrite and chalcopyrite in greenstone measures about 1 metre long and 10 centimetres thick. A sample assayed 2.80 per cent copper (Assessment Report 6676).

CAPSULE GEOLOGY

These showings are likely the ones worked on in 1890 and known as the Star of the West (see 092F 215).

BIBLIOGRAPHY

EMPR AR 1895-647,653,654; 1897-569
EMPR ASS RPT *5400, *6676, 13723, 16522
EMPR BULL 1, 1896, p. 5; 37
EMPR EXPL 1975-94; 1977-109-110
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Phelps, G.B. (1974, *1975): Report, in Focus Resources Ltd. Prospectus, see 092F 215)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #31,#224, 1975

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1990/05/09	REVISED BY:	LDJ	FIELD CHECK:	N

MINFILE NUMBER: **092F 400**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOR**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 00 58 N
LONGITUDE: 124 49 18 W
ELEVATION: 110 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the Port Alberni-Bamfield road (at about 32 kilometres) where the road crosses Parsons Creek (Assessment Report 6655).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5430845
EASTING: 366805

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Andesite

HOSTROCK COMMENTS: The andesite host may belong to either of the two units.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by andesite intruded by minor coarse grained mafic intrusives. Massive, medium to coarse-grained diorite of the Early to Middle Jurassic Island Intrusions are observed locally. The andesite may belong to the Upper Triassic Karmutsen Formation, Vancouver Group or to the Lower Jurassic Bonanza Group.

Chalcopyrite and bornite with minor malachite is found in association with quartz in very narrow shear zones where the road crosses Parsons Creek. Chalcopyrite and malachite were also found in the bed of Parsons Creek about 300 metres downstream from the bridge.

BIBLIOGRAPHY

EMPR ASS RPT *6655, 11368
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/11 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 401**

NATIONAL MINERAL INVENTORY:

NAME(S): **HEB**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F13W
BC MAP:
LATITUDE: 49 52 43 N
LONGITUDE: 125 58 36 W
ELEVATION: 1375 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.5 kilometres west of the Heber River (Assessment Report 14551).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5529384
EASTING: 286151

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Malachite Epidote
ALTERATION TYPE: Oxidation Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Dioritic Rock

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: FLOAT

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1984

COMMODITY	GRADE	
Copper	0.1000	Per cent

REFERENCE: Assessment Report 14551.

CAPSULE GEOLOGY

The area is underlain by massive green porphyritic basalt of the Upper Triassic Karmutsen Formation, Vancouver Group. A stock of the Early to Middle Jurassic Island Plutonic Suite disrupts the strata to the immediate northwest of the showings.

Blebs of pyrite and chalcopyrite occur within highly epidotized basalt. Quartz vein float containing blebs and fracture coatings of chalcopyrite and malachite were also reported. One sample contained 0.1 per cent copper and negligible amounts of gold and silver (Assessment Report 14551).

BIBLIOGRAPHY

EMPR ASS RPT *14551
EMPR EXPL 1985-C191
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 80-16

DATE CODED: 1990/02/25
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 402**

NATIONAL MINERAL INVENTORY:

NAME(S): **COURTENAY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11E
BC MAP:
LATITUDE: 49 41 20 N
LONGITUDE: 125 00 57 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the Pantledge River, within the town of Courtenay.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5505992
EASTING: 354606

COMMODITIES: Shale, Ceramic Clay

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform, Massive
CLASSIFICATION: Sedimentary, Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Haslam	

LITHOLOGY: Shale
Claystone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Courtenay deposit consists of shale (formerly of the Trent River Formation) of the Upper Cretaceous Nanaimo Group, Haslam Formation. Samples of the shale were collected from the banks of the Puntledge River in the town of Courtenay and sent to a ceramics laboratory for testing. The Geological Survey of Canada Summary Report for 1922 tabulates the characteristics of the material as fired bricklets. As a result of the testing the shale was found to be suitable for the manufacture of building bricks, hollow ware and dry-press facebrick.

BIBLIOGRAPHY

EMPR BULL *30, p. 56
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
GSC SUM RPT *1922, Part A, pp. 58-59

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/19 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 403**

NATIONAL MINERAL INVENTORY:

NAME(S): **UNION BAY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F10W
BC MAP:
LATITUDE: 49 35 05 N
LONGITUDE: 124 53 48 W
ELEVATION: 50 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located near Union Bay (Geological Survey of Canada Memoir 47).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5494188
EASTING: 362908

COMMODITIES: Shale

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Haslam	

LITHOLOGY: Shale
Claystone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Union Bay deposit consists of shale, probably of the Upper Cretaceous Nanaimo Group, Haslam Formation. The average air shrinkage of the material is 4.3 per cent and the average tensile strength 65 pounds per square inch. The clay when wet-moulded burns to a reddish-brown brick, of good ring, and moderate absorption. From fire tests of the material it was found that the clay is beyond vitrification at cone 3 and fused at cone 4. The clay was moulded into dry-press bricklets. These burned to a good red colour, but did not give a good hard body.

BIBLIOGRAPHY

EMPR BULL *30, p. 56
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 2-1965; 17-1968; 1386A
GSC MEM *47, pp. 60-61
GSC OF 463
GSC P 68-50; 72-44
GSC SUM RPT 1922, Part A

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 404**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROGERS CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07W 092F07E
BC MAP:
LATITUDE: 49 15 45 N
LONGITUDE: 124 47 17 W
ELEVATION: 50 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: North of Rogers Creek, east of Alberni Inlet (Geological Survey of Canada Summary Report 1922, page 61).

MINING DIVISION: Alberni
Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5458176
EASTING: 369909

COMMODITIES: Clay

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Quaternary

DEPOSIT

CHARACTER:	Massive	Stratiform	Unconsolidated
CLASSIFICATION:	Residual	Sedimentary	Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Haslam	

LITHOLOGY: Clay

HOSTROCK COMMENTS: The area of the clay deposit is underlain by Nanaimo Group sediments.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Glacial clay of large extent occurs in the Rogers Creek area, east of the head of Alberni Inlet. The Rogers Creek clay is described as yellowish, tough and silty. The area is underlain by sediments of the Upper Cretaceous Nanaimo Group, Haslam Formation.

BIBLIOGRAPHY

EMPR BULL *30, p. 46
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 2-1965; 17-1968; 1386A
GSC MEM 47
GSC OF 463
GSC P 68-50; 72-44
GSC SUM RPT *1922, Part A, p.61

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/20 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 405**

NATIONAL MINERAL INVENTORY:

NAME(S): **CRESCENT BAY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 46 38 N
LONGITUDE: 124 37 41 W
ELEVATION: 15 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Northern shoreline of Crescent Bay near the northern tip of Texada Island (Geological Survey of Canada Memoir 58, page 99).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5515133
EASTING: 382786

COMMODITIES: Clay

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Residual Industrial Min.
COMMENTS: Age of alluvium from Open File 1990-3.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Quaternary			Unnamed/Unknown Informal

LITHOLOGY: Boulder Clay
Limestone
Pillow Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

Quaternary alluvium comprising glacial boulder clays occur along the shoreline in the northern part of Crescent Bay near the northern tip of Texada Island. The clay contains few scattered pebbles. Bedrock is comprised of limestone and pillow basalt of the Upper Triassic Quatsino and Karmutsen formations respectively, of the Vancouver Group.

Testing revealed the clay is very gritty, slightly calcareous, but has fairly good plasticity when tempered with water. The air shrinkage is high at 8 per cent. On burning to Cone 010 (the temperature that most common bricks are burned at), the clay has a good hard body of light red colour. The fire shrinkage is zero and the absorption 16 per cent. When burned to Cone 6, the clay develops a good red colour and steel hard body, but the absorption is high at 15 per cent. At Cone 3 the body is dark red and almost vitrified. The shrinkage at this temperature is 4 per cent. This is a good common brick clay, but is not suitable for the manufacture of vitrified wares, as the shrinkage is too great and the softening point too low (Geological Survey of Canada Memoir 58, pages 99,100).

BIBLIOGRAPHY

EMPR BULL 30, p. 46
EMPR OF 1990-3
GSC MAP 1386A; 17-1968
GSC MEM *58, pp. 99,100
GSC OF 463
GSC P 68-50

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/20 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 406**

NATIONAL MINERAL INVENTORY:

NAME(S): **IRISH**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 45 52 N
LONGITUDE: 124 34 35 W
ELEVATION: 21 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized outcrop, at the head of Sturt Bay on the north bank of Sturt Creek, 1.5 kilometres north-northwest from the community of Vananda on Texada Island (Fieldwork 1976, page 37).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5513633
EASTING: 386476

COMMODITIES: Copper, Lead, Zinc, Gold, Silver

MINERALS
SIGNIFICANT: Chalcopyrite, Galena, Sphalerite
ASSOCIATED: Pyrite, Pyrrhotite, Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Mafic Dike
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1981

COMMODITY	GRADE	
Silver	4.7900	Grams per tonne
Gold	1.3000	Grams per tonne

COMMENTS: Sample of dyke material.
REFERENCE: Assessment Report 9417.

CAPSULE GEOLOGY

The Irish occurrence area is underlain by limestone of the Upper Triassic Quatsino Formation (Vancouver Group) intruded by a small fine-grained diorite stock. Mafic diorite dykes up to 3.6 metres wide are found throughout the property and most are mineralized with pyrite, pyrrhotite and minor magnetite.

The Irish showing comprises galena and chalcopyrite sparsely disseminated in limestone with galena veins feathering out at 350 degrees. Nearby, blebs of chalcopyrite occur in a mafic dyke. Further east, limestone is bleached for 30 centimetres across an open fracture striking 005 degrees and dipping 80 degrees east and contains veinlets and pockets of sphalerite and minor pyrite.

A core sample of dyke material from a shallow diamond-drill hole assayed 1.30 grams per tonne gold and 4.79 grams per tonne silver (Assessment Report 9417).

BIBLIOGRAPHY

EMPR ASS RPT 5645, 6842, *9417
EMPR FIELDWORK *1976, p. 37; 1989, pp. 257-265
EMPR GEOLOGY 1976, pp. 52,53
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58

BIBLIOGRAPHY

GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/02/26 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 407**

NATIONAL MINERAL INVENTORY:

NAME(S): **LIMEKILN BAY**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 47 19 N
LONGITUDE: 124 37 44 W
ELEVATION: 11 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centered on quarry in Limekiln Bay as shown in Bulletin 40, Figure 7.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5516401
EASTING: 382754

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite Magnetite Pyrite
MINERALIZATION AGE: Upper Triassic
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Various Fossils

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: Bedding dips 0 to 20 degrees northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil
MATERIAL DATED: Various fossils

LITHOLOGY: Limestone
Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1944
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Limestone	54.4200	Per cent

COMMENTS: Average across 9.36 metres of strata. Grade given for CaO.
REFERENCE: Bulletin 40, page 59.

CAPSULE GEOLOGY

The Limekiln Bay deposit is situated on the western margin of a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 3 kilometres wide, that is preserved along the axis of a broad northwest plunging syncline. The limestone at this locality dips between 0 to 20 degrees northeast. The quarry is developed in the lower portion of the middle member of the Quatsino limestone, consisting of a hundred metres of calcium and high calcium limestone with some interbedded magnesian limestone. A single large dyke intrudes the limestone just north of the quarry.

The deposit is comprised of very fine-grained, black to dark bluish-grey, calcium to high calcium limestone containing some magnesian beds up to 0.6 metres thick. Dolomite occurs as fine, white laminae and less commonly as disseminations and veinlets. A thin section displays fine-grained calcite containing approximately 5 per cent dolomite and minor magnetite and pyrite with veinlets of recrystallized calcite. Three channel samples taken in succession over the lower 9.36 metres of strata, exposed on the south end of the quarry, averaged 54.42 per cent CaO, 1.75 per cent MgO, 0.23 per cent insolubles, 0.24 per cent R_2O_3, 0.05 per cent Fe_2O_3, 0.009 per cent MnO, 0.013 per cent P_2O_5, 0.03 per cent sulphur and 43.33 per cent ignition loss (Bulletin 40, page 59).

Quarrying operations began here in the late 1880's. Between 1902 and 1908 the Marble Bay Company and the Tacoma Steel Company

CAPSULE GEOLOGY

quarried and burnt the limestone on site for lime manufacturing.

BIBLIOGRAPHY

EMPR AR 1911-206; 1913-288; 1916-359
EMPR BULL 23, pp. 11,12,68-70; *40, pp. 11,12,28,29,58-60
CANMET RPT 452, Vol.5, p. 160; 811, Part 5, pp. 150,151
GSC MAP 17-1968; 1386A
GSC OF 463
GSC MEM 58, p. 97
GSC P 68-50, pp. 14,15
Lockie, D.A. (1957): A Petrographic Analysis of Some Limestones of Southwestern British Columbia, University of British Columbia B.A. Thesis

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1989/07/14	REVISED BY:	PSF	FIELD CHECK:	N

MINFILE NUMBER: **092F 408**

NATIONAL MINERAL INVENTORY:

NAME(S): **NANAIMO RIVER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 05 34 N
LONGITUDE: 124 23 10 W
ELEVATION: 380 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of limestone on a road on the north bank of Nanaimo River (Open File 1989-6).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5438695
EASTING: 398806

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Silica
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Tabular
DIMENSION: 3000 x 500 Metres STRIKE/DIP: 048/25N TREND/PLUNGE:
COMMENTS: Limestone band trends north-northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone
Volcanic Sandstone
Chert

HOSTROCK COMMENTS: Dating of Mount Mark Formation is from Geological Survey of Canada Paper 79-30.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels
COMMENTS: In an island arc sequence on northeast margin of the Cowichan uplift.

CAPSULE GEOLOGY

A band of impure, siliceous, crinoidal limestone of the Upper Pennsylvanian to Lower Permian Mount Mark Formation (Buttle Lake Formation limestone), extends discontinuously north-northeast for 4 kilometres. The Nanaimo River limestone crosses the Nanaimo River 2 kilometres below the outlet of Fourth Lake and is up to 500 metres in width. The limestone is in contact with sandstone, chert and limestone of the Mississippian to Pennsylvannian Fourth Lake Formation, Buttle Lake Group, to the east. Bedding at one point strikes 048 degrees and dips 25 degrees northwest. This sequence is hornfelsed by a granitic intrusion outcropping to the west.

BIBLIOGRAPHY

EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 10 (in Ministry Library))
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 49-963; 17-1968
GSC OF 463; 1272
GSC P 68-50, pp. 9,10; 79-30, pp. 18,19
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 409** NATIONAL MINERAL INVENTORY:

NAME(S): **MT. SPENCER**

STATUS: Showing MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 02 57 N NORTHING: 5434180
LONGITUDE: 124 36 59 W EASTING: 381892
ELEVATION: 440 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on surface trace of limestone band as shown on Open File 1989-6 (Sheet 1).

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: Metres STRIKE/DIP: 165/30W TREND/PLUNGE:
COMMENTS: Limestone band trends north-northwest for 13.5 kilometres.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone
Basalt
Andesite
Chert
Argillite

HOSTROCK COMMENTS: Dating of Mount Mark Formation is from Geological Survey of Canada Paper 79-30.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: In an island arc sequence on southwest margin of the Cowichan uplift.

CAPSULE GEOLOGY

A band of limestone extends north-northwest for 13.5 kilometres on the east flanks of Mount Spencer and Limestone Mountain, west of the Nitinat River and 20 kilometres southeast of Port Alberni.

The Mt Spencer limestone is part of the Upper Pennsylvanian to Lower Permian Mount Mark Formation (previously the Buttle Lake Formation), Buttle Lake Group. Several east dipping thrust faults displace the limestone. The unit dips shallowly to near vertically to the west and southwest. The limestone is underlain by andesites of the Devonian Nitinat Formation (Sicker Group) and chert, argillite and limestone of the Mississippian to Pennsylvannian Fourth Lake Formation, Buttle Lake Group. Basalts of the Upper Triassic Vancouver Group, Karmutsen Formation unconformably overlie the limestone.

BIBLIOGRAPHY

EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 10 (in Ministry Library))
EMPR OF 1987-2; 1988-24; *1989-6; 1992-18, p. 139
GSC MAP 49-963; 17-1968
GSC OF 463; 1272
GSC P 68-50, pp. 9,10; 79-30, pp. 18,19
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
Hudson R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of

BIBLIOGRAPHY

British Columbia, Vol. 1: Vancouver Island, pp. 141-142

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 410**

NATIONAL MINERAL INVENTORY:

NAME(S): **PARSONS CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W 092C15W
BC MAP:
LATITUDE: 49 01 01 N
LONGITUDE: 124 49 43 W
ELEVATION: 145 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on surface trace of limestone band as shown on Geological Survey of Canada Open File 1272 (Sheet 7).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5430950
EASTING: 366299

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Irregular
MODIFIER: Folded
DIMENSION: STRIKE/DIP: 175/30W TREND/PLUNGE:
COMMENTS: Attitude of bedding at north end of limestone band.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Andesite
Basalt
Volcanic
Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Situated on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

The Parsons Creek occurrence is comprised of a folded band of impure limestone of the Upper Triassic Vancouver Group, Quatsino Formation extends for 6 kilometres northwest from Coleman Creek across Parsons Creek to Alberni Inlet. Bedding strikes 128 to 175 degrees and dips 30 to 50 degrees southwest. The band is underlain by basalts of the Upper Triassic Vancouver Group, Karmutsen Formation and Lower Jurassic Bonanza Group volcanics.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 10 (in Ministry Library))
EMPR OF 1988-24, p. 45; 1989-6
GSC MAP 49-963; 17-1968
GSC OF 463; 1272
GSC P 68-50, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/05 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 411**

NATIONAL MINERAL INVENTORY:

NAME(S): **HECATE MOUNTAIN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W 092C15W
BC MAP:
LATITUDE: 49 00 16 N
LONGITUDE: 124 56 49 W
ELEVATION: 580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on surface trace of limestone band as shown on Geological Survey of Canada Open File 1272 (Sheet 7).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5429776
EASTING: 357612

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: STRIKE/DIP: 012/40W TREND/PLUNGE:
COMMENTS: Attitude of bedding near southwest end of limestone band.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Andesite
Basalt
Volcanic
Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Situated on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

At the Hecate Mountain occurrence, a 250 metre wide band of limestone of the Upper Triassic Vancouver Group, Quatsino Formation extends for 5 kilometres southwest from Handy Creek across the southeast flank of Hecate Mountain to Alberni Inlet, 27 kilometres south-southwest of Port Alberni. Bedding near the southwest end of the band strikes 012 degrees and dips 40 degrees west. Near its centre, the band is segmented by a crossfault. The northeast end of the band is also truncated by a fault. The unit is underlain by andesites and basalts of the Upper Triassic Vancouver Group, Karmutsen Formation and overlain by volcanics and sediments of the Lower Jurassic Bonanza Group.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 10 (in Ministry Library))
EMPR OF 1988-24, p. 45
GSC MAP 49-963; 17-1968
GSC OF 463; 1272
GSC P 68-50, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/06 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 412**

NATIONAL MINERAL INVENTORY:

NAME(S): **SPROAT LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 13 03 N
LONGITUDE: 124 58 16 W
ELEVATION: 440 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on the largest exposure of limestone on St. Andrew Creek as shown on Geological Survey of Canada Open File 1272 (Sheet 7).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5453505
EASTING: 356461

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Silica
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Irregular
MODIFIER: Folded Faulted
DIMENSION: 6500 x 60 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone bed folded into a syncline plunging northwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Black Argillite
Andesite
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Situated on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

At the Sproat Lake occurence, a 60 metre thick bed of limestone of the Upper Triassic Vancouver Group, Quatsino Formation extends southeast from the south shore of Two Rivers Arm of Sproat Lake for 6.5 kilometres, 11 kilometres west of Port Alberni. The bed outcrops as two irregular northwest trending bands up to 3 kilometres apart; a result of being folded into a northwest trending syncline. The southwest limb is segmented by several parallel northwest trending faults. The limestone is overlain by black argillite of the Parsons Bay Formation and underlain by andesites and basalts of the Karmutsen Formation, both units of the Upper Triassic Vancouver Group.

The bed is composed of fine-grained, dark grey limestone that weathers light grey. The limestone contains thin calcite veinlets and scattered small silicious patches in addition to scattered lenses and nodules of black chert. A few narrow mafic dykes intrude the limestone.

BIBLIOGRAPHY

EMPR IND MIN FILE (*Report by J.W. McCammon, 1968; Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 10 (in Ministry Library))
EMPR OF 1988-24, p. 45; 1992-18, p. 41
GSC MAP 49-963; 17-1968
GSC OF 463; 1272
GSC P 68-50, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/06 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 413**

NATIONAL MINERAL INVENTORY:

NAME(S): **UCHUCKLESIT INLET**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 01 45 N
LONGITUDE: 125 01 04 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on surface trace of limestone 2 kilometres northeast of Uchucklesit Inlet, as shown on Geological Survey of Canada Map 17-1968.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5432659
EASTING: 352505

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: Limestone band trends north.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Volcanic
Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Situated on a shallow marine platform of ocean rift volcanics.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

At the Uchucklesit Inlet occurrence, a limestone band of the Upper Triassic Vancouver Group, Quatsino Formation extends northward from the northwest shore of Uchucklesit Inlet for 5 kilometres to the southeast shore of Henderson Lake, 30 kilometres southwest of Port Alberni. The band is segmented by several west-northwest trending cross faults. The unit is underlain by volcanics of the Upper Triassic Vancouver Group, Karmutsen Formation and overlain by volcanics and sediments of the Lower Jurassic Bonanza Group.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 10 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/06 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 414** NATIONAL MINERAL INVENTORY:

NAME(S): **PIPESTEM INLET**, EFFINGHAM INLET

STATUS: Past Producer Open Pit MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 02 37 N NORTHING: 5434601
LONGITUDE: 125 11 02 W EASTING: 340410
ELEVATION: 50 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on limestone band between Pipestem and Effingham Inlets, as shown on Geological Survey of Canada Map 17-1968.

COMMODITIES: Limestone Marble Building Stone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: 5000 x 2000 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone band trends west-southwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Basalt
Andesite
Hornblende Gneiss
Quartz Diorite
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: Situated on a shallow marine platform of ocean rift volcanics.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1973
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	53.3700	Per cent

COMMENTS: Average of 26 samples taken across deposit. Grade given for CaO.
REFERENCE: Industrial Min. File: Limestone Deposits of Pacific Northwest.

CAPSULE GEOLOGY

A band of limestone of the Upper Triassic Vancouver Group, Quatsino Formation extends east-northeast for 5 kilometres from the east end of Pipestem Inlet to the west shore of Effingham Inlet, 35 kilometres southwest of Port Alberni. The band widens from 500 metres at Pipestem Inlet to 2.0 kilometres at Effingham Inlet. To the south, the band is in fault contact with hornblende gneiss and quartz diorite of the pre-Jurassic Westcoast Complex and volcanics of the Lower Jurassic Bonanza Group. To the north it is bounded by basalts and andesites of the Upper Triassic Vancouver Group, Karmutsen Formation.

At Pipestem Inlet, the band is comprised of fine-grained, blue limestone, while at Effingham Inlet to the east, it consists of white crystalline limestone cut by numerous dykes. In thin section the limestone at Effingham Inlet displays bands of reddish-brown ferruginous mud and unidentified fossil structures cemented by recrystallized calcite and fine limy mud. A series of 26 samples taken across the entire deposit, in a northwest direction, averaged 53.37 per cent CaO, 1.28 per cent MgO, 1.54 per cent SiO2, 0.18 per cent Al2O3, 0.19 per cent Fe2O3, and 43.49 per cent ignition loss (Industrial Mineral File - "Limestone Deposits of the Pacific

CAPSULE GEOLOGY

Northwest," pages 2-3).
The limestone at Effingham Inlet is reported to have been quarried for marble up to 1902 (Geological Survey of Canada, Summary Report 1902, page 63).

BIBLIOGRAPHY

EMPR AR 1911-208
EMPR BULL 1, p. 5
EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 10; Report on Limestone Deposits of the Pacific Northwest, pp. 2-4 (in Ministry Library))
EMPR OF 1992-18, pp. 37, 39
GSC ANN RPT Vol. 15, 1902-1903, p. 65A
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 14,15
GSC SUM RPT 1902, p. 63
CANMET RPT 811, Part 5, p. 141
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 146
Lockie, D.A. (1957): A Petrographic Analysis of Some Limestones of Southwestern British Columbia, University of British Columbia unpublished B.A. Thesis, p. 37

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/06 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 415**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROUND LAKE**, PATERSON LAKE, ROSEANNE, LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E
BC MAP:
LATITUDE: 49 20 49 N
LONGITUDE: 125 01 45 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing on Map 1, Assessment Report 16239. Also Figure 22, Geology, Exploration and Mining 1974, page 178.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5468005
EASTING: 352620

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite Malachite Bornite Pyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Skarn Hydrothermal Epigenetic
COMMENTS: Skarn mineralization related to shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic
Tuffaceous Basalt
Diorite Dike
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: HIGH-GRADE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1987

COMMODITY	GRADE	
Silver	57.0000	Grams per tonne
Gold	1.5000	Grams per tonne
Copper	3.2100	Per cent

REFERENCE: Assessment Report 16101.

CAPSULE GEOLOGY

The Round Lake showing is underlain by andesite or basalt of the Upper Triassic Karmutsen Formation, Vancouver Group. The rock is a massive dark green volcanic rock with occasional chlorite and epidote-filled amygdules. A small porphyritic diorite dyke trending 308 degrees and a thin bed of limestone striking 125 degrees and dipping 60 degrees southwest, occur near the showing.

The Karmutsen volcanics are intensely altered to garnet-epidote skarn in an area of prominent shears and fractures. This zone has been injected by short veins and pockets of quartz that contain, or are adjacent to blebs, disseminations and stringers of pyrite, chalcopyrite and bornite.

One high grade sample assayed 3.21 per cent copper, 1.5 grams per tonne gold and 57.0 grams per tonne silver (Assessment Report 16101). A 3 metre chip sample contained 0.44 per cent copper and only moderately anomalous gold and silver.

BIBLIOGRAPHY

EMPR AR *1967-76; 1968-104
EMPR ASS RPT *16101, *16239
EMPR EXPL 1987-C148

BIBLIOGRAPHY

EMPR GEM *1974-177,178
EMPR PF (Christopher, P.A. (1987): Report in Prospectus, Della Terra Resources Ltd.)
GSC MAP 17-1968
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1987/12/08 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/03/26 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 416**

NATIONAL MINERAL INVENTORY:

NAME(S): **NAHMINT MOUNTAIN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 11 01 N
LONGITUDE: 125 16 33 W
ELEVATION: 1040 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on limestone outcrop 5.0 kilometres southwest of Nahmint Mountain, as shown on Geological Survey of Canada Map 17-1968.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5450361
EASTING: 334159

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 3300 x 2500 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Deposit appears to be flat lying.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Basalt
Andesite
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Situated on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

At the Nahmint Mountain occurrence, a flat lying mass of limestone of the Upper Triassic Vancouver Group, Quatsino Formation outcrops on an unnamed mountain over a 3300 by 2500 metre area, 5 kilometres southwest of Nahmint Mountain. The limestone is partially overlain by Lower Jurassic Bonanza Group volcanics, which forms the peak of the mountain. Basalts and andesites of the Upper Triassic Vancouver Group, Karmutsen Formation underlie the limestone.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/06 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 417**

NATIONAL MINERAL INVENTORY:

NAME(S): **CLAYOQUOT ARM NORTH**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 13 43 N
LONGITUDE: 125 27 30 W
ELEVATION: 1160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on largest limestone mass 8.0 kilometres northeast of the north end of Clayoquot Arm, as shown on Geological Survey of Canada Map 17-1968.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5455779
EASTING: 321024

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 2500 x 2000 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Three limestone masses are nearly flat lying.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Basalt
Andesite
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Situated on a shallow marine platform of ocean rift volcanics.

CAPSULE GEOLOGY

At the Clayoquot Arm North occurrence, three masses of limestone of the Upper Triassic Vancouver Group, Quatsino Formation, varying in size from 1250 by 500 metres to 2500 by 2000 metres, outcrop along several mountain tops 8 kilometres northwest of the head of Clayoquot Arm, 45 kilometres west of Port Alberni. The largest limestone mass is in fault contact to the north with volcanics of the Upper Triassic Vancouver Group, Karmutsen Formation and is partially overlain by Lower Jurassic Bonanza Group volcanics. All three masses are underlain by basalts and andesites of the Karmutsen Formation.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon 1973, p. 11 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/06 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 418**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT MAITLAND**, KENNEDY LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E 092F03W
BC MAP:
LATITUDE: 49 08 04 N
LONGITUDE: 125 30 29 W
ELEVATION: 220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on western limestone lens, 2.5 kilometres west of the peak of Mount Maitland.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5445430
EASTING: 317057

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 2000 x 250 Metres STRIKE/DIP: 165/60E TREND/PLUNGE:
COMMENTS: Attitude of west lens.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Basalt
Andesite
Volcanic
Quartz Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Formed on a shallow marine platform of ocean rift volcanics.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

At the Mount Maitland occurrence, two small limestone lenses of the Upper Triassic Vancouver Group, Quatsino Formation outcrop on the flanks of Mount Maitland, 2.5 kilometres north of Kennedy Lake, 50 kilometres west-southwest of Port Alberni. One lens is situated 1.25 kilometres east-northeast of the Mount Maitland peak, while the second is located 2.5 kilometres west of the peak. The west lens strikes 165 degrees for 2000 metres and dips 60 degrees east, while the east lens strikes north for 1750 metres. Both lenses vary up to 250 metres in exposed width. Basalts and andesites of the Upper Triassic Vancouver Group, Karmutsen Formation underlie both lenses. The east lens is overlain by Lower Jurassic Bonanza Group volcanics.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 14,15

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/07/06 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 419**

NATIONAL MINERAL INVENTORY:

NAME(S): **CLAYOQUOT SOUND EAST**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 09 53 N
LONGITUDE: 125 32 58 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on surface trace of limestone band as shown on Geological Survey of Canada Map 17-1968.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5448897
EASTING: 314152

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 2000 x 500 Metres STRIKE/DIP: /30 TREND/PLUNGE:
COMMENTS: Limestone band strikes north, dips 30 to 45 degrees east.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Undefined Formation	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone
Basalt
Volcanic Breccia
Tuff
Argillite

HOSTROCK COMMENTS: Buttle Lake Group limestone outside uplifts has not been assigned a formation name.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Situated in an island arc sequence.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Clayoquot Sound East deposit consists of a band of Pennsylvanian to Permian limestone of the Buttle Lake Group. The band correlates with the Azure Lake Formation of the Buttle Lake uplift and the Mount Mark Formation of the Cowichan Uplift, both units of the new Buttle Lake Group. See Cream 1,3 (092F 220) for a description of the revised stratigraphy nomenclature.

The band is up to 500 metres wide and extends for 2 kilometres along the east shore of Clayoquot Arm, 55 kilometres west-southwest of Port Alberni. The limestone is underlain by volcanic breccia, tuff and argillite and overlain by basalts of the Upper Triassic Vancouver Group, Karmutsen Formation to the east. The entire sequence strikes north and dips 30 to 45 degrees east.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 9,10; 79-30, p. 18
PERS COMM Massey, N., Feb. 1990
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/27 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 420**

NATIONAL MINERAL INVENTORY:

NAME(S): **DEER BAY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 14 30 N
LONGITUDE: 125 35 06 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on surface outcrop of limestone band as shown on Geological Survey of Canada Map 17-1968.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5457537
EASTING: 311852

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 2000 x 250 Metres STRIKE/DIP: 091/60N TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Undefined Formation	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone
Basalt
Volcanic Breccia
Tuff
Argillite

HOSTROCK COMMENTS: Buttle Lake Group limestone outside uplifts has not been assigned to a formation name.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Situated in an island arc sequence.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

At the Deer Bay occurrence, a fault-bounded band of Pennsylvanian to Permian limestone (Buttle Lake Group) outcrops a kilometre north of Deer Bay at the head of Tofino Inlet, 58 kilometres west of Port Alberni. The band correlates with the Azure Lake Formation of the Buttle Lake uplift and the Mount Mark Formation of the Cowichan uplift, both units of the new Buttle Lake Group. See Cream 1,3 (092F 220) for a description of the revised stratigraphy nomenclature.

The band, up to 250 metres wide, strikes 091 degrees for 2000 metres and dips 60 degrees north. The unit is underlain by volcanic breccia, tuff and argillite and is unconformably overlain by basalts of the Upper Triassic Vancouver Group, Karmutsen Formation.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 9,10; 79-30, p. 18
PERS COMM Massey, N., Feb. 1990
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/27 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 421** NATIONAL MINERAL INVENTORY:

NAME(S): **HERBERT INLET**

STATUS: Showing MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 20 57 N NORTHING: 5470408
LONGITUDE: 125 55 56 W EASTING: 287047
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on outcrop of southern limestone body as shown on Geological Survey of Canada Map 17-1968.

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Conodont

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: Metres STRIKE/DIP: 040/40S TREND/PLUNGE:
COMMENTS: Attitude of southern limestone mass. Vein dips southeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Undefined Formation	

DATING METHOD: Fossil
MATERIAL DATED: Conodont

LITHOLOGY: Limestone
Basalt
Volcanic Breccia
Tuff
Argillite

HOSTROCK COMMENTS: Buttle Lake Group limestone, outside uplifts, has not been assigned to a formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: Situated in an island arc sequence.

CAPSULE GEOLOGY

At the Herbert Inlet occurrence, two masses of Pennsylvanian to Permian limestone (Buttle Lake Group), each up to 250 metres wide, outcrop on the east side of Herbert Inlet, 83 kilometres west of Port Alberni. Both limestone masses are underlain by volcanic breccia, tuff and argillite and overlain unconformably by basalts of the Upper Triassic Vancouver Group, Karmutsen Formation.

The limestone correlates with the Azure Lake Formation of the Buttle Lake uplift and the Mount Mark Formation of the Cowichan uplift, both units of the new Buttle Lake Group. See Cream 1,3 (092F 220) for a description of the revised stratigraphy nomenclature.

The southernmost body strikes 040 degrees for 1000 metres and dips 40 degrees southeast. About 750 metres to the north a second limestone lens trends northward for 1250 metres.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 9,10; 79-30, p. 18
PERS COMM Massey, N., Feb. 1990
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of

BIBLIOGRAPHY

British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/27 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 422** NATIONAL MINERAL INVENTORY:

NAME(S): **BUTTLE LAKE**

STATUS: Past Producer Open Pit MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F12E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 39 12 N NORTHING: 5503143
LONGITUDE: 125 31 20 W EASTING: 317953
ELEVATION: 225 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on quarry as shown on Buttle Lake geological map in Industrial Mineral File.

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Brachiopods/Fusulinids

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: 9999 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone dips gently northeast to southeast. Deposit dimension is 11000 metres.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	

DATING METHOD: Fossil
MATERIAL DATED: Brachiopods/Fusulinids

LITHOLOGY: Limestone
Basaltic Flow
Gabbro
Volcanic Breccia
Tuff
Argillite

HOSTROCK COMMENTS: Azure Lake Formation is the new name for the Buttle Lake Formation in the Buttle Lake uplift.

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
COMMENTS: Situated on the eastern margin of the Buttle Lake uplift.

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1973
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	52.6800	Per cent

COMMENTS: Sample from quarry. Grade given for CaO.
REFERENCE: Industrial Min. File: J.W. McCammon, 1973, page 12.

CAPSULE GEOLOGY

On the eastern boundary of the Buttle Lake uplift a band of Permian limestone of the Azure Lake Formation (formerly Buttle Lake Formation) extends for 11 kilometres along the east side of Buttle Lake, near its south end. The Buttle Lake occurrence limestone band is unconformably overlain to the east by basaltic flows of the Upper Triassic Vancouver Group, Karmutsen Formation. Underlying volcanic breccia, tuff and argillite outcrop to the west. The band is underlain near its south end by a gabbro sill.

The unit dips gently northeast to southeast. Several faults segment the limestone. A sample from a small quarry on the east shore of Buttle Lake, 22.4 kilometres south of the Gold River road bridge, contained 52.68 per cent CaO, 0.18 per cent MgO, and 5.14 per cent insolubles (J.W. McCammon, 1973, page 12).

The geological interpretation of the uplift has recently

CAPSULE GEOLOGY

undergone revision and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and a new Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, N., Personal Communication, 1990). See Cream 1,3 (092F 220) for a description of the revised stratigraphy nomenclature.

BIBLIOGRAPHY

EMPR IND MIN FILE (Undated Field Notes by J.W. McCammon; Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 12 (in Ministry Library))
EMPR MAP (Buttle Lake, 1963)
EMPR OF 1992-18, pp. 19, 21-22
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 9,10; 79-30, p. 18
GSC SUM RPT 1930A, pp. 59,60
PERS COMM Massey, N., Feb. 1990
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 162-163
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/27 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 423**

NATIONAL MINERAL INVENTORY:

NAME(S): **GREAT CENTRAL LAKE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06W
BC MAP:
LATITUDE: 49 24 40 N
LONGITUDE: 125 26 59 W
ELEVATION: 730 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on surface trace of eastern limestone band, as shown on Geological Survey of Canada Map 17-1968.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5476044
EASTING: 322309

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Permian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: Limestone body lies nearly flat.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Azure Lake	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Granodiorite
Quartz Diorite
Pillow Basalt
Volcanic Breccia
Tuff
Argillite

HOSTROCK COMMENTS: Formerly the Buttle Lake Formation; now the Azure Lake Formation within Buttle Lake uplift.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Situated in a roof pendant within the Island Intrusions.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

At the Great Central Lake occurrence, a flat-lying mass of Pennsylvanian to Permian limestone of the Buttle Lake Group, Azure Lake Formation (formerly the Buttle Lake Formation) outcrops near the southern end of the Buttle Lake uplift. Two parallel limestone bands, each up to 500 metres wide, occur on either side of a hill located 3 kilometres northwest of the west end of Great Central Lake, 48 kilometres southwest of Comox.

The two bands trend northward for 1.8 kilometres. They are separated by an overlying 750 metre wide mass of basalt of the Upper Triassic Vancouver Group, Karmutsen Formation that forms the top of the hill. This sequence is truncated to the south and north by several west trending faults. The sequence is bounded by granodiorite and quartz diorite of the Jurassic Island Intrusions to the west, east and north. The limestone and basalt lie adjacent to volcanic breccia, tuff and argillite to the south.

The geological interpretation of the uplift has recently undergone revision and the stratigraphy has been reassigned to several new formations of a redefined Sicker Group and a new Buttle Lake Group (formerly the upper part of the Sicker Group), (Juras, 1987; Massey, N. Personal Communication, 1990). See Cream 1,3 nomenclature.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 11 (in Ministry Library))
GSC MAP 17-1968
GSC OF 463
GSC P 68-50, pp. 9,10; 79-30, p. 18

BIBLIOGRAPHY

PERS COMM Massey, N., Feb. 1990
Juras, S.S. (1987): Geology of the Polymetallic Volcanogenic Buttle Lake Camp, with Emphasis on the Price Hillside, Central Vancouver Island, British Columbia, Canada, Ph.D. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/27 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 424**

NATIONAL MINERAL INVENTORY:

NAME(S): **LUND**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F15W 092F15E
BC MAP:
LATITUDE: 49 59 29 N
LONGITUDE: 124 45 08 W
ELEVATION: 50 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Small quarry 500 metres north of Thulin Lake, one kilometre north from the village of Lund, 20 kilometres northwest along the coast from the town of Powell River (Industrial Minerals File).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5539144
EASTING: 374404

COMMODITIES: Dimension Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Quartz diorite.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Magmatic Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Coast Plutonic Complex

LITHOLOGY: Quartz Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

CAPSULE GEOLOGY

The Lund occurrence is underlain by Mesozoic quartz diorite of the Coast Plutonic Complex. Pinkish, rather knotty "granite" has been quarried in very small amounts for local use. Accessible stone in thin sheets occurs in 10 metre cliffs.

BIBLIOGRAPHY

EMPR IND MIN FILE (List of granite quarries (in Ministry Library))
GSC MAP 17-1968; 1386A
GSC OF 611

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/04 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 425**

NATIONAL MINERAL INVENTORY:

NAME(S): **HARDY ISLAND**

STATUS: Producer Open Pit
REGIONS: British Columbia
NTS MAP: 092F09E
BC MAP:
LATITUDE: 49 43 59 N
LONGITUDE: 124 12 25 W
ELEVATION: 35 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quarry on the southwest shore of Hardy Island (Fieldwork, 1986).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5509650
EASTING: 413025

COMMODITIES: Granite Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Feldspar Quartz Biotite Hornblende
COMMENTS: Granite.
MINERALIZATION AGE: Jurassic

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Magmatic Industrial Min.
TYPE: R03 Dimension stone - granite
SHAPE: Regular

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Coast Plutonic Complex

LITHOLOGY: Medium Grained Equigranular Granodiorite

HOSTROCK COMMENTS: Coast Plutonic Complex ranges from Jurassic to Tertiary in age.

GEOLOGICAL SETTING
TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

Granite was produced from two abandoned quarries on the southwest shore of Hardy Island at the south end of Jervis Inlet.

The Hardy Island quarries are developed in granodiorite of Jurassic age within the Jurassic to Tertiary Coast Plutonic Complex. The rock is similar in appearance to stone from the Nelson Island quarries (092F 189), weathering grey to black. On fresh surfaces it is medium to coarse-grained with a uniform light grey appearance. The stone is comprised of feldspar, quartz, biotite and hornblende. Black knots up to 30 centimetres are common and pyrite and chalcopyrite are frequently noted.

The lower quarry has an opening approximately 100 metres long with faces between 2 and 23 metres high. The upper quarry has an opening 95 metres wide by 5 to 18 metres high and has been advanced north along a northeast set of steeply dipping joints. Joints and fractures in both quarries are widely spaced (greater than 1 metre apart) and potential reserves of stone exist. Physical properties are as follows (CANMET Report 452, p. 93):

Specific gravity	2.703
Crushing strength (dry) (lbs/sq.in.)	32,288
Transverse strength (lbs/sq.in.)	1,453
Shearing strength (lbs/sq.in.)	1,393

This quarry was operated in the early 1900's by Sechelt Granite Quarries Ltd. The stone was used for the construction of breakwaters in Vancouver and Victoria but no production figures are available.

BIBLIOGRAPHY

EMPR AR 1923-A268; 1929-C437; 1935-G32; 1939-A113; 1942-A92; 1949-A247; 1953-A185
EMPR FIELDWORK *1986, pp. 325, 328
EMPR INF CIRC *1988-6, p. 14; 1994-15
EMPR OF 1991-20
GSC MAP 17-1968
GSC OF 463, 611
GSC P 68-50; 90-1F, pp. 95-107

BIBLIOGRAPHY

CANMET RPT *452, Vol 5, pp. 91-94

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/11/09 REVISED BY: GVW FIELD CHECK: Y

MINFILE NUMBER: **092F 426**

NATIONAL MINERAL INVENTORY:

NAME(S): **DENMAN ISLAND**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F10W
BC MAP:
LATITUDE: 49 32 09 N
LONGITUDE: 124 48 20 W
ELEVATION: 76 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quarry, located 1.65 kilometres east of ferry terminal on Denman Island Ferry road.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5488591
EASTING: 369363

COMMODITIES: Sandstone Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Sandstone.
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R06 Dimension stone - sandstone
SHAPE: Regular

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Decourcy	

LITHOLOGY: Sandstone
Chert

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

Sandstone from a quarry on Denman Island was used to construct the Normal School and Drill Hall in Victoria and the Metropolitan Building and Dawson School in Vancouver. No production figures are available.

The northwest trending Upper Cretaceous DeCourcy Formation of the Nanaimo Group consists of 20 metres of sandstone underlain by minor siltstone and shale. The sandstone is light to medium grey in color, medium-grained (0.06 to 2 millimetres) and displays a uniform texture although thin (4 to 5 centimetres) beds of coarse (greater than 2 millimetres) sandy/pebble are present. Commonly, white to black cherty fragments (up to 3 millimetres) give the rock a coarse appearance.

The quarry is approximately 26 metres long and 17 metres wide and was developed in 3 benches along prominent joints striking northwest and dipping steeply southwest. Other irregular northwest striking joints dip moderately northeast while well-developed northeast joints dip vertically. Spacing between joints and fractures ranges between 0.4 and 20.3 metres with most spaced 1.5 metres apart.

Potential reserves extend for 100 metres west of the quarry along a prominent ridge.

BIBLIOGRAPHY

EMPR FIELDWORK *1987, pp. 385-387
EMPR INF CIRC 1994-15
EMPR OF 1991-20
GSC MAP 17-1968
GSC OF 463
GSC P 68-50
CANMET RPT *452, Vol. V, pp. 33-37
Victoria Times Colonist, June 22, 1997, p. C8

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/22 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 427**

NATIONAL MINERAL INVENTORY:

NAME(S): **HORNBY ISLAND**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 29 33 N
LONGITUDE: 124 39 50 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Somewhere on the southern shore of Hornby Island where cliffs are only 10 metres high. Also reported to be 1.6 kilometres southeast of Hornby Island Wharf (CANMET Report 452).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5483537
EASTING: 379506

COMMODITIES: Sandstone Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Quartz Feldspar
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R06 Dimension stone - sandstone

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Geoffrey	

LITHOLOGY: Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

A sandstone quarry is reported to be situated on the southern shore of Hornby Island, 1.6 kilometres to the southeast of the Hornby Island Wharf, where cliffs attain a height of about 10 metres. The exact location of the quarry is not known, but most of the sandstone cliffs on the southern shore are mapped as part of the Geoffrey Formation of the Nanaimo Group.

The weathered surface of the stone is buff colour. The unaltered stone is blue and much of it is very hard. It is abundant but pebbly streaks and the hard nature of the stone would make quarrying difficult.

A selected sample of the rock consisted of grains of orthoclase, plagioclase, quartz, volcanic rock and mica. The volcanic fragments often exceed 2 millimetres in diameter and the quartz and feldspar often exceed 1 millimetre. The feldspars are not greatly altered but the mineral grains are not closely appressed and there seems to be a large amount of cement.

Under the freezing test the stone showed serious disintegration on all edges and angles, and became very friable. Very little change was produced under the corrosion test. It absorbs water quickly and has a coefficient of saturation on the safe side of the danger line. The high quantity of magnesia is the most striking thing brought out by an analysis of the rock.

Hornby Island stone has been used to a very limited extent. The best example is the blue variety used in the Dodson block on Hastings Street in Vancouver. No production figures are available.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 385-392
EMPR INF CIRC 1994-15
EMPR OF 1991-20
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
CANMET RPT *452, Vol.V, pp. 37-41

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 428**

NATIONAL MINERAL INVENTORY:

NAME(S): **EFFINGHAM INLET**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 03 22 N
LONGITUDE: 125 08 32 W
ELEVATION: 20 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: About 8 kilometres up the east side of Effingham Inlet, from its entrance (Minister of Mines Annual Report 1906).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5435904
EASTING: 343494

COMMODITIES: Building Stone, Gemstones

MINERALS
SIGNIFICANT: Chalcedony, Jasper
ASSOCIATED: Hematite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Stratiform
CLASSIFICATION: Volcanogenic, Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Basalt
Jaspilite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

On the east side of Effingham Inlet, about 8 kilometres up, there is a high bluff of reddish brown rock, having a compact, fine grained texture and showing no cleavage or bedding planes. The rock consists of angular grains of quartz, which are cemented together by a fine aggregate of granular material, which is almost wholly hematite. The rock is reported to be a jaspilite or impure jasper and to have possible value as a building stone.

Associated with this rock mass are intrusions of a greenish volcanic rock having a more or less amygdaloidal texture. The area is underlain by Upper Triassic intermediate to mafic rocks of the Karmutsen Formation, Vancouver Group.

BIBLIOGRAPHY

EMPR AR *1906-189
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/03/30 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 429**

NATIONAL MINERAL INVENTORY:

NAME(S): **MCQUILLAN CREEK**, MCQUILLAN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 07 40 N
LONGITUDE: 124 37 10 W
ELEVATION: 920 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of outcrop at the southeast corner of claim (Assessment Report 13904).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5442923
EASTING: 381855

COMMODITIES: Iron Gemstones

MINERALS
SIGNIFICANT: Jasper Hematite
ASSOCIATED: Quartz
ALTERATION: Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Concordant Layered
CLASSIFICATION: Volcanogenic Industrial Min.
TYPE: G01 Algoma-type iron-formation Q05 Jasper
SHAPE: Regular
MODIFIER: Fractured
DIMENSION: 15 x 2 Metres STRIKE/DIP: TREND/PLUNGE: 155/

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Eocene			Mount Washington Intrus. Suite

LITHOLOGY: Hematite Jasper
Basalt Flow
Hematite Basalt Breccia
Feldspar Porphyry Basalt
Dacite Tuff
Tuff
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The McQuillan Creek showing is located 17 kilometres southeast of Port Alberni on McQuillan Creek. The area is underlain by volcanic rocks of the Devonian Duck Lake Formation, Sicker Group which have been intruded by Late Eocene Mount Washington Intrusive Suite rocks to the south.

The rocks comprise hematitic jasper, basalt flows, hematitic basalt breccia, feldspar porphyry basalt intrusives, basalt and tuff.

Hematitic jasper is exposed in a 1.7 metre wide by 15 metre long outcrop, trending approximately 155 degrees. The jasper consists of 75 to 90 per cent bright brick-red jasper with 10 to 20 per cent interstitial clear quartz containing about 5 to 10 per cent very fine-grained disseminated hematite. Irregular hematite-filled fractures, up to 2 centimetres thick, crosscut the jasper. Locally the jasper contains massive hematite bands, 0.5 to 1.5 metres thick. A sample from the outcrop assayed low values for copper, zinc, silver and gold (Assessment Report 14880). An outcrop of jasper somewhere along the creek, occurring between a large bed of argillaceous schist and crystalline rock and containing abundant hematite, was noted in the Minister of Mines Annual Report 1895. This is possibly the same outcrop.

BIBLIOGRAPHY

EMPR AR 1895-652

BIBLIOGRAPHY

EMPR ASS RPT 11064, 12538, *13904, *14880
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (In 092F 444 - Hollycroft Resource Corp. Statement of Material Facts Mar.2, 1988)
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 137

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/05/08 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 430**

NATIONAL MINERAL INVENTORY:

NAME(S): **STAMP RIVER**, PATERSON LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07W
BC MAP:
LATITUDE: 49 19 52 N
LONGITUDE: 124 59 50 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Map 1, Assessment Report 16239.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5466184
EASTING: 354893

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Malachite
ASSOCIATED: Quartz
ALTERATION: Quartz Limonite Siderite Ankerite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Brecciated Tuffaceous Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1987

COMMODITY	GRADE	
Copper	0.3900	Per cent

REFERENCE: Assessment Report 16239.

CAPSULE GEOLOGY

The Stamp River occurrence area is underlain by brecciated tuffaceous basalt of the Upper Triassic Karmutsen Formation Vancouver Group. A 4 metre wide linear zone, trending 085 to 090 degrees for about 50 metres, contains drusy quartz, massive quartz, limonite, siderite, ankerite and minor chalcopyrite, bornite and malachite. Rock samples assayed 0.006 to 0.39 per cent copper (Assessment Report 16239).

BIBLIOGRAPHY

EMPR ASS RPT 16101, *16239
EMPR PF (Christopher, P.A. (1987): Report in Prospectus, Della Terra Resources Ltd.)
GSC OF 463; 1272(Sheet 4 of 10)
GSC P 17-1968; 68-50; 72-44

DATE CODED: 1987/12/30
DATE REVISED: 1990/03/23

CODED BY: LDJ
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 431**

NATIONAL MINERAL INVENTORY:

NAME(S): **KENNEDY LAKE**, SALMONBERRY MOUNTAIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04E
BC MAP:
LATITUDE: 49 02 15 N
LONGITUDE: 125 30 17 W
ELEVATION: 320 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on area where upper limestone member is truncated by Island Intrusions as shown in Bulletin 55, Figure 2.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5434647
EASTING: 316944

COMMODITIES: Magnesium

MINERALS
SIGNIFICANT: Brucite
ASSOCIATED: Calcite Ankerite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Disseminated
CLASSIFICATION: Replacement Igneous-contact Industrial Min.
TYPE: R09 Limestone

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
DATING METHOD:	Fossil		
MATERIAL DATED:	Halobia mollusks		
Jurassic			Island Plutonic Suite
ISOTOPIC AGE:	167 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		

LITHOLOGY: Limestone
Granodiorite
Quartz Monzonite

HOSTROCK COMMENTS: Age dates from Geological Survey of Canada Paper 68-50.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

In the Kennedy Lake occurrence area, calcareous sediments of the Upper Triassic Vancouver Group, Quatsino Formation are exposed along the south shore of Kennedy Lake and the north slope of Salmonberry Mountain. Limestone is thoroughly recrystallized to a medium or very coarse grain size and has been bleached white from its normal grey colour. Limited exposures suggest that the stratigraphically higher limestone may form part of a southwest plunging syncline, which has been truncated on the northeast slope of Salmonberry Mountain by granodiorite and quartz monzonite stocks of the Jurassic Island Plutonic Suite.

In general, the limestones are fairly pure with only limited indications of alteration. Rounded grains of quartz and ankerite are commonly present. Close to the intrusive contact, plates and nodules of brucite are disseminated through the altered limestone.

BIBLIOGRAPHY

EMPR AR 1946-183; 1962-111-121,151-153; 1963-102
EMPR BULL 55, pp. 20,40; 20, PART V
EMPR OF 1987-13, p. 52
GSC ECON GEOL RPT 3, Vol.1
GSC MAP 17-1968; 1386A
GSC OF 9; 61; 463
GSC P 66-1; 68-50, pp. 14,15; 72-44
GSC SUM RPT 1920A

DATE CODED: 1985/07/24
DATE REVISED: 1986/01/16
CODED BY: GSB
REVISED BY: BG
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 432**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROAD ZONE**, PATERSON LAKE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07W
BC MAP:
LATITUDE: 49 20 01 N
LONGITUDE: 124 59 18 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Figure IV, Assessment Report 16239.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5466444
EASTING: 355546

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Bornite
ASSOCIATED: Quartz
ALTERATION: Chlorite Malachite
ALTERATION TYPE: Chloritic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic Rock
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	31.5400	Grams per tonne
Copper	3.1200	Per cent

REFERENCE: Assessment Report 16239.

CAPSULE GEOLOGY

This area is underlain by Upper Triassic Karmutsen Formation volcanics of the Vancouver Group. The rock is a massive dark green volcanic with occasional chlorite and epidote-filled amygdules.

The Road zone is located in a quarry on the road south of Patterson Lake. A zone of very weathered bornite is localized along two parallel shears 40 centimetres apart. Each shear is approximately 10 centimetres wide. This zone is vertical and trends north. The rock is extremely chloritized and malachite staining is abundant. One sample assayed 3.12 per cent copper and 31.54 grams per tonne silver (Assessment Report 16239). Gold values were negligible.

BIBLIOGRAPHY

EMPR ASS RPT *16101, *16239
EMPR EXPL 1987-C148
EMPR PF (Christopher, P.A. (1987): Report in Prospectus, Della Terra Resources Ltd.)
GSC MAP 17-1968
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1987/12/09 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/03/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 433**

NATIONAL MINERAL INVENTORY:

NAME(S): **ALPEER**, L.D.

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 10 59 N
LONGITUDE: 125 19 05 W
ELEVATION: 640 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample ALP 87-18, Figure 3 (Assessment Report 16252).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5450392
EASTING: 331080

COMMODITIES: Gold, Copper, Zinc, Lead

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Bornite, Arsenopyrite, Sphalerite, Galena
ASSOCIATED: Quartz
ALTERATION: Chlorite, Epidote, Sericite, Limonite
ALTERATION TYPE: Chloritic, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Andesite
Rhyodacite
Gossan

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1987

COMMODITY	GRADE	
Gold	45.7000	Grams per tonne

COMMENTS: Two metre sample.
REFERENCE: Assessment Report 16252.

CAPSULE GEOLOGY

Intermediate and mafic volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group) of are intruded by granitic to dioritic stocks of the Middle to Upper Jurassic Island Plutonic Suite. At the Alpeer occurrence, andesites and rhyodacites are in fault contact with granodiorite to diorite rocks.

The volcanics host seams and fracture fillings containing quartz, epidote, limonite, pyrite and minor arsenopyrite, sphalerite, galena and chalcopyrite. The volcanics also contain abundant disseminated pyrite and are silicified and intensely chloritized.

A 2 metre chip sample of intensely sheared rhyodacite with abundant pyrite and limonite assayed 45.7 grams per tonne gold (Assessment Report 16252). The gold which is associated with the pyrite is fairly coarse-grained.

A sample of a quartz vein, located 200 metres southwest of the anomalous gold sample, contained 0.7 per cent copper and 1.05 grams per tonne gold (Assessment Report 16252). The vein, 5 to 10 centimetres wide, contains abundant pyrite and minor arsenopyrite, chalcopyrite and sphalerite.

BIBLIOGRAPHY

EMPR ASS RPT 3376, 11419, 12766, *16252
EMPR EXPL 1983-198; 1984-157

BIBLIOGRAPHY

EMPR GEM 1971-235; 1972-264
GSC MAP 17-1968
GSC P 68-50

DATE CODED: 1987/12/31 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 434**

NATIONAL MINERAL INVENTORY:

NAME(S): **ALPEER 3**, L.D.

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 10 54 N
LONGITUDE: 125 19 35 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample ALP 87-29, Figure 4, Assessment Report 16252.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5450256
EASTING: 330468

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Azurite
ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote Sericite Limonite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Rhyodacite
Gossan

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1987

COMMODITY	GRADE	
Copper	0.7000	Per cent

COMMENTS: Two metre sample.
REFERENCE: Assessment Report 16252.

CAPSULE GEOLOGY

Intermediate and mafic volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group) intruded by granitic to dioritic stocks of the Early to Middle Jurassic Island Plutonic Suite. At the Alpeer occurrence, andesites and rhyodacites are in fault contact with granodiorite to diorite rocks.

The volcanics host seams and fracture-fillings containing quartz, epidote, limonite, pyrite and minor arsenopyrite, sphalerite, galena and chalcopyrite. The volcanics also contain abundant disseminated pyrite and are silicified and intensely chloritized.

A 2 metre chip sample of seams containing sulphides assayed 0.7 per cent copper (Assessment Report 16252).

BIBLIOGRAPHY

EMPR ASS RPT 3376, 11419, 12766, *16252
EMPR EXPL 1983-198; 1984-157
EMPR GEM 1971-235; 1972-264
GSC MAP 17-1968
GSC P 68-50

DATE CODED: 1987/12/31
DATE REVISED: / /

CODED BY: LDJ
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 435**

NATIONAL MINERAL INVENTORY:

NAME(S): **FALCON**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 10 39 N
LONGITUDE: 125 28 28 W
ELEVATION: 960 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location from Map 1, Assessment Report 12769.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5450136
EASTING: 319665

COMMODITIES: Copper Zinc Lead

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Galena Copper
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Volcanogenic
DIMENSION:
STRIKE/DIP: 300/40S
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1983
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Copper	0.3700	Per cent
Zinc	0.1560	Per cent

COMMENTS: Sample across 30 centimetres.
REFERENCE: Assessment Report 12769.

CAPSULE GEOLOGY

The Falcon occurrence area is underlain by intermediate volcanic rock, likely andesite, of the Upper Triassic Karmutsen Formation (Vancouver Group). A mineralized zone, striking 300 degrees and dipping 40 degrees southwest within altered volcanics, contains disseminated pyrite, chalcopyrite and minor galena and native copper. A 30 centimetre sample assayed 0.37 per cent copper and 0.156 per cent zinc (Assessment Report 12769).

BIBLIOGRAPHY

EMPR ASS RPT *12769
EMPR EXPL 1984-159
GSC MAP 17-1968
GSC OF 463; 1272
GSC P 68-50; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064

DATE CODED: 1988/01/04
DATE REVISED: / /
CODED BY: LDJ
REVISED BY:
FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 436**

NATIONAL MINERAL INVENTORY:

NAME(S): **LEVIATHIAN (L.322)**, DUCHESS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 15 04 N
LONGITUDE: 125 39 35 W
ELEVATION: 118 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 14332).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5458776
EASTING: 306451

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Undefined Formation	
Paleozoic-Mesozoic			Westcoast Complex
Jurassic			Island Plutonic Suite

LITHOLOGY: Volcanic Rock

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1985

COMMODITY	GRADE	
Silver	2.7000	Grams per tonne
Copper	0.3000	Per cent

REFERENCE: Assessment Report 14337.

CAPSULE GEOLOGY

At the Leviathian occurrence, diorite to quartz diorite of the Jurassic Island Plutonic Suite or the Paleozoic and/or Mesozoic Westcoast Complex intrude Devonian Sicker Group rocks.

A 35 metre wide altered zone, with a 3.5 metre wide quartz vein striking 110 degrees, occurs in volcanic rocks. Mineralization is likely chalcopyrite. A rock sample assayed 0.3 per cent copper and 2.7 grams per tonne silver (Assessment Report 14337).

BIBLIOGRAPHY

EMPR AR 1901-1232A; 1913-280
EMPR ASS RPT *14337
EMPR EXPL 1985-146
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1988/01/13
DATE REVISED: 1988/01/13

CODED BY: LDJ
REVISED BY: LDJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 437**

NATIONAL MINERAL INVENTORY: 092F2 Au1

NAME(S): **HAVILAH**, MCQUILLAN VEIN, KING SOLOMON, STORM, SOL B

STATUS: Past Producer Underground
MINING DIVISION: Alberni
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 06 41 N
NORTHING: 5441086
LONGITUDE: 124 36 35 W
EASTING: 382526
ELEVATION: 1280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of vein near divide.

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS
SIGNIFICANT: Pyrite Sphalerite Galena Chalcopyrite Arsenopyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 0080 x 0005 Metres
STRIKE/DIP: 020/70E
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite
Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Diorite
Quartz Feldspar Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1936
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	20.6000	Grams per tonne
Gold	5.5000	Grams per tonne

COMMENTS: Sixty centimetre sample of vein.
REFERENCE: Minister of Mines Annual Report 1936, page 33.

CAPSULE GEOLOGY

The McQuillan vein is located 600 metres southeast of the Gillespie vein (092F 082) and the Havilah mine workings, about 20 kilometres southeast of Port Alberni.

The area is underlain by Devonian Sicker Group volcanic rocks (Duck Lake Formation). These are cut by a body of coarse-grained hybrid diorite of the Early to Middle Jurassic Island Plutonic Suite. A north trending fault bounds the diorite to the west and cuts andesite to the north of the diorite.

The McQuillan vein and the adjoining Alberni vein to the south, occur along a shear zone which cuts andesite, diorite and Tertiary quartz-feldspar porphyry. The shear zone trends 020 degrees for about 80 metres, dips 70 degrees east and is about 5 metres wide. Quartz lenses along the shear contain pyrite, sphalerite, galena and lesser chalcopyrite and arsenopyrite. A 60 centimetre sample of a vein assayed 5.5 grams per tonne gold and 20.6 grams per tonne silver (Minister of Mines Annual Report 1936).

BIBLIOGRAPHY

EMPR AR 1893-1080; 1894-773; 1895-652; *1936-A37,F30-F33; 1939-40,42, 88; 1949-153
EMPR ASS RPT 5354, 9126, 10194, 11988, 12538, 12696, 13668, 14928, 15288, 17222, 18400, 19695
EMPR BULL 37
EMPR EXPL 1982-142; 1983-194
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (*Laanela, H. (1965): Report by Gunnex Limited, in Gillespie - 092F 082)
EMR MP CORPFILE (Havilah Gold Mines Ltd.)
GSC MAP 17-1968; 17A; 49-1963
GSC OF 463, 1272
GSC P 68-50, p. 38; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #57, 1985

DATE CODED: 1988/01/21 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 438**

NATIONAL MINERAL INVENTORY: 092F2 Au2

NAME(S): **SKYLINE (L.100G)**, GOLDEN EAGLE, B AND K, HIGH GRADE, MAR

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 06 14 N
LONGITUDE: 124 35 50 W
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: High Grade vein, Map A (Assessment Report 9639).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5440233
EASTING: 383420

COMMODITIES: Gold Silver Lead

MINERALS
SIGNIFICANT: Pyrite Galena Arsenopyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 360/70W
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: TOTAL
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1980
QUANTITY: 6000 Tonnes

COMMODITY	GRADE	
Gold	6.5000	Grams per tonne

COMMENTS: Estimate from 2 drillholes in 2 zones.
REFERENCE: Assessment Report 9639.

CAPSULE GEOLOGY

The Skyline occurrence is located just south of the Havilah mine workings (092F 082, 437), approximately 21 kilometres southeast of Port Alberni.

The area is underlain by volcanics of the Devonian Duck Lake Formation, Sicker Group which have been intruded by Early to Middle Jurassic Island Plutonic Suite.

Two parallel quartz veins, 3 to 9 metres apart, lie in a north trending shear within carbonate altered andesite. The veins are 15 to 30 centimetres wide, 40 metres long and dip 70 degrees west. Banded mineralization consists of pyrite, arsenopyrite and galena.

A 30 centimetre sample assayed 52.1 grams per tonne gold and 113.8 grams per tonne silver (Gunnex Limited, 1965). Two drill holes in 1980 resulted in an inferred reserve of 6000 tonnes of 5.8 grams per tonne gold in two zones (Assessment Report 9639).

The showing lies in the Golden Eagle group of claims (see 092F 080) and has been described as the "High Grade vein" of the B and K group (092F 081).

BIBLIOGRAPHY

EMPR AR 1900-994; 1944-150,152
EMPR ASS RPT 9126, *9639, *10902
EMPR BULL 37
EMPR EXPL 1980-165-166; 1982-142
EMPR FIELDWORK 1988 pp. 61-74

BIBLIOGRAPHY

EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (*Fraser, W., Schorn, T.F. (1965): Reports by Gunnex Limited, in Golden Eagle, 092F 080)
GSC MAP 17-1968; 17A; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #90, 1980; #226,#239, 1985
IPDM Dec. 1985

DATE CODED: 1988/12/19 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 439**

NATIONAL MINERAL INVENTORY:

NAME(S): **PANTHER ROAD**, NEW, THISTLE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 05 47 N
LONGITUDE: 124 37 35 W
ELEVATION: 880 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing on Plate 1 (Assessment Report 13711).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5439445
EASTING: 381274

COMMODITIES: Gold, Copper, Silver

MINERALS

SIGNIFICANT: Pyrite, Galena
ASSOCIATED: Quartz, Carbonate
ALTERATION: Chlorite, Epidote, Carbonate, Quartz
ALTERATION TYPE: Chloritic, Epidote, Carbonate, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Massive, Disseminated
CLASSIFICATION: Volcanogenic, Syngenetic
DIMENSION: 0002 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Basalt
Basaltic Flow

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1988

COMMODITY	GRADE	
Silver	9.0000	Grams per tonne
Gold	2.0600	Grams per tonne
Copper	0.1705	Per cent

COMMENTS: DDH 88-02; sample 147889 over 0.49 metres also assayed 0.0078 per cent zinc. From pyritic zones within chloritic alteration zones.
REFERENCE: Assessment Report 17661.

CAPSULE GEOLOGY

The Panther Road showing is located approximately 1 kilometre southeast of the Thistle mine (092F 083), about 21 kilometres southeast of Port Alberni.

Basaltic flows and pillow basalts of the Upper Triassic Karmutsen Formation (Vancouver Group) are underlain by a complexly interlayered succession of volcanics and sediments of the Paleozoic Sicker Group. These include limestones and marbles of the Upper Pennsylvannian to Lower Permian Mount Mark Formation (Buttle Lake Group), and basaltic flows, agglomerates and bedded tuffs of the Upper Devonian McLaughlin Ridge Formation (Myra Formation).

A 2.2 metre wide interval of pyritic chlorite-altered basalt and sericite-altered basalt, of the basaltic flow unit ("Mine Flow Unit"), contains an 80 centimetre width of massive pyrite. The mineralized zone strikes about 150 degrees and dips southwest. Chloritic alteration is most common but chlorite-epidote-carbonate-quartz alteration is also present.

A sample across the 2.2 metre width assayed 16.8 grams per tonne gold, 1.7 grams per tonne silver and 0.09 per cent copper (Assessment Report 13711). Drilling in the vicinity of this showing in 1988 resulted in one sample assaying 2.06 grams per tonne gold, 9.0 grams per tonne silver, 0.0175 per cent copper and 0.0078 per cent zinc

CAPSULE GEOLOGY

from pyritic zones within chloritic alteration zones (Assessment Report 17661)

Three other showings, located 230 metres southeast to 200 metres south of the Panther Road showing, grade up to 12.0 grams per tonne gold over 17 centimetres (Assessment Report 15288).

BIBLIOGRAPHY

EMPR ASS RPT 9126, *10237, 11064, 11949, *13711, 14928, *15288, *17661
EMPR BULL 37
EMPR EXPL 1982-143; 1983-196; 1985-141
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #96,#178, 1985
V STOCKWATCH Jan.17, 1986
Today's Market Line #181, 1984

DATE CODED: 1988/02/22 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 440**

NATIONAL MINERAL INVENTORY:

NAME(S): **PANTHER ROAD SOUTH**, THISTLE, RAND, RIFT CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 04 46 N
LONGITUDE: 124 37 30 W
ELEVATION: 520 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing on Plate 1 (Assessment Report 13711).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5437559
EASTING: 381335

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Chalcopyrite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Chlorite, Carbonate, Epidote, Quartz, Hematite
ALTERATION TYPE: Chloritic, Epidote, Carbonate, Propylitic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated, Stockwork
CLASSIFICATION: Epigenetic, Volcanogenic, Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

LITHOLOGY: Basalt
Diabase
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1988

COMMODITY	GRADE	
Gold	1.1900	Grams per tonne

COMMENTS: DDH 88-01, Sample 147869 also assayed 0.0024 per cent copper, 0.0023 per cent zinc, trace silver and trace lead.
REFERENCE: Assessment Report 17661.

CAPSULE GEOLOGY

The Panther Road South showing is located south of the Panther Road showing (092F 439), about 22 kilometres southeast of Port Alberni.

Basaltic flows and pillowed basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) are underlain by a complexly interlayered succession of volcanics and sediments of the Paleozoic Sicker and Mississippian to Lower Permian Buttle Lake groups. These include limestones and marbles of the Upper Pennsylvannian to Lower Permian Mount Mark Formation, and basaltic flows, diabase, agglomerates and bedded tuffs of the Upper Devonian McLaughlin Ridge Formation (Myra Formation).

A zone of semi-massive pyrite, up to 10 centimetres thick and 50 centimetres long, occurs in McLaughlin Ridge basalts ("Mine Flow Unit" of the Thistle mine, 092F 083). A sample across the zone assayed 2.1 grams per tonne gold (Assessment Report 13711).

Drilling in 1988 in this area, encountered a stockwork of hematitic quartz-carbonate veinlets (DDH 88-01) containing disseminated pyrrhotite and chalcopyrite. A sample containing disseminated chalcopyrite assayed 1.19 grams per tonne gold, 0.0024 per cent copper, 0.0023 per cent zinc, trace silver and trace lead (Assessment Report

CAPSULE GEOLOGY

17661). Chloritic alteration is common, but epidote-carbonate-chlorite-quartz alteration is also present. Mineralization is associated with alteration.

BIBLIOGRAPHY

EMPR ASS RPT 9126, *13711, 14928, *17661
EMPR BULL 37
EMPR EXPL 1985-141
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990, pp. 125-135
GCNL #96, 1985

DATE CODED: 1988/02/22 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 441**

NATIONAL MINERAL INVENTORY:

NAME(S): **PANTHER**, THISTLE, RAND

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 05 19 N
LONGITUDE: 124 37 25 W
ELEVATION: 720 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample site (George Cross Newsletter #96, 1985).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5438576
EASTING: 381458

COMMODITIES: Gold, Copper

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Chlorite, Epidote, Carbonate, Quartz
ALTERATION TYPE: Chloritic, Epidote, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Vein
CLASSIFICATION: Epigenetic, Volcanogenic, Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

LITHOLOGY: Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	2.4700	Grams per tonne
Copper	0.1600	Per cent

REFERENCE: George Cross News Letter #96, 1985.

CAPSULE GEOLOGY

The Panther showing is located between the Panther Road (092F 439) and the Panther Road South (092F 440) showings, about 23 kilometres southeast of Port Alberni.

Basaltic flows and pillowed basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) are underlain by a complexly interlayered succession of volcanics and sediments of the Paleozoic Sicker and Mississippian to Lower Permian Buttle Lake groups. These include limestones and marbles of the Upper Pennsylvannian to Lower Permian Mount Mark Formation (Buttle Lake Group), and basaltic flows ("Mine Flow Unit" of the Thistle mine, 092F 083), agglomerates and bedded tuffs of the Upper Devonian McLaughlin Ridge Formation (Myra Formation), Sicker Group.

Copper-gold mineralization (likely pyrite and chalcopyrite) occur in basaltic rocks of the McLaughlin Ridge Formation. A sample assayed 2.47 grams per tonne gold and 0.16 per cent copper (George Cross News Letter #96, 1985). Chloritic alteration is common, but chlorite-epidote-carbonate-quartz alteration is also present.

BIBLIOGRAPHY

EMPR ASS RPT 9126, *13711, 17661
EMPR BULL 37
EMPR EXPL 1985-141
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272

BIBLIOGRAPHY

GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990, pp. 125-135
GCNL #96, 1985

DATE CODED: 1988/02/22 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 442**

NATIONAL MINERAL INVENTORY:

NAME(S): **SADDLE**, THISTLE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 05 59 N
LONGITUDE: 124 37 45 W
ELEVATION: 960 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample site (George Cross Newsletter #96, 1985).

MINING DIVISION: Alberni
Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5439820
EASTING: 381079

COMMODITIES: Gold Silver Zinc Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Sphalerite
COMMENTS: Assumed minerals present.
ASSOCIATED: Quartz Carbonate
ALTERATION: Chlorite Epidote Carbonate Quartz
ALTERATION TYPE: Chloritic Epidote Carbonate Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Massive
CLASSIFICATION: Epigenetic Hydrothermal Volcanogenic Syngenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Basalt
Porphyry Diabase

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1988

COMMODITY	GRADE	
Silver	1.0000	Grams per tonne
Gold	1.6950	Grams per tonne
Copper	0.0100	Per cent
Zinc	0.0064	Per cent

COMMENTS: DDH 88-04, Sample 147923 over 0.4 metres.
REFERENCE: Assessment Report 17661.

CAPSULE GEOLOGY

The Saddle showing is located north of the Panther showing (092F 441) about 20 kilometres southeast of Port Alberni.

Basaltic flows and pillow basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) are underlain by a complexly interlayered succession of volcanics and sediments of the Paleozoic Sicker and Mississippian to Lower Permian Buttle Lake groups. These include basaltic flows, agglomerates and bedded tuffs of the Upper Devonian McLaughlin Ridge Formation (Myra Formation), Sicker Group.

Chalcopyrite, and likely sphalerite, occur on fractures cutting basaltic rocks ("Mine Flow Unit" of the Thistle mine, 092F 083) of the McLaughlin Ridge Formation. A 0.9 metre sample assayed 1.1 per cent zinc, 0.04 per cent copper and 0.27 grams per tonne gold (George Cross News Letter #96, 1985).

Drilling in 1988 encountered strong chloritic alteration and semi-massive to massive auriferous pyrite. A sample (DDH 88-04, #147923) assayed 1.695 grams per tonne gold, 1.0 gram per tonne silver, 0.010 per cent copper and 0.0064 per cent zinc (Assessment Report 17661). Chlorite-epidote-carbonte-quartz alteration is also present in the area.

BIBLIOGRAPHY

EMPR ASS RPT 9126, *13711, *17661

BIBLIOGRAPHY

EMPR BULL 37
EMPR EXPL 1985-141
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-5O; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #96, 1985

DATE CODED: 1988/02/22 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 443**

NATIONAL MINERAL INVENTORY:

NAME(S): **DOUGLAS**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 07 04 N
LONGITUDE: 124 39 05 W
ELEVATION: 850 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample site (George Cross Newsletter #96, 1985).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5441862
EASTING: 379501

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Volcanogenic Syngenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	28.1000	Grams per tonne
Copper	0.9000	Per cent

REFERENCE: George Cross News Letter #96, 1985.

CAPSULE GEOLOGY

The Douglas showing is located to the southeast of Douglas Peak, about 19 kilometres southeast of Port Alberni.

Basaltic flows and pillow basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) are underlain by a complexly inter-layered succession of volcanics and sediments of the Paleozoic Sicker and Mississippian to Lower Permian Buttle Lake groups. In the area, the rocks comprise basaltic flows, agglomerates and bedded tuffs of the Upper Devonian McLaughlin Ridge Formation (Myra Formation), Sicker Group.

Gold-copper mineralization (likely pyrite and chalcopyrite) occurs in basalts. A sample assayed 28.1 grams per tonne gold and 0.9 per cent copper (George Cross News Letter #96, 1985).

BIBLIOGRAPHY

EMPR ASS RPT 9126, *13711
EMPR BULL 37
EMPR EXPL 1985-141
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1963
GSC P 68-50
CIM BULL Vol. 83 No. 935, March 1990, pp. 125-135
GCNL #96, 1985

DATE CODED: 1988/02/22 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 444**

NATIONAL MINERAL INVENTORY:

NAME(S): **MCQUILLAN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 08 19 N
LONGITUDE: 124 37 20 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 13904).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5444132
EASTING: 381678

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Feldspar
ALTERATION: Chlorite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Volcanogenic Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	

LITHOLOGY: Pillow Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	1.8000	Grams per tonne
Copper	0.1840	Per cent

REFERENCE: Assessment Report 13904.

CAPSULE GEOLOGY

The McQuillan showing is located just southwest of McKinlay Peak, about 16 kilometres southeast of Port Alberni.

The area is underlain by volcanics of the Paleozoic Sicker Group. These are a complex, interlayered succession of basaltic pillowed flows, basaltic volcaniclastics, hematitic jasper and dacitic agglomerate lapilli tuff. The succession is upright, strikes northwest to north and dips 20 to 40 degrees southwest.

Pillowed amygdaloidal basalt of the Devonian Duck Lake Formation (Sicker Group), contains one or two pyritic alteration fracture zones up to 3 centimetres wide with disseminated pyrite and fracture-filled chalcopyrite. A grab sample assayed 0.184 per cent copper, 0.01 per cent zinc and 1.8 grams per tonne silver (Assessment Report 13904).

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT 11622, 12538, *13904, 14880
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Hollycroft Resource Corp. Statement of Material Facts, Mar. 2, 1988)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30

BIBLIOGRAPHY

CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1988/02/25 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 445**

NATIONAL MINERAL INVENTORY:

NAME(S): **DEBBIE 3**, ROGERS CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 14 04 N
LONGITUDE: 124 41 35 W
ELEVATION: 320 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5454898
EASTING: 376751

COMMODITIES: Zinc, Copper, Lead, Silver

MINERALS

SIGNIFICANT: Pyrite, Sphalerite, Chalcopyrite, Galena
ASSOCIATED: Chlorite, Gypsum, Stibnite
ALTERATION: Pyrite, Sericite
ALTERATION TYPE: Sericitic, Chloritic, Carbonate, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive
CLASSIFICATION: Volcanogenic
TYPE: G04 Besshi massive sulphide Cu-Zn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Devonian	Sicker	Duck Lake	

LITHOLOGY: Porphyritic Basalt
Tuff
Agglomerate
Chlorite Schist

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1986

COMMODITY	GRADE	
Copper	0.1200	Per cent
Lead	0.8200	Per cent
Zinc	14.1000	Per cent

COMMENTS: Twenty centimetre sample.
REFERENCE: Assessment Report 15287.

CAPSULE GEOLOGY

The Debbie 3 occurrence is underlain by porphyritic mafic volcanic rocks of the Devonian Nitinat and Duck Lake formations of the Sicker Group. These include massive and pillowed basalts and volcaniclastics. The volcanic sequence is crudely stratified, strikes north-northwest and dips moderately east and contains narrow to broad zones of schistosity conformable with stratification. Chlorite schist represents the metamorphosed and deformed mafic rock.

A north trending, 200 metre wide, pyritic sericite-chlorite-carbonate schist zone occurs in the area. A drill hole, cutting the alteration zone, assayed 2.06 per cent zinc, 0.32 per cent copper, 0.04 per cent lead and 5.8 grams per tonne silver over 0.6 metres (Assessment Report 15287). Mineralization intersected in the drill hole includes thin bands and disseminations of pyrite and minor gypsum, sphalerite and chalcopyrite. The drill hole also intersected a 1.3 metre width of disseminated and massive stibnite (9.40 per cent over 7 centimetres). This alteration zone appears coincident with a fault (Geological Survey of Canada Open File 1272).

Three hundred and fifty metres south of the drill hole and 350 metres east of the alteration zone is a surface showing of banded, fine-grained sphalerite with minor chalcopyrite and galena in four

CAPSULE GEOLOGY

lenses, 4 to 20 centimetres thick, conformable within schistose porphyritic basalt clastics. Schistosity strikes 160 degrees and dips 49 degrees east, with lineation plunging 14 degrees south-southeast. A 20 centimetre sample assayed 14.1 per cent zinc, 0.87 per cent lead and 0.12 per cent copper (Assessment Report 13758).

BIBLIOGRAPHY

EMPR ASS RPT 7984, 9111, 10176, *13758, 15023, *15287
EMPR BULL 37
EMPR EXPL 1980-167; 1985-134; 1986-158; 2002-29-40
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6; 1999-2
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED:	1988/03/03	CODED BY:	LDJ	FIELD CHECK:	N
DATE REVISED:	1988/03/03	REVISED BY:	LDJ	FIELD CHECK:	N

MINFILE NUMBER: **092F 446**

NATIONAL MINERAL INVENTORY:

NAME(S): **RUSH**, RUSH 1, SICKER-RUSH

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 02 44 N
LONGITUDE: 124 23 35 W
ELEVATION: 680 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample (Assessment Report 16592).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5433455
EASTING: 398203

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite Epidote
ALTERATION TYPE: Oxidation Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1987

COMMODITY	GRADE	
Copper	0.5000	Per cent

REFERENCE: Assessment Report 16592.

CAPSULE GEOLOGY

The Rush showing is located near Fleece Creek, about 3 kilometres east of Fourth Lake.

Minor fracture fillings of chalcopyrite, malachite and pyrite occur over a 2 square metre area of dark green massive basalt of the Upper Devonian McLaughlin Ridge Formation (Sicker Group). Epidote alteration rims the fractures. A grab sample assayed 0.5 per cent copper (Assessment Report 16592).

BIBLIOGRAPHY

EMPR ASS RPT 15452, *16592, 17600
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990, pp. 125-135

DATE CODED: 1988/03/03
DATE REVISED: 1990/05/08

CODED BY: LDJ
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 447**

NATIONAL MINERAL INVENTORY:

NAME(S): **NAN**, NAN 5-6, SICKER-RUSH

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 01 29 N
LONGITUDE: 124 22 30 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 16592).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5431115
EASTING: 399480

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Devonian	Sicker	Nitinat	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.5100	Per cent

COMMENTS: Twenty centimetre sample.
REFERENCE: Assessment Report 16592.

CAPSULE GEOLOGY

The Nan showing is located slightly southeast of Fourth Lake and east of the Flight 5 showing (092F 563).

Malachite and trace chalcopyrite on fractures occur in agglomeratic basalts of the Upper Devonian McLaughlin Ridge Formation (Sicker Group). A 20 centimetre chip sample assayed 0.51 per cent copper (Assessment Report 16592).

BIBLIOGRAPHY

EMPR ASS RPT *16592, 17600
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990, pp. 125-135

DATE CODED: 1988/03/03
DATE REVISED: 1990/05/08
CODED BY: LDJ
REVISED BY: DEJ
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 448**

NATIONAL MINERAL INVENTORY:

NAME(S): **WESTERING 2**, NORTH

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 09 24 N
LONGITUDE: 125 25 40 W
ELEVATION: 145 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Zone of aurifereous quartz veins.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5447710
EASTING: 322991

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Tertiary	Unnamed/Unknown Group	Unnamed/Unknown Formation	

LITHOLOGY: Dacitic Lapilli Tuff
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1987

COMMODITY	GRADE	
Gold	18.4000	Grams per tonne

COMMENTS: Vein material over 3 metres width.
REFERENCE: Assessment Report 16473.

CAPSULE GEOLOGY

The area is underlain by massive fine-grained andesitic flows of the Upper Triassic Karmutsen Formation (Vancouver Group), and dacite lapilli tuff, probably of Tertiary age. Northeast striking, steeply dipping joints are widespread and are frequently dilated and infilled with auriferous quartz veinlets. The veinlets dip steeply and vary from 0.1 to 10 centimetres wide. Individual veins comprise coarsely crystalline quartz, about 10 per cent calcite and up to 2 per cent sulphides, which include pyrrhotite, pyrite, chalcopyrite, arsenopyrite and sphalerite.

At the North zone, northeast striking quartz veins making up to 1 per cent of the rock volume, occur over a 200 metre width and 400 metre length in dacite lapilli tuff. Eight composite samples of vein material assayed from 0.53 to 18.4 grams per tonne gold (Assessment Report 16473). One hundred sixty metres to the north (Esther claim), several quartz veins contained gold values. One sample of vein material over 3 metres assayed 29.0 grams per tonne gold (Assessment Report 16473).

BIBLIOGRAPHY

EMPR ASS RPT *16473
GSC MAP 17-1968
GSC OF 463
GSC P 68-50

DATE CODED: 1988/03/07
DATE REVISED: / /

CODED BY: LDJ
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 449**

NATIONAL MINERAL INVENTORY:

NAME(S): **MID PAD**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 22 24 N
LONGITUDE: 125 35 55 W
ELEVATION: 180 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing location (Assessment Report 16450).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5472206
EASTING: 311365

COMMODITIES: Gold Silver Lead Copper

MINERALS

SIGNIFICANT: Pyrite Galena Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Carbonate Pyrite
ALTERATION TYPE: Carbonate Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: STRIKE/DIP: 118/90N TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Plutonic Rocks Wrangell

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	14.9000	Grams per tonne
Gold	25.9000	Grams per tonne
Copper	0.0200	Per cent
Lead	0.1600	Per cent

REFERENCE: Assessment Report 16450.

CAPSULE GEOLOGY

A major fault cuts volcanic rocks of the Upper Triassic Karmutsen Formation (Vancouver Group) and granodiorite to quartz diorite of the Early to Middle Jurassic Island Plutonic Suite. The volcanics are fine-grained to aphanitic, dark green andesite. The intrusive contact is marked by a medium to fine-grained dark, mafic-rich diorite, which is cut by many dykes of leucocratic granodiorite.

The main direction of shearing is about 112 degrees. Shear features such as gouge-filled fractures, rehealed brecciation and zones of shattered rock are abundant throughout the area.

The Mid Pad showing is a discontinuous quartz lense in carbonate and pyrite altered granodiorite. The 118 degree striking, 90 degree dipping vein is exposed on both sides of Ursus Creek. Mineralization consists of disseminated pyrite, galena and chalcopyrite. The south part of the vein was chip sampled across 38 centimetres and assayed 7.35 grams per tonne gold; a grab sample assayed 25.9 grams per tonne gold, 14.5 grams per tonne silver, 0.16 per cent lead and 0.02 per cent copper (Assessement Report 16450).

BIBLIOGRAPHY

EMPR ASS RPT 9378, *12623, *16450
EMPR BULL 8; 13
EMPR EXPL 1980-171; 1984-162,163; 1987-C145

BIBLIOGRAPHY

EMPR PF (Prospectus, Pacific Sentinel Gold Corp., August 31, 1987;
Filing Statement, Pacific Sentinel Gold Corp., May 9, 1988)
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16
GCNL #67, 1984; #11,#13,#104,#227, 1988; #4,#31, 1989
V STOCKWATCH Jan.18, 1988
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With
Emphasis on the Relationships of Mineral Deposits to Plutonic
Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1988/03/08 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1988/03/08 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 450**

NATIONAL MINERAL INVENTORY:

NAME(S): **JUNCTION**, MYLONITE, EAST, URSUS

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 22 16 N
LONGITUDE: 125 35 15 W
ELEVATION: 240 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Ursus Creek, where the creek branches into north and south tributaries (Assessment Report 16450).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5471932
EASTING: 312163

COMMODITIES: Gold

MINERALS

SIGNIFICANT:	Pyrite			
ASSOCIATED:	Quartz	Calcite		
ALTERATION:	Quartz	Calcite	Sericite	
ALTERATION TYPE:	Silicific'n		Sericitic	Carbonate
MINERALIZATION AGE:	Unknown			

DEPOSIT

CHARACTER:	Disseminated	Breccia
CLASSIFICATION:	Epigenetic	Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite
Mylonite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1988

COMMODITY	GRADE	
Gold	9.1900	Grams per tonne

COMMENTS: A 1.8 metre drill interval.
REFERENCE: George Cross News Letter #31, 1989.

CAPSULE GEOLOGY

A major fault cuts volcanic rocks of the Upper Triassic Karmutsen Formation (Vancouver Group) and granodiorite to quartz diorite of the Early to Middle Jurassic Island Plutonic Suite. The volcanics are fine-grained to aphanitic, dark green andesite. The intrusive contact is marked by a medium to fine-grained dark, mafic-rich diorite, which is cut by many dykes of leucocratic granodiorite.

The main direction of shearing is about 112 degrees. Shear features such as gouge-filled fractures, rehealed brecciation and zones of shattered rock are abundant throughout the area.

The Junction zone, also known as the East or Mylonite zone, is exposed in cliffs along the south side of the north branch of Ursus Creek, about 50 metres upstream from where the southern branch is joined. Pyrite, with associated gold, is disseminated in tectonically crushed granodiorite. The hard greenish cataclastic rock (mylonite) contains numerous subangular, elongate fragments of quartz up to 5 centimetres. The matrix is composed of quartz, sericite and calcite. The pyrite is locally oxidized to limonite.

Grab samples assayed up to 24.9 grams per tonne gold and a 0.5 metre chip sample assayed 3.94 grams per tonne gold (Assessement Report 16450). From one of five holes drilled in 1988 a 1.8 metre interval assayed 9.19 grams per tonne gold (George Cross News Letter #31, 1989).

BIBLIOGRAPHY

EMPR ASS RPT 9378, 12623, *16450
EMPR BULL 8; 13
EMPR EXPL 1980-171; 1984-162,163; 1987-C145
EMPR PF (Prospectus, Pacific Sentinel Gold Corp., August 31, 1987;
Filing Statement, Pacific Sentinel Gold Corp., May 9, 1988)
GSC MAP 17-1968; 1386A
GSC MEM 204
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16
GCNL #67, 1984; #11,#13,#104,#227, 1988; *#4,*#31, 1989, #32, 1990
N MINER June 12, 1995
V STOCKWATCH Jan.18, 1988
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With
Emphasis on the Relationships of Mineral Deposits to Plutonic
Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1988/03/08 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/01/31 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 451**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAIN**, RAILWAY

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 16 11 N
LONGITUDE: 124 43 55 W
ELEVATION: 310 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing adjacent to railway tracks (Assessment Report 16138).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5458883
EASTING: 374009

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Pyrite Magnetite Pyrrhotite
ASSOCIATED: Quartz Carbonate Epidote
ALTERATION: Malachite Sericite
ALTERATION TYPE: Oxidation Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive Vein
CLASSIFICATION: Volcanogenic Hydrothermal Epigenetic
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu
DIMENSION: 10 x 7 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Diabase
Gabbro

HOSTROCK COMMENTS: The gabbroic intrusion is likely coeval with the Karmutsen Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	14.9000	Grams per tonne

REFERENCE: Assessment Report 16138.

CAPSULE GEOLOGY

The Cowichan uplift consist mainly of northwest trending volcanic-volcaniclastic-sedimentary rocks of the Paleozoic Sicker and Buttle Lake groups. These are bounded by younger mafic volcanics of the Upper Triassic Vancouver Group and sediments of the Lower Cretaceous Nanaimo Group. The Sicker Group stratigraphy is very complex with numerous intercalations and rapid lateral facies changes. The rocks are commonly schistose in the vicinity of faults with associated carbonatization and silicification.

A large gabbroic intrusion, likely coeval with Upper Triassic Karmutsen Formation (Vancouver Group) volcanism, cuts dacites and andesites of the Mississippian to Pennsylvanian Fourth Lake Formation (formerly the Cameron River Formation) and limestones of the Upper Pennsylavanian to Lower Permian Mount Mark Formation. The Fourth Lake and Mount Mark formations, formerly of the Sicker Group, have been reassigned to the new Upper Paleozoic Buttle Lake Group.

Coarse-grained massive pyrite occurs in seams and pods over an area 10 by 7 metres on a vertical rock-cut face. The pods are contorted and irregular in shape and up to 10 by 50 by 100 centimetres in size. They do not express consistent strike direction or lineations, but suggest, rather, a complex infolding within the enclosing rocks. The host rock consists of fine to medium-grained, multiphase diabase-gabbro intrusions which contain magnetite and pyrrhotite. A grab sample assayed 14.9 grams per tonne gold (Assessment Report 16138).

CAPSULE GEOLOGY

Veinlets are common throughout the rock, but are most concentrated near the pyrite pods. Bleaching and sericitic alteration are adjacent to these quartz-carbonate-epidote veinlets. Malachite is associated with some veinlets, where a grab sample assayed 0.2 per cent copper (Assessment Report 16138).

BIBLIOGRAPHY

EMPR ASS RPT *16138
EMPR OF 1989-6
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44; 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 134
Sutherland Brown, A. (1988): Mineral Resources of the Alberni Region, EMPR, British Columbia Geoscience Research Program (RG87-26)

DATE CODED: 1988/03/10 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/04/26 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 452**

NATIONAL MINERAL INVENTORY:

NAME(S): **EAST TRACK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 16 09 N
LONGITUDE: 124 43 35 W
ELEVATION: 320 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing north of railway tracks (Assessment Report 16138).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5458812
EASTING: 374412

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Sicker	Fourth Lake	

LITHOLOGY: Dacite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEINS

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1987

COMMODITY	GRADE	
Gold	2.3000	Grams per tonne

REFERENCE: Assessment Report 16138.

CAPSULE GEOLOGY

The Cowichan uplift consists mainly of northwest trending volcanic-volcaniclastic-sedimentary rocks of the Paleozoic Sicker and Buttle Lake groups. These are bounded by younger mafic volcanics of the Vancouver Group and sediments of the Nanaimo Group. The stratigraphy is very complex with numerous intercalations and rapid lateral facies changes. The rocks are commonly schistose in the vicinity of faults with associated carbonatization and silicification.

The East Track showing is a 2 to 3 metre wide zone of quartz veining and silicification within foliated dacite of the Mississippian to Pennsylvanian Fourth Lake Formation (formerly the Cameron River Formation). Some of the veins are rusty and contain fine disseminations and blebs of pyrite. A grab sample assayed 2.3 grams per tonne gold (Assessment Report 16138).

The Fourth Lake Formation, formerly the Upper part of the Myra Formation (Sicker Group), has been reassigned to the new Upper Paleozoic Buttle Lake Group.

BIBLIOGRAPHY

EMPR ASS RPT *16138
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44; 79-30
Sutherland Brown, A. (1988): Mineral Resources of the Alberni Region, EMPR, British Columbia Geoscience Research Program

BIBLIOGRAPHY

(RG87-26)

DATE CODED: 1988/03/11 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/04/26 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 453**

NATIONAL MINERAL INVENTORY:

NAME(S): **OLD CU-AG**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 17 49 N
LONGITUDE: 124 44 00 W
ELEVATION: 440 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pits (Assessment Report 16138).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5461912
EASTING: 373978

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Azurite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	

LITHOLOGY: Porphyritic Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: PIT

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1987

COMMODITY	GRADE	
Silver	17.1000	Grams per tonne
Copper	0.0500	Per cent

COMMENTS: Sample from southern pit.
REFERENCE: Assessment Report 16138.

CAPSULE GEOLOGY

The Cowichan uplift consists mainly of northwest trending volcanic-volcaniclastic-sedimentary rocks of the Paleozoic Sicker and Buttle Lake groups. These are bounded by younger mafic volcanics of the Vancouver Group and sediments of the Nanaimo Group. The stratigraphy is very complex with numerous intercalations and rapid lateral facies changes. The rocks are commonly schistose in the vicinity of faults with associated carbonatization and silicification.

Two small copper-stained pits (1 by 1 metre) occur 130 metres apart in silicified volcanics of the Devonian Duck Lake Formation (Sicker Group). A north trending fault cuts the volcanics, which are porphyritic andesites. Mineralization consists of numerous quartz veinlets with trace chalcopyrite, bornite, azurite and pyrite.

Sampling of the northern pit assayed 8.57 grams per tonne silver and sampling of the southern pit assayed 76.1 grams per tonne silver. Another sample of the southern pit assayed 17.1 grams per tonne silver and 0.05 per cent copper (Assessment Report 16138).

BIBLIOGRAPHY

EMPR ASS RPT *16138
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44; 79-30
Sutherland Brown, A. (1988): Mineral Resources of the Alberni Region, EMPR, British Columbia Geoscience Research Program

BIBLIOGRAPHY

(RG87-26)

DATE CODED: 1988/03/11
DATE REVISED: 1990/04/26

CODED BY: LDJ
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 454**

NATIONAL MINERAL INVENTORY:

NAME(S): **FACT**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 03 14 N
LONGITUDE: 125 27 50 W
ELEVATION: 125 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing (Assessment Report 14704).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5436371
EASTING: 319987

COMMODITIES: Gold, Silver, Copper, Iron

MINERALS

SIGNIFICANT: Pyrrhotite, Magnetite, Chalcopyrite, Bornite
COMMENTS: Black manganese minerals.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Massive
CLASSIFICATION: Replacement, Epigenetic, Industrial Min.
TYPE: K01 Cu skarn; I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Andesite Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1986

COMMODITY	GRADE	
Silver	13.7000	Grams per tonne
Gold	14.2600	Grams per tonne
Copper	1.6000	Per cent
Iron	35.3000	Per cent

REFERENCE: Assessment Report 14704.

CAPSULE GEOLOGY

A 200 metre Tertiary andesite porphyry stock cuts limestone of the Upper Triassic Quatsino Formation (Vancouver Group) and granodiorite of the Jurassic Island Intrusions.

Massive pyrrhotite-magnetite-chalcopyrite veins extend out from the porphyry into the limestone, along the contact. Minor bornite and black manganese minerals also occur. A grab sample assayed 14.26 grams per tonne gold, 13.7 grams per tonne silver, 1.6 per cent copper and 35.3 per cent iron (Assessment Report 14704).

One hundred fifty metres to the east, massive chalcopyrite occurs in fractures within limestone. A grab sample assayed 8 per cent copper and 33.2 grams per tonne silver (Assessment Report 14704).

BIBLIOGRAPHY

EMPR ASS RPT *14704
GSC MAP 17-1968
GSC OF 463
GSC P 68-50

DATE CODED: 1988/03/24
DATE REVISED: / /

CODED BY: LDJ
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 455**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT DAWLEY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 02 34 N
LONGITUDE: 125 29 15 W
ELEVATION: 320 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing #1, figure 2, Bulletin 55.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5435192
EASTING: 318222

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Magnetite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Replacement Epigenetic Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Limestone
Andesite
Felsite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

At the Mount Dawley occurrence, lower magnetite occurs in the hangingwall of a 10 metre wide andesite sill of the Jurassic Bonanza Group within limestone of the Upper Triassic Quatsino Formation (Vancouver Group). Magnetite and pyrite coat the sheared upper surface of the sill and magnetite is disseminated in a nearby small felsite body.

A small pod of massive pyrite in limestone assayed 0.15 per cent copper (Minister of Mines Annual Report 1962).

BIBLIOGRAPHY

EMPR AR 1962-122
EMPR BULL *55, p. 61, Fig. 2
GSC MAP 17-1968
GSC OF 463
GSC P 68-50

DATE CODED: 1988/03/25 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 456**

NATIONAL MINERAL INVENTORY:

NAME(S): **UPPER FRANKLIN**, WEBB

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 06 59 N
LONGITUDE: 124 41 05 W
ELEVATION: 640 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Several minor showings occur in this area, as described by Laanela, 1966.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5441761
EASTING: 377065

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Malachite
ASSOCIATED: Quartz
ALTERATION: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1966
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	2.7500	Per cent

REFERENCE: Property File - Laanela, H. (1966).

CAPSULE GEOLOGY

The Upper Franklin showings are located in the area of the Upper Franklin River, 15 kilometres southeast of Port Alberni.

Chalcopyrite and malachite occur in quartz stringers and epidotized shears within andesite of the Upper Triassic Karmutsen Formation (Vancouver Group).

One zone, up to 0.6 metres wide, assayed 1.74 per cent copper from a grab sample. Another zone, 1.5 to 1.8 metres wide, assayed 2.75 per cent copper from a grab sample (Laanela, 1966). These showings are about 600 metres apart.

BIBLIOGRAPHY

EMPR ASS RPT 12538, *12696, 13668, 14203, 14880, 14928, 15288
EMPR BULL 37
EMPR FIELDWORK 1988, pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (*Laanela, H., (1966): Report, Gunnex Ltd., Mineral Occurrence #52)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1988/04/05 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 457**

NATIONAL MINERAL INVENTORY:

NAME(S): **PAT 1**, WEBB, BARCLAY 2

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 07 19 N
LONGITUDE: 124 41 15 W
ELEVATION: 520 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 15197).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5442383
EASTING: 376876

COMMODITIES: Copper, Silver, Gold

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated, Vein, Shear
CLASSIFICATION: Epigenetic, Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1986

COMMODITY	GRADE	
Silver	14.8000	Grams per tonne
Gold	0.8800	Grams per tonne
Copper	1.6600	Per cent

REFERENCE: Assessment Report 15197.

CAPSULE GEOLOGY

The Pat 1 showing is located just southwest of Douglas Peak, about 12 kilometres southeast of Port Alberni.

Basalts of the Upper Triassic Karmutsen Formation (Vancouver Group) are overlain by siltstones of the Cretaceous Nanaimo Group and intruded by diorite of the Early to Middle Jurassic Island Plutonic Suite.

Chalcopyrite occurs in altered basalt, likely associated with a shear. A grab sample assayed 1.66 per cent copper, 14.8 grams per tonne gold and 0.88 grams per tonne silver and another nearby grab sample assayed 2.7 grams per tonne silver (Assessment Report 15192).

This showing is near the Webb showing described by Laanela in 1966.

BIBLIOGRAPHY

EMPR ASS RPT 12696, 14201, 14202, *15197, *18222
EMPR BULL 37
EMPR EXPL 1986-163
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Laanela, H. (1966): Report in Upper Franklin - 092F 456)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1988/04/05
DATE REVISED: 1990/05/09

CODED BY: LDJ
REVISED BY: LDJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 458**

NATIONAL MINERAL INVENTORY:

NAME(S): **PAT 3**, BARCLAY 1

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 09 44 N
LONGITUDE: 124 42 20 W
ELEVATION: 860 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 15196).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5446890
EASTING: 375660

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform
CLASSIFICATION: Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Nanaimo	Haslam	
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: LENS

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1986

COMMODITY	GRADE	
Silver	2.0000	Grams per tonne
Copper	0.1420	Per cent

REFERENCE: Assessment Report 15196.

CAPSULE GEOLOGY

The Pat 3 showing is located on Patlicant Mountain, just north of the Pat 1 showing (092F 457), about 12 kilometres southeast of Port Alberni.

The area is underlain by siltstone, shale and coal of the Cretaceous Haslam Formation (Nanaimo Group) which are intruded by diorite of the Tertiary Mount Washington Intrusive Suite (Personal Communication - N. Massey, May 1990).

A sulphide lens up to 1 metre long occurs in the intrusive rocks. A sample assayed 0.142 per cent copper and 2.0 grams per tonne silver (Assessment Report 15196). Mineralization is likely chalcopyrite and pyrite.

BIBLIOGRAPHY

EMPR ASS RPT 14201, 14202, *15196, 18222
EMPR BULL 37
EMPR EXPL 1986-163; 2002-29-40
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
PERS COMM (N. Massey, May 1990)

DATE CODED: 1988/04/05 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 459**

NATIONAL MINERAL INVENTORY:

NAME(S): **OLSEN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 01 45 N
LONGITUDE: 124 38 05 W
ELEVATION: 760 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized zone (Assessment Report 13857).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5431985
EASTING: 380504

COMMODITIES: Copper Zinc

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite Sphalerite Magnetite Chalcopyrite
ALTERATION: Chlorite Epidote Saussurite
ALTERATION TYPE: Chloritic Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Volcanogenic
DIMENSION: 0600 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Mineralized zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0800	Per cent

REFERENCE: Assessment Report 13857.

CAPSULE GEOLOGY

The Olsen showing is located on Mount Olsen, 25 kilometres southeast of Port Alberni.

A 600 metre long zone hosts disseminated and stringer pyrrhotite, pyrite and minor sphalerite, magnetite and chalcopyrite and occurs in basalt of the Upper Triassic Karmutsen Formation (Vancouver Group). The basalts are locally altered to chlorite and epidote-saussurite. Samples assayed up to 0.08 per cent copper (Assessment Report 13857).

Diorites of the Early to Middle Jurassic Island Intrusions occur to the west.

BIBLIOGRAPHY

EMPR ASS RPT 13723, *13857
EMPR BULL 37
EMPR EXPL 1985-137,138
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #84,#97,Dec.10, 1986

DATE CODED: 1988/04/11 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 460**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT OLSEN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 01 19 N
LONGITUDE: 124 38 35 W
ELEVATION: 1280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 13723).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5431196
EASTING: 379878

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	40.0000	Grams per tonne
Copper	1.3200	Per cent

REFERENCE: Assessment Report 13723.

CAPSULE GEOLOGY

The Mount Olsen showing is located southwest of Mount Olsen, near Logan Peak, about 24 kilometres southeast of Port Alberni.

Tholeiitic basalts of the Upper Triassic Karmutsen Formation (Vancouver Group) are intruded by diorite to quartz diorite and minor feldspar porphyry of the Early to Middle Jurassic Island Intrusions. A northeast trending joint or fracture system cuts all rock types.

Pyrite, chalcopyrite and malachite are hosted by brecciated volcanics and quartz stockwork. The occurrence lies in one of the northeast trending fracture systems. A grab sample assayed 1.32 per cent copper and 40 grams per tonne silver (Assessment Report 13723).

BIBLIOGRAPHY

EMPR ASS RPT *13723, *13857
EMPR BULL 37
EMPR EXPL 1985-137,138
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
GCNL #84,#97,Dec.10, 1986

DATE CODED: 1988/04/11 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 461**

NATIONAL MINERAL INVENTORY:

NAME(S): **KIT KAT 5**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 01 29 N
LONGITUDE: 124 34 55 W
ELEVATION: 450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 13945).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5431410
EASTING: 384352

COMMODITIES: Copper, Nickel, Platinum, Palladium

MINERALS
SIGNIFICANT: Pyrite, Malachite, Azurite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform, Disseminated
CLASSIFICATION: Volcanogenic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Basalt
Basaltic Tuff
Hornblendite
Gossan

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1985

COMMODITY	GRADE	
Copper	0.1400	Per cent
Nickel	0.1000	Per cent
Palladium	1.2000	Grams per tonne
Platinum	0.0270	Grams per tonne

REFERENCE: Assessment Report 13945.

CAPSULE GEOLOGY

The Kit Kat 5 occurrence is located west of Mount Hooper, 27 kilometres southeast of Port Alberni.

The area is underlain mainly by basalt, pillowed basalt, basaltic tuff and agglomerate of the Devonian Duck Lake Formation (Sicker Group) which have been intruded by Early to Middle Jurassic Island Plutonic Suite.

Disseminated and rare podiform pyrite occur in a sheared medium-grained basaltic tuff or flow. Fracture surfaces are gossanally stained with lesser amounts of malachite and azurite staining. A sample from a pod of pyrite in hornblendite assayed 0.14 per cent copper, 0.1 per cent nickel, 1.2 grams per tonne palladium and 0.027 grams per tonne platinum. Another grab sample assayed 1.65 grams per tonne platinum, 4.85 grams per tonne palladium, 2.2 grams per tonne silver, 0.655 per cent copper and 0.2 per cent nickel (Assessment Report 13945).

A third grab sample assayed 1.65 grams per tonne platinum, 4.85 grams per tonne palladium, 2.2 grams per tonne silver, 0.655 per cent copper and 0.2 per cent nickel (Assessment Report 13945).

A sample from gouge material contianing malachite and azurite, 250 metres to the north, assayed 0.67 per cent copper (Assessment Report 13945). The showing is likely at the northern extension of the Main showing of the Columbia occurrence (92F 339).

BIBLIOGRAPHY

EM GEOFILE 2000-02
EMPR ASS RPT *13945, 16167
EMPR BULL 37
EMPR EXPL 1985-135-136
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1986-7, p. 7; 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990, pp. 125-135
GCNL #222, 1985
WWW http://www.infomine.com/

DATE CODED: 1988/04/14 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 462**

NATIONAL MINERAL INVENTORY:

NAME(S): **TONI**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 04 39 N
LONGITUDE: 124 28 25 W
ELEVATION: 580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 14729).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5437117
EASTING: 392385

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
ASSOCIATED: Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEINS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.1750	Per cent

REFERENCE: Assessment Report 14729.

CAPSULE GEOLOGY

The Toni showing is located on the Nanaimo River, about 4 kilometres south of Labour Day Lake.

Volcaniclastics, volcanics and sediments of the Sicker and Buttle Lake groups are intruded by quartz monzonite to granodiorite of the Early to Middle Jurassic Island Intrusions. These are overlain by sediments of the Cretaceous Comox Formation of the Nanaimo Group. The Sicker Group includes andesite and volcaniclastics of the Upper Devonian McLaughlin Ridge Formation. The Buttle Lake Group includes limestone and chert of the Mississippian to Pennsylvanian Fourth Lake Formation. These two formations were previously known as the Myra Formation.

Pyrite and minor pyrrhotite and chalcopyrite occur in quartz-carbonate veins in shear zones within the volcanics. A sample assayed 0.175 per cent copper (Assessment Report 14729).

BIBLIOGRAPHY

EMPR ASS RPT 11080, 13575, *14729, 15272
EMPR BULL 37
EMPR EXPL 1986-155-156
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30

BIBLIOGRAPHY

CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1988/04/14 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 463**

NATIONAL MINERAL INVENTORY:

NAME(S): **COLUMBIA VI**, COLUMBIA

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 00 24 N
LONGITUDE: 124 34 55 W
ELEVATION: 220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 16167).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5429403
EASTING: 384310

COMMODITIES: Copper, Silver, Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION: Ankerite, Silica
ALTERATION TYPE: Carbonate, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Basalt, Basaltic Flow, Chert, Jasper

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	3.7000	Grams per tonne
Gold	16.2200	Grams per tonne
Copper	0.0800	Per cent

COMMENTS: Sample from a pyrite vein 3-4 centimetres wide in silicified basalt.
REFERENCE: Assessment Report 17769.

CAPSULE GEOLOGY

The Columbia VI showing is located 27 kilometres southeast of Port Alberni. The area is underlain by rocks of the Devonian Nitinat Formation and the Upper Devonian McLaughlin Formation which occur along the western part of a 10 kilometre belt of the Paleozoic Sicker Group, known as the Cowichan uplift.

The volcanics consist of massive and pillowed basalt with minor chert and jasper. Small patches of epidote, and lesser amounts of quartz are common throughout the sequence. These rocks are steeply dipping and become younger to the west. The metamorphic grade is usually lower greenschist facies.

A shear zone contains ankerite and quartz veinlets heavily mineralized with pyrite. A sample from a quartz or pyrite vein containing massive pyrite hosted in silicified basalt assayed 16.22 grams per tonne gold, 3.7 grams per tonne silver and 0.08 per cent copper (Assessment Report 17769).

BIBLIOGRAPHY

EMPR ASS RPT *16167, *17769

BIBLIOGRAPHY

EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Payton Ventures Inc. Prospectus March 31, 1987)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990, pp. 125-135

DATE CODED: 1988/04/18 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/04/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 464**

NATIONAL MINERAL INVENTORY:

NAME(S): **SURPRISE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 05 29 N
LONGITUDE: 124 24 35 W
ELEVATION: 470 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shear zone (Assessment Report 11010).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5438572
EASTING: 397080

COMMODITIES: Copper, Silver, Gold, Molybdenum

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Bornite, Tetrahedrite, Molybdenite
ALTERATION: Malachite, Tenorite, Pyrite, Chlorite, Saussurite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Podiform, Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I06 Cu±Ag quartz veins; L04 Porphyry Cu ± Mo ± Au
DIMENSION: 0200 x 0001 Metres
STRIKE/DIP: 135/70E
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Island Plutonic Suite

LITHOLOGY: Biotite Monzonite
Tonalite
Diabase

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Plutonic Rocks
Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan Uplift.

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1982
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	89.5000	Grams per tonne
Gold	2.7000	Grams per tonne
Copper	3.4300	Per cent

COMMENTS: 1.5 metre sample.
REFERENCE: Assessment Report 11010.

CAPSULE GEOLOGY

The Surprise showing is located on Rockyrun Creek, about 4.5 kilometres south of Moriarty Lake, about 30 kilometres southeast of Port Alberni.

The area is underlain mainly by granodiorite, monzonite and tonalite of the Early to Middle Jurassic Island Plutonic Suite and by lesser volcanics of the Middle Triassic Karmutsen Formation and limestone, tuff and sediments of the Paleozoic Sicker Group. The intrusive rocks are cut by northwest and northeast trending faults, with the older rocks exposed in faulted sections.

Pyrite, chalcopyrite, bornite, tetrahedrite and molybdenite occur as disseminations, blebs and veins in two parallel shears within biotite monzonite and lesser tonalite and diabase dykes. The shears, which trend 135 degrees and dip 70 degrees northeast, are 5 to 20 centimetres wide and intermittently traced for 200 metres, and broken up by crosscutting faults. Alteration minerals in and around the shear zones are malachite, tenorite, pyrite, chlorite and saussurite. A 1.5 metre drill core sample assayed 3.43 per cent copper, 89.5 grams per tonne silver and 2.7 grams per tonne gold (Assessment Report 11010).

BIBLIOGRAPHY

EMPR ASS RPT *11010, 11913, 12128, 13236, 15939, 16719
EMPR BULL 37
EMPR EXPL 1982-141; 1983-193
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1988/04/20 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 465**

NATIONAL MINERAL INVENTORY: 092F1 Au2

NAME(S): **WO 7**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 06 09 N
LONGITUDE: 124 20 15 W
ELEVATION: 770 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralization (Assessment Report 8688).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5439712
EASTING: 402374

COMMODITIES: Zinc Copper

MINERALS
SIGNIFICANT: Sphalerite Pyrite Chalcopyrite Magnetite
ASSOCIATED: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Tertiary			Mount Washington Intrus. Suite

LITHOLOGY: Porphyritic Granite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Plutonic Rocks Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Wo 7 showing is located on Rockyrun Creek, 2.5 kilometres south of Mount Moriarty, about 27 kilometres southeast of Port Alberni.

Early to Middle Jurassic Island Intrusions are cut by granite porphyry of the Tertiary Mount Washington Intrusive Suite (Personal Communication - N. Massey, May 1990). A shear zone in the younger intrusives contain calcite veinlets with sphalerite, pyrite, chalcopyrite and magnetite.

BIBLIOGRAPHY

EMPR ASS RPT *8688, 12128, 15939, 16719
EMPR BULL 37
EMPR EXPL 1980-164; 1984-150
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135
PERS COMM (N. Massey, May 1990)

DATE CODED: 1988/04/20 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 466**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOOP**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E 092F01W
BC MAP:
LATITUDE: 49 00 04 N
LONGITUDE: 124 32 35 W
ELEVATION: 760 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location (Assessment Report 14461).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5428726
EASTING: 387141

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Carbonate Chlorite
ALTERATION TYPE: Carbonate Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated Shear
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Chloritic Schist
Basalt
Intermediate Flow
Pyroclastic
Chert
Tuff
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
YEAR: 1985

COMMODITY	GRADE	
Gold	0.1000	Grams per tonne
Copper	0.0900	Per cent

COMMENTS: Two metre sample.
REFERENCE: Assessment Report 14461.

CAPSULE GEOLOGY

The Hoop showing is located just south of Mount Hooper, about 30 kilometres southeast of Port Alberni. The area is underlain by northwest trending Sicker Group rocks, including mafic to intermediate flows and pyroclastics of the Devonian Nitinat Formation and cherts and tuffs of the Upper Devonian McLaughlin Ridge Formation (Myra Formation).

A 200 metre wide, northwest trending carbonatized shear zone cuts the volcanics. Associated with the shear are abundant quartz and carbonate veinlets which contain disseminations and pods of pyrite. Anomalous gold values occur in and around the shear zone.

A 2 metre channel sample across a shear in chloritic basalt/schist assayed 0.09 per cent copper and 0.1 gram per tonne gold. A nearby sample of a diorite dyke, cut by quartz stringers with disseminated pyrite, assayed 0.267 per cent copper and 0.072 per cent nickel (Assessment Report 14461).

BIBLIOGRAPHY

EMPR ASS RPT *14461, 17640
EMPR BULL 37
EMPR EXPL 1986-160
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1988/04/21 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 467**

NATIONAL MINERAL INVENTORY:

NAME(S): **SICKER**, SICKER 1-2, SICKER-RUSH, RUSH 3

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 04 24 N
LONGITUDE: 124 23 35 W
ELEVATION: 450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location on Sicker 1 claim (Assessment Report 15452).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5436543
EASTING: 398259

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Arsenopyrite Pyrrhotite Magnetite Gold
ASSOCIATED: Quartz Carbonate
ALTERATION: Ankerite Carbonate Quartz Chlorite Epidote Sericite Hematite
ALTERATION TYPE: Carbonate Oxidation Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Stockwork
CLASSIFICATION: Hydrothermal Epigenetic Skarn
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Carboniferous	Buttle Lake	Fourth Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Graphitic Argillaceous Chert
Tuff
Cherty Tuff
Sericitic Schist
Cherty Sediment/Sedimentary
Granodiorite
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	3.2000	Grams per tonne
Gold	2.9300	Grams per tonne
Copper	0.0400	Per cent

COMMENTS: Sample of quartz vein containing visible gold associated with pyrite. Sample #19130 from DDH 88-4.
REFERENCE: Assessment Report 17600.

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.1000	Grams per tonne
Copper	0.1000	Per cent

REFERENCE: Assessment Report 15452.

CAPSULE GEOLOGY

The Sicker showing is located just east of the north tip of Fourth Lake. The area is underlain by a northwest dipping succession of sediments and volcanics of the Paleozoic Sicker and Buttle Lake

CAPSULE GEOLOGY

groups. This is truncated to the west by granodiorite of the Early to Middle Jurassic Island Plutonic Suite. Disseminated and fracture-filled pyrite and minor chalcopyrite occur in quartz-filled veins within cherts, tuffs, cherty tuffs and sediments and sericitic schist. Minor skarn occurs along the igneous contact.

An 8 centimetre wide fracture zone containing pyrite cuts meta-graphitic argillaceous chert, likely of the Carboniferous Fourth Lake Formation (Myra Formation). A grab sample assayed 0.1 per cent copper and 0.1 gram per tonne gold (Assessment Report 15452).

A sample of diorite with disseminated chalcopyrite, taken in 1965, 500 metres to the south-southwest, assayed 0.3 per cent copper (Property File - Laanela, 1965).

Exploration in 1988 revealed a broad 800 metre wide northwest trending zone of ankeritic alteration most likely associated with shearing. The zone extends from the northern boundary of the Sicker 2 claim to the Staking Reserve boundary on the Rush 3 claim. In addition to quartz and quartz-carbonate veining, local pods of arsenopyrite, chalcopyrite, pyrrhotite and magnetite were noted. Visible gold was observed in drill core from the northwestern corner of the Rush 3 claim; this sample over 0.59 metres assayed 2.93 grams per tonne gold, 3.2 grams per tonne silver and 0.04 per cent copper (Assessment Report 17600).

BIBLIOGRAPHY

EMPR ASS RPT 9140, *15452, 16592, *17600
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (*Laanela, H. (1965): Report Fourth Lake area, #30, Gunnex Ltd., in General File)
GSC MAP 17-1968; 49-1963
GSC OF 463; 1272
GSC P 68-50; 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1988/04/20 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1990/05/08 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 468**

NATIONAL MINERAL INVENTORY:

NAME(S): **LOGAN**, LOGAN 1-2

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 00 02 N
LONGITUDE: 124 34 15 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Logan 2 claim where most of samples were taken (Property File - Antony Resources Ltd. Prospectus May 1988).

MINING DIVISION: Victoria
Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5428706
EASTING: 385109

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT:	Pyrite	Chalcopyrite	
ALTERATION:	Silica	Epidote	Pyrite
ALTERATION TYPE:	Silicific'n	Epidote	Pyrite
MINERALIZATION AGE:	Unknown		

DEPOSIT

CHARACTER:	Disseminated	Vein	Breccia
CLASSIFICATION:	Epigenetic	Replacement	
TYPE:	I06 Cu±Ag quartz veins		

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Upper Devonian	Sicker	McLaughlin Ridge	
Jurassic			Island Plutonic Suite

LITHOLOGY: Pyroxene Breccia
Diabase

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located within the southern extent of the Cowichan Thrust.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	6.3400	Grams per tonne
Gold	6.4400	Grams per tonne

COMMENTS: Average of 14 samples. Assays up to 12.75 grams per tonne gold and 10.97 grams per tonne silver were recorded.
REFERENCE: Property File (Antony Resources Ltd., Prospectus, 1987(.

CAPSULE GEOLOGY

The Logan showing is located on Rift Creek near its outlet into the Nitinat River. The showing occurs at the southern extent of the Cowichan Thrust which cuts through the Logan claims. Paleozoic Sicker Group rocks comprising of the Devonian Nitinat and/or McLaughlin Ridge formations, are exposed in the hangingwall of the fault. The Sicker Group rocks are intruded by Jurassic Island Plutonic Suite. In the footwall, rocks of the Nitinat Formation are intruded by Triassic diabase sills and overlain in fault contact with pillowed and massive flows of the Upper Triassic Karmutsen Formation, Vancouver Group.

Mineralization occurs primarily on the Logan 2 claim which staddles the northwest striking fault zone. Outcrops in this area show intensive fracturing, shearing and brecciation and silicification, epidotization and pyritization are reported. Mineralization consists of pyrite and chalcopyrite in silicified zones and as fillings in vugs and narrow fractures.

Fourteen chip samples averaged 6.44 grams per tonne gold and 6.34 grams per tonne silver (high of 12.75 grams per tonne gold and 10.97 grams per tonne silver) (Property File - Antony Resources Ltd. Prospectus, May 1988).

BIBLIOGRAPHY

EMPR ASS RPT *16982
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Antony Resources Ltd. Prospectus, May 1988)
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1988/11/22 CODED BY: JMR FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 469**

NATIONAL MINERAL INVENTORY:

NAME(S): **DDAM**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 11 12 N
LONGITUDE: 124 37 25 W
ELEVATION: 960 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches 1 kilometre north of Henry Lake, 14 kilometres east-southeast from the town of Port Alberni (Assessment Report 17562).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5449476
EASTING: 381692

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
COMMENTS: Trace chalcopyrite.
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	

LITHOLOGY: Lapilli Tuff
Agglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Ddam occurrence is underlain by Devonian Sicker Group rocks, predominantly mixed lapilli tuffs and agglomerates of the Nitinat Formation. Included within the tuffs is a siliceous, banded, grey-black aphanitic tuff layer. There are silicified, bleached, altered pyritic zones at stratigraphic contacts.

Mineralization consisting of mainly pyrite with trace amounts of chalcopyrite occur in shear zones with occasional milky grey-white quartz veins ranging from 1 centimetre stockwork veinlets to 10 centimetre wide veins. A barren quartz-epidote-silica phase postdates the milky quartz veins.

BIBLIOGRAPHY

EMPR ASS RPT 14768, *17562
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1990/04/18
DATE REVISED: / /

CODED BY: GO
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 470**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOTHAM**, OYSTER, OYSTER 2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F16E
BC MAP:
LATITUDE: 49 54 14 N
LONGITUDE: 124 00 45 W
ELEVATION: 366 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Number 1 adit in Oyster 2 claim is 0.6 kilometres east of Hotham Sound, 3.0 kilometres southeast of Baker Bay (Assessment Report 14272).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5528436
EASTING: 427293

COMMODITIES: Copper, Zinc, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Sphalerite
COMMENTS: Silver mineralogy not known.
ASSOCIATED: Quartz, Pyrite
ALTERATION: Epidote, Chlorite, Quartz
ALTERATION TYPE: Silicific'n, Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
SHAPE: Tabular
DIMENSION:
STRIKE/DIP: 070/65N
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Coast Plutonic Complex

ISOTOPIC AGE: 90 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Diorite, Tonalite

HOSTROCK COMMENTS: Age date from Powell Lake area (Geological Survey of Canada Map 1386A).

GEOLOGICAL SETTING

TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	26.4000	Grams per tonne
Copper	1.5600	Per cent
Zinc	0.6900	Per cent

COMMENTS: Sample from mineralized shear.
REFERENCE: Assessment Report 14272, page 20.

CAPSULE GEOLOGY

The Hotham occurrence is underlain by Mesozoic Coast Plutonic Complex diorite near a contact with a tonalitic phase of the intrusion.

Several parallel shear zones, ranging from 2.0 centimetres to 1.0 metre in width, host minor quartz, pyrite, chalcopyrite and sphalerite mineralization in the wider portions of the zones. The mineralization is accompanied by epidote and chlorite alteration and silicification. The shears strike 070 to 075 degrees and dip 65 degrees north.

A grab sample from a mineralized shear assayed 1.56 per cent copper and 26.4 grams per tonne silver. A maximum value of 0.69 per cent zinc is also reported (Assessment Report 14272).

BIBLIOGRAPHY

EMPR ASS RPT 11230, *14272
EMPR BULL 39
EMPR EXPL 1985-C160; 1982-149
GSC MAP 17-1968; 1386A
GSC OF 611
GSC P 66-1; 68-50

DATE CODED: 1989/06/26 CODED BY: WV FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 471**

NATIONAL MINERAL INVENTORY:

NAME(S): **B.C. CEMENT**, BLUBBER BAY, GRILSE POINT

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 48 04 N
LONGITUDE: 124 36 21 W
ELEVATION: 3 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on quarry Number 4 (Grilse Point quarry) as shown on NTS Map 92F/15.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5517755
EASTING: 384443

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: Deposit folded into a north plunging anticline.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil
Unknown

Unnamed/Unknown Informal

LITHOLOGY: Limestone
Diorite
Gabbro
Diorite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1944
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	53.8600	Per cent

COMMENTS: Average across 152 metres. Grade given for CaO.
REFERENCE: Bulletin 40, page 69.

CAPSULE GEOLOGY

This occurrence is located on Lot 12 on the east side of Blubber Bay at the north end of Texada Island. Limestone was quarried here by B.C. Cement between 1929 and 1957.

The B.C. Cement deposit is located on the north end of a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 3 kilometres wide that is preserved along the axis of a broad northwest plunging syncline. Locally, the limestone is folded into a northwest plunging anticline which comprises minor tight folds up to a few metres across. The core of the anticline is occupied by the lower member of the Quatsino limestone, which outcrops as a northwest trending belt of high calcium limestone. The overlying middle and upper members are exposed along the flanks of the anticline as two subparallel belts of calcium and magnesian limestone extending southeast from Blubber Bay and Grilse Point. A northeast trending 300 metre long stock of diorite-gabbro intrudes the limestone along the east shore of Blubber Bay. Numerous north to west trending greenstone and diorite dykes originate from this stock.

The high calcium limestone in the core of the fold is grey and granular and commonly displays a foliation, while to the southwest it becomes black and fine grained. The magnesian limestone tends to have a more uniform creamy colour. A series of five chip samples

CAPSULE GEOLOGY

taken in succession across 152 metres of high calcium limestone in the central portion of the property averaged 53.86 per cent CaO, 0.74 per cent MgO, 1.23 per cent insolubles, 0.40 per cent R2O3, 0.16 per cent Fe2O3, 0.020 per cent MnO, 0.027 per cent P2O5, 0.04 per cent sulphur and 43.52 per cent ignition loss (Bulletin 40, page 69). This does not include a 30.5 metre chip sample near the middle of the section contaminated with some cream coloured feldspathic material. This sample contained 48.80 per cent CaO, 0.80 per cent MgO, 8.64 per cent insolubles and 2.13 per cent R2O3 (ibid).

Limestone was produced from four quarries located along a 1.0 kilometre long section of the east shore of Blubber Bay, the largest being the number 4 quarry at Grilse Point.

BIBLIOGRAPHY

EM EXPL 1998-47-55; 1999-25-32
EMPR AR 1929-437; 1930-423; 1931-238; 1933-344; 1936-F65; 1937-F38; 1938-F71; 1948-183; 1949-248; 1951-221; 1952-259,260; 1953-193; 1954-183; 1955-96,97; 1956-154; 1957-88,89
EMPR ASS RPT 12084, 12085, 14447
EMPR BULL 23, pp. 75-78; *40, pp. 51-58,67-71
EMPR OF 1990-3; 1992-18, pp. 24, 27-28
GSC MAP 17-1968; 1386A
GSC MEM 58, p. 66
GSC OF 463
GSC P 68-50, pp. 14,15
CANMET RPT 811, Part 5, pp. 148-150

DATE CODED: 1989/07/17 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/07/17 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 472**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEALE**

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 05 N
LONGITUDE: 124 31 55 W
ELEVATION: 122 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on Lot 423, as shown on NTS Map 92F/10.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508410
EASTING: 389571

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Various Fossils

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
DATING METHOD:	Fossil		
MATERIAL DATED:	Various fossils		
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

Limestone was quarried during the early 1940's on Lot 423, one kilometre northwest of Paxton Lake on northern Texada Island.

The Beale quarry is situated near the southwestern margin of a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 13 kilometres wide that is preserved along the axis of a broad northwest plunging syncline. To the southeast, the limestone is in fault contact with basaltic flows of the Upper Triassic Vancouver Group, Karmutsen Formation.

In 1941, Stanley Beale produced 1579 tonnes of limestone for use as stucco.

BIBLIOGRAPHY

EMPR BULL 40, pp. 51-58
EMPR OF 1990-3
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, pp. 14,15

DATE CODED: 1989/07/24 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/07/24 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 473**

NATIONAL MINERAL INVENTORY:

NAME(S): **COULTER**, VANANDA

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E 092F10E
BC MAP:
LATITUDE: 49 45 02 N
LONGITUDE: 124 33 24 W
ELEVATION: 61 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centered on western portion of Lot 14 as shown on NTS Map 92F/15.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5512060
EASTING: 387864

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil

LITHOLOGY: Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

A deposit of white limestone located on Lot 14, one kilometre south of Vananda on Texada Island, was quarried for stucco by T.H. Coulter. About 54.4 tonnes of limestone was quarried here in 1937.

The Coulter deposit lies within a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 3 kilometres wide that is preserved along the axis of a broad northwest plunging syncline.

BIBLIOGRAPHY

EMPR BULL 23, pp. 86,87; 40, pp. 51-58,79
EMPR OF 1990-3
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 1968-50, pp. 14,15

DATE CODED: 1989/07/18 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/07/18 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 474**

NATIONAL MINERAL INVENTORY:

NAME(S): **FOGH**, WESTERN LIME, PETRIE LIME

STATUS: Past Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 47 30 N
LONGITUDE: 124 36 20 W
ELEVATION: 52 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on quarry in northeastern corner of Lot 9, as shown in Bulletin 40, Figure 7.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5516704
EASTING: 384441

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION:
STRIKE/DIP: 178/64E TREND/PLUNGE:
COMMENTS: Attitude in northeastern quarry.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1944
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	54.2300	Per cent

COMMENTS: Sample of white limestone. Grade given for CaO.
REFERENCE: CANMET Report 811, page 157, Sample 10B.

CAPSULE GEOLOGY

Limestone was produced from several quarries located on Lot 9, just southeast of Blubber Bay on the north end of Texada Island.

The Fogh property is situated on the north end of a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up tp 3 kilometres wide that is preserved along the axis of a broad northwest plunging syncline. In the western portion of the property the limestone is gently folded. This deformation becomes more intense and complex to the east. Bedding in a quarry northeast of the Paris mine (092F 266) strikes 178 degrees and dips 35 to 90 degrees east. West trending dykes commonly cut the limestone. A few small stocks of diorite-gabbro have intruded the limestone in the vicinity of the Paris mine.

The limestone is fine-grained, dark bluish-grey to black and high calcium in composition to the west. To the east, fine to medium-grained, cream to light brown magnesian limestone forms a northwest trending band crossing the northeastern portion of Lot 9. Three chip samples taken in succession across 91 metres of magnesian limestone averaged 40.97 per cent CaO, 12.57 per cent MgO, 0.75 per cent insolubles, 0.65 per cent R2O3, 0.50 per cent Fe2O3, 0.109 per cent MnO, 0.013 per cent P2O5, 0.07 per cent sulphur and 44.67 per cent ignition loss (Bulletin 40, page 67). A sample of white, high calcium limestone west of the band of magnesian limestone, contained 54.23 per cent CaO, 0.83 per cent MgO, 0.50 per cent SiO2, 0.08 per cent Al2O3, 0.11 per cent Fe2O3 and nil sulphur (CANMET Report 811,

CAPSULE GEOLOGY

page 157 - Sample 10B).
Limestone was produced from several small quarries on the northern portion of Lot 9, the largest located just northeast of the Paris mine in the northeast corner of Lot 9. In 1929, Western Lime Producers Company Inc. quarried 962 tonnes. The property was then leased to Petrie Limes Products, which quarried 7394 tonnes of limestone in 1931.

BIBLIOGRAPHY

EMPR AR 1929-437; 1931-238
EMPR BULL *23, pp. 74,75; *40, pp. 51-58,66,67
EMPR OF 1990-3; 1992-18, pp. 24, 29
GSC MAP 17-1968; 1386A
GSC MEM 58, p. 66
GSC OF 463
GSC P 68-50, pp. 14,15
CANMET RPT *811, Part 5, pp. 147,148,157

DATE CODED: 1989/07/17 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/07/17 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 475**

NATIONAL MINERAL INVENTORY:

NAME(S): **HANDY CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 02 17 N
LONGITUDE: 124 57 08 W
ELEVATION: 420 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on surface trace of limestone lens as shown on Geological Survey of Canada Open File 1272 (Sheet 7).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5433522
EASTING: 357322

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 3000 x 1500 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Limestone lens trends north, dips west.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Andesite
Basalt
Volcanic
Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

A west dipping limestone lens of the Upper Triassic Vancouver Group, Quatsino Formation trends north for 3 kilometres to the headwaters of Handy Creek, 23 kilometres south-southwest of Port Alberni.

The Handy Creek lens is terminated by a fault to the south and pinches out to the north between overlying Lower Jurassic Bonanza Group volcanics and sediments and underlying basalts and andesites of the Upper Triassic Karmutsen Formation, Vancouver Group. Exposed widths vary up to 1500 metres.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by J.W. McCammon, 1973, p. 10 (in Ministry Library))
GSC MAP 49-963; 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50, pp. 14,15

DATE CODED: 1989/07/06 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/07/06 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 476** NATIONAL MINERAL INVENTORY:

NAME(S): **JOHNSON QUARRIES**, BEALE QUARRY , WEST QUARRY

STATUS: Past Producer Open Pit MINING DIVISION: Nanaimo
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 49 44 23 N NORTHING: 5510856
LONGITUDE: 124 33 25 W EASTING: 387819
ELEVATION: 88 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on quarry as shown on 1:31680 scale topographic map in Industrial Mineral File.

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
MINERALIZATION AGE: Upper Triassic
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Various Fossils

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: STRIKE/DIP: 015/15N TREND/PLUNGE:
COMMENTS: Attitude of west limb of a southwest plunging anticline.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil
MATERIAL DATED: Various Fossils

LITHOLOGY: Limestone
Porphyritic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Georgia Depression
TERRANE: Wrangell

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1956
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	52.2000	Per cent

COMMENTS: Taken across 11.6 metres. Grade given for CaO.
REFERENCE: Bulletin 40, page 78, Sample 3.

CAPSULE GEOLOGY

Limestone was produced from two small quarries on Lot 492, 350 metres south of the east end of Priest Lake on northern Texada Island.

The Johnson Quarries are situated near the western margin of a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 3 kilometres wide that is preserved along the axis of a broad northwest trending syncline. The quarried limestone is the middle calcium member of the Quatsino limestone. Locally, the limestone is warped into a smaller southwest plunging syncline with a west limb striking 015 degrees and dipping 15 degrees northwest and an east limb dipping less than 10 degrees south. Two porphyritic dykes striking northeast and dipping vertically are exposed in the west quarry.

The limestone is fine-grained, dark grey to black with some light grey bands. Calcium limestone is predominant, with minor interbedded magnesian limestone. A chip sample taken across 11.6 metres of strata, in the southwest face of the west quarry, contained 52.70 per cent CaO, 1.68 per cent MgO, 1.86 per cent insolubles, 0.10 per cent R2O3, 0.16 per cent Fe2O3, 0.005 per cent MnO, 0.017 per cent P2O5, 0.06 per cent sulphur, 43.30 per cent ignition loss and 0.14 per cent water (Bulletin 40, page 78 - Sample 3).

Two small quarries were operated by Stanley Beale between 1945

CAPSULE GEOLOGY

and 1955.

BIBLIOGRAPHY

EMPR AR 1945-132
EMPR BULL 23, pp. 85,86; *40, pp. 51-58,77,78
EMPR OF 1990-3; 1992-18, pp. 24, 29-30
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, pp. 14,15

DATE CODED: 1989/07/18 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/07/18 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 477**

NATIONAL MINERAL INVENTORY:

NAME(S): **MCMILLAN LIME**, EAGLE BAY, EAGLE COVE, LOWER MEMBER

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 46 12 N
LONGITUDE: 124 34 45 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on sampled section as described in Bulletin 40, page 72.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5514255
EASTING: 386289

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: Folded into a north trending anticline.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Greenstone Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1944

COMMODITY	GRADE	
Limestone	55.1400	Per cent

COMMENTS: Average across 244 metres. Grade given for CaO.
REFERENCE: Bulletin 40, page 72.

CAPSULE GEOLOGY

The McMillan Lime occurrence is located on the northern half of Lot 3 adjacent to Eagle Bay on the northeast coast of Texada Island.

The deposit is situated within a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 13 kilometres wide that is preserved along the axis of a broad northwest plunging syncline. In the vicinity of Eagle Bay three members of the Quatsino limestone outcrop on the eastern limb of an anticline that continues northward to the B.C. Cement quarry (092F 471). The upper magnesian member extends southeast from Grilse Point along the coast past Eagle Bay to Sturt Bay. The underlying middle calcium to high calcium member and the lower high calcium member outcrop as parallel belts flanking the magnesian limestone belt to the southwest. The beds are locally warped into a series of open northwest plunging folds with dips usually not exceeding 40 degrees. Greenstone dykes are present but not as common as at Blubber Bay to the north.

The limestone is generally fine-grained and bluish-grey in colour. Four chip samples taken in succession across 244 metres of calcium to high calcium limestone (middle member) averaged 52.97 per cent CaO, 2.48 per cent MgO, 0.98 per cent insolubles, 0.29 per cent R2O3, 0.24 per cent Fe2O3, 0.033 per cent MnO, 0.016 per cent P2O5, 0.06 per cent sulphur and 43.04 per cent ignition loss (Bulletin 40, page 72). A second set of four chip samples taken southwest of the first set across 244 metres of high calcium limestone (lower member) averaged 55.14 per cent CaO, 0.48 per cent MgO, 0.43 per cent

CAPSULE GEOLOGY

insolubles, 0.16 per cent R2O3, 0.11 per cent Fe2O3, 0.031 per cent MnO, 0.023 per cent P2O5, 0.05 per cent sulphur and 43.55 per cent ignition loss (Bulletin 40, page 72).

BIBLIOGRAPHY

EMPR BULL *23, pp. 78-80; *40, pp. 51-58,71,72
EMPR GEM 1973-549
EMPR OF 1990-3; 1992-18, pp. 24, 29
EMPR PF (Assay certificate, 1944)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, pp. 14,15

DATE CODED: 1989/07/17 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/07/17 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 478**

NATIONAL MINERAL INVENTORY:

NAME(S): **MT. DICK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09E
BC MAP:
LATITUDE: 49 30 02 N
LONGITUDE: 124 09 31 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on surface trace of limestone bed as shown in Bulletin 40, Figure 4, page 48.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5483748
EASTING: 416110

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Carbonate Calcite
MINERALIZATION AGE: Pennsylvan.-Permian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
DIMENSION: 190 x 6 Metres STRIKE/DIP: 058/60N TREND/PLUNGE:
COMMENTS: Limestone bed.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
DATING METHOD: Fossil			
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Pillow Basalt
Marble

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Mt Dick occurrence is comprised of a bed of fine to medium-grained, grey limestone of the Permian to Pennsylvanian Mount Mark Formation (Buttle Lake Group) up to 6 metres thick, extending north from the southwest coast of Texada Island for 820 metres. The bed outcrops along the base of cliffs comprised of massive and pillowed basaltic flows of the overlying Upper Triassic Vancouver Group, Karmutsen Formation. Aphanitic volcanics of the Paleozoic Sicker Group underlie the limestone. The bed strikes 058 degrees and dips 60 degrees northwest. This limestone is likely the southwestern extension of the bed that comprises the Anderson Bay occurrence (092F 088), which outcrops 1.1 kilometres to the northeast. Crinoids, corals and bryozoa are commonly found in this limestone. A bed of purple-pink variegated marble up to 6 metres wide, also occurs in the limestone.

BIBLIOGRAPHY

EMPR BULL *40, pp. 47-49
EMPR EXPL 1985-B20
EMPR FIELDWORK *1979, pp. 109-111
GSC ANN RPT 1887 Vol.II, p. 33B
GSC MAP 17-1968; 1386A
GSC MEM 58, pp. 14-17
GSC OF 463
GSC P 68-50, p. 8
CANMET RPT *452 Vol.5, pp. 149,150,155; 811 Part 5, pp. 142,144

DATE CODED: 1989/07/11 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/07/11 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 479**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLUBBER BAY**, PACIFIC LIME, ASHGROVE CEMENT

STATUS: Producer Open Pit
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 47 07 N
LONGITUDE: 124 37 22 W
ELEVATION: 55 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on Quarry 6, as shown on NTS Map 92F/15 (Open Pit Mine).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5516021
EASTING: 383186

COMMODITIES: Limestone Aggregate Building Stone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite Quartz
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
COMMENTS: Limestone is warped into a broad dome.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Diorite Dike
Greenstone Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Blubber Bay quarries are located on Lot 13 along the southwest shore of Blubber Bay at the north end of Texada Island. Several different companies have owned Blubber Bay Quarry since 1907, starting with Pacific Lime Company. The quarry was subsequently purchased by Gypsum Lime and Albastine (1955), Domtar (1962), and Oregon Portland Cement (1983). Ash Grove Cement is the current owner and has been since 1985.

The quarry has been in operation continuously since 1907. The deposit is situated on the western flank of a broad northwesterly plunging syncline within a 13 kilometre long belt of Upper Triassic Vancouver Group, Quatsino Formation limestone up to 3 kilometres wide along its axis. Locally, the principal structure consists of a broad dome centred on the southwest corner of the Number 2 quarry. Dips range from less than 10 degrees near the centre of the dome to 40 degrees in the Number 3 quarry, 150 metres to the northwest. The dome is complicated by a few steeply dipping faults with displacements of up to 3 metres. The quarries are developed in the upper portion of the high calcium lower member and in the lower portion of the more magnesian middle member of the Quatsino limestone. The limestone is intruded by a few steeply dipping, dominantly west trending diorite and greenstone dykes a few centimetres to 6 metres wide.

The limestone is generally fine grained and black to dark bluish grey in colour. In places, irregular vein-like masses of white limestone occur in the dark limestone, likely due to the bleaching effect of solutions migrating along fractures. Dolomite and quartz occur as fine disseminations and as veinlets in the middle member. Two chip samples taken in succession across the top 12.1 metres of the lower high calcium member exposed in the southeastern portion of the Number 2 quarry averaged 55.34 per cent CaO, 0.46 per cent MgO, 0.20 per cent insolubles, 0.01 per cent R2O3, 0.04 per cent Fe2O3, 0.010 per cent MnO, 0.017 per cent P2O5, 0.02 per cent sulphur and 43.89 per cent ignition loss (Bulletin 40, page 65).

The limestone is being selectively mined for chemical and cement

CAPSULE GEOLOGY

grade product.
Gilles Bay (Holnam West) (092F 395) and Blubber Bay (Ashgrove Cement) ship about 5 million tonnes annually. About 1 million tonnes of waste rock is sold from Texada Island as construction aggregrate.

BIBLIOGRAPHY

EM EXPL 1999-25-32
EMPR AR 1909-25; 1910-25; 1911-28,206; 1913-288; 1916-359; 1919-28; 1920-216; 1921-222; 1922-238; 1923-256; 1926-316; 1927-358; 1929-392,437; 1930-423; 1931-238; 1933-344; 1936-F65; 1937-F38; 1938-F70; 1939-112; 1944-82; 1945-131,132; 1946-206; 1947-218; 1948-189; 1966-268; 1967-310; 1968-320
EMPR BULL *23, pp. 70-74; *40, pp. 52-58,60-66
EMPR ENG INSP Annual Report 1989, 1990
EMPR EXPL 1985-A48; 1996-A13
EMPR GEM 1969-396; 1970-500; 1971-465; 1972-600; 1973-549; 1974-383,384
EMPR INF CIRC 1995-a, p. 9; 1996-1, p. 9; 1997-1, p. 12; 1998-1, p. 13
EMPR MAP 65, 1989
EMPR MINING 1975-1980 Vol.I, p. 45; 1981-1985, p. 63; 1986-1987, p. 88; 1988, p. 88
EMPR OF 1990-3; 1992-1; 1992-9; 1992-18, pp. 24-25; 1994-1
EMPR PF (Grainger, R.M. (1991): Blubber Bay Quarry, Ash Grove Cement West Inc.)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50, pp. 14,15
CANMET RPT 452 Vol.5, pp. 160,161; *811 Part 5, pp. 144-147
N MINER Oct. 18, 1998
WWW http://www.prcn.org/blubberbayquarry/index.htm
Ogilvy, A.G. (1967): A Petrographic Investigation of the Stratigraphic Significance of "Insul" & Magnesia in Domtar Chemicals Limestone Quarry, Blubber Bay, British Columbia, Unpub. B.A.Sc. Thesis, University of British Columbia

DATE CODED: 1989/10/28 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/11/28 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **092F 480**

NATIONAL MINERAL INVENTORY:

NAME(S): **VRL-10**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 09 16 N
LONGITUDE: 125 24 05 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: North of Kennedy Lake, east of Kennedy River. Located uphill to the south, from a point 20 metres upstream from the Singer Group claim post (Assessment Report 11940). Shares some of the characteristics of the Jo Jo vein (092F 047). See also 092F 099 - Esther.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5447401
EASTING: 324907

COMMODITIES: Silver Gold Zinc Copper

MINERALS
SIGNIFICANT: Pyrrhotite Pyrite Sphalerite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Island Plutonic Suite

LITHOLOGY: Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: FLOAT
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1983

COMMODITY	GRADE	
Silver	61.0300	Grams per tonne
Gold	1.0300	Grams per tonne
Copper	0.5800	Per cent
Zinc	6.8000	Per cent

REFERENCE: Assessment Report 11940.

CAPSULE GEOLOGY

Upper Triassic basalts and andesites of the Karmutsen Formation, Vancouver Group are intruded by quartz diorite to granodiorite of the Early to Middle Jurassic Island Plutonic Suite. The rocks are cut by northwest trending faults which typically show intense shearing and local pyritization, sericitization and silicification over widths of 0.5 to 2 metres.

An 80 centimetre wide quartz vein, carrying pyrrhotite, strikes 100 degrees and dips 90 degrees within granodiorite. Float from the vein contained pyrrhotite and lesser amounts of pyrite, sphalerite and chalcopyrite. A sample of the float contained 61.03 grams per tonne silver, 1.03 grams per tonne gold, 6.80 per cent zinc, 0.58 per cent copper and 0.1 per cent lead (Assessment Report 11940).

BIBLIOGRAPHY

EMPR ASS RPT *11940
EMPR BULL 55
EMPR EXPL 1983-201
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic

BIBLIOGRAPHY

Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/12/05 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 481**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAVEN-TR 1**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 12 12 N
LONGITUDE: 125 23 14 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: About 400 metres west of Kennedy River, 9.0 kilometres north-northeast of Kennedy Lake (Assessment Report 12739).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5452803
EASTING: 326112

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Unknown
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic
Andesite Dike

HOSTROCK COMMENTS: Andesitic dykes of unknown affinity.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist

INVENTORY

ORE ZONE: VEINS
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1984

COMMODITY	GRADE	
Gold	0.6000	Grams per tonne

REFERENCE: Assessment Report 12739.

CAPSULE GEOLOGY

Karmutsen Formation volcanics of the Upper Triassic Vancouver Group are intruded by the Jurassic Island Intrusions consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcaniclastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.

A series of quartz-carbonate veins, from 5 to 10 centimetres in width, are related to slightly faulted dyke margins. These andesitic dykes occur as a subparallel swarm hosted by Karmutsen volcanics. The veins have been traced along strike for about 60 metres. One sample contained 0.6 grams per tonne gold (Assessment Report 12739).

BIBLIOGRAPHY

EMPR ASS RPT *12739, 14329
EMPR EXPL 1984-157
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1989/12/10
DATE REVISED: / /
CODED BY: GJP
REVISED BY:
FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 482**

NATIONAL MINERAL INVENTORY:

NAME(S): **KEN**, VENT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 14 42 N
LONGITUDE: 125 20 29 W
ELEVATION: 550 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Area of "B" zone.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5457330
EASTING: 329593

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite Azurite Specularite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite
Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1975

COMMODITY	GRADE	
Copper	0.4200	Per cent

COMMENTS: A 3.0 metre chip sample.
REFERENCE: Assessment Report 5624.

CAPSULE GEOLOGY

The area is underlain by andesite and basalt of the Upper Triassic Karmutsen Formation, Vancouver Group and by minor felsite flows. These are intruded by quartz monzonite, quartz diorite and diorite of the Jurassic Island Intrusions.

Copper mineralization occurs at several localities over a distance of about 750 metres, near the west bank of a southwest flowing creek. The largest zone, the B zone, is approximately 90 by 90 metres in area.

Mineralization within the Karmutsen rocks includes chalcopyrite, specularite, bornite, malachite and azurite. Chalcopyrite generally occurs: 1) as infillings along shears and fractures with quartz and calcite or 2) within amygdules (with minor bornite) in the volcanic flows. A 3 metre chip sample from one shear zone assayed 0.42 per cent copper (Assessment Report 5624). Samples of amygdaloidal basalt containing chalcopyrite assayed in excess of 0.5 per cent copper.

BIBLIOGRAPHY

EMPR ASS RPT 1902, 2464, 2996, 3058, *5624
EMPR EXPL 1975-E97
EMPR GEM 1969-219,355, 1970-288, 1971-235, 1972-264
EMPR PF (Unis, W.E. (1972): Evaluation of the Diamond Drilling Program on the Vent Claims, DeKalb Mining Corporation (unpublished))
GSC MAP 17-1968; 1386A
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1989/12/12 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 483**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 13 13 N
LONGITUDE: 125 17 58 W
ELEVATION: 820 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Identified from Sher Group geology map (Map 5, Assessment Report 2883).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5454488
EASTING: 332562

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite
COMMENTS: Unidentified copper mineralization present.
ALTERATION: Silica Pyrite Sericite Saussurite
ALTERATION TYPE: Silicific'n Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Quartz Porphyry
Quartz Feldspar Porphyry
Andesite
Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The area is underlain by andesite and basalt of the Upper Triassic Karmutsen Formation, Vancouver Group. These are intruded by quartz monzonite, quartz diorite and diorite of the Jurassic Island Plutonic Suite. Feldspar porphyry, quartz feldspar porphyry and gabbro have also been observed in the area. Two major northwest trending lineaments transect the area.

At the Sher occurrence, copper mineralization occurs in a gossanous area comprised of porphyries that have intruded Karmutsen volcanics. The porphyries have been silicified, pyritized, sericitized, and saussuritized. A few calcite veinlets carrying a green mineral, possibly fuchsite, occur near the margin of the porphyry.

BIBLIOGRAPHY

EMPR ASS RPT *2883
EMPR GEM 1971-235
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1989/12/13
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 484**

NATIONAL MINERAL INVENTORY:

NAME(S): **SENTINAL PEAK**, OK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06W
BC MAP:
LATITUDE: 49 15 17 N
LONGITUDE: 125 21 32 W
ELEVATION: 350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 1.0 kilometre west of Kennedy River (Assessment Report 1244).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5458450
EASTING: 328354

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite Pyrite
ASSOCIATED: Quartz Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Igneous-contact Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Basalt
Granodiorite
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1983
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Molybdenum	0.1500	Per cent

REFERENCE: Assessment Report 12441.

CAPSULE GEOLOGY

The Sentinal Peak area is underlain by andesite and basalt of the Upper Triassic Karmutsen Formation, Vancouver Group. These are intruded by granodiorite of the Jurassic Island Plutonic Suite. Some diorite is also exposed.

Disseminated pyrite and minor chalcopyrite occurs in intensely fractured and altered volcanics for a considerable distance south of the intrusive contact. Quartz veins containing pyrite and abundant molybdenite also cut the volcanics from 100 to 500 metres south of the contact. A sample of this quartz vein material assayed 0.15 per cent molybdenum (Assessment Report 12441). A wide quartz vein, about 450 metres south-southwest of the contact, is reported to contain magnetite, pyrite, minor chalcopyrite and molybdenite.

BIBLIOGRAPHY

EMPR ASS RPT *12441
EMPR GEM *1970-287
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1989/12/13
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 485**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROBIN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 05 53 N
LONGITUDE: 125 24 05 W
ELEVATION: 450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located within a canyon of a creek that flows southeast into Toquart Lake (Assessment Report 14329).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5441133
EASTING: 324709

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Igneous-contact Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Andesite
Basalt
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1984
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.6000	Grams per tonne

REFERENCE: Assessment Report 14658.

CAPSULE GEOLOGY

The Robin area is underlain by Karmutsen Formation basalts and andesites, and Quatsino Formation limestone, both of the Upper Triassic Vancouver Group. These in turn are overlain by Lower Jurassic Bonanza Group flows, tuffs and breccias ranging from basalt to rhyodacite in composition. Stocks of quartz diorite and granodiorite of the Jurassic Island Plutonic Suite intrude the strata. The youngest rocks in the area are Tertiary volcanics consisting of welded tuffs, breccias, basaltic tuffs and rhyodacites. Coeval Tertiary intrusions of quartz diorite to quartz monzonite occur and may be linked to the Eocene. Rocks of the pre-Jurassic Westcoast Complex occur in the region. They are genetically related to the Jurassic Island Plutonic Suite, and considered to be derived from Sicker and Vancouver groups rocks.

Several samples of Karmutsen andesite contain anomalous amounts of gold. These samples were taken in a creek canyon that is also the contact of Island Plutonic Suite granodiorite on the east and Karmutsen volcanics on the west. The canyon also defines the position of a major northwest trending fault. The higher assays are reported to be associated with pyritic quartz veins, gouge-filled fault zones and structurally controlled alteration. Samples contain 0.30, 0.40 and 0.60 grams per tonne gold (Assessment Report 14658).

BIBLIOGRAPHY

EMPR AR 1962-111-122
EMPR ASS RPT 13642, *14658
EMPR BULL 55

BIBLIOGRAPHY

EMPR EXPL 1985-C145, 1986-C169
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED:	1989/12/15	CODED BY:	GJP	FIELD CHECK:	N
DATE REVISED:	1989/12/15	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **092F 486**

NATIONAL MINERAL INVENTORY:

NAME(S): **MULLER**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 15 38 N
LONGITUDE: 125 36 43 W
ELEVATION: 1233 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Between Tofino and Tranquil creeks, 1.0 kilometre north of the "4046" foot elevation mark (Geological Survey of Canada Paper 66-1). The "4046" mark appears on older topographic maps (1:50,000 scale) that have a revision date of 1955.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5459704
EASTING: 309964

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Magnetite
ALTERATION: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Skarn Industrial Min.
DIMENSION: 0030 x 0006 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Limestone
Intrusive

HOSTROCK COMMENTS: Assumed to occur at contact of Buttle Lake Group limestone and intrusive.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Muller area is underlain by rocks of the pre-Jurassic Westcoast Complex. This complex is a heterogeneous assemblage of hornblende-plagioclase gneiss, amphibolite, agmatite, basic migmatite, quartz diorite or tonalite and minor metasedimentary and metavolcanic rocks. It is genetically related to the Jurassic Island Intrusions, and considered to be derived from Sicker and Vancouver Group rocks. Small areas of limestone belonging to the Upper Upper Paleozoic Buttle Lake Group, also occur in the area.

Muller reports the occurrence of an iron skarn outcropping on a ridge between Tofino and Tranquil creeks, 1 kilometre north of the 4046 foot (1233 metres) elevation mark. The deposit consists of a vertical lens of magnetite that is up to 6 metres wide but pinches out within 30 metres (Geological Survey of Canada, Paper 66-1).

BIBLIOGRAPHY

EMPR BULL 3, 1917
EMPR FIELDWORK 1988, pp. 61-74
GSC BULL 172
GSC EC GEOL #3, Vol.1, p. 229
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P *61-1, pp. 74-77; 68-50; 71-36; 72-44; 79-30
CANMET RPT #47
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1989/12/18 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 487**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLD CREST**, GUPPY, WARN BAY

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05E
BC MAP:
LATITUDE: 49 15 40 N
LONGITUDE: 125 44 21 W
ELEVATION: 40 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near the northern shore of Warn Bay (Assessment Report 17589).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5460094
EASTING: 300711

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
COMMENTS: Shear zone with quartz veins.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Andesitic Agglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Boundary Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1988

COMMODITY	GRADE	
Gold	3.0900	Grams per tonne

COMMENTS: A 1.0 metre sample.
REFERENCE: Assessment Report 17589.

CAPSULE GEOLOGY

The region is underlain by Paleozoic Sicker Group sediments and volcanics. These are overlain by Upper Triassic Vancouver Group rocks consisting of Karmutsen Formation volcanics and Quatsino Formation limestone. Stocks of the Jurassic Island Intrusions consisting of granodiorite to quartz diorite intrude the strata. An assemblage of rocks belonging to the pre-Jurassic Westcoast Complex also occurs in the area. The assemblage consists of gneiss, amphibolite, agmatite, and quartz diorite or tonalite. This complex is considered to be derived from Sicker and Vancouver group rocks which were migmatized in early Jurassic time. Its mobilized granitoid part is thought to have become the source of the Jurassic Island Intrusions.

The Gold Crest showing, located near the northern shore of Warn Bay, consists of a brecciated shear in Sicker volcanics. Quartz healed breccia, quartz veining and fault gouge fill a 0.4 to 1.0 metre wide shear zone in an andesitic agglomerate. The zone strikes 166 degrees and dips 85 degrees to the east. A one metre chip sample contained 3.09 grams per tonne gold and a sample of pyritic wallrock assayed 1.37 grams per tonne gold over 0.29 metres (Assessment Report 17589).

BIBLIOGRAPHY

EMPR ASS RPT 15551, *17589
EMPR EXPL 1987-C146, 1988-C85
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1989/12/20 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 488**

NATIONAL MINERAL INVENTORY:

NAME(S): **LONE CONE EAST**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04W
BC MAP:
LATITUDE: 49 12 42 N
LONGITUDE: 125 54 07 W
ELEVATION: 335 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the eastern flank of Lone Cone Mountain (Assessment Report 4175). Mineralization also found 350 metres north and 500 metres northeast of above coordinates.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5455040
EASTING: 288659

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Amphibole Pyroxene Rock
Andesite
Gabbro

HOSTROCK COMMENTS: Mineralization hosted in area of Westcoast Complex rocks (possibly some Sicker Group rocks).

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Meares Island is underlain mainly by rocks of the pre-Jurassic Westcoast Complex, a heterogeneous assemblage of hornblende-plagioclase gneiss, amphibolite, agmatite, mafic migmatite, quartz diorite or tonalite and minor metasedimentary and metavolcanic rocks. This complex is considered to be derived from Sicker and Vancouver groups rocks which were migmatized in early Jurassic time. Its mobilized granitoid part is thought to have become the source of the Jurassic Island Intrusions.

A quartz diorite stock of the Early to Middle Eocene Tofino Intrusive Suite intrudes the strata in the northwest part of the island. These Tertiary intrusions were formerly known as the Catface Intrusions (Nick Massey, Personal Communication, May 1990).

At the Lone Cone East occurrence, magnetite-chalcopyrite-pyrrhotite mineralization occurs in amphibolite (Westcoast Complex) and andesite (Sicker Group?) on the east side of Lone Cone Mountain.

BIBLIOGRAPHY

EMPR ASS RPT *4175, 11677
EMPR EXPL 1983-204
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1972-265, 1973-231, 1974-175
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1989/12/28
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 489**

NATIONAL MINERAL INVENTORY:

NAME(S): **LONE CONE NORTH**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04W
BC MAP:
LATITUDE: 49 12 59 N
LONGITUDE: 125 54 33 W
ELEVATION: 450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the northern flank of Lone Cone Mountain, reportedly between 90 and 460 metres elevation. However the geology map from the relevant report shows mineralization only around 400 to 460 metres elevation (Assessment Report 4175).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5455585
EASTING: 288153

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Igneous-contact Hydrothermal Epigenetic
COMMENTS: Mineralization found along fractures and in disseminations.

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	
Paleozoic-Mesozoic			Westcoast Complex
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Gabbro
Diorite Gneiss
Andesite
Quartz Diorite

HOSTROCK COMMENTS: Mineralization hosted in Westcoast Complex, Sicker Group (?) and intrusive rock near intrusive contact.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Meares Island is underlain mainly by rocks of the pre-Jurassic Westcoast Complex. This complex is a heterogeneous assemblage of hornblende-plagioclase gneiss, amphibolite, magmatite, mafic migmatite, quartz diorite or tonalite and minor metasedimentary and metavolcanic rocks. This complex is considered to be derived from Sicker and Vancouver groups rocks which were migmatized in early Jurassic time. Its mobilized granitoid part is thought to have become the source of the Jurassic Island Intrusions.

The western part of the island has been in part mapped as volcanics and sediments of the Paleozoic Sicker Group. The strata is disrupted by a stock of Tertiary intrusions that may be related to the Tofino Intrusive Suite.

At the Lone Cone North occurrence, chalcopyrite lies along fracture planes and as scattered disseminations adjacent to these fractures near the contact of a quartz diorite intrusion on the northern flank of Lone Cone Mountain. The country rock, consisting of gabbro and diorite gneiss (Westcoast Complex) and andesite (Sicker Group?) hosts most of the mineralization, with a lesser amount found within the intrusive. Some pyrrhotite is found with chalcopyrite along dacite dykes within this zone.

BIBLIOGRAPHY

EMPR ASS RPT *4175, 11677
EMPR EXPL 1983-204
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1972-265, 1973-231, 1974-175
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 79-30

BIBLIOGRAPHY

CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1989/12/28 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 490**

NATIONAL MINERAL INVENTORY:

NAME(S): **LEMAY CREEK**, LONE CONE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04W
BC MAP:
LATITUDE: 49 13 33 N
LONGITUDE: 125 53 08 W
ELEVATION: 120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Coordinates are for the centre of a metasedimentary area in "Lemay Creek". Located from text and Geology Map 5 of Assessment Report 4175.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5456569
EASTING: 289912

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Quartzite
Gabbro
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Meares Island is underlain mainly by rocks of the pre-Jurassic Westcoast Complex. This complex is a heterogeneous assemblage of hornblende-plagioclase gneiss, amphibolite, agmatite, mafic migmatite, quartz diorite or tonalite and minor metasedimentary and metavolcanic rocks. This complex is considered to be derived from Sicker and Vancouver groups rocks which were migmatized in early Jurassic time. Its mobilized granitoid part is thought to have become the source of the Jurassic Island Intrusions.

At the Lemay Creek occurrence, copper mineralization occurs in a south flowing creek (Lemay Creek) that drains into Lemmens Inlet. The southern slope of the mountain, down which the creek flows, is composed mainly of gabbro (Westcoast Complex?). An area of quartzite and limestone is exposed in the creek from 100 to 170 metres elevation. The quartzite is locally rich in pyrrhotite with minor chalcopyrite. Chalcopyrite also ocurrs in gabbro at the 20 (slightly east) and 200 metre elevation level of the stream and again 480 metres north of the latter.

A few copper showings also occur from 400 to 800 metres east of the creek, between 20 and 60 metres elevation.

BIBLIOGRAPHY

EMPR ASS RPT *4175, 11677
EMPR EXPL 1983-204
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1972-265, 1973-231, 1974-175
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island,

BIBLIOGRAPHY

British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1989/12/28 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 491**

NATIONAL MINERAL INVENTORY:

NAME(S): **RITCHIE BAY**, LONE CONE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F04W
BC MAP:
LATITUDE: 49 13 30 N
LONGITUDE: 125 53 23 W
ELEVATION: 2 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located along the shore near the southeast corner of Ritchie Bay, Meares Island (Assessment Report 4175, Map 5).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5456488
EASTING: 289605

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Gabbro
Diorite Gneiss

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

Copper mineralization occurs along the shore of Ritchie Bay in an area underlain by rocks of the pre-Jurassic Westcoast Complex. The southernmost showing consists of pyrrhotite with a trace of chalcopyrite hosted by gabbro. One hundred and twenty metres to the north, diorite gneiss contains magnetite, pyrite and a trace of chalcopyrite. Two hundred and sixteen metres north of this, gabbro outcrop is mineralized with chalcopyrite. The northernmost showing occurs 215 metres to the north and consists of minor chalcopyrite in diorite gneiss.

BIBLIOGRAPHY

EMPR ASS RPT *4175
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1972-265, 1973-231, 1974-175
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1989/12/28
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 492**

NATIONAL MINERAL INVENTORY:

NAME(S): **BAIN 4**, LYNN, LILY 2

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 10 51 N
LONGITUDE: 124 42 00 W
ELEVATION: 580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of sample R103 in anomalous copper zone (Assessment Report 16631).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5448950
EASTING: 376111

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Arsenopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Silica Malachite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal Volcanogenic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Mafic Intrusive
Andesite
Diorite
Argillite
Basalt
Siltstone
Chert

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.3900	Grams per tonne
Copper	0.2660	Per cent

COMMENTS: Sample of mafic intrusive with malachite staining.
REFERENCE: Assessment Report 16631.

CAPSULE GEOLOGY

The Bain 4 showing is located just west of the Yellow property, (092F 079) 6 kilometres southeast of Port Alberni.

The area is underlain by volcanic and sedimentary rocks of the Devonian Duck Lake Formation, Sicker Group and by volcanic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group. These have been intruded by Early to Middle Jurassic Island Plutonic Suite. The rocks comprise basaltic and andesitic tuffs, breccias and flows, argillite, siltstone and chert intruded by dioritic rocks.

A copper anomaly was delineated in 1980 and exploration in 1987 resulted in samples containing anomalous gold values from this zone. One sample (R103), described as a mafic intrusive with malachite staining, initially assayed 0.39 grams per tonne gold, 0.266 per cent copper and 0.0082 per cent zinc. This sample was re-assayed for platinum, palladium and gold and assayed 1.8 grams per tonne gold with insignificant platinum and palladium values (Assessment Report

CAPSULE GEOLOGY

16631).
Quartz carbonate veins and stringers with pyrite, chalcopyrite and minor arsenopyrite occur in the area. Pyrite is also disseminated in silicified andesitic and dioritic rocks.

BIBLIOGRAPHY

EMPR ASS RPT 8249, 15549, *16631
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30

DATE CODED:	1990/05/09	CODED BY:	DEJ	FIELD CHECK:	N
DATE REVISED:	1990/05/09	REVISED BY:	DEJ	FIELD CHECK:	N

MINFILE NUMBER: **092F 493**

NATIONAL MINERAL INVENTORY:

NAME(S): **MWP**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 10 53 N
LONGITUDE: 124 47 56 W
ELEVATION: 2 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the shore of the west side of Alberni Inlet, about one kilometre north of China Creek (Laanela, 1965).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5449178
EASTING: 368906

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 0006 Metres STRIKE/DIP: 010/65E TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Volcanic Rock
Feldspar Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

At the MWP occurrence, a quartz vein containing chalcopyrite is reported to occur on the shore of Alberni Inlet, north of China Creek. The vein is 6 by 0.1 metres, strikes 010 degrees and dips 65 degrees east. The area is underlain by pillow lava of the Upper Triassic Karmutsen Formation, Vancouver Group. Feldspar porphyry dykes and altered volcanics are reported nearby.

Another shoreline occurrence has been observed to the north at Lone Tree Point. No description is available.

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Laanela, H. (1965): Mount Hankin Copper Showings (Mineral Occurrence #48), Gunnex Limited)
GSC MAP 49-1963; 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1990/04/17 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/04/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 494**

NATIONAL MINERAL INVENTORY:

NAME(S): **RANT POINT**, CYPRESS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 15 41 N
LONGITUDE: 125 50 08 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the southern shore of Rant Point, at the entrance to Bedwell Sound (Assessment Report 14003). Probably similar to the Bay Creek showing (092F 343), which occurs over 4.0 kilometres to the northwest.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5460383
EASTING: 293700

COMMODITIES: Silver Gold Lead

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Unspecified sulphides, but probably consisting mainly of pyrite.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Syngenetic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Tuff
Pelitic Sediment/Sedimentary
Schistose Felsic Meta Volcanic
Schistose Mafic Meta Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1985

COMMODITY	GRADE	
Silver	66.5100	Grams per tonne
Gold	0.6800	Grams per tonne
Lead	0.2000	Per cent

REFERENCE: Assessment Report 14003, Figure 3.

CAPSULE GEOLOGY

The Rant Point area is underlain by a thick succession of Paleozoic Sicker Group volcanics and sediments that have been intruded by numerous dykes, sills and plugs ranging from gabbro to granodiorite in composition.

The Sicker rocks comprise predominantly pyroclastic mafic to felsic volcanics with minor intercalations of chert, argillite and siltstone. The pyroclastics range from coarse lapilli (rarely breccia) tuffs to ash tuffs. Generally, the strata has an average strike of 150 degrees and dip of 50 degrees. Stocks of mafic intrusives belonging to the pre-Jurassic Westcoast Complex disrupt area strata.

Mineralization in the area occurs in three principal modes:
1) Disseminated sulphides, primarily pyrite with rare chalcopyrite.
2) Fine lamellae to bands of massive to submassive sulphides.
3) Disseminated magnetite and/or ilmenite.

A 4 metre wide exposure of massive sulphide is reported to occur in outcrop on the shoreline of Rant Point, near the entrance of Bedwell Sound. The showing consists of 20 to 50 per cent sulphides (unspecified) hosted by pelitic sediments or tuff and schistose felsic and mafic metavolcanics. The massive sulphides are apparently concordant with the schistosity of the host volcaniclastics.

CAPSULE GEOLOGY

A sample of this material assayed 66.51 grams per tonne silver, 0.68 grams per tonne gold, 0.20 per cent lead, 0.026 per cent zinc and 0.006 per cent copper (Assessment Report 14003, Figure 3).

BIBLIOGRAPHY

EMPR ASS RPT *14003, 15563, 16742, 17359
EMPR EXPL 1985-C150, 1987-C146, 1988-C86
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1969-217, 1972-267
EMPR OF 1999-2
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/01/04 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 495**

NATIONAL MINERAL INVENTORY:

NAME(S): **DECEMBER LIMESTONE**, WEST, CENTRAL, EAST

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 44 12 N
LONGITUDE: 124 32 47 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on West zone, 3.3 kilometres east of Raven Bay (Assessment Report 612).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510500
EASTING: 388573

COMMODITIES: Limestone

MINERALS

SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Various fossils

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: 648 x 288 x 50 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: West zone; bedding is nearly horizontal.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

DATING METHOD: Fossil
MATERIAL DATED: Various fossils

LITHOLOGY: Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: CENTRAL REPORT ON: Y

CATEGORY: Inferred YEAR: 1964
QUANTITY: 2270000 Tonnes

COMMODITY	GRADE	
Limestone	100.0000	Per cent

COMMENTS: Grade not determined.
REFERENCE: Assessment Report 612.

ORE ZONE: EAST REPORT ON: Y

CATEGORY: Inferred YEAR: 1964
QUANTITY: 2040000 Tonnes

COMMODITY	GRADE	
Limestone	98.6300	Per cent

COMMENTS: Grade given for CaCO3.
REFERENCE: Assessment Report 612.

ORE ZONE: WEST REPORT ON: Y

CATEGORY: Inferred YEAR: 1964
QUANTITY: 3180000 Tonnes

COMMODITY	GRADE	
Limestone	97.5500	Per cent

COMMENTS: Grade given for CaCO3.
REFERENCE: Assessment Report 612.

CAPSULE GEOLOGY

The December Limestone occurrence is located 2.5 kilometres south of Vananda, 1.5 to 3.5 kilometres due east of Raven Bay, on northern Texada Island.

This deposit lies near the eastern edge of a 13 kilometre long

CAPSULE GEOLOGY

belt of limestone of the Upper Triassic Quatsino Formation, up to 3 kilometres wide, that is preserved along the axis of a broad, northwesterly plunging syncline. In this vicinity, the strata are generally flat-lying. The deposit appears to be hosted in the middle magnesian to calcium limestone member of the Quatsino Formation.

The limestone is very fine grained, uniform, creamy white to grey to black in colour. Thin sections reveal the limestone is comprised mostly of a groundmass of calcite crystals less than 0.10 millimetres in diameter containing larger grains 0.32 to 0.65 millimetres in diameter, either scattered throughout the groundmass or confined to bands within the groundmass. The burnability of the limestone (degree to which the limestone is altered to lime on heating) was found to improve with smaller grain size.

Grab sampling revealed three zones of limestone containing less than 2.5 per cent MgO. Average grades (in per cent) and reserve estimates (in tonnes) for the three zones are presented as follows (Assessment Report 612, pp. 14, 15):

	CaCO3 (per cent)	MgO (per cent)	Reserves (tonnes)
West Zone	97.55	2.15	3,180,000
Central Zone	-	1.49	2,270,000
East Zone	98.63	1.02	2,040,000

Reserves for all three zones have been estimated to a depth of 15.2 metres.

The deposit was evaluated by Lafarge Cement in 1964 for limestone suitable for use in the manufacture of wood pulp utilizing the sulphate (kraft) process.

BIBLIOGRAPHY

EMPR ASS RPT *612
EMPR BULL 23, pp. 61-67; 40, pp. 52-60
EMPR OF 1990-3; 1992-18, p. 28
GSC MAP 17-1968; 1386A
GSC MEM 58
GSC OF 463
GSC P 68-50, pp. 14,15

DATE CODED: 1989/12/27 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1989/12/27 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **092F 496**

NATIONAL MINERAL INVENTORY:

NAME(S): **THUNDER**, GOOD FRIDAY, CATS EYE 5

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 17 04 N
LONGITUDE: 125 55 22 W
ELEVATION: 15 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the east side of Cypre River about 500 metres north of the river's mouth and on the west side of the river from 600 to 1100 metres north-northwest of the river's mouth. These showings were originally found on the Cats Eye 4 and 5 claims (Assessment Report 3443).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5463188
EASTING: 287454

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Shear
CLASSIFICATION: Hydrothermal Epigenetic
COMMENTS: Mineralization occurs in shear zone and/or in stringers and/or disseminations.

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	
Paleozoic-Mesozoic			Westcoast Complex

LITHOLOGY: Diabase
Andesite
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Thunder occurrence area is underlain predominantly by a northwest trending sequence of mafic volcanics and sediments of the Paleozoic Sicker Group. These rocks are intruded by Paleozoic or Triassic diabasic sills and feldspar porphyritic dykes of possible Tertiary age. In gradational contact are gneisses, hornfelsic basalts and amphibolites of the pre-Jurassic Westcoast Complex.

A grab sample taken on the east bank of the Cypre River from a 6 metre wide shear fracture zone, assayed 1.90 per cent copper, 3.43 grams per tonne silver and trace gold. Across the river to the west disseminated chalcopyrite is reported to occur in meta-andesite and gabbro. A sample of this material assayed 0.25 per cent copper over 4.6 metres (Assessment Report 3443).

Chalcopyrite is also reported to occur in stringers at this location. Rocks are described as diabase (Assessment Report 17098).

BIBLIOGRAPHY

EMPR ASS RPT 3106, *3443, 3444, 4177, 4688, *17098
EMPR EXPL 1986-C86
EMPR FIELDWORK 1988, pp. 61-74
EMPR GEM 1971-246, 1972-266
EMPR PF (*Prospectus, Thunder Valley Mines Ltd., Aug. 24, 1971; Prospectus, Suntac Minerals Corporation, July 11, 1988 (located in Cyprus file, 092F 299))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the

BIBLIOGRAPHY

Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1990/01/06 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/01/06 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 497**

NATIONAL MINERAL INVENTORY:

NAME(S): **COVE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 18 06 N
LONGITUDE: 125 57 17 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Coordinates for shoreline showing on southern shore of Whitepine Cove. Scattered copper mineralization occurs inland to the south and southwest for about 1.0 kilometre (Assessment Report 15470, Figure 2).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5465192
EASTING: 285207

COMMODITIES: Copper Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Sphalerite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Undefined Formation	
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Limestone
Chert
Argillite
Diabase

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1986

COMMODITY	GRADE	
Copper	0.5400	Per cent
Zinc	0.1900	Per cent

REFERENCE: Assessment Report 15470.

CAPSULE GEOLOGY

The Cove occurrence area is underlain by limestone correlative with the Upper Pennsylvanian to Lower Permian Azure Lake Formation of the Buttle Lake Group and argillite, siltstone, amphibolite and diabase of the Paleozoic Sicker Group. See H-W (092F 330) for a summary of recent revisions of Paleozoic strata in the Cowichan and Buttle Lake uplifts.

Scattered copper mineralization occurs on the south shore of Whitepine Cove and inland. Several outcrops consisting of limestone, chert, argillite, and diabase contain pyrite, chalcopyrite, and trace sphalerite. One sample assayed 0.54 per cent copper, 0.19 per cent zinc, 0.1 grams per tonne gold and 3.8 grams per tonne silver (Assessment Report 15470).

BIBLIOGRAPHY

EMPR ASS RPT *15470
EMPR EXPL 1987-C147
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
CJES Vol.24, No.10, 1987, pp. 2047-2064
PERS COMM Massey, N. (1990)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With

BIBLIOGRAPHY

Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

Isachsen, C. (1984): Geology, Geochemistry and Geochronology of the Westcoast Crystalline Complex and Related Rocks, Vancouver Island, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1990/01/08 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 498**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEDINGFIELD SOUTH**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 17 36 N
LONGITUDE: 125 53 35 W
ELEVATION: 480 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located from 0.75 to 1.5 kilometres north of Cypres Bay (Assessment Reports 14500, Plate 3 and 15152, Plate 3). Some of the showing area held was by Thunder Valley Mines, 1971 to 1972. See MINFILE occurrence 092F 344 (Hot). Later, the same ground was held by BHP-Utah Mines, 1985 to 1987. See MINFILE occurrence 092F 343 (Bay Creek).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5464092
EASTING: 289653

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Bedingfield South occurrence area is underlain primarily by metavolcanic and metasedimentary rocks of the Paleozoic Sicker Group. These are overlain by limestone which is correlative with the Upper Pennsylvanian to Lower Permian Azure Lake Formation (Buttle Lake Group) of the Buttle Lake uplift, which in turn are overlain by basalts of the Upper Triassic Karmutsen Formation, Vancouver Group. See Bedingfield 18 (092F 227), for a more comprehensive geologic description. Also see H-W (092F 330) for a summary of revisions with respect to Paleozoic strata within the Cowichan and Buttle Lake uplifts.

Chalcopyrite, pyrrhotite and pyrite are reported to occur in basalt (Karmutsen Formation?) at an elevation of 480 metres; chalcopyrite occurs 600 metres to the southwest at 280 metres elevation, also in basalt (Assessment Report 15152, Plate 3). A trace of chalcopyrite in basalt or gabbro occurs 400 metres further to the southwest at about 100 metres elevation (Assessment Report 14500, Plate 3).

BIBLIOGRAPHY

EMPR ASS RPT 3106,,3443, 3444, 14003, *14500, *15152, 15563, 16742
EMPR EXPL 1986-C171,C172; 1987-C146
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (see Bay Creek (092F 343), and Hot (092F 344))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
PERS COMM: Nick Massey
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/01/11
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 499**

NATIONAL MINERAL INVENTORY:

NAME(S): **CYPRE 1**, BEDINGFIELD

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 18 46 N
LONGITUDE: 125 52 00 W
ELEVATION: 740 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the summit of one of the peaks in the Bedingfield Range, about 3.5 kilometres west of Bedwell Sound (Assessment Report 15152).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5466180
EASTING: 291654

COMMODITIES: Zinc

MINERALS
SIGNIFICANT: Sphalerite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Dacite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Cypre 1 occurrence, area is underlain primarily by meta-volcanic and metasedimentary rocks of the Paleozoic Sicker Group. These are overlain by limestone of the Upper Pennsylvanian to Lower Permian Buttle Lake Group, which in turn are overlain by basalts of the Upper Triassic Karmutsen Formation, Vancouver Group. See Bedingfield 18 (092F 227), for a more comprehensive geologic description.

Sphalerite is reported to occur in dacitic rock near the summit of a Bedingfield Range mountain (Assessment Report 15152, Plate 3). No other details of the showing were recorded.

Two quartz stockwork showings were reported to occur on the southeastern flank of the Bedingfield Range containing polymetallic mineralization and pyrite (Assessment Report 14500, page 5).

BIBLIOGRAPHY

EMPR ASS RPT *14500, *15152, 16667
EMPR EXPL 1986-C171,C172; 1987-C146
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
PERS COMM Massey, N. (1990)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/01/10
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 500**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEDINGFIELD 10**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 22 24 N
LONGITUDE: 125 57 45 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Three hundred metres west of Herbert Inlet, 6.5 kilometres from the head of the inlet (Assessment Report 14500).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5473180
EASTING: 284954

COMMODITIES: Zinc Lead

MINERALS
SIGNIFICANT: Sphalerite Galena Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Sicker	Undefined Formation	

LITHOLOGY: Rhyolite Lapilli Tuff
Rhyolite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1987

COMMODITY	GRADE	
Lead	0.1600	Per cent
Zinc	2.0400	Per cent

REFERENCE: Assessment Report 17670.

CAPSULE GEOLOGY

The Bedingfield 10 occurrence area is underlain primarily by metavolcanic and metasedimentary rocks of the Paleozoic Sicker Group. In the area of interest these rocks are reported to consist of: a rhyolitic volcanic waterlain tuff and wacke sequence, frequently pyritic and graphitic and having a 135 degree strike with 65 degree west dip; a middle rhyolite pyroclastic sequence characterized by waterlain tuffs, lapilli ash flows, rhyolite flows, dykes and breccia; and an upper rhyolite lapilli breccia unit. These are overlain by limestone of the Upper Pennsylvanian to Lower Permian Buttle Lake Group, which in turn are overlain by basalts of the Upper Triassic Karmutsen Formation, Vancouver Group (Assessment Report 15152).

A mineralized outcrop occurs in the bed of a road that runs along the west side of Herbert Inlet. An early report describes the showing as a polymetallic occurrence associated with a quartz stockwork near the "Sediment-Sill Unit" (Assessment Report 14500, page 5). This unit consists of interbedded argillite and siltstone, interlayered with basic sills (Muller, Geological Survey of Canada Paper 79-30).

Later reports state that the mineralization comprises fracture-filling brown sphalerite, fine-grained galena and pyrite in silicified rhyolite lapilli tuff. One sample taken at this site assayed 2.04 per cent zinc, 0.16 per cent lead, 15.7 grams per tonne silver and 0.31 grams per tonne gold (Assessment Report 17670).

BIBLIOGRAPHY

EMPR ASS RPT *14500, 15152, *16297, *17670

BIBLIOGRAPHY

EMPR EXPL 1986-C171,C172; 1987-C146; 1988-C86
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 79-30
PERS COMM Massey, N. (1990)
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/01/12 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 501**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOYEHA 2 (L.1702)**, MOYEHA RICH LEAD

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 25 38 N
LONGITUDE: 125 55 16 W
ELEVATION: 125 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: From description this occurrence is apparently located on Crown Grant Lot 1702 (Moyeha 2) on the west side of Moyeha River near its mouth at the head of Herbert Inlet (Minister of Mines Annual Report 1935). The report states that the showing is immediately above the Moyeha River.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5479053
EASTING: 288190

COMMODITIES: Gold Silver Lead

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Galena Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 080/38S
TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1935
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	27.4300	Grams per tonne
Gold	29.4900	Grams per tonne

COMMENTS: A 7.6 centimetre chip sample across a vein.
REFERENCE: Minister of Mines Annual Report 1935, page F46.

CAPSULE GEOLOGY

The Moyeha 2 occurrence is located near the northwest corner of the head of Herbert Inlet. To the east of the occurrence the area is underlain by volcanics of the Upper Triassic Karmutsen Formation (Vancouver Group); to the west the volcanics are intruded by a stock of the Jurassic Island Intrusions. These plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite.

The country rock is a highly altered andesite that is described as massive, fine-grained and having amygdaloidal phases. Dykes of quartz porphyry have invaded the andesite to the southwest where both rock types are known to host deposits similar to this one. See Moyeha 1 (092F 179).

A quartz vein occurring in andesite strikes 080 degrees and dips 38 degrees south. It has been traced along its length for about 90 metres at an elevation of 125 metres. The width varies from 5 to 15 centimetres, averaging about 7.5 centimetres. The vein is typically drusy and contains small amounts of chalcopyrite, pyrite, galena and free gold. A 7.6 centimetre sample of typical quartz assayed 29.49 grams per tonne gold and 27.43 grams per tonne silver (Minister of Mines Annual Report 1935, page F46).

About 10 metres in elevation below the main vein a 5 centimetre

CAPSULE GEOLOGY

wide quartz vein was exposed in a trench over a length of 15 centimetres. The nature of this vein is similar to that of the above vein.

BIBLIOGRAPHY

EMPR AR 1933-252, *1935-F45
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC MEM *204, pp. 23,24
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/01/17 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 502**

NATIONAL MINERAL INVENTORY:

NAME(S): **BIG BOY NORTH**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F05W
BC MAP:
LATITUDE: 49 26 01 N
LONGITUDE: 125 54 16 W
ELEVATION: 80 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 45 metres in an eastward direction from the northwest corner post of the Big Boy 8 Crown Grant, Lot 1723 (Minister of Mines Annual Report 1935). This appears to be just outside the claim boundary.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5479716
EASTING: 289426

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Gold Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Big Boy North occurrence area is underlain by andesite of the Upper Triassic Karmutsen Formation, Vancouver Group. The area to the west of the volcanics is intruded by a stock of the Early to Middle Jurassic Island Intrusions. These plutonic rocks on Vancouver Island vary in composition from gabbro to quartz monzonite but are mainly granodiorite and quartz diorite. Dykes of quartz porphyry are also reported to cut the andesite.

A quartz vein, from 5 to 10 centimetres in width, occurs in a shear that is exposed on the face of a 7.6 metre high bluff. The vein carries a little chalcopyrite and free gold.

BIBLIOGRAPHY

EMPR AR 1933-251; *1935-F44; 1940-27; 1941-27
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (Sketch of Big Boy mine, surface workings and claims)
GSC MAP 17-1968; 1386A
GSC MEM 204, p.20
GSC OF 463
GSC P 68-50; 72-44; 79-30; 80-16

DATE CODED: 1990/01/18
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 503**

NATIONAL MINERAL INVENTORY:

NAME(S): **IRON HORSE (L.176)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 44 06 N
LONGITUDE: 124 36 10 W
ELEVATION: 292 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Decline shaft on Lot 176, on the northwestern slopes of Surprise Mountain, 4.2 kilometres west-southwest from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510400
EASTING: 384506

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Rusty weathered quartz vein.
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 175/65W
TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	17.0000	Grams per tonne
Copper	0.1500	Per cent

COMMENTS: Sample of quartz vein.
REFERENCE: Personal Communication (Webster, I. (1989)).

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Iron Horse occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation. A decline shaft is developed on a rusty weathering, 11 centimetre wide quartz vein striking 175 degrees and dipping 65 degrees west. A grab sample from the vein assayed 0.15 per cent copper and 17 grams per tonne silver (Personal Communication-EMPR, Webster, I. (1989).

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

BIBLIOGRAPHY

PERS COMM (EMPR, Webster, I. (1989))

DATE CODED: 1990/04/05 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 504**

NATIONAL MINERAL INVENTORY:

NAME(S): **LONG B**, LONG BEACH, UPPER CREEK, SOUTHEAST VEIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 36 59 N
LONGITUDE: 124 16 53 W
ELEVATION: 366 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches, 2 kilometres east from the summit of Mount Grant in the southern half of Texada Island, 1.5 kilometres north-northeast of Bobs Lake (Assessment Report 13747).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5496769
EASTING: 407439

COMMODITIES: Gold, Copper, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Bornite
ASSOCIATED: Quartz, Pyrite
ALTERATION: Chlorite, Epidote
ALTERATION TYPE: Silicific'n, Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION:
STRIKE/DIP: 022/66W
TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Quartz Diorite
Granodiorite
Basalt
Basalt Breccia
Porphyritic Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	8.1900	Grams per tonne

COMMENTS: Sample across 0.3 metre quartz vein.
REFERENCE: Assessment Report 18671.

CAPSULE GEOLOGY

Regionally the area is predominantly underlain by basaltic volcanic rocks of the Upper Triassic Karmutsen Formation (Vancouver Group). The basalts range from feldspar porphyritic to augite porphyritic with amygdaloidal and aphanitic varieties also present. Pillow basalt flows are common. Limestone occurs locally as narrow lenses with limited lateral extent.

The Long B occurrence is underlain by a composite granodiorite to quartz diorite stock in contact with altered Karmutsen Formation basalt, porphyritic basalt and basalt breccia. Chlorite and epidote alteration is common near intrusive contacts. Local areas of intense chlorite, kaolin and potassic alteration are common within the intrusion. Silicification is accompanied by abundant pyrite in lenses and heavy disseminations.

The volcanic/intrusive contact is well exposed at the Upper Creek showing where it strikes 343 degrees with steep west dips. A large quartz vein occurs adjacent to the contact and is hosted in

CAPSULE GEOLOGY

diorite. It strikes 022 degrees and dips 66 degrees northwest. The vein structure passes westward into volcanic rocks and becomes progressively less well-defined. The vein is mineralized with massive chalcopyrite, pyrite and bornite and is exposed intermittently over a strike length of 75 metres. Rock samples from the vein assayed up to 8.19 grams per tonne over 0.3 metres (Assessment Report 18671). A related quartz vein referred to as the Southeast vein is 450 metres further downslope and on strike with the Upper Creek showing. A rock sample in 1950 assayed 13.36 grams per tonne gold over a 20 centimetre width (Minister of Mines Annual Report 1950).

BIBLIOGRAPHY

EM EXPL 2000-25-32
EMPR AR *1950-A178-A180
EMPR ASS RPT 9264, *13747, *18671
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

DATE CODED: 1990/02/16 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 505**

NATIONAL MINERAL INVENTORY:

NAME(S): **DAVE'S**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 36 11 N
LONGITUDE: 124 16 37 W
ELEVATION: 628 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches, 2.5 kilometres south-southeast from the summit of Mount Grant and 1 kilometre east of Bobs Lake, in the southern half of Texada Island (Assessment Report 18671).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5495281
EASTING: 407735

COMMODITIES: Gold, Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Limonite, Silica, Hematite, Epidote
ALTERATION TYPE: Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork
CLASSIFICATION: Hydrothermal, Epigenetic
DIMENSION:
STRIKE/DIP: 072/
TREND/PLUNGE:
COMMENTS: Quartz vein dips steeply south.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Basalt
Altered Intermediate Dike
Diorite
Quartz Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	42.4000	Grams per tonne
Gold	17.4200	Grams per tonne

COMMENTS: Sample of a 0.3 metre wide pyritic quartz vein.
REFERENCE: Assessment Report 18671.

CAPSULE GEOLOGY

Regionally the area is predominantly underlain by basaltic volcanic rocks of the Upper Triassic Karmutsen Formation (Vancouver Group). The basalts range from feldspar porphyritic to augite porphyritic with amygdaloidal and aphanitic varieties also present. Pillow basalt flows are common. Limestone occurs locally as narrow lenses with limited lateral extent.

The Dave's occurrence area is underlain by basalt of the Karmutsen Formation in contact with a diorite intrusive. The contact area is silicified and contains pyrite as fracture-fillings and disseminations. Hematite and minor epidote are also evident.

A narrow pyritic quartz vein of limited extent striking 072 degrees and dipping steeply south, cuts an altered intermediate dyke which has been sheared in a direction parallel to the vein. The dyke in turn crosses the diorite intrusive. A rock sample from the quartz vein assayed 14.83 grams per tonne gold (Assessment Report 18671).

A weathered pyritic quartz porphyry dyke occurs 30 metres along strike from the vein and is cut by carbonate stringers and a 0.5 to 1 metre wide, strongly silicified and limonitic shear zone.

BIBLIOGRAPHY

EMPR ASS RPT *18671
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

DATE CODED: 1990/02/16 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 506**

NATIONAL MINERAL INVENTORY:

NAME(S): **FRISKY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W 092F09E
BC MAP:
LATITUDE: 49 35 45 N
LONGITUDE: 124 15 38 W
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pits, 2.5 kilometres south-southeast from Bobs Lake in the southern half of Texada Island (Assessment Report 17301).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5494458
EASTING: 408906

COMMODITIES: Copper Lead Zinc Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate Pyrite Pyrrhotite
COMMENTS: Iron carbonate.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Unknown	Vancouver	Karmutsen	Unnamed/Unknown Informal

LITHOLOGY: Basalt
Andesite
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: PITS

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1987

COMMODITY	GRADE	
Silver	26.0000	Grams per tonne
Gold	1.0900	Grams per tonne
Copper	0.1000	Per cent
Lead	1.0000	Per cent
Zinc	0.4300	Per cent

COMMENTS: Samples from pits.
REFERENCE: Assessment Report 17301.

CAPSULE GEOLOGY

Regionally the area is predominantly underlain by basaltic volcanic rocks of the Upper Triassic Karmutsen Formation (Vancouver Group). The basalts range from feldspar porphyritic to augite porphyritic with amygdaloidal and aphanitic varieties also present. Pillow basalt flows are common. Limestone occurs locally as narrow lenses with limited lateral extent.

The Frisky occurrence area is underlain by basalt and andesite of the Karmutsen Formation intruded by at least two diorite stocks. Major shearing and faulting is evident at and near the intrusive contacts. The shear zones commonly host quartz-carbonate (iron carbonate) veining. Quartz veins also occur within both the volcanic and intrusive rocks. Mineralization comprises small amounts of chalcopyrite, pyrite and pyrrhotite within the veins.

Grab samples from several pits assayed up to 0.1 per cent copper, greater than 1.0 per cent lead, 0.43 per cent zinc, 1.09 grams per tonne gold and 26.0 grams per tonne silver (Assessment Report 17301).

BIBLIOGRAPHY

EMPR ASS RPT *17301
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

DATE CODED: 1990/02/19 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 507**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOLT**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 41 42 N
LONGITUDE: 124 28 57 W
ELEVATION: 144 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches, 3.5 kilometres south from the summit of Comet Mountain and 2 kilometres north of the village of Gillies Bay, on Texada Island (Assessment Report 17692).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5505775
EASTING: 393085

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Magnetite Chalcopyrite Pyrite
ALTERATION: Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated
CLASSIFICATION: Skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Unknown	Vancouver	Karmutsen	Unnamed/Unknown Informal

LITHOLOGY: Basalt
Limestone
Diorite
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Georgia Depression
RELATIONSHIP:
GRADE:

CAPSULE GEOLOGY

The Bolt showing area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) basalt with local interbedded limestone intruded by diorite.

Skarn is developed at the contact of limestone with intrusive rock. The contact zone strikes northeast and contains massive magnetite with pyrite and chalcopyrite.

BIBLIOGRAPHY

EMPR ASS RPT 13912, *17692
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/02/22 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 508**

NATIONAL MINERAL INVENTORY:

NAME(S): **TEX AND ADA**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E 092F15E
BC MAP:
LATITUDE: 49 44 05 N
LONGITUDE: 124 36 52 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trench, 1.75 kilometres west of the west end of Kirk Lake, 2 kilometres north-northwest of Surprise Mountain on Texada Island (Assessment Report 12084).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510387
EASTING: 383665

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Hematite Epidote
COMMENTS: Manganese staining.
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Pillow Basalt
Pillow Breccia
Limestone
Feldspar Porphyritic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: CONTACT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.1500	Per cent

COMMENTS: Sample from brecciated contact of limestone and basalt.
REFERENCE: Assessment Report 12084.

CAPSULE GEOLOGY

The Tex and Ada occurrence area is underlain by the Upper Triassic Karmutsen Formation (Vancouver Group) consisting of chloritic pillow basalts with local zones of brecciation, pillow breccias and occasional limestone lenses. Feldspar porphyritic dykes or sills intrude the brecciated basalt locally. The basalts are usually strongly fractured with hematite and manganese stain and epidote along the fractures.

Numerous small, discontinuous drusy quartz lenses and veinlets occur in the basalt and are mineralized with pyrite and occasional chalcopyrite. Locally, pyrite and chalcopyrite also occur at a brecciated contact between basalt and limestone. A rock chip sample from this location assayed 0.15 per cent copper (Assessment Report 12084). Elsewhere on the property, chalcopyrite occurs in a silicified breccia cut by a feldspar porphyritic dyke. A rock sample taken from trench dump material assayed up to 21 grams per tonne silver (Assessment Report 14444).

BIBLIOGRAPHY

EMPR ASS RPT *12084, 12085, *14444
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28

BIBLIOGRAPHY

GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/02/22 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 509**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOON**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W
BC MAP:
LATITUDE: 49 49 24 N
LONGITUDE: 125 28 56 W
ELEVATION: 1158 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of breccia showing (Assessment Report 17981). Vein showing 600 metres to the southwest of Balsam Creek.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5521944
EASTING: 321465

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz Calcite
ALTERATION: Chlorite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic Syngenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	16.7000	Grams per tonne

REFERENCE: Assessment Report 17981.

CAPSULE GEOLOGY

The Moon occurrence area is underlain by Upper Triassic Vancouver Group, Karmutsen Formation volcanics. These are overlain to the east by Upper Cretaceous Nanaimo Group sediments.

One showing occurs in amygdaloidal basalt breccia with a chloritic matrix. This chloritic breccia contains patches of calcite, quartz and a greenish mineral, possibly prehnite. A composite grab sample taken over a 10 square metre area assayed 16.70 grams per tonne gold (Assessment Report 17981).

A second showing is located about 600 metres southwest of the first and consists of a lensy quartz vein from 1 centimetre to 1 metre in width, striking 040 degrees and dipping 65 to 80 degrees south. The vein cuts massive basalts and is composed of white quartz with fine-grained sheared basalt fragments and about 1 per cent rounded chalcopyrite/bornite grains. Assays of vein material range up to 1.20 grams per tonne gold and 6.05 per cent copper (Assessment Report 17981).

BIBLIOGRAPHY

EMPR ASS RPT 13935, 15424, 16686, *17981
EMPR EXPL 1985-C158; 1987-C157,C158
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 80-16

DATE CODED: 1990/03/02
DATE REVISED: 1990/03/02

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 510**

NATIONAL MINERAL INVENTORY:

NAME(S): **IDEAL 3**, MUREX CREEK, DOVE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14E
BC MAP:
LATITUDE: 49 47 20 N
LONGITUDE: 125 13 40 W
ELEVATION: 213 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 6.5 kilometres northwest of Mount Washington on Murex Creek.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5517540
EASTING: 339650

COMMODITIES: Gold, Silver, Zinc, Lead, Copper

MINERALS
SIGNIFICANT: Pyrite, Sphalerite, Galena, Chalcopyrite, Realgar
ASSOCIATED: Quartz, Calcite
ALTERATION: Carbonate
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Conglomerate

HOSTROCK COMMENTS: Shear zone in Benson Member of Comox Formation near contact with Karmutsen Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage, Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEINLETS
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1986

COMMODITY	GRADE	
Silver	24.6000	Grams per tonne
Gold	9.8700	Grams per tonne
Copper	0.0500	Per cent
Lead	0.8000	Per cent
Zinc	1.2000	Per cent

REFERENCE: Assessment Report 16412.

CAPSULE GEOLOGY

The Ideal 3 occurrence area is underlain primarily by basaltic lavas of the Upper Triassic Karmutsen Formation, Vancouver Group. These rocks are mostly massive flows and pillow lavas of partly amygdaloidal basalts, with minor tuffs, volcanic breccias and agglomerates. A major unconformity separates the Karmutsen Formation from the overlying Upper Cretaceous Nanaimo Group. The Nanaimo Group (Comox Formation) consists of fine to coarse-grained detrital sedimentary rocks. The Benson Member is a basaltic pebble-cobble-boulder conglomerate which marks the unconformity in some areas. Diorite and granodiorite of the Tertiary Mount Washington Intrusive Suite have intruded the above rocks, forming stocks, sills and dykes.

The main showing consists of a 1 to 8 centimetre wide, 230 degree striking shear zone, with 10 to 20 degree northwest dips. The zone is hosted within the Benson conglomerate, about 1 metre above the unconformity with the Karmutsen Formation. The shear zone contains quartz and calcite veinlets up to 1.5 centimetres in width and locally up to 4 centimetres in width. The veins and adjacent rocks contain pyrite, sphalerite, galena and chalcopyrite. The wallrock is moderately to strongly iron-carbonate altered.

A composite of grab samples of the veinlets (1 to 3 centimetres

CAPSULE GEOLOGY

wide) assayed 9.87 grams per tonne gold, 24.6 grams per tonne silver, 0.05 per cent copper, 0.8 per cent lead, 1.2 per cent zinc and 0.4 per cent arsenic (Assessment Report 16412).

A quartz-pyrrhotite-chalcopyrite veinlet occurs in a shear zone in basalt, on the east wall of Murex Creek about 1.5 kilometres upstream from the above occurrence. A sample (Sample 49A) assayed 0.42 per cent copper and 2.43 per cent zinc (Assessment Report 16412).

Realgar and arsenopyrite occur as disseminations and lenses in calcite veins. This showing is located about 2 kilometres to the northwest of the main showing on a southern branch of McKay Creek.

BIBLIOGRAPHY

EMPR ASS RPT *16412, 17500
EMPR EXPL 1987-C154, 1988-C91
EMPR PF (Prospectus: Visible Gold Inc., Dec. 3, 1987)
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 80-16
GCNL #186, 1988
NW PROSP Oct/Nov 1988
V STOCKWATCH Dec. 17, 1987

DATE CODED: 1990/03/12 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/03/12 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 511**

NATIONAL MINERAL INVENTORY:

NAME(S): **M-21**, TEXADA (L.132)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 45 24 N
LONGITUDE: 124 34 33 W
ELEVATION: 122 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drill hole collars in Lot 132, 1 kilometre west from the community of Vananda on Texada Island (Assessment Report 18672).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5512768
EASTING: 386498

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Magnetite Pyrrhotite Chalcopyrite
ASSOCIATED: Garnet Magnetite Quartz Pyrite
ALTERATION: Garnet Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Diorite
Altered Dike
Andesite Dike
Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Georgia Depression
GRADE:

INVENTORY

ORE ZONE: SKARN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	4.2600	Grams per tonne

COMMENTS: Sample from magnetite-pyrrhotite skarn across 0.7 metres.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The M-21 occurrence area is centred near a teardrop-shaped diorite plug which intrudes Upper Triassic Quatsino Formation (Vancouver Group) limestone.

The M-21 zone is identified by an area of white recrystallized limestone cut by numerous, variably altered dykes mineralized with pyrrhotite and pyrite. Weak skarn development is evident in limestone and is expressed as a garnet-magnetite-pyrrhotite zone. A rock sample from this zone assayed 4.26 grams per tonne gold over 0.7 metres (Assessment Report 18672). Shallow diamond drilling encountered an altered andesite dyke mineralized with pyrite and chalcopyrite which assayed 11.92 grams per tonne gold over 0.5 metres. Another drill hole intersected a zone of quartz veins cutting an altered andesite dyke mineralized with pyrite and pyrrhotite; a sample from here assayed 7.19 grams per tonne gold over 0.5 metres (Assessment Report 18672).

BIBLIOGRAPHY

EMPR ASS RPT 7414, *14827, *18672
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28

BIBLIOGRAPHY

GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/13 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 512**

NATIONAL MINERAL INVENTORY:

NAME(S): **IDEAL 4**, DOVE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14E
BC MAP:
LATITUDE: 49 45 25 N
LONGITUDE: 125 12 42 W
ELEVATION: 550 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 6 kilometres east of Mount Washington. Samples 101 and 103 on Figure 17B (Assessment Report 16412).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5513955
EASTING: 340705

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
ALTERATION: Sericite
ALTERATION TYPE: Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Nanaimo	Comox	

LITHOLOGY: Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1986

COMMODITY	GRADE	
Copper	0.1500	Per cent

REFERENCE: Assessment Report 16412.

CAPSULE GEOLOGY

Pyrite, pyrrhotite and chalcopyrite are disseminated in sandstone of the Upper Cretaceous Nanaimo Group, Comox Formation. At the Ideal 4 occurrence, two showings occur in zones of sericitized sandstone; one showing over a 2 metre interval. The other showing contains 20 to 30 per cent quartz. A grab sample assayed 0.15 per cent copper and 0.034 grams per tonne gold (Assessment Report 16412).

BIBLIOGRAPHY

EMPR ASS RPT *16412, 17500
EMPR EXPL 1987-C154, 1988-C91
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44; 80-16

DATE CODED: 1990/03/13
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 513**

NATIONAL MINERAL INVENTORY:

NAME(S): **IDEAL 4 WEST**, DOVE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F11E 092F14E
BC MAP:
LATITUDE: 49 44 59 N
LONGITUDE: 125 14 11 W
ELEVATION: 760 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Samples 168, 169 and 129 (Assessment Report 16412).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5513204
EASTING: 338901

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrrhotite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Tertiary			Mount Washington Intrus. Suite

ISOTOPIC AGE: 35 +/- 6 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Basalt
Quartz Diorite

HOSTROCK COMMENTS: Copper mineralization occurs in both units. Age date from Geological Survey of Canada Paper 72-44, page 15.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1986

COMMODITY	GRADE	
Copper	0.8500	Per cent

REFERENCE: Assessment Report 16412.

CAPSULE GEOLOGY

At the Ideal 4 West occurrence, two copper bearing quartz veins occur in basalt of the Upper Triassic Karmutsen Formation, Vancouver Group. One vein is 4 to 6 centimetres wide and contains 10 to 15 per cent pyrrhotite and up to 2 per cent chalcopyrite. The vein strikes 235 degrees and dips 80 degrees northwest. The second vein, with similar mineralogy, has only a few per cent pyrrhotite and is found a few hundred metres to the northwest of the first. The vein strikes 245 degrees and dips 50 degrees northwest. An assay of this vein material revealed a content of 0.85 per cent copper and 4.5 grams per tonne silver (Assessment Report 16412).

Twenty-nine metres north of the northerly vein is an exposure of quartz diorite of the Late Eocene to Early Oligocene Mount Washington Intrusive Suite (formerly Catface Intrusions). Pyrrhotite and chalcopyrite occur in patches on the numerous fractures and joints of the intrusive.

BIBLIOGRAPHY

EMPR ASS RPT *16412, 17500
EMPR EXPL 1987-C154, 1988-C91
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

BIBLIOGRAPHY

PERS COMM Massey, N. (May 1990) (with respect to renaming of Tertiary intrusions)

DATE CODED: 1990/03/13 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/03/13 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 514**

NATIONAL MINERAL INVENTORY:

NAME(S): **MILKIDEAL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W
BC MAP:
LATITUDE: 49 47 38 N
LONGITUDE: 125 16 13 W
ELEVATION: 564 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located from assay samples and Figure 3 (Assessment Report 16406).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5518188
EASTING: 336608

COMMODITIES: Gold Silver Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

HOSTROCK COMMENTS: Rock type not described; assumed to be Karmutsen basalt.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1986

COMMODITY	GRADE	
Silver	46.9700	Grams per tonne
Gold	2.9100	Grams per tonne
Zinc	0.5500	Per cent

COMMENTS: Sample H #6, Number 87 on Figure 3.
REFERENCE: Assessment Report 16406.

CAPSULE GEOLOGY

The area of the Milkideal occurrence has been mapped as Karmutsen Formation of the Upper Triassic Vancouver Group. These rocks consist of amygdaloidal basalts, pillow basalts, pillow breccia, minor tuff and volcanic breccia.

Although reports do not describe the characteristics of the occurrence, several samples taken at the site assayed high in gold. The best assay revealed a sample content of 2.91 grams per tonne gold, 46.97 grams per tonne silver and 0.55 per cent zinc (Assessment Report 16406).

BIBLIOGRAPHY

EMPR ASS RPT *16406, 17500
EMPR EXPL 1987-C155, 1988-C91
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1990/03/13
DATE REVISED: 1990/03/13

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 515**

NATIONAL MINERAL INVENTORY:

NAME(S): **HARMONY 7**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F14W
BC MAP:
LATITUDE: 49 48 40 N
LONGITUDE: 125 18 26 W
ELEVATION: 625 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located from assay samples and Figure 3 (Assessment Report 16406) Sample F1, Number 60.

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5520183
EASTING: 334009

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

HOSTROCK COMMENTS: Rock type not reported; assumed to be Karmutsen basalt.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1986

COMMODITY	GRADE	
Gold	1.6500	Grams per tonne

COMMENTS: Sample F1, number 60 on Figure 3.
REFERENCE: Assessment Report 16406.

CAPSULE GEOLOGY

The area of the Harmony 7 occurrence has been mapped as Karmutsen Formation of the Upper Triassic Vancouver Group. These rocks consist of amygdaloidal basalts, pillow basalts, pillow breccia, minor tuff and volcanic breccia.

An in-situ sample assayed 1.65 grams per tonne gold (Assessment Report 16406). The sample and occurrence were not described.

BIBLIOGRAPHY

EMPR ASS RPT *16406, 17500
EMPR EXPL 1987-C155, 1988-C91
GSC MAP 2-1965; 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1990/03/13
DATE REVISED: 1990/03/13

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 516**

NATIONAL MINERAL INVENTORY:

NAME(S): **YEW**, TEXADA ISLAND

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 44 44 N
LONGITUDE: 124 33 26 W
ELEVATION: 87 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches between Priest and Emily lakes, 1.25 kilometres south from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5511505
EASTING: 387813

COMMODITIES: Gold Copper Silver

MINERALS

SIGNIFICANT: Pyrite Magnetite Pyrrhotite Chalcopyrite Bornite Gold
ALTERATION: Garnet Epidote
COMMENTS: Skarn zone beneath sulphide replacement zone.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Massive
CLASSIFICATION: Replacement Skarn
TYPE: K01 Cu skarn
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Basalt
Basalt Breccia
Skarn
Amygdaloidal Basalt
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: YEW

REPORT ON: Y

CATEGORY: Combined
YEAR: 1989
QUANTITY: 102329 Tonnes

COMMODITY	GRADE	
Gold	13.6600	Grams per tonne
Copper	1.4500	Per cent

COMMENTS: Indicated and inferred ore assuming an average true thickness of 0.5 metre.
REFERENCE: George Cross News Letter No.146, 1989.

CAPSULE GEOLOGY

The area is dominated by Upper Triassic Karmutsen Formation (Vancouver Group) volcanic rocks consisting of typically fine-grained and/or feldspar phyric basalts and amygdaloidal basalts with minor intercalated limestone beds.

At the Yew occurrence, stratigraphy is comprised of three rock units of the Karmutsen Formation. A lower, thick series of green-grey basalt flows that texturally change from amygdaloidal and non-amygdaloidal sequences, is overlain by a thin, white-grey fine-grained limestone that rapidly thins and thickens over short distances. Overlying the limestone is an amygdaloidal basalt breccia with fragments of amygdaloidal basalt up to 15 centimetres. White zeolites, epidote, pyrite, quartz and chlorite comprise vesicle fillings within the basalts. Two hundred metres north of the occurrence, two small diorite plugs intrude the basalts.

Massive pyrite, magnetite, pyrrhotite, minor chalcopyrite and

CAPSULE GEOLOGY

trace bornite replaces limestone at the lower contact of the limestone bed. The mineralized zone is flat-lying, close to surface, thin and tabular, and ranges in thickness from 0.4 to 1.8 metres. Representative samples of the sulphide layer from a pit assayed up to 61.29 grams per tonne gold and up to 56.90 grams per tonne silver (Vancouver Stockwatch, January 19, 1988). A second zone comprising garnet-epidote skarn within basalt occurs below the massive mineralization and contains visible native gold. A drill hole intersection over 30 centimetres assayed 128.92 grams per tonne gold (Assessment Report 14861).

Combined (indicated and inferred) reserves are 102,329 tonnes grading 13.66 grams per tonne gold and 1.45 per cent copper (George Cross News Letter No.146, 1989). These reserves assume an average true thickness of 0.5 metre.

BIBLIOGRAPHY

EM EXPL 1999-25-32; 2000-25-32
EMPR ASS RPT 5386, *14861, *18672
EMPR FIELDWORK 1989, pp. 257-265
EMPR MAP 65 (1989)
EMPR OF 1990-3; 1988-28; 1992-1
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
GCNL #251(Dec.31), 1990; #146, 1989; #11, 1988; #244, 1987
V STOCKWATCH Dec.21, 1987; Jan.19, 1988; July 27, 1989
Placer Dome File

DATE CODED: 1990/03/14 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1994/12/07 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **092F 517**

NATIONAL MINERAL INVENTORY:

NAME(S): **LUCKY LEAD**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 43 59 N
LONGITUDE: 124 27 37 W
ELEVATION: 12 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit along the east coast of Texada Island, 2.75 kilometres from Raven Bay (Assessment Report 17947).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509975
EASTING: 394770

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Shear
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION:
STRIKE/DIP: 090/90
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Amygdaloidal Basalt
Mafic Dike
Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SHEARS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	10.1000	Grams per tonne
Gold	5.0300	Grams per tonne
Copper	0.4000	Per cent

COMMENTS: Composite sample from two distinct shears.
REFERENCE: Assessment Report 17947.

CAPSULE GEOLOGY

The Lucky Lead occurrence is underlain by amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) near a narrow, elongate diorite intrusive which outcrops along the coast.

A short adit is developed in basalt along a sulphide-bearing shear zone which also cuts a narrow mafic dyke. The shear zone is subvertical and strikes 090 to 100 degrees. Several thin shears, up to 5 centimetres wide and containing abundant pyrite and chalcopyrite, form the 2 metre wide shear at the adit portal. A composite rock sample of two distinct shears, each approximately 20 centimetres wide, which are exposed along the roof of the adit, assayed 0.4 per cent copper, 5.03 grams per tonne gold and 10.1 grams per tonne silver (Assessment Report 17947).

BIBLIOGRAPHY

EMPR ASS RPT *17947, 18087
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

BIBLIOGRAPHY

GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/15 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 518**

NATIONAL MINERAL INVENTORY:

NAME(S): **BASELINE**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 43 40 N
LONGITUDE: 124 27 30 W
ELEVATION: 140 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pyritic outcrop on the north facing slope of Comet Mountain between Raven and Pocahontas bays, 7.5 kilometres south-southeast from the community of Vananda on Texada Island (Assessment Report 17947).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509385
EASTING: 394898

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: OUTCROP

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
YEAR: 1988

COMMODITY	GRADE	
Gold	0.8600	Grams per tonne

COMMENTS: Sample from strongly fractured, pyritic basalt.
REFERENCE: Assessment Report 17947.

CAPSULE GEOLOGY

The Baseline occurrence is underlain by amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group).

Abundant, substantially weathered veinlet and disseminated pyrite occurs in moderately to strongly fractured basalt. A rock channel sample collected over 1.8 metres of exposed outcrop assayed 0.86 grams per tonne gold (Assessment Report 17947).

BIBLIOGRAPHY

EMPR ASS RPT *17947, 18087
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/15 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 519**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROAD SHOW**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 43 26 N
LONGITUDE: 124 28 49 W
ELEVATION: 223 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Outcrop in road bed near the summit of Comet Mountain, 6.6 kilometres south-southeast from the community of Vananda on Texada Island (Assessment Report 17947).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508984
EASTING: 393308

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Magnetite Chalcopyrite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1988

COMMODITY	GRADE	
Copper	0.4400	Per cent

REFERENCE: Assessment Report 17947.

CAPSULE GEOLOGY

The Road Show occurrence is underlain by basalt of the Upper Triassic Karmutsen Formation (Vancouver Group).

Abundant magnetite with minor pyrrhotite and chalcopyrite occurs in foliated and locally banded basalt. A rock sample assayed 0.44 per cent copper (Assessment Report 17947).

BIBLIOGRAPHY

EMPR ASS RPT *17947, 18087
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/15
DATE REVISED: 1998/05/12

CODED BY: GO
REVISED BY: LDJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 520**

NATIONAL MINERAL INVENTORY:

NAME(S): **LOCALITY 6**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 42 43 N
LONGITUDE: 124 28 45 W
ELEVATION: 196 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Small shafts, south of the road along Comet Mountain and Mount Pocahontas, 4 kilometres north of the village of Gillies Bay on Texada Island (Assessment Report 17947).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5507654
EASTING: 393362

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Magnetite Pyrrhotite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.3500	Per cent

COMMENTS: Composite grab sample from shaft dump material.
REFERENCE: Assessment Report 17947.

CAPSULE GEOLOGY

The Locality 6 occurrence is underlain by basalt of the Upper Triassic Karmutsen Formation (Vancouver Group). The Marble Bay fault occurs just to the north.

Several small, old shafts are developed in basalt. Numerous pieces of massive magnetite-pyrrhotite rock with variable minor chalcopyrite occurs in the dump material. A composite grab sample from here assayed 0.35 per cent copper (Assessment Report 17947).

BIBLIOGRAPHY

EMPR ASS RPT *17947, 18087
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/15 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 521**

NATIONAL MINERAL INVENTORY:

NAME(S): **LOCALITY 7**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F09W
BC MAP:
LATITUDE: 49 43 24 N
LONGITUDE: 124 29 56 W
ELEVATION: 114 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pit and trench near the northern boundary of Lot 151 (Copper Cave), 1.25 kilometres west from the summit of Comet Mountain, 5 kilometres north from the village of Gillies Bay on Texada Island (Assessment Report 17947).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508949
EASTING: 391966

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.6700	Grams per tonne

COMMENTS: Sample of pyritic basalt from dump material.
REFERENCE: Assessment Report 17947.

CAPSULE GEOLOGY

The Locality 7 occurrence is underlain by basalt of the Upper Triassic Karmutsen Formation (Vancouver Group). A splay from the Marble Bay fault cuts through the area.

A shallow trench exposes basalt containing variable, locally abundant pyrite. A composite grab sample of pyrite-rich basalt assayed 89 parts per billion gold. A grab sample of pyritic basalt from a dump of a nearby pit, assayed 0.675 grams per tonne gold (Assessment Report 17947).

BIBLIOGRAPHY

EMPR ASS RPT *17947, 18087
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/15 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 522**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOLLY SKARN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 44 31 N
LONGITUDE: 124 31 26 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft, just northeast of the Imperial Limestone quarry (092F 394) 750 metres west of Spratt Bay, 2.8 kilometres south-southeast from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5511054
EASTING: 390206

COMMODITIES: Copper, Cobalt, Silver

MINERALS

SIGNIFICANT: Magnetite, Chalcopyrite, Erythrite
ALTERATION: Magnetite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Basalt
Limestone
Skarn

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SHAFT

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1979

COMMODITY	GRADE	
Silver	13.0000	Grams per tonne
Cobalt	0.1600	Per cent
Copper	2.0000	Per cent

REFERENCE: Assessment Report 7843.

CAPSULE GEOLOGY

The Molly occurrence lies close to the contact between Quatsino Formation limestone and Karmutsen Formation basalt, both of the Upper Triassic Vancouver Group.

Minor iron skarn occurs and is comprised of magnetite and chalcopyrite with high cobalt values. A Ministry of Mines sample from a shaft at the showing identified erythrite and assayed 2 per cent copper, 0.16 per cent cobalt and 13 grams per tonne silver (Assessment Report 7843).

BIBLIOGRAPHY

EMPR ASS RPT 7219, *7843, 14474
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/16
DATE REVISED: 1990/03/16

CODED BY: GO
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 523**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAUDE ADAMS (L.57)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 58 N
LONGITUDE: 124 33 59 W
ELEVATION: 96 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pit on Lot 57, 1 kilometre south of Priest Lake, 2.8 kilometres south-southwest from the community of Vananda on Texada Island (Assessment Report 14827).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5510098
EASTING: 387123

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Massive
CLASSIFICATION: Hydrothermal Epigenetic Replacement

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1985

COMMODITY	GRADE	
Gold	0.6800	Grams per tonne

COMMENTS: Sample of quartz vein.
REFERENCE: Assessment Report 14827.

CAPSULE GEOLOGY

The Maude Adams occurrence is underlain by Upper Triassic Quatsino Formation limestone close to the fault contact (Holly fault) with Upper Triassic Karmutsen Formation amygdaloidal basalt, both of the Vancouver Group.

A pit exposes a gossanous, small quartz vein close to a limestone outcrop. A rock sample assayed up to 0.68 grams per tonne gold (Assessment Report 14827).

Past development included a shaft which was sunk in limestone where a pocket of chalcopyrite and pyrite ore was encountered hosted in a siliceous limestone gangue.

BIBLIOGRAPHY

EMPR AR *1914-K381
EMPR ASS RPT *14827
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/19 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 524**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLDEN ROD**, HAROLD D (L.443)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 48 N
LONGITUDE: 124 34 26 W
ELEVATION: 153 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit on Lot 443, 1.25 kilometres south-southeast of Kirk Lake, 3.4 kilometres south-southwest from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509800
EASTING: 386576

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Pyrite Gold Chalcopyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Chlorite Carbonate
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Pillow Basalt Breccia
Basalt
Microdiorite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SHEAR

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Gold	6.2800	Grams per tonne

COMMENTS: Sample from shear zone.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Golden Rod occurrence area is underlain by pillow basalt breccias of the Upper Triassic Karmutsen Formation (Vancouver Group) cut by a number of pyritic fault zones. Small microdiorite dykes are emplaced along these zones.

Mineralization at the Golden Rod showing comprises a 0.1 to 0.4 metre wide massive pyrite zone along the contacts of a microdiorite dyke that is up to 3 metres wide. Minor and variable pyrite is also present within the dyke. Isolated specks of native gold occur on the walls of the fault zone which is commonly pervasively chlorite-carbonate altered. A quartz-calcite stringer zone was also observed within the basalt breccia hosted in a shear zone.

Diamond drilling has revealed that the microdiorite dyke does not always occur on the footwall of the fault zone and that the massive pyrite zone becomes disseminated at depth. A narrow limestone bed was also intersected with minor garnet skarn developed along the contacts with the dyke. Quartz-calcite veinlets were found to carry local chalcopyrite at depth.

A sample of a strongly sheared, pyritic quartz-calcite vein assayed 6.28 grams per tonne gold (Assessment Report 18672).

BIBLIOGRAPHY

EMPR ASS RPT 9511, 11626, *12701, 18672

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/20 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 525**

NATIONAL MINERAL INVENTORY:

NAME(S): **LINDSAY FR. (L.50)**, TEXADA (L.48)

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 44 31 N
LONGITUDE: 124 35 11 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pits on a small knoll on Lot 50, 250 metres north of Kirk Lake, 2.8 kilometres west-southwest from the community of Vananda on Texada Island (Minister of Mines Annual Report 1897, page 563).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5511147
EASTING: 385703

COMMODITIES: Gold Copper Lead

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Gold Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 240/
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Pillow Basalt Breccia
Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Lindsay Fr. occurrence area is underlain by pillow basalt breccias and amygdaloidal basalt of the Upper Triassic Karmutsen Formation (Vancouver Group) close to the northern extension of the Holly fault.

A small quartz vein 10 to 25 centimetres wide, occurs in a brecciated shear zone striking 240 degrees. Mineralization consists of pyrite, chalcopyrite and trace galena. Another similar shear zone in pillow basalt breccias hosts another small, pyritic quartz vein with rare native gold.

BIBLIOGRAPHY

EMPR AR *1897-563
EMPR OF 1990-3; 1988-28
EMPR FIELDWORK 1989, pp. 257-265
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/20
DATE REVISED: 1998/05/12
CODED BY: GO
REVISED BY: LDJ
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 526**

NATIONAL MINERAL INVENTORY:

NAME(S): **LION (L.174)**, LION'S TRENCH

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 47 N
LONGITUDE: 124 36 18 W
ELEVATION: 155 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shallow shaft just south of Lot 174, on the northwest end of Surprise Mountain, 4.6 kilometres west-southwest from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509817
EASTING: 384333

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Gold	3.1600	Grams per tonne
Copper	0.4500	Per cent

COMMENTS: Sample of pyritic quartz vein.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Lion occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation cut by a shear structure. The shear zone hosts a pyritic, drusy quartz vein mineralized with minor chalcopyrite. The vein locally contains angular wallrock fragments. A grab sample from the vein assayed 3.16 grams per tonne gold and 0.45 per cent copper (Assessment Report 18672).

BIBLIOGRAPHY

EMPR AR 1897-564
EMPR ASS RPT *18672
EMPR OF 1990-3; 1988-28
EMPR FIELDWORK 1989, pp. 257-265
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

BIBLIOGRAPHY

GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/21 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 527**

NATIONAL MINERAL INVENTORY:

NAME(S): **TYHEE (L.105)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 44 N
LONGITUDE: 124 36 06 W
ELEVATION: 192 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit on Lot 105, on the northwest end of Surprise Mountain, 4.6 kilometres west-southwest from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509719
EASTING: 384571

COMMODITIES: Gold Copper Silver Lead Zinc

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 090/65S
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1988

COMMODITY	GRADE	
Silver	8.1000	Grams per tonne
Gold	9.1900	Grams per tonne
Copper	0.3900	Per cent

COMMENTS: Sample from shear zone in adit.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Tyhee occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation cut by a shear structure striking 090 degrees and dipping 65 degrees south. Trenches and an adit explore the shear which is mineralized with massive pyrite and chalcopyrite with some malachite staining. The shear zone hosts brecciated, multiple phases of drusy quartz veining. Chip sampling of the shear within the adit assayed 9.19 grams per tonne gold, 0.39 per cent copper and 8.1 grams per tonne silver over 0.35 metres (Assessment Report 18672). A grab sample north of the adit assayed 1.03 per cent zinc and 0.28 per cent lead.

The dominant fault direction is northwest but mineralization is developed along conjugate shear zones.

BIBLIOGRAPHY

EMPR AR 1897-565; 1928-C384
EMPR ASS RPT *18672
EMPR FIELDWORK 1989, pp. 257-265

BIBLIOGRAPHY

EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
GCNL #48, 1986

DATE CODED: 1990/03/21 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 528**

NATIONAL MINERAL INVENTORY:

NAME(S): **FRANCIS (L.122)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 42 43 N
LONGITUDE: 124 35 22 W
ELEVATION: 10 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adits at sea level on Lot 122 on the southern slopes of Surprise Mountain, 500 metres north along the coast from Welcome Bay, 5.6 kilometres south-southwest from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5507817
EASTING: 385412

COMMODITIES: Gold Silver Copper Zinc

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Silver	97.6000	Grams per tonne
Gold	18.1000	Grams per tonne
Copper	0.3400	Per cent
Zinc	0.2200	Per cent

REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Francis occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation cut by a shear structure. The shear zone hosts pyritic quartz veining ranging in width from 5 to 60 centimetres. Three veins are exposed at sea level of which two were tunnelled on. One of the veins strikes 080 degrees with vertical dips. Mineralization consists of minor chalcopyrite and rarely native gold.

A recent grab sample assayed 18.1 grams per tonne gold, 97.6 grams per tonne silver, 0.34 per cent copper and 0.22 per cent zinc (Assessment Report 18672).

BIBLIOGRAPHY

EMPR AR *1897-565
EMPR ASS RPT *18672
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968

BIBLIOGRAPHY

GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/22 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 529**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER KING (L.181)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 42 55 N
LONGITUDE: 124 35 35 W
ELEVATION: 100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit on Lot 181, on the southern slopes of Surprise Mountain between Davis and Welcome bays, 5.4 kilometres south-southwest from the community of Vananda on Texada Island (Assessment Report 18672).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508193
EASTING: 385160

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: ADIT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	1.1900	Grams per tonne

COMMENTS: Sample from adit.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Silver King occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation. A sample from an adit assayed 1.19 grams per tonne gold (Assessment Report 18672). The showing is inferred to be a shear-hosted, pyritic quartz vein due to the proximity of numerous similar occurrences in the same geologic setting (Frances - 092F 528, Thyhee - 092F 527).

BIBLIOGRAPHY

EMPR ASS RPT *18672
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/22 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 530**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAM (L.147)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 42 43 N
LONGITUDE: 124 34 42 W
ELEVATION: 52 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft and trenches on Lot 147, on the southern slopes of Surprise Mountain, just north of Welcome Bay, 5.2 kilometres south-southwest from the community of Vananda on Texada Island (Assessment Report 18672).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5507800
EASTING: 386213

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Copper	0.3500	Per cent

COMMENTS: Sample from trench.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Ram occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation cut by a shear structure. The shear zone hosts pyritic quartz veins mineralized with minor amounts of chalcopyrite. A grab sample from a trench assayed 0.35 per cent copper (Assessment Report 18672).

BIBLIOGRAPHY

EMPR AR *1916-K358
EMPR ASS RPT *18672
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/22 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 531**

NATIONAL MINERAL INVENTORY:

NAME(S): **TIP TOP**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 42 58 N
LONGITUDE: 124 35 17 W
ELEVATION: 210 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pits, on the southern slopes of Surprise Mountain, 5.2 kilometres south-southwest from the community of Vananda on Texada Island (Assessment Report 18672).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508278
EASTING: 385522

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: PIT

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

COMMODITY	GRADE	
Silver	19.9000	Grams per tonne
Copper	1.4000	Per cent

COMMENTS: Sample from pit.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Tip Top occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation containing a lens of limestone. A grab sample from a pit in the basalt near the limestone lens assayed 1.4 per cent copper and 19.9 grams per tonne silver (Assessment Report 18672). The showing is inferred to be pyritic quartz veins mineralized with chalcopyrite, hosted in a shear structure similar to numerous occurrences nearby in the same geologic setting (Ram - 092F 530, Silver King - 092F 529).

BIBLIOGRAPHY

EMPR ASS RPT *18672
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50

BIBLIOGRAPHY

GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/22 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 532**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNTAIN CHIEF (L.55)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 37 N
LONGITUDE: 124 35 45 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pits on Lot 55 near the boundary with Lot 104 (Golden Era), on the northern slopes of Surprise Mountain, 4.6 kilometres south-southwest from the community of Vananda on Texada Island (Assessment Report 18672).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509494
EASTING: 384987

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Pyrite Sphalerite Galena Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: PIT

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Silver	27.2000	Grams per tonne
Gold	3.3300	Grams per tonne
Copper	0.0700	Per cent
Lead	2.3700	Per cent
Zinc	2.8400	Per cent

COMMENTS: Sample from pit.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Mountain Chief occurrence is underlain by amygdaloidal basalt of the Karmutsen Formation cut by an north-northwest trending shear structure that is subparallel to, or the same as the structure which hosts the Silver Tip occurrence (092F 261) 250 metres to the south.

The shear zone hosts quartz veins mineralized with pyrite, sphalerite, galena and chalcopyrite. A grab sample from a pit assayed 3.33 grams per tonne gold, 27.2 grams per tonne silver, 2.37 per cent lead, 2.84 per cent zinc and 0.07 per cent copper (Assessment Report 18672).

BIBLIOGRAPHY

EMPR AR 1897-565; 1928-C384
EMPR ASS RPT *18672
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28

BIBLIOGRAPHY

GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/23 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 533**

NATIONAL MINERAL INVENTORY:

NAME(S): **NANCY BELL (L.46)**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 27 N
LONGITUDE: 124 35 24 W
ELEVATION: 320 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft on Lot 46 near the summit of Surprise Mountain, 4.6 kilometres south-southwest from the community of Vananda on Texada Island (Assessment Reprot 18672).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5509176
EASTING: 385401

COMMODITIES: Gold, Silver, Copper, Zinc, Lead

MINERALS

SIGNIFICANT: Pyrite, Sphalerite, Chalcopyrite, Galena
ASSOCIATED: Quartz, Calcite
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION:
STRIKE/DIP: 145/65W
TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Amygdaloidal Basalt
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Silver	197.8000	Grams per tonne
Gold	16.4800	Grams per tonne
Copper	9.6200	Per cent
Lead	0.0900	Per cent
Zinc	2.9000	Per cent

COMMENTS: Composite sample of sulphide-rich material.
REFERENCE: Assessment Report 18672.

CAPSULE GEOLOGY

The Surprise Mountain area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). Mineralized quartz and quartz-carbonate veins with variable sulphide content are associated with narrow, steeply dipping shear zones.

The Nancy Bell occurrence is underlain by Karmutsen Formation amygdaloidal basalt and a thin interbed of limestone. The rocks are cut by a shear structure striking 145 degrees and dipping 65 degrees southwest. The shear zone is locally silicified, strongly chloritic and 2 to 3 metres wide in places. The zone hosts quartz and quartz-calcite veining. En echelon bodies of silicified and mineralized volcanics indicate a component of right lateral shearing.

Mineralization consisting of pyrite, sphalerite, chalcopyrite and galena occurs on the footwall side of the veins. A composite grab sample of sulphide-rich material assayed 16.48 grams per tonne gold, 197.8 grams per tonne silver, 9.62 per cent copper, 2.9 per cent zinc and 0.09 per cent lead (Assessment Report 18672).

CAPSULE GEOLOGY

Past work includes a shaft developed on the shear zone, 240 metres northeast of the Silver Tip workings (092F 261).

BIBLIOGRAPHY

EMPR AR 1921-G215,G223,G224; 1922-N237; 1923-A257; *1927-C359; 1928-C384; 1929-C393,C394; *1934-F11
EMPR ASS RPT *18672
EMPR FIELDWORK 1989, pp. 257-265
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
GCNL #197,#48,#103, 1986
N MINER Nov.3, 1986

DATE CODED: 1990/03/23 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 534**

NATIONAL MINERAL INVENTORY:

NAME(S): **MANTO**, QUARRY MANTO-IDEAL CEMENT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 43 11 N
LONGITUDE: 124 34 03 W
ELEVATION: 160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quarry bench within the open pit of the Ideal Cement deposit (092F 395) on Lot 25, 1.75 kilometres southeast of Surprise Mountain, 4.2 kilometres south of the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508648
EASTING: 387012

COMMODITIES: Gold Silver Zinc Copper

MINERALS
SIGNIFICANT: Pyrite Sphalerite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: J01 Polymetallic manto Ag-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Limestone
Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
YEAR: 1988

COMMODITY	GRADE	
Silver	21.5900	Grams per tonne
Gold	9.5900	Grams per tonne
Copper	0.2900	Per cent
Zinc	8.4700	Per cent

COMMENTS: Sample across 79 centimetres.
REFERENCE: George Cross News Letter #13, 1988.

CAPSULE GEOLOGY

The area is underlain by rhythmically layered amygdaloidal, feldspar porphyritic and spherulitic basalt flows of the Karmutsen Formation conformably overlain by limestone of the Quatsino Formation, both of the Upper Triassic Vancouver Group. The limestone is in fault contact (Ideal fault) with the basalts near the Manto occurrence.

The Manto occurrence was discovered during quarrying of limestone at the Ideal Cement deposit (see 092F 395). A sulphide mineralized area is exposed for 54 metres on an east trending limestone bench in the quarry. The mineralized zone is bounded on the west by a narrow northwest trending vertical dyke. Most of the mineralization is within an apparent fault zone approximately 30 metres wide. Predominant pyrite, sphalerite and minor chalcopyrite occurs as fracture-fillings. In places the host limestone is brecciated with fragments surrounded by sulphides.

Recent channel sampling assayed up to 9.59 grams per tonne gold, 21.59 grams per tonne silver, 8.47 per cent zinc and 0.29 per cent copper across 79 centimetres (George Cross Newsletter #13, 1988).

BIBLIOGRAPHY

EMPR ASS RPT 5655, *5912
EMPR FIELDWORK 1989, pp. 257-265

BIBLIOGRAPHY

EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144
GCNL #13, 1988
PR REL Vananda Gold Ltd. January 19, 1988

DATE CODED: 1990/03/26 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1999/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 535**

NATIONAL MINERAL INVENTORY:

NAME(S): **KM**, TRIPLE CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 03 51 N
LONGITUDE: 125 14 15 W
ELEVATION: 265 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Numerous small showings (Assessment Report 15685, Figure 4).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5437000
EASTING: 336560

COMMODITIES: Zinc Copper

MINERALS
SIGNIFICANT: Sphalerite Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Unknown
COMMENTS: Reported to be a fault/skarn related occurrence but Ministry staff insist it is not skarn related.

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Upper Triassic	Vancouver	Quatsino	

LITHOLOGY: Basalt
Limestone

HOSTROCK COMMENTS: Skarn occurrence in Karmutsen mafic volcanics in an area where Quatsino limestone occurs.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The KM occurrence area is primarily underlain by metavolcanic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group. Overlying the Karmutsen rock is the Upper Triassic Quatsino Formation, also of the Vancouver Group, consisting of massive limestone.

Pyrite, chalcopyrite and sphalerite showings are reported to be common in the area of interest, particularly skarn-type, but of little significance. A sphalerite occurrence is the only noteworthy showing in the area and is reported to be a fault/skarn related deposit hosted by fine-grained mafic volcanics. Ministry staff have determined that it is not skarn-related (I. Webster and G. Ray, personal communication, 1991).

BIBLIOGRAPHY

EMPR ASS RPT 12466, 14188, *15685, 16782
EMPR EXPL 1984-156, 1985-C144, 1987-C142
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/03/27 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/03/27 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 536**

NATIONAL MINERAL INVENTORY:

NAME(S): **TURRET**, SUICIDE CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03E
BC MAP:
LATITUDE: 49 04 40 N
LONGITUDE: 125 13 26 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located just over 2 kilometres to the southwest of the head of Effingham Inlet on "Suicide Creek" (Assessment Report 15685, Figure 4).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5438484
EASTING: 337598

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Not reported.
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: FLOAT
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1985

COMMODITY	GRADE	
Gold	0.8200	Grams per tonne
Copper	0.5500	Per cent

REFERENCE: Assessment Report 15685.

CAPSULE GEOLOGY

At the Turret occurrence, a gold-bearing quartz vein is reported to occur in massive fine-grained volcanic flow rock of the Upper Triassic Karmutsen Formation, Vancouver Group. The vein is a west trending structure which outcrops in cliff faces and appears to have a maximum width of one third of a metre. A sample of the vein assayed 0.82 grams per tonne gold and 0.55 per cent copper (Assessment Report 15685). Three different float samples, apparently from this vein, assayed as high as 1.23 per cent copper, 1.99 per cent zinc and 2.06 grams per tonne gold.

BIBLIOGRAPHY

EMPR ASS RPT 12466, *15685, 18491, 18567
EMPR EXPL 1984-156, 1987-C142
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

DATE CODED: 1990/03/27 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/03/27 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 537**

NATIONAL MINERAL INVENTORY:

NAME(S): **ALLADIN (L.189)**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island, Texada Island
NTS MAP: 092F10E
BC MAP:
LATITUDE: 49 42 58 N
LONGITUDE: 124 31 28 W
ELEVATION: 130 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized zone on Lot 189 on the north tip of Paxton Lake, 5 kilometres south from the community of Vananda on Texada Island (Open File 1990-3).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5508183
EASTING: 390108

COMMODITIES: Lead

MINERALS
SIGNIFICANT: Galena Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: J01 Polymetallic manto Ag-Pb-Zn I06 Cu±Ag quartz veins
DIMENSION: 0400 x 0200 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Breccia zone.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Limestone
Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Alladin occurrence is underlain by massive recrystallized limestone of the Quatsino Formation close to the contact with underlying amygdaloidal basalt of the Karmutsen Formation, both of the Upper Triassic Vancouver Group.

Galena and pyrite occur as veinlets and disseminations in a 400 by 200 metre zone of hydrothermal breccia in limestone.

BIBLIOGRAPHY

EMPR FIELDWORK *1989, pp. 257-270
EMPR OF 1990-3; 1988-28
GSC EC GEOL 3, pp. 86-102
GSC MAP 1386A; 17-1968
GSC MEM 58
GSC OF 463
GSC P 68-50
GSC SUM RPT 1924 Part A, pp. 106-144

DATE CODED: 1990/03/27 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1998/05/12 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **092F 538**

NATIONAL MINERAL INVENTORY:

NAME(S): **HILLIER ISLAND**, KS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 01 47 N
LONGITUDE: 125 19 18 W
ELEVATION: 5 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the southwest shore of Hillier Island in Toquart Bay (Assessment Report 12545).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5433357
EASTING: 330295

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

HOSTROCK COMMENTS: Assumed to be Karmutsen basalt as the host rock was not reported.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1983

COMMODITY	GRADE	
Gold	1.3800	Grams per tonne

COMMENTS: Sample 81
REFERENCE: Assessment Report 12545.

CAPSULE GEOLOGY

A rock sample taken along the southwestern shore of Hillier Island in Toquart Bay assayed 1.38 grams per tonne gold (Assessment Report 12545). The island is underlain by mafic volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. Intrusive dykes were observed on the island. Details of the occurrence were not reported.

BIBLIOGRAPHY

EMPR ASS RPT *12545
EMPR EXPL 1983-199
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1990/03/27
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 539**

NATIONAL MINERAL INVENTORY:

NAME(S): **KR**, KO

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 05 19 N
LONGITUDE: 125 16 08 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location 28-30 (Assessment Report 12813, sample location map).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5439786
EASTING: 334348

COMMODITIES: Zinc Copper

MINERALS
SIGNIFICANT: Sphalerite Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt
Andesite

HOSTROCK COMMENTS: Area mapped as mafic volcanics of Karmutsen Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1984

COMMODITY	GRADE	
Copper	0.0500	Per cent
Zinc	3.3400	Per cent

COMMENTS: Sample 28.
REFERENCE: Assessment Report 12813.

CAPSULE GEOLOGY

The area of the KR occurrence is underlain by Upper Triassic mafic volcanics of the Karmutsen Formation, Vancouver Group. Sphalerite and chalcopyrite occur in a quartz "blowout" in volcanic cliffs. One sample assayed 3.34 per cent zinc and 0.05 per cent copper. Pyrite and chalcopyrite are also commonly found in area volcanics.

BIBLIOGRAPHY

EMPR ASS RPT *12813, 17530
EMPR EXPL 1984-158
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1990/03/28
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 540**

NATIONAL MINERAL INVENTORY:

NAME(S): **KW**, RIDGE ZONE

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 03 02 N
LONGITUDE: 125 20 05 W
ELEVATION: 260 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: About 1.5 kilometres north of Toquort Bay (Assessment Report 18567, Figure 5).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5435702
EASTING: 329412

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Chalcopyrite	Pyrite	Pyrrhotite
ASSOCIATED:	Quartz	Epidote	Jasper
ALTERATION:	Silica	Epidote	
ALTERATION TYPE:	Silicific'n	Epidote	
MINERALIZATION AGE:	Unknown		

DEPOSIT

CHARACTER:	Stockwork	Vein
CLASSIFICATION:	Hydrothermal	Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Quartz Feldspar Porphyry
Diorite
Gabbro

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The KW occurrence area is underlain by Karmutsen Formation basalts and andesites and by overlying Quatsino Formation limestone, both of the Upper Triassic Vancouver Group. Stocks of quartz diorite and granodiorite of the Jurassic Island Plutonic Suite intrude the strata.

The Ridge zone consists of a west-northwest trending lineament, up to 250 metres wide, of locally sheared and brecciated Karmutsen volcanics with a number of quartz feldspar porphyry, diorite and minor gabbroic dykes and/or sills. The zone is locally bleached and brecciated and well exposed for several hundred metres of strike length.

The volcanics often contain intense quartz and epidote veinlets and patches of silicification and epidotization. Minor pyrite and lesser chalcopyrite occurs in the veinlets and up to 20 per cent disseminated pyrite is occasionally present in the volcanic rocks. Similar amounts of pyrrhotite are much less common. Diamond-drill hole R89-26 intersected a silicified zone containing up to 20 per cent pyrite and a few sections carrying chalcopyrite as veinlets or disseminations. Jasper may be present in quartz veins where rocks are brecciated and bleached.

BIBLIOGRAPHY

EMPR ASS RPT 15685, *18567
EMPR EXPL 1987-C142
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1990/03/28 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/05/28 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 541**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHAMROCK (OPHIR)**, OPHIR, VANBERT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F15E
BC MAP:
LATITUDE: 49 56 14 N
LONGITUDE: 124 32 53 W
ELEVATION: 60 Metres
LOCATION ACCURACY: Within 5 KM

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5532800
EASTING: 388913

COMMENTS: Reported to be on Copper Creek which flows east into the 'north' side of Powell Lake, about 5 to 8 kilometres from the lakes outlet (Minister of Mines Annual Reports 1917 and 1927). The Shamrock claim was originally known as the Vanbert claim. The Shamrock claim is on the north side of Copper Creek, the Ophir claim on the south, a short distance from the mouth of the creek.

COMMODITIES: Gold, Silver, Lead, Zinc, Copper

MINERALS

SIGNIFICANT: Pyrite, Galena, Sphalerite, Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic-Cenozoic			Coast Plutonic Complex

LITHOLOGY: Diorite
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Fiord Ranges (Southern)

INVENTORY

ORE ZONE: LENS

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1924

COMMODITY	GRADE	
Silver	51.4300	Grams per tonne
Gold	2.7400	Grams per tonne

REFERENCE: Minister of Mines Annual Report 1924, page 248.

CAPSULE GEOLOGY

The Shamrock (Ophir) showing is apparently located on Copper Creek near the "north" shore of Powell Lake about 5 to 8 kilometres from the lakes outlet. The area is underlain primarily by quartz diorite of the Jurassic to Tertiary Coast Plutonic Complex (Geological Survey of Canada Map 1386A).

The showings consist of a series of quartz veins hosting pyrite and lesser amounts of galena, sphalerite, and chalcopyrite. The veins strike in a northeast direction and dip very flatly to the southwest within sheared and fissured diorite.

Reports of vein widths vary. One prominent fissure reportedly shows a maximum width of about six metres, filled with mineralized quartz and breccia. Other reports indicate a maximum vein width of one metre.

Some development work was done on these showings during the early part of the century. At least one tunnel measuring eight metres in length was driven on a one metre quartz vein.

One open-cut exposed lenses of solid ore several centimetres wide in quartz gangue. A sample of this assayed 2.74 grams per tonne gold and 51.43 grams per tonne silver (Minister of Mines Annual Report 1924).

BIBLIOGRAPHY

EMPR AR 1901-1232A; 1903-256; *1917-257; 1921-221; *1924-248; 1925-

BIBLIOGRAPHY

292; 1927-357
EMPR PF (Bryant, C.M. (1929): Reports on Shamrock claim, 1 page, Oct. 3, 1929)
GSC MAP 17-1968
GSC OF 611
GSC P 66-1

DATE CODED: 1989/04/17 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 542**

NATIONAL MINERAL INVENTORY:

NAME(S): **TOQ 3**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F03W
BC MAP:
LATITUDE: 49 06 43 N
LONGITUDE: 125 20 40 W
ELEVATION: 200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located north of Toquart Lake (Assessment Report 18567, Figure 4).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5442547
EASTING: 328913

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena
ASSOCIATED: Quartz Epidote Calcite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Intermediate Volcanic
Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEINS

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1989

COMMODITY	GRADE	
Copper	0.4800	Per cent

REFERENCE: Assessment Report 18567.

CAPSULE GEOLOGY

At the Toq 3 occurrence, veins of quartz, epidote and calcite, up to 30 centimetres wide, occur in intermediate volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. These veins carry blebs of chalcopyrite and traces of malachite and galena. One sample assayed 0.48 per cent copper (Assessment Report 18567).

BIBLIOGRAPHY

EMPR ASS RPT 15685, *18567
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44

DATE CODED: 1990/03/28
DATE REVISED: 1990/03/28

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 543**

NATIONAL MINERAL INVENTORY:

NAME(S): **SNAPPER**, SNAPPER 1-2, BLACK, MATT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 06 28 N
LONGITUDE: 124 32 37 W
ELEVATION: 480 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample 63 from Snapper 2 claim (Assessment Report 17058).

MINING DIVISION: Victoria
Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5440584
EASTING: 387342

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Sphalerite Galena
ASSOCIATED: Quartz Carbonate
ALTERATION: Carbonate
ALTERATION TYPE: Carbonate Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Faulted Sheared
DIMENSION: 0600 x 0010 Metres STRIKE/DIP: 170/90N TREND/PLUNGE:
COMMENTS: Shear zone; attitude of vein.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Upper Devonian	Sicker	McLaughlin Ridge	
Triassic			Unnamed/Unknown Informal

LITHOLOGY: Basalt
Andesite
Flow Breccia
Volcaniclastic Sediment/Sedimentary
Greywacke
Siltstone
Argillite
Black Chert
Diabase Dike
Gabbroic Dike

HOSTROCK COMMENTS: Diabase and gabbro dykes and sills are considered to be coeval with Triassic Karmutsen Formation volcanics.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	119.9800	Grams per tonne
Gold	3.1540	Grams per tonne

COMMENTS: Sample #226263 across 10 centimetre quartz vein, containing 7 per cent sulphides.
REFERENCE: Assessment Report 17058.

CAPSULE GEOLOGY

The Snapper showing is located 22 kilometres southeast of Port Alberni, slightly east of the Tan (092F 398) showing.

The area, located in the Cowichan uplift, is underlain by volcanics and minor sediments of the Upper Devonian McLaughlin Ridge Formation (formerly the Myra Formation) and the Devonian Nitinat

CAPSULE GEOLOGY

Formation, Sicker Group. Diabase and gabbro dykes and sills, considered to be coeval with the Triassic Karmutsen Formation, outcrop to the south.

The showing occurs in volcanic and sedimentary rocks of the Nitinat Formation. These comprise basalt, andesite, flow breccia, volcaniclastic sediments, greywacke, siltstone, argillite and black chert.

Quartz-carbonate veins hosted in shear zones are mineralized with pyrite, chalcopyrite, sphalerite and galena. Disseminated sulphides also occur in carbonatized volcanics. Shear zones extend 600 metres along strike and are up to 10 metres wide.

A grab sample across 10 centimetres of a quartz vein striking 170 degrees with vertical dips and containing 7 per cent sulphides assayed 3.154 grams per tonne gold and 119.98 grams per tonne silver (Assessment Report 17058).

BIBLIOGRAPHY

EMPR ASS RPT 14338, *17058
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Saga Resources Ltd. Prospectus Oct. 1987)
GSC MAP 17-1968; 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1990/04/06 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/04/10 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 544**

NATIONAL MINERAL INVENTORY:

NAME(S): **MONKEY**, CAMERON

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 08 32 N
LONGITUDE: 124 33 03 W
ELEVATION: 920 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of sample #64282 on the Monkey claim (Assessment Report 12564).

MINING DIVISION: Nanaimo
Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5444424
EASTING: 386893

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Sphalerite Chalcopyrite Galena
COMMENTS: Up to 50 per cent pyrite and up to 10 per cent sphalerite.
ASSOCIATED: Quartz
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Concordant Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Faulted Folded
DIMENSION: 0120 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The main vein has been traced for 120 metres and is up to 7.5 centimetres wide with a 7.5 centimetre silcified zone in the wallrock.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Devonian	Sicker	Nitinat	
Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Argillite
Feldspar Porphyry Andesite
Tuff
Dacite Tuff
Flow
Andesitic Flow
Andesite
Basalt
Chert
Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	10.8000	Grams per tonne
Gold	1.0400	Grams per tonne
Copper	0.1300	Per cent
Lead	0.0700	Per cent
Zinc	1.0800	Per cent

COMMENTS: Sample (#64282) of quartz vein 12 centimetres wide.
REFERENCE: Assessment Report 12564.

CAPSULE GEOLOGY

The Monkey showing is located 27 kilometres east of Port Alberni. Two old short adits, driven on a gold-bearing quartz vein, were found on this claim.

CAPSULE GEOLOGY

The area is underlain by rocks of the Paleozoic Sicker Group comprising the Upper Devonian McLaughlin Ridge Formation and the Devonian Nitinat Formation. These rocks consist primarily of andesitic, basaltic and dacitic tuffs and flows, lesser argillite and chert and minor conglomerate or breccia.

A conformable quartz vein occurs within a thick band of argillite. The vein is heavily mineralized with pyrite (up to 50 per cent) and sphalerite (up to 10 per cent), and minor chalcopyrite and galena. The vein is up to 7.5 centimetres wide with a 7.5 centimetre zone of silicified wallrock containing many quartz stringers, and has been traced for 120 metres. Two other small quartz veins, one possibly an offshoot of the main vein and the other similar in appearance but thinner, occur in the area. A fault is parallel to the main vein 2 to 3 metres to the north and separates argillite from Tertiary(?) feldspar porphyritic andesite, believed to be intrusive.

A 1984 grab sample from a quartz vein assayed 1.04 grams per tonne gold, 10.8 grams per tonne silver, 0.13 per cent copper, 0.07 per cent lead and 1.08 per cent zinc (Assessment Report 12564).

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT *12564
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1990/04/09 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/04/09 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 545**

NATIONAL MINERAL INVENTORY:

NAME(S): **HEY-BERT**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 11 20 N
LONGITUDE: 124 27 35 W
ELEVATION: 920 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of sampled shear zone, 1.75 kilometres south of Englishman River and 1.5 kilometres west of Moriarty Creek, 31 kilometres west from the village of Wellington (Assessment Report 11356).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5449480
EASTING: 393638

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
COMMENTS: Trace chalcopyrite.
ALTERATION: K-Feldspar Quartz Chlorite Epidote Carbonate
ALTERATION TYPE: Potassic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Granodiorite
Quartz Monzonite
Feldspar Porphyry Basalt
Basalt
Basalt Tuff
Basalt Flow Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock

YEAR: 1983

COMMODITY	GRADE	
Copper	0.0700	Per cent

COMMENTS: Sample from sheared granodiorite.
REFERENCE: Assessment Report 11356.

CAPSULE GEOLOGY

The area is underlain by Upper Triassic Karmutsen Formation (Vancouver Group) volcanic and volcaniclastic rocks intruded by Jurassic Island Plutonic Suite granodiorite to quartz monzonite. Unconformably overlying these rocks are Cretaceous Nanaimo Group bedded conglomerates, greywackes and sandstones.

The Hey-Bert occurrence comprises Karmutsen Formation massive basalt, feldspar porphyry basalt, basalt flow breccia and basalt tuffs intruded by granodiorite and quartz monzonite of the Island Plutonic Suite. The quartz monzonite rocks contain sporadic zones of intense shearing and/or fracturing with associated potassic (potassium feldspar) or carbonate alteration. An alteration assemblage of quartz, epidote and chlorite occurs primarily in the Karmutsen rocks as fracture-fillings, veinlets or veins. Mineralization consisting of pyrite with trace chalcopyrite are associated with shear/fracture zones and alteration zones in granodiorite and quartz monzonite, with strong linear shears in feldspar porphyry basalt and as pervasive disseminations in altered basalt. A rock sample from sheared granodiorite assayed 0.07 per cent

CAPSULE GEOLOGY

copper (Assessment Report 11356).

BIBLIOGRAPHY

EMPR ASS RPT *11356
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1990/04/10 CODED BY: GO FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 546**

NATIONAL MINERAL INVENTORY:

NAME(S): **STARBOARD**, STAR, MARY, FITZWATER, NICKI CREEK, M6

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 03 15 N
LONGITUDE: 124 37 24 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Nicki Creek zone, approximate centre of sampled area in the northeast corner of the Starboard claim.

MINING DIVISION: Victoria
Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5434747
EASTING: 381396

COMMODITIES: Gold, Silver, Zinc, Copper, Lead

MINERALS

SIGNIFICANT: Pyrite, Arsenopyrite, Chalcopyrite, Pyrrhotite, Sphalerite, Galena
ASSOCIATED: Quartz, Carbonate
ALTERATION: Malachite, Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear, Disseminated
CLASSIFICATION: Hydrothermal, Porphyry, Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Faulted, Sheared
DIMENSION: 1600 x 0250 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Quartz veins or stringers, up to 30 centimetres wide occur in an area 1600 metres long by 100 to 400 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Devonian	Sicker	Nitinat	
Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Siltstone
Clastic Siltstone
Calcareous Siltstone
Tuff
Fossiliferous Limestone
Andesite
Feldspar Porphyry Dike

HOSTROCK COMMENTS: Porphyry dykes are possibly Jurassic in age.

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Silver	21.3000	Grams per tonne
Gold	12.8000	Grams per tonne
Zinc	7.8800	Per cent

COMMENTS: Sample #20140 from quartz vein.
REFERENCE: Assessment Report 16731.

CAPSULE GEOLOGY

The Starboard showing is located approximately 20 kilometres southeast of Port Alberni, just east of the Cup (Mary) showings (092F 207).

The area is underlain by sedimentary rocks of the Upper Pennsylvannian to Lower Permian Mount Mark Formation, Buttle Lake Group and by volcanic rocks of the Devonian Nitinat Formation, Sicker

CAPSULE GEOLOGY

Group. These comprise siltstone, bioclastic and calcareous siltstone, fossiliferous limestone, tuffs, andesite and Jurassic(?) feldspar porphyry dykes of unknown affinity.

Mineralization consisting of pyrite, arsenopyrite, chalcopyrite, pyrrhotite, sphalerite, galena, malachite and hematite occurs in narrow quartz veins hosted by Mount Mark Formation siltstone. The veins or stringers, perpendicular to bedding, are up to 30 centimetres wide. The veins occur over an area 1600 metres long by 100 to 400 metres wide as outlined by geophysical and geochemical surveys. Several interesting zones have been delineated and tested by chip sampling (Nicki Creek, M6). A typical assay, from the Nicki Creek zone (sample #20140), assayed 12.80 grams per tonne gold, 21.3 grams per tonne silver and 7.88 per cent zinc (Assessment Report 16731).

BIBLIOGRAPHY

EMPR ASS RPT 13672, 14470, 15694, *16731
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Crew Minerals Prospectus, May 1987)
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1990/04/18 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/04/18 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 547**

NATIONAL MINERAL INVENTORY:

NAME(S): **WATER**, LAT, FITZWATER,
NORTH RIFT CREEK

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 04 40 N
LONGITUDE: 124 37 24 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: North Rift Creek zone at the northeast corner of the Water claim (Assessment Report 16731).

MINING DIVISION: Victoria
Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5437371
EASTING: 381453

COMMODITIES: Gold, Silver, Copper

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Galena
ASSOCIATED: Quartz, Carbonate, Jasper
ALTERATION: Sericite, Ankerite
ALTERATION TYPE: Sericitic, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Faulted, Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Pennsylvan.-Permian	Buttle Lake	Mount Mark	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Pillow Basalt
Basaltic Breccia
Tuff
Limestone
Siltstone
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located in the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: NORTH RIFT CREEK
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	0.4000	Grams per tonne
Gold	1.9600	Grams per tonne

COMMENTS: Sample (#20112) containing massive pyrite and minor copper.
REFERENCE: Assessment Report 16731.

CAPSULE GEOLOGY

The Water showing is located 3.5 kilometres south of the Thistle mine (092F 083), approximately 20 kilometres southeast of Port Alberni.

The area is underlain by volcanic rocks of the Devonian Duck Lake Formation, Sicker Group and by sediments of the Late Pennsylvannian to Early Permian Mount Mark Formation, Buttle Lake Group. These comprise massive and pillowed basaltic flows, breccia, andesite, agglomerate lapilli and cherty tuffs, limestone, siltstone, jasper and Late Triassic(?) feldspar porphyry dykes. The Rift Creek thrust fault occurs slightly east of the showing.

Mineralization consists of pyrite, chalcopyrite and galena in quartz veins with associated quartz-carbonate and sericite alteration. The veins are hosted in sheared pillow basalt and

CAPSULE GEOLOGY

breccia of the Duck Lake Formation. The associated alteration occurs over a width of more than 100 metres. On the Lat claim, just to the east, finely laminated black argillite with 10 to 20 per cent disseminated pyrite occurs between sequences of basaltic and cherty tuff.

A typical assay (sample #20112) from the North Rift Creek zone assayed 1.96 grams per tonne gold and 0.4 grams per tonne silver (Assessment Report 16731).

BIBLIOGRAPHY

EMPR ASS RPT 13668, 14928, *16731
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Crew Minerals Prospectus (May 1987), see 092F 547)
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1990/04/12 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/04/18 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 548**

NATIONAL MINERAL INVENTORY:

NAME(S): **NMP**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 11 07 N
LONGITUDE: 124 46 52 W
ELEVATION: 360 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the eastern slopes of Mount Hankin, at the headwaters of a tributary of China Creek.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5449580
EASTING: 370212

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Igneous-contact

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Volcanic
Diorite

HOSTROCK COMMENTS: Along volcanic-diorite contact.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell Plutonic Rocks

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

At the NMP occurrence, minor chalcopyrite occurs along the diorite-volcanic contact on the east flank of Mount Hankin. To the west of the contact the area consists of Upper Triassic Karmutsen Formation (Vancouver Group) volcanics, to the east, diorite of the Lower Jurassic Island Plutonic Suite.

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Laanela, H. (1965): Mount Hankin Copper Showings (Mineral Occurrence #48), Gunnex Limited; Laanela, H. (1965): Airborne Magnetic Anomaly #54, Gunnex Limited reports)
GSC MAP 49-1963; 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1990/04/17 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/04/17 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 549**

NATIONAL MINERAL INVENTORY:

NAME(S): **STAMP 3**, SOUTHEAST

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 12 13 N
LONGITUDE: 124 49 38 W
ELEVATION: 30 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On the Stamp 3 claim, southeast showing (Assessment Report 18771). West side of Alberni Inlet.

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5451698
EASTING: 366901

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION:
STRIKE/DIP: 145/90
TREND/PLUNGE:
COMMENTS: Shear.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	1.6500	Grams per tonne
Copper	0.8500	Per cent

REFERENCE: Assessment Report 18771, page 14.

CAPSULE GEOLOGY

The Stamp 3 showing occurs in andesitic volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. A 25 centimetre wide silicified shear zone, striking 145 degrees with vertical dip, contains 5 per cent pyrite and minor chalcopyrite. One sample assayed 1.65 grams per tonne gold and 0.85 per cent copper, while another sample assayed 1.97 per cent copper (Assessment Report 18771).

BIBLIOGRAPHY

EMPR ASS RPT 447, 11357, 15038, 17557, *18771
EMPR EXPL 1983-197; 1986-C168; 1988-C83; 2002-29-40
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 49-1963; 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1990/04/18
DATE REVISED: / /
CODED BY: GJP
REVISED BY:
FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 550**

NATIONAL MINERAL INVENTORY:

NAME(S): **ARROWSMITH 3**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 11 33 N
LONGITUDE: 124 36 20 W
ELEVATION: 820 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sampled outcrop near several small lakes between Cop and Kamaat creeks south of Cameron River, 15 kilometres east-southeast from the town of Port Alberni (Assessment Report 16020).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5450096
EASTING: 383021

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Volcanogenic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Upper Cretaceous	Nanaimo	Comox	

LITHOLOGY: Jasperoid
Tuff
Agglomerate
Conglomerate
Volcanic Siltstone
Pyroxene Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Georgia Depression

CAPSULE GEOLOGY

The Arrowsmith 3 occurrence is underlain by an assemblage of Devonian Sicker Group rocks (Nitinat Formation) consisting of tuff, volcanic siltstone, pyroxene porphyry and agglomerate unconformably overlain by conglomerate of the Upper Cretaceous Nanaimo Group (Comox Formation). The stratigraphy strikes north-northwest and dips to the east. Malachite staining is associated with jasperoid lenses and silicification apparently localized along stratigraphic contacts in the volcanic sequence.

BIBLIOGRAPHY

EMPR ASS RPT *16020, 17408
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463
GSC P 68-50
Prospectus, Sunport Metals Corporation-August 31, 1989 (Rpt. by T.G. Hawkins (1989))

DATE CODED: 1990/04/19
DATE REVISED: / /

CODED BY: GO
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 551**

NATIONAL MINERAL INVENTORY:

NAME(S): **DEVIL'S DEN**, STAMP 1

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 14 32 N
LONGITUDE: 124 51 42 W
ELEVATION: 180 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: South of Devil's Den Lake, west of the head of Port Alberni (Assessment Report 17557, Figure 4).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5456051
EASTING: 364498

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	4.1500	Grams per tonne
Copper	0.2600	Per cent

REFERENCE: Assessment Report 17557, page 11.

CAPSULE GEOLOGY

The Devil's Den occurrence area is underlain by volcanics of the Upper Triassic Karmutsen Formation, Vancouver Group. At the Devil's Den showings excavations consist of two opencuts and a 1.5 metre deep shaft/pit. The showing is thought to be associated with a major north trending fault.

The shaft exposes grey silicified andesite with 30 per cent quartz-calcite veinlets. In the eastern open cut a 30 centimetre wide quartz vein occurs containing 2 to 3 per cent pyrite. The southernmost open cut reveals a 20 centimetre wide quartz vein, striking 110 degrees, with 10 per cent pyrite and 1 to 2 per cent chalcopyrite. A sample of this vein assayed 4.15 grams per tonne gold and 0.26 per cent copper (Assessment Report 17557).

BIBLIOGRAPHY

EMPR ASS RPT 447, 11357, 15038, *17557,* 18771
EMPR EXPL 1983-197; 1986-C168; 1988-C83; 1999-25-32; 2002-29-40
EMPR FIELDWORK 1988, pp. 61-74
GSC MAP 49-1963, 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1990/04/19
DATE REVISED: 1990/04/19

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 552**

NATIONAL MINERAL INVENTORY:

NAME(S): **SPRING**

STATUS: Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 08 42 N
LONGITUDE: 124 33 00 W
ELEVATION: 820 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit No. 2, 2 kilometres southeast of Peak Lake and 500 metres west of Cameron River (West Fork), 20 kilometres east-southeast from the town of Port Alberni (Assessment Report 18108).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5444732
EASTING: 386961

COMMODITIES: Gold, Zinc, Silver, Copper, Lead

MINERALS
SIGNIFICANT: Pyrite, Sphalerite, Chalcopyrite, Galena
ASSOCIATED: Quartz, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian Tertiary	Sicker	McLaughlin Ridge	Unnamed/Unknown Informal

LITHOLOGY: Chert
Cherty Tuff
Tuff
Argillite
Lapilli Tuff
Cherty Siltstone
Hornblende Feldspar Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Cowichan uplift.

PHYSIOGRAPHIC AREA: Georgia Depression

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1988

COMMODITY	GRADE	
Silver	30.5000	Grams per tonne
Gold	3.6000	Grams per tonne
Copper	0.1800	Per cent
Zinc	2.8000	Per cent

COMMENTS: Sample of quartz veins near adits.
REFERENCE: Assessment Report 18108.

CAPSULE GEOLOGY

The Spring occurrence area is underlain by rocks of the Paleozoic Sicker and Buttle Lake groups, and the Upper Triassic Karmutsen Formation (Vancouver Group). The oldest rocks, the Devonian Nitinat Formation (Sicker Group) are poorly exposed and comprise pyroxene porphyritic basaltic agglomerate and breccia. These rocks are apparently conformably overlain by Upper Devonian McLaughlin Ridge Formation (Sicker Group) rocks comprised of an interbedded package of dominantly fine-grained tuff, argillite and chert/cherty siltstone and tuff with local beds of lapilli tuff. Bedding is planar to slightly undulatory and generally thin (less than 30 centimetres) and strikes east with moderate to steep dips to the south. Variability in bedding orientations suggests gentle folding about a south plunging axis. A south-southeast trending fault juxtaposes Sicker Group rocks with Mississippian to Pennsylvanian Fourth Lake Formation (Buttle Lake Group) rocks

CAPSULE GEOLOGY

consisting of argillite, massive crinoidal limestone, chert, cherty siltstone and sandstone. Bedding strikes south-southeast and dips moderately to the northeast. Massive, mainly crinoidal limestone and interbedded siltstone and shale of the Upper to Lower Pennsylvanian Mount Mark Formation (Buttle Lake Group) conformably overlies Fourth Lake Formation rocks. Interbedded sandstone and shale of the Permian St. Mary's Lake Formation (Buttle Lake Group) overlies the Mount Mark Formation. These rocks trend north-northwest. Unconformably overlying the St. Mary's Lake Formation, and in places the Mount Mark Formation, is massive basalt of the Karmutsen Formation. Intermediate hornblende-feldspar porphyritic dykes crosscut the overall stratigraphic sequence. The Tertiary dykes are generally oriented parallel to bedding and dip steeply north and south and are up to 15 metres wide. Faulting on the property includes major northwest trending faults (Cameron River fault) and northwest trending splay faults. Minor northeast to east trending faults also occur and appear to localize the dykes and/or mineralized quartz veins and alteration zones.

Mineralization includes quartz veins spatially associated with hornblende-feldspar porphyry dykes, quartz and quartz-carbonate veins in shear zones and minor sulphide disseminations in hornblende-feldspar porphyry dykes. The quartz veins are up to 50 centimetres wide and have been traced along strike for up to 400 metres (three veins have been located). The veins cut chert and cherty tuff of the McLaughlin Ridge Formation and occur on either side of hornblende feldspar porphyry dykes. Mineralization consists of pyrite, sphalerite, chalcopyrite and galena. Several short adits explore the quartz veins. A rock sample from these veins near the adits assayed up to 3.6 grams per tonne gold, 2.8 per cent zinc, 30.5 grams per tonne silver and 0.18 per cent copper (Assessment Report 18108). An east-northeast trending shear zone lying 200 to 300 metres south of and parallel to the quartz veins developed by the adits, contain sulphide-bearing quartz and quartz carbonate veins up to 5 centimetres wide. The veins generally occupy imbricate shears and are variably mineralized with pyrite, chalcopyrite, sphalerite and galena. Rock samples from these veins assayed up to 2.64 grams per tonne gold, 0.39 per cent lead and 0.13 per cent zinc (Assessment Report 18108). Hornblende-feldspar porphyry dykes locally contain trace to minor disseminated pyrite and minor chalcopyrite.

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT 15590, *17183, *18108
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50

DATE CODED: 1990/04/19 CODED BY: GO FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 553**

NATIONAL MINERAL INVENTORY:

NAME(S): **CREEK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 10 46 N
LONGITUDE: 124 58 21 W
ELEVATION: 420 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Near the centre of Creek 1 to 4 claims (cancelled), in a creek bed on the lower slope of road R-407 (Assessment Report 12052, page 7).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5449277
EASTING: 356249

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Bornite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Volcanogenic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	

LITHOLOGY: Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

At the Creek occurrence, mineralization is found within a deformed massive amygdaloidal flow of the Upper Triassic Karmutsen Formation, Vancouver Group. The amygdules are filled with pyrite, chalcopyrite or bornite.

BIBLIOGRAPHY

EMPR ASS RPT *9313, 10288, *12052, 13949
GSC MAP 49-1963, 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1990/04/20
DATE REVISED: / /
CODED BY: GJP
REVISED BY:
FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 554**

NATIONAL MINERAL INVENTORY:

NAME(S): **MEN**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F06E 092F06W
BC MAP:
LATITUDE: 49 18 03 N
LONGITUDE: 125 15 02 W
ELEVATION: 340 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sampled outcrop in road cut along road to Doran Lake, 2 kilometres southeast from Doran Lake, between Great Central and Sproat lakes (Assessment Report 17418).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5463336
EASTING: 336389

COMMODITIES: Gold Copper Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
COMMENTS: Trace chalcopyrite.
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: l06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Jurassic			Island Plutonic Suite

LITHOLOGY: Pillow Basalt
Basalt Flow Breccia
Porphyritic Basalt
Diorite Dike
Granodiorite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
YEAR: 1988

COMMODITY	GRADE	
Silver	8.0000	Grams per tonne
Gold	5.0000	Grams per tonne

COMMENTS: Sample of quartz-carbonate vein.
REFERENCE: Assessment Report 17418.

CAPSULE GEOLOGY

The Men occurrence is underlain by pillow basalt, basalt flow breccia and massive porphyritic basalt flows of the Upper Triassic Karmutsen Formation (Vancouver Group). The basalts are intruded by numerous diorite-granodiorite dykes that range in width from 1 to 10 metres with roughly north or northwest trending contacts with the basalt. The dykes are related to Jurassic Island Plutonic Suite. A number of strong north and northwest strike-slip faults occur; less dominant faults strike northeast.

Mineralization occurs near the faults where irregular, narrow pyritic quartz-carbonate veining is hosted in fractures. The veins range up to 15 centimetres in width and contain trace chalcopyrite. A rock sample assayed 5.0 grams per tonne gold and 8.0 grams per tonne silver (Assessment Report 17418).

BIBLIOGRAPHY

EMPR ASS RPT *17418
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
GSC MAP 17-1968; 1386A
GSC OF 463

BIBLIOGRAPHY

GSC P 68-50

DATE CODED: 1990/04/23
DATE REVISED: / /

CODED BY: GO
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 555**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKY 2**, OTTER

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02W
BC MAP:
LATITUDE: 49 11 45 N
LONGITUDE: 124 56 12 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On a tributary of Cous Creek (Assessment Report 17441, Map 1).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5451031
EASTING: 358907

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
COMMENTS: Copper stain assumed to be malachite.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown
COMMENTS: Possibly skarn related.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Lower Jurassic	Bonanza	Undefined Formation	

LITHOLOGY: Limestone
Shale
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1987

COMMODITY	GRADE	
Copper	0.5800	Per cent

COMMENTS: Sample R-10.
REFERENCE: Assessment Report 17441, Appendix III.

CAPSULE GEOLOGY

At the Sky 2 occurrence, copper mineralization occurs along an east trending creek that flows into Cous Creek. The creek is underlain by limestone and shale of the Upper Triassic Quatsino Formation (Vancouver Group). This is overlain locally by volcanic rocks of the Lower Jurassic Bonanza Group.

Outcrops of shale and limestone along the creek are reported to show copper mineralization; malachite is the only mineral described. A sample of shale with copper staining assayed 3.2 grams per tonne silver and 0.58 per cent copper (Assessment Report 17411). A quartz vein up to 30 centimetres in width was observed but contained no obvious sulphides.

BIBLIOGRAPHY

EMPR ASS RPT 15970, *17441
GSC MAP 17-1968; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44

DATE CODED: 1990/04/23
DATE REVISED: 1999/06/24

CODED BY: GJP
REVISED BY: LDJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **092F 556**

NATIONAL MINERAL INVENTORY:

NAME(S): **TURTLE LAKE**, R.P.

STATUS: Developed Prospect
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07W
BC MAP:
LATITUDE: 49 19 43 N
LONGITUDE: 124 57 42 W
ELEVATION: 75 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Area A in Bog E on the north shore of Turtle Lake, 1 kilometre east of the east end of Great Central Lake, 13 kilometres northwest from the town of Port Alberni (Assessment Report 233).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5465838
EASTING: 357469

COMMODITIES: Volcanic Ash Peat

MINERALS
SIGNIFICANT: Silica
COMMENTS: Volcanic ash overlain by peat moss.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform Unconsolidated
CLASSIFICATION: Volcanogenic Sedimentary Industrial Min.
TYPE: R11 Volcanic ash - pumice A01 Peat
SHAPE: Tabular

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Ash
Peat
Glacial Till
Glacial Gravel
Porphyritic Andesite
Diorite

HOSTROCK COMMENTS: Volcanic ash layer under peat moss but overlying glacial till and gravel; bedrock is andesite and diorite.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Overlap Assemblage Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: TURTLE LAKE REPORT ON: Y

CATEGORY: Measured YEAR: 1958
QUANTITY: 408195 Tonnes

COMMODITY	GRADE	
Volcanic Ash	80.0000	Per cent

COMMENTS: Total combined reserves of Areas A,B,C in Bog E; grades range from 80 to 90 per cent silica.
REFERENCE: Assessment Report 233.

ORE ZONE: AREA C - BOG E REPORT ON: N

CATEGORY: Measured YEAR: 1958
QUANTITY: 45355 Tonnes

COMMODITY	GRADE	
Volcanic Ash	80.0000	Per cent

COMMENTS: Grade ranges from 80 to 90 per cent silica.
REFERENCE: Assessment Report 233.

ORE ZONE: AREA B - BOG E REPORT ON: N

CATEGORY: Measured YEAR: 1958
QUANTITY: 90710 Tonnes

COMMODITY	GRADE	
Volcanic Ash	80.0000	Per cent

COMMENTS: Grade ranges from 80 to 90 per cent silica.
REFERENCE: Assessment Report 233.

INVENTORY

ORE ZONE: AREA A - BOG E REPORT ON: N

CATEGORY: Measured YEAR: 1958
QUANTITY: 272130 Tonnes

COMMODITY	GRADE	
Volcanic Ash	80.0000	Per cent

COMMENTS: Grade ranges from 80 to 90 per cent silica.
REFERENCE: Assessment Report 233.

CAPSULE GEOLOGY

The Turtle Lake bedrock area is comprised of porphyritic andesite of the Upper Triassic Karmutsen Formation (Vancouver Group) intruded by diorite. The general topographic features are low-lying hills with linear deep ravines between the hills where swamps and small lake conditions exist. The swamps have varied vegetative cover immediately underlain by 0.6 to 10.6 metres of peat moss. A typical cross-section of the peat moss in the swamps is 0.3 metres of roots and bushes; the next 1.5 to 3 metres is a solid, soft sphagnum moss. Underlying this is a heavy humus composed chiefly of decomposed mosses and old microscopic marine life. The humus and peat encountered in all of the lakes and immediately underlying the heavy peat mosses is a very soft and soupy type of black peat moss suspended in water.

Volcanic ash is found under this peat moss in the swamps and under Turtle Lake, and various test holes indicate that the ash deposits range from 0.6 to 12.1 metres in thickness. The humus material of moss immediately overlying the volcanic ash contains 1 to 5 per cent of fine volcanic ash. Greater thicknesses of ash are located under Turtle Lake which are overlain by slightly lesser thicknesses of peat moss in the range of 1.5 to 7.3 metres. Underlying the ash beds are fine to coarse, clean glacial till and gravel dipping from 2 to 4 degrees and are of undetermined thickness. The ash is a grey colour, very fine and generally composed of 80 to 90 per cent silica with the balance being alumina oxide; moisture content is approximately 22 per cent. A fineness screen test was made of a composite sample taken from the 0 to 9.1 metre horizon in the ash beds. This sample was dried and rolled by hand on a steel plate and the following screen tests obtained:

Sample Weight-210 grams

Screen Fineness	Weight (grams)
+ 30	30
- 30 + 80	20
- 80 + 100	2.5
- 100 + 150	5
- 150 + 200	46
- 200	102
Loss in screening	4.5

There are three defined areas of measured geological reserves of ash. The Bog E area encompasses the northern half of Turtle Lake and surrounding swamp. Area A within Bog E contains 272,130 tonnes ash, Area B contains 90,710 tonnes ash and Area C contains 45,355 tonnes ash for a combined total of 408,195 tonnes (Assessment Report 233). Hand drilling indicates a further reserve potential of ash in Bog E and also Bog F on the west end of Turtle Lake and in Bog A, at the south and east end of the lake and under the lake.

BIBLIOGRAPHY

EMPR ASS RPT *233
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463
GSC P 68-50

DATE CODED: 1990/04/26 CODED BY: GO FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **092F 557**

NATIONAL MINERAL INVENTORY:

NAME(S): **FRANK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W 092F02E
BC MAP:
LATITUDE: 49 05 07 N
LONGITUDE: 124 29 51 W
ELEVATION: 925 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing (Sample F9) near centre of claim (Assessment Report 16585).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5438016
EASTING: 390658

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
COMMENTS: Assumed.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Unknown
DIMENSION: 0400 x 0100 Metres
STRIKE/DIP: 045/
TREND/PLUNGE:
COMMENTS: Zone delineated by geochemical survey contains showing and strikes northeast.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Carboniferous	Buttle Lake	Fourth Lake	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Tuff
Argillite
Breccia

HOSTROCK COMMENTS: Host rock was not described.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1987

COMMODITY	GRADE	
Silver	11.5000	Grams per tonne
Gold	0.0460	Grams per tonne
Copper	3.6000	Per cent

COMMENTS: Sample 87-01 F9.
REFERENCE: Assessment Report 16585.

CAPSULE GEOLOGY

The Frank showing is located 40 kilometres west of Nanaimo at the head of the Nanaimo River.

The area is underlain by volcanic rocks of the Upper Devonian McLaughlin Ridge Formation, Sicker Group (formerly lower Myra Formation) and sedimentary rocks of the Mississippian to Pennsylvannian Fourth Lake Formation, Buttle Lake Group (formerly upper Myra Formation). These have been intruded by late Triassic dykes and sills of unknown affinity.

The showing is hosted in rocks mapped as breccia, tuff and argillite; the actual host rocks are not described. Massive sulphide mineralization, pyrite and chalcopyrite are assumed, was discovered during a geochemical survey. The mineralization occurs in a north-east striking zone, outlined by the geochemical survey, 400 metres long and 100 metres wide. A sample assayed 3.6 per cent copper, 11.5 grams per tonne silver and 0.046 grams per tonne gold (Assessment Report 16585).

BIBLIOGRAPHY

EMPR ASS RPT *16585

BIBLIOGRAPHY

EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6; 1999-2
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1990/04/25 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/04/25 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 558**

NATIONAL MINERAL INVENTORY:

NAME(S): **SPARK**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 02 40 N
LONGITUDE: 124 28 18 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of Spark claim (Assessment Report 15286).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5433440
EASTING: 392456

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Devonian	Sicker	Duck Lake	

LITHOLOGY: Porphyritic Hornblende Andesite
Black Andesite
Rhyolite
Conglomerate
Banded Chert
Hornblende Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
RELATIONSHIP:
GRADE: Greenschist

CAPSULE GEOLOGY

The Spark showing is located 1.5 kilometres west of the southern tip of Fourth Lake.

The area is underlain by volcanic and sedimentary rocks of the Devonian Nitinat Formation or possibly the Duck Lake Formation both of the Paleozoic Sicker Group.

The rocks comprise porphyritic hornblende andesite, black andesite, minor rhyolite, conglomerates, greywacke, banded chert and hornblende granodiorite of unknown affinity.

There are two sets of quartz veins in the area. The first set are very tight, closed veins which have been metamorphosed with the surrounding rocks. The veins in the second set, possibly related to the hornblende granodiorite intrusive, are vuggy and often contain pyrite and chalcopyrite.

BIBLIOGRAPHY

EMPR ASS RPT *15286
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1990/04/26
DATE REVISED: / /
CODED BY: DEJ
REVISED BY:
FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **092F 559**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT WESLEY**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F07E
BC MAP:
LATITUDE: 49 18 47 N
LONGITUDE: 124 39 46 W
ELEVATION: 450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: West side of Mount Wesley, along Branch Road 200 (Assessment Report 14443).

MINING DIVISION: Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5463588
EASTING: 379147

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Karmutsen	
Pennsylvan.-Permian	Buttle Lake	Mount Mark	

LITHOLOGY: Basalt
Limestone

HOSTROCK COMMENTS: Copper mineralization reported in both units.

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

CAPSULE GEOLOGY

The Mount Wesley area is underlain primarily by basalt of the Upper Triassic Karmutsen Formation (Vancouver Group). On the western slope of the mountain, a large northwest trending lense of limestone of the Upper Pennsylvanian to Lower Permian Mount Mark Formation, (Buttle Lake Group) occurs. It is bounded on the east by basalt, and on the west by volcanics and sediments of the Devonian Sicker Group.

Rusty, altered limestone was initially reported to host veins and some malachite specks (Laanela, 1965). Later prospecting located numerous quartz stringers from 1 to 10 centimetres wide and randomly oriented within rusty, fractured and sheared basalt. Some minute specks of chalcopyrite and bornite were present. This showing occurs in a fault zone exposed in a roadcut just east of the limestone lense. Several samples taken in 1985 failed to show any elevated values in copper, lead, zinc, silver or gold (Assessment Report 14443).

BIBLIOGRAPHY

EMPR ASS RPT 13520, *14443
EMPR FIELDWORK 1987, pp. 81-91; 1988, pp. 61-74
EMPR OF 1989-6
EMPR PF (*Laanela, H. (1965): Mount Wesley Copper Showing, Mineral Occurrence #31, Gunnex Ltd.)
GSC MAP 17-1968; 49-1963; 1386A
GSC OF 463; 1272
GSC P 68-50; 72-44; 79-30
Sutherland Brown, A. (1988): Mineral Resources of the Alberni Region, EMPR, British Columbia Geoscience Research Program (RG87-26)

DATE CODED: 1990/04/26 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1990/04/26 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **092F 560**

NATIONAL MINERAL INVENTORY:

NAME(S): **MCKINLAY 1**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 06 55 N
LONGITUDE: 124 33 49 W
ELEVATION: 680 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of chip sample (Assessment Report 16822).

MINING DIVISION: Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5441448
EASTING: 385900

COMMODITIES: Gold, Silver, Copper, Lead, Zinc

MINERALS

SIGNIFICANT: Pyrite, Galena, Sphalerite
ASSOCIATED: Quartz, Ankerite
ALTERATION: Silica, Mariposite, Pyrite, Ankerite
ALTERATION TYPE: Silicific'n, Pyrite, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown
SHAPE: Irregular
MODIFIER: Fractured
COMMENTS: Stratigraphic units dip northwest and trend northeast.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	

LITHOLOGY: Andesite
Massive Andesite
Andesitic Tuff
Tuffaceous Cherty Siltstone
Pyroxene Feldspar Porphyry Agglomerate
Pyroxene Feldspar Porphyry Tuff
Epiclastic Sediment/Sedimentary
Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
COMMENTS: Located within the Cowichan uplift.

PHYSIOGRAPHIC AREA: Vancouver Island Ranges

INVENTORY

ORE ZONE: ROADCUT

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1987

COMMODITY	GRADE	
Silver	8.6000	Grams per tonne
Gold	0.0685	Grams per tonne
Copper	0.4000	Per cent
Lead	0.1300	Per cent
Zinc	0.4650	Per cent

REFERENCE: Assessment Report 16822.

CAPSULE GEOLOGY

The McKinlay 1 showing is located south of McKinlay peak and 20 kilometres southeast of Port Alberni.

The area is underlain by volcanic and volcaniclastic rocks of the Devonian Nitinat Formation, Sicker Group. These comprise andesitic tuff, massive green andesite, lapilli tuff, pyroxene feldspar porphyrytic agglomerates and tuffs and cherty siltstone.

A soil survey conducted in 1987 outlined five anomalous zones, the most significant zone is 400 metres long and partly coincident with a pyrite-silica-iron carbonate alteration zone which is greater than 5 metres wide. A chip sample assayed 0.0685 grams per tonne gold, 8.6 grams per tonne silver, 0.4 per cent copper, 0.13 per cent lead and 0.465 per cent zinc from a zone that trends northeast (Assessment Report 16822). Alteration is accompanied by disseminated

CAPSULE GEOLOGY

pyrite, iron carbonate and mariposite with minor galena and sphalerite.

BIBLIOGRAPHY

EMPR ASS RPT *16822, 19265
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Swift Minerals Ltd. Prospectus Aug. 17/87)
GSC MAP 17-1968; 49-1963
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1990/05/03 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/05/03 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 561**

NATIONAL MINERAL INVENTORY:

NAME(S): **APRIL**

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 05 12 N
LONGITUDE: 124 40 30 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of sample 2963 in the southwest corner of the claim (Assessment Report 15953).

MINING DIVISION: Alberni
UTM ZONE: 10 (NAD 83)
NORTHING: 5438441
EASTING: 377701

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Pyrrhotite Magnetite
ASSOCIATED: Quartz Epidote Calcite
ALTERATION: Epidote Chlorite Limonite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Vancouver	Karmutsen	Island Plutonic Suite

LITHOLOGY: Chloritic Greenstone
Altered Pillow Breccia
Basaltic Greenstone
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: OUTCROP
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1987

COMMODITY	GRADE	
Silver	1.5000	Grams per tonne
Gold	0.1200	Grams per tonne
Copper	0.4300	Per cent

COMMENTS: Sample (#2963) containing epidote stringers with quartz and minor sulphides.
REFERENCE: Assessment Report 15953.

CAPSULE GEOLOGY

The April showing is located 19 kilometres southeast of Port Alberni on the north side of Museum Creek.

The area is underlain by volcanic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group intruded by Early to Middle Jurassic Island Plutonic Suite. These comprise dark green chloritic greenstone, altered pillow breccia, basaltic greenstone and diorite intrusives.

Quartz-epidote-calcite stringers are hosted in greenstone with disseminated to semi-massive pyrite, chalcopyrite, pyrite and possibly magnetite. Propylitic alteration in the host rock is common. A grab sample from an outcrop (#2963) assayed 0.4294 per cent copper, 1.5 grams per tonne silver and 0.012 grams per tonne gold (Assessment Report 15953). The sample contained epidote stringers, up to 8 centimetres wide striking 320 degrees, with quartz

CAPSULE GEOLOGY

and minor sulphides.

BIBLIOGRAPHY

EMPR ASS RPT 12696, 15288, *15953
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968; 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
CIM BULL Vol. 83 No. 935, March 1990 pp. 125-135

DATE CODED: 1990/05/04 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/05/04 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 562**

NATIONAL MINERAL INVENTORY:

NAME(S): **RITE 1**, LAURA , RAIN,
RITE AND RAIN

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 01 16 N
LONGITUDE: 124 20 31 W
ELEVATION: 850 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of Target A Anomaly 1 (Assessment Report 18635).

MINING DIVISION: Nanaimo
Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5430670
EASTING: 401890

COMMODITIES: Gold, Silver, Copper

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Quartz, Ankerite, Limonite, Sericite, Hematite, Epidote, Malachite
ALTERATION TYPE: Silicific'n, Carbonate, Oxidation, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Faulted, Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Jurassic			Island Plutonic Suite

LITHOLOGY: Tuff
Volcaniclastic
Chert
Argillite
Diorite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

CAPSULE GEOLOGY

The Rite 1 showing is located 40 kilometres southwest of Nanaimo on the east side of Green Creek.

The area is underlain by volcanic and volcaniclastic rocks of the Devonian Duck Lake Formation, Sicker Group which have been intruded by Early to Middle Jurassic Island Plutonic Suite. These comprise tuff, chert, argillite, diorite and granodiorite. A broad zone of imbricate faulting and shearing is present and exposures of fault breccia, intense shearing and alteration occur.

Exploration in 1988 identified four target areas characterized by gold, silver, arsenic, copper and molybdenite mineralization hosted in quartz-sulphide veins within quartz-ankerite, sericite, fuchsite and hematite bearing shear zones. The main target has a strike length of 3.2 kilometres with widths up to 1 kilometre, within which a series of 10 to 100 metre wide alteration sequences occur. The molybdenum showings occur to the south of the Rite 1 claim on the Rite 2 claim (092C 109) and the Close occurrence (092C 112).

Anomalous gold mineralization occurs in pyritic quartz and quartz-carbonate veins up to 0.20 metres wide. The veins are associated with the imbricate fault and shear zone which is up to 2.2 kilometres long and 1 kilometre wide. The zone is characterized by abundant localized intense quartz-ankerite-limonite-sericite-hematite and epidote alteration.

A chip sample (TN9-5) taken across 10 centimetres of a rusty quartz vein, on the Laura claim, assayed up to 25 per cent pyrite and 6.48 grams per tonne gold (Assessment Report 18635). In the southern

CAPSULE GEOLOGY

portion of the Rite 1 claim, veins containing up to 4 per cent pyrite, trace malachite and trace chalcopyrite are slightly anomalous in gold, silver and copper.

Mineralization along the same trend, from a parallel vein/shear system, is exposed on the adjacent Rush/Sicker property (092F 446, 467).

BIBLIOGRAPHY

EMPR ASS RPT *18635
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
EMPR PF (Galico Resources Inc. Prospectus, April 1989)
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30

DATE CODED: 1990/05/08 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/05/08 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 563**

NATIONAL MINERAL INVENTORY:

NAME(S): **FLIGHT 5**, FLIGHT

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F01W
BC MAP:
LATITUDE: 49 01 18 N
LONGITUDE: 124 24 48 W
ELEVATION: 820 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of jasper body (Assessment Report 15887).

MINING DIVISION: Victoria
Nanaimo
UTM ZONE: 10 (NAD 83)
NORTHING: 5430827
EASTING: 396672

COMMODITIES: Silica, Manganese, Magnetite, Copper

MINERALS

SIGNIFICANT: Jasper, Pyrite, Magnetite, Pyrrhotite, Chalcopyrite
COMMENTS: Massive pyrrhotite was reported but not located on maps.
ASSOCIATED: Quartz
ALTERATION: Silica, Hematite, Malachite, Chlorite, Sericite, Kaolinite
ALTERATION TYPE: Silicific'n, Oxidation, Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Stratiform, Vein, Shear
CLASSIFICATION: Volcanogenic, Hydrothermal, Epigenetic, Industrial Min.
TYPE: Q05 Jasper
SHAPE: Irregular
MODIFIER: Faulted, Sheared
DIMENSION: 250 x 12 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Jasper body is vertically dipping.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Sicker	McLaughlin Ridge	
Devonian	Sicker	Nitinat	

LITHOLOGY: Jasper
Basalt
Cherty Tuff
Tuff
Massive Basaltic Agglomerate
Massive Andesitic Agglomerate
Volcanic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

CAPSULE GEOLOGY

The Flight 5 showing is located 9 kilometres northeast of the west tip of Cowichan Lake.

The area is underlain by volcanic and volcaniclastic rocks of the Paleozoic Sicker Group. These rocks comprise jasper, tuff, basaltic to andesitic agglomerates, volcanic breccia and minor flows of the Upper Devonian McLaughlin Ridge Formation and the Devonian Nitinat Formation. Minor shearing and faulting have been identified in the area.

An extensive jasper body containing minor magnetite occurs at the McLaughlin Ridge Formation\Nitinat Formation contact. A 10-centimetre band of conformable massive pyrrhotite is reported to occur near this contact, however, it does not appear to have been mapped or documented.

The jasper body is 10 to 15 metres thick, traceable for 250 metres, dips vertically and is hosted in basaltic rocks overlain by epiclastic sandstones and siltstones. The jasper is locally broken with minor infillings of magnetite and is laterally succeeded by lenses, blocks or wedges of jasper with minor pyrite. These are overlain by fine-grained chloritic tuff, laminated cherty tuff and finally by hemaititc altered lapilli tuff. The tuff contains graphitic partings and quartz veining carrying pyrite and trace chalcopyrite. A 30-centimetre wide associated shear zone contains

CAPSULE GEOLOGY

chlorite, kaolinite, sericite, pyrite, trace chalcopyrite and malachite. Rock samples of the jasper body assayed only low values for gold, silver, copper, lead and zinc (Assessment Report 15887).

BIBLIOGRAPHY

EMPR ASS RPT *15887
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, pp. 103-104

DATE CODED:	1990/05/08	CODED BY:	DEJ	FIELD CHECK:	N
DATE REVISED:	1990/05/08	REVISED BY:	DEJ	FIELD CHECK:	N

MINFILE NUMBER: **092F 564**

NATIONAL MINERAL INVENTORY:

NAME(S): **PEAK LAKE**, EMMA 2, EMMA

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 09 16 N
LONGITUDE: 124 33 50 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Emma adit (Assessment Report 17207).

MINING DIVISION: Nanaimo
Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5445802
EASTING: 385969

COMMODITIES: Gold, Silver, Copper, Zinc, Molybdenum

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Sphalerite, Chalcopyrite, Molybdenite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Silica, Epidote, Carbonate, Malachite
ALTERATION TYPE: Silicific'n, Epidote, Carbonate, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 0600 Metres
STRIKE/DIP: 026/80W
TREND/PLUNGE:
COMMENTS: The zone is up to 600 metres wide, extends south of Peak Lake and is open to the south. The veins are up to 25 centimetres wide.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Nitinat	
Upper Devonian	Sicker	McLaughlin Ridge	

LITHOLOGY: Volcaniclastic
Feldspar Porphyry Dacite Dike
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	6.6000	Grams per tonne
Gold	0.3750	Grams per tonne
Copper	0.0630	Per cent
Zinc	0.0302	Per cent

COMMENTS: Typical assay from drill core over 0.55 metres.
REFERENCE: Assessment Report 17207.

CAPSULE GEOLOGY

The Peak Lake showing is located 700 metres southeast of Peak Lake on the Emma 2 claim.

The area is underlain by rocks of the Paleozoic Sicker Group comprising deformed breccia, tuff, argillite, greenstone, greenschist, narrow dykes of andesite porphyry, and argillaceous and calcareous sedimentary rocks. There are numerous faults and shear zones in the area suggesting a north-northeast fault through the Peak Lake area. A number of quartz veins and carbonatized zones are present.

The Peak Lake zone is characterized by widespread pyrite and pyrrhotite mineralization in Devonian Nitinat Formation volcaniclastic rocks. Pyritic dacite has intruded the volcaniclastic rocks and is the likely source of mineralization. Alteration varies

CAPSULE GEOLOGY

from quartz-epidote flooding for up to 500 metres distal to the Peak Lake fault to pervasive carbonatization proximal to the fault with abundant quartz veins, up to 25 centimetres wide, throughout. The veins locally contain sphalerite, chalcopyrite and molybdenite in addition to pyrite. Gold concentration appears to increase with sphalerite content and with proximity to the strong north trending Peak Lake fault which cuts the zone. The zone is up to 600 metres wide, extends south of Peak Lake and is open to the south.

A typical assay result from drilling on the Peak Lake zone (87.17 to 87.72 metres) over 0.55 metres is 0.375 grams per tonne gold, 6.6 grams per tonne silver, 0.063 per cent copper, and 0.0302 per cent zinc (Assessment Report 17207).

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT 12070, 13875, 16799, *17207
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
GCNL #115, 1984; #59, #189, 1985; #164, 1988
V STOCKWATCH June 17, Aug. 26, Oct. 7, 1987

DATE CODED: 1990/05/09 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 565**

NATIONAL MINERAL INVENTORY:

NAME(S): **DEBEAUX CREEK**, SU 2, EMMA, DAUGHTERS

STATUS: Showing
REGIONS: British Columbia, Vancouver Island
NTS MAP: 092F02E
BC MAP:
LATITUDE: 49 09 35 N
LONGITUDE: 124 36 22 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of adit (Assessment Report 17207).

MINING DIVISION: Nanaimo, Victoria
UTM ZONE: 10 (NAD 83)
NORTHING: 5446453
EASTING: 382903

COMMODITIES: Gold, Nickel, Chromium

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Magnetite
ASSOCIATED: Quartz, Carbonate, Serpentine
ALTERATION: Serpentine, Carbonate
ALTERATION TYPE: Serpentin'zn, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Massive
CLASSIFICATION: Epigenetic, Hydrothermal, Magmatic, Industrial Min.
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 0300 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Zone of serpentinization is up to 300 metres wide and undetermined strike length.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Sicker	Duck Lake	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Diabase Gabbroic Intrusive
Mafic Volcaniclastic
Basalt
Andesite
Volcaniclastic

GEOLOGICAL SETTING

TECTONIC BELT: Insular
PHYSIOGRAPHIC AREA: Vancouver Island Ranges
TERRANE: Wrangell
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Located in the Cowichan uplift.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Nickel	0.0382	Per cent

COMMENTS: Sample #16232, also 0.913 per cent chromium. A quartz-carbonate vein sample assayed 0.20 grams per tonne gold.
REFERENCE: Assessment Report 17207.

CAPSULE GEOLOGY

The Debeaux Creek showing is located about 2.5 kilometres west of Peak Lake.

The area is underlain by rocks of the Paleozoic Sicker Group comprising deformed breccia, tuff, argillite, greenstone, greenschist, narrow dykes of andesite porphyry, and argillaceous and calcareous sedimentary rocks. There are numerous faults and shear zones in the area suggesting a north-northeast fault through the Peak Lake area. A number of quartz veins and carbonatized zones are present.

The Debeaux Creek zone is characterized by locally intensely carbonatized basaltic and andesitic volcaniclastic rocks of the Devonian Duck Lake Formation and extensively serpentinized diabasic

CAPSULE GEOLOGY

gabbro. These are likely related to the northeast trending faults which transect the area.

A Late Triassic(?) diabasic gabbro of unknown affinity has intruded along the Debeaux Creek fault. Later stage movement along the fault combined with hydrothermal processes has altered portions of the gabbro to magnetite-rich serpentinite with associated nickel-bearing sulphide mineralization. The zone of serpentinization is up to 300 metres wide with an undetermined strike length. This zone bears certain similarities to a magmatogenic deposit, in that the gold is associated with nickel-sulphide segregations in ultramafic to mafic rocks. A grab sample (16232) assayed 0.0382 per cent nickel and 0.913 per cent chromium (Assessment Report 17207). A sample from a 5 centimetre quartz-carbonate vein containing pyrite and pyrrhotite and cutting basalt near the serpentinite contact assayed 0.20 grams per tonne gold (Assessment Report 17207).

BIBLIOGRAPHY

EM EXPL 2002-29-40
EMPR ASS RPT 12070, 13875, 16799, *17207
EMPR BULL 37
EMPR FIELDWORK 1988 pp. 61-74
EMPR OF 1987-2; 1988-24; *1989-6
GSC MAP 17-1968, 49-1963
GSC OF 463, 1272
GSC P 68-50, 79-30
GCNL #115, 1984; #59, #189, 1985; #164, 1988
V STOCKWATCH June 17, Aug. 26, Oct. 7, 1987

DATE CODED: 1990/05/09 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1990/05/09 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **092F 566**

NATIONAL MINERAL INVENTORY:

NAME(S): **NELSON ISLAND SKARN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 092F09E
BC MAP:
LATITUDE: 49 43 12 N
LONGITUDE: 124 07 05 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 35 kilometres northwest of Sechelt (Exploration 1992, pages 81 to 83).

MINING DIVISION: Vancouver
UTM ZONE: 10 (NAD 83)
NORTHING: 5508100
EASTING: 419409

COMMODITIES: Copper Zinc Iron

MINERALS

SIGNIFICANT:	Chalcopyrite	Pyrite	Magnetite	
ASSOCIATED:	Garnet	Diopside	Epidote	Actinolite
ALTERATION:	Garnet	Diopside	Epidote	Actinolite

ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive Disseminated
CLASSIFICATION: Skarn
COMMENTS: North trending band of altered limestone with skarn-type mineralization.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Vancouver	Quatsino	
Upper Triassic	Vancouver	Karmutsen	
Cretaceous-Tertiary			Coast Plutonic Complex

LITHOLOGY: Limestone
Marble
Skarn
Diorite Dike
Quartz Diorite
Granodiorite
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Coast Crystalline
TERRANE: Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.3400	Per cent
Zinc	0.0640	Per cent

COMMENTS: Sample NI91-12B of magnetite, malachite, and chalcopyrite skarn.
REFERENCE: Exploration 1991, page 83.

CAPSULE GEOLOGY

The Nelson Island Skarn is situated on a north-facing slope south of an unnamed creek linking West Lake and Mackechnie Lake located in the centre of Nelson Island. The area of interest is a heavily tree covered (second growth) prominent ridge along which recent logging road construction uncovered a previously unknown north-trending band of altered limestone with skarn-type mineralization. There is no record of exploration for metallic minerals on the island.

Nelson Island is underlain by intrusive rocks of the Coast Plutonic Complex (GSC Open File 611). The western two-thirds of the island are predominantly underlain by quartz diorite; exposures of granodiorite occur on the south end of the island at Quarry Bay and at the mouth of Blind Bay at the island's western extremity. The northeast end of the island is underlain by diorite. A belt of Upper Triassic Karmutsen Formation volcanic rocks trends northwest across

CAPSULE GEOLOGY

the middle of the island.

Limestone (Upper Triassic Quatsino Formation?) forms a northwest-trending band across the island. At the "road-cut" exposure the limestone band is about 100 metres wide but it may widen along strike or with depth. It is cut by numerous diorite dikes. Most of the limestone has been metasomatically altered to a combination of marble and skarn. The marble displays wildly contorted banding defined by irregularly alternating plain white and black carbonaceous, pyritic layers. Boundaries between limestone and marble are gradational over tens of centimetres.

Numerous narrow (for example, 0.5 to 3.0 metres in width) bands of skarn cut the outcrop. There are three varieties: massive, pale brown garnet skarn; spotted brown garnet and pale green diopside skarn, and pistachio-green spotted (retrograde) epidote skarn. The more intense garnet-bearing skarn varieties are commonly associated with massive sulphide pods up to 0.75 metres across. Magnetite-actinolite zones occur outside the limestone band and within hornfelsed diorite that is exposed at the western limit of the limestone. Diorite is dark grey-green, fine-grained and commonly contains two to three per cent disseminated pyrite. A network of epidote-coated fractures cross-cuts the diorite. Medium to coarse-grained equigranular quartz diorite forms the eastern margin of the limestone. The contact zone displays apparent granophyric texture over a width of less than a metre. Sulphide mineralization consists of disseminated and fracture-controlled pyrite and chalcopyrite.

This new discovery is evidence of the potential of this area to host skarn mineralization. Similar occurrences may exist in under-explored, densely forested areas in the locality.

BIBLIOGRAPHY

EMPR EXPL *1991, pp. 81-83
GSC MAP 1386A
GSC OF 611

DATE CODED: 1993/05/20 CODED BY: DEJ FIELD CHECK: Y
DATE REVISED: 1993/05/20 REVISED BY: DEJ FIELD CHECK: Y

MINFILE PRODUCTION REPORT

GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 001** NAME: **LENORA (L.35G)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1964	151	151	Silver	11,757	
			Gold	529	
			Copper		4,608
1952		1	Cadmium		200
1951	8,849	8,849	Silver	483,776	
			Gold	9,829	
			Cadmium		1,192
			Copper		39,359
			Lead		38,899
			Zinc		323,842
1947	7,525	7,525	Silver	514,755	
			Gold	15,769	
			Copper		81,239
			Lead		8,400
			Zinc		286,544
1944	15,731	15,731	Silver	521,815	
			Gold	20,870	
			Cadmium		3,154
			Copper		146,161
			Lead		76,342
			Zinc		1,060,728
1943	15,923	15,923	Silver	482,625	
			Gold	17,262	
			Copper		97,996
			Lead		40,946
			Zinc		254,997
1907	1,558	1,558	Silver	177,287	
			Gold	5,319	
			Copper		29,937
1903	34,030	34,030	Silver	2,259,788	
			Gold	130,415	
			Copper		986,805
1902	14,126	14,126	Silver	3,633,048	
			Gold	60,558	
			Copper		585,231
1901	14,220	14,220	Silver	1,653,124	
			Gold	84,818	
			Copper		901,244
1900	6,392	6,392	Silver	780,436	
			Gold	32,192	
			Copper		601,361
1899	1,308	1,308	Silver	196,913	
			Gold	8,273	
			Copper		119,642
1898	18	18	Silver	6,221	
			Gold	311	
			Copper		1,814

SUMMARY TOTALS: 092B 001 NAME: **LENORA (L.35G)**

	Metric		Imperial	
Mined:	119,831	tonnes	132,091	tons
Milled:	119,832	tonnes	132,092	tons
Recovery:				
Silver:	10,721,545	grams	344,705	ounces
Gold:	386,145	grams	12,415	ounces
Cadmium:	4,546	kilograms	10,022	pounds
Copper:	3,595,397	kilograms	7,926,491	pounds
Lead:	164,587	kilograms	362,852	pounds
Zinc:	1,926,111	kilograms	4,246,347	pounds

Comments:

1952: The actual amount of ore milled is not known.
1951: Twin J.
1947: Twin J. closed from Aug. 31, 1947 to 1951.
1944: Twin J.
1943: Twin J.

MINFILE NUMBER: **092B 002** NAME: **TYEE (L.36G)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1909	669		Silver	24,602	
			Gold	12,877	
			Copper		13,400
1907	11,039		Silver	860,122	
			Gold	40,309	
			Copper		218,099
1906	21,621		Silver	1,920,859	
			Gold	104,040	
			Copper		816,267
1905	28,939		Silver	2,706,832	
			Gold	155,608	
			Copper		1,219,679
1904	52,117		Silver	4,401,510	
			Gold	242,697	
			Copper		1,929,123
1903	38,102		Silver	3,792,482	
			Gold	205,902	
			Copper		1,634,953
1901	181		Silver	18,662	
			Gold	1,120	
			Copper		9,072

SUMMARY TOTALS: 092B 002 NAME: **TYEE (L.36G)**

	Metric		Imperial	
Mined:	152,668	tonnes	168,288	tons
Milled:		tonnes		tons
Recovery:				
Silver:	13,725,069	grams	441,271	ounces
Gold:	762,553	grams	24,517	ounces
Copper:	5,840,593	kilograms	12,876,300	pounds

Comments:

1909: Subsequent production included with Lenora (092B 001).

MINFILE NUMBER: **092B 003** NAME: **RICHARD III (L.39G)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1907	3,603		Silver	327,048	
			Gold	14,650	
			Copper		101,766
1904	1,299		Silver	194,829	
			Gold	8,149	
			Copper		11,819
1903	1		Silver	840	
			Gold	31	
			Copper		19

SUMMARY TOTALS: 092B 003 NAME: **RICHARD III (L.39G)**

	Metric		Imperial	
Mined:	4,903	tonnes	5,405	tons
Milled:		tonnes		tons
Recovery:				
Silver:	522,717	grams	16,806	ounces
Gold:	22,830	grams	734	ounces
Copper:	113,604	kilograms	250,454	pounds

Comments:

1907: See Lenora (092B 001) for subsequent production.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 004** NAME: **VICTORIA (L.21G)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1907	72		Silver	156	
			Gold	124	
			Copper		702
1905	10		Silver	746	
			Copper		1,072
1904	33		Silver	2,550	
			Copper		2,572

SUMMARY TOTALS: 092B 004 NAME: **VICTORIA (L.21G)**

	Metric		Imperial	
Mined:	115	tonnes	127	tons
Milled:		tonnes		tons
Recovery:				
Silver:	3,452	grams	111	ounces
Gold:	124	grams	4	ounces
Copper:	4,346	kilograms	9,581	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 005** NAME: **BAMBERTON** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1988	21,000	21,000	Limestone		21,000,000
1957	55,400	55,400	Limestone		55,400,000
1956	192,854	192,854	Limestone		192,854,000
1955	155,936	155,936	Limestone		155,936,000
1954	157,998	157,998	Limestone		157,998,000
1953	218,015	218,015	Limestone		218,015,000
1952	161,214	161,214	Limestone		161,214,000
1951	135,400	135,400	Limestone		135,400,000
1950	123,900	123,900	Limestone		123,900,000
1949	97,700	97,700	Limestone		97,700,000
1948	112,358	112,358	Limestone		112,358,000
1947	79,400	79,400	Limestone		79,400,000
1946	44,432	44,432	Limestone		44,432,000
1945	39,961	39,961	Limestone		39,961,000
1944	52,051	52,051	Limestone		52,051,000
1943	53,327	53,327	Limestone		53,327,000
1942	90,915	90,915	Limestone		90,915,000
1941	96,553	96,553	Limestone		96,553,000
1940	69,002	69,002	Limestone		69,002,000
1939	42,205	42,205	Limestone		42,205,000
1938	63,528	63,528	Limestone		63,528,000
1937	62,699	62,699	Limestone		62,699,000
1936	55,421	55,421	Limestone		55,421,000
1935	37,733	37,733	Limestone		37,733,000
1934	28,320	28,320	Limestone		28,320,000
1933	22,823	22,823	Limestone		22,823,000
1932	40,690	40,690	Limestone		40,690,000
1931	91,011	91,011	Limestone		91,011,000
1930	133,039	133,039	Limestone		133,039,000
1929	162,026	162,026	Limestone		162,026,000
1928	174,600	174,600	Limestone		174,600,000
1927	136,400	136,400	Limestone		136,400,000
1926	141,946	141,946	Limestone		141,946,000
1925	126,300	126,300	Limestone		126,300,000
1924	123,000	123,000	Limestone		123,000,000
1923	113,000	113,000	Limestone		113,000,000
1922	101,800	101,800	Limestone		101,800,000
1916	18,500	18,500	Limestone		18,500,000
1915	34,800	34,800	Limestone		34,800,000
1914	37,400	37,400	Limestone		37,400,000
1913	27,200	27,200	Limestone		27,200,000

SUMMARY TOTALS: 092B 005 NAME: **BAMBERTON**

	Metric		Imperial	
Mined:	3,731,857	tonnes	4,113,668	tons
Milled:	3,731,857	tonnes	4,113,668	tons
Recovery:				
Limestone:	3,731,857,000	kilograms	8,227,334,043	pounds

Comments:

1988: A.R.M. Industries quarried for riprap.

MINFILE NUMBER: **092B 006** NAME: **TOD INLET** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1921	49,400	49,400	Limestone		49,400,000
1920	65,900	65,900	Limestone		65,900,000
1919	21,800	21,800	Limestone		21,800,000
1918	22,100	22,100	Limestone		22,100,000
1917	43,100	43,100	Limestone		43,100,000
1916	40,800	40,800	Limestone		40,800,000
1915	26,921	26,921	Limestone		26,921,000
1914	72,600	72,600	Limestone		72,600,000
1913	98,400	98,400	Limestone		98,400,000
1912	104,800	104,800	Limestone		104,800,000
1911	84,700	84,700	Limestone		84,700,000
1910	52,400	52,400	Limestone		52,400,000
1909	48,000	48,000	Limestone		48,000,000
1908	34,450	34,450	Limestone		34,450,000
1907	28,900	28,900	Limestone		28,900,000
1906	33,600	33,600	Limestone		33,600,000
1905	9,100	9,100	Limestone		9,100,000

SUMMARY TOTALS: 092B 006 NAME: **TOD INLET**

	Metric		Imperial	
Mined:	836,971	tonnes	922,603	tons
Milled:	836,971	tonnes	922,603	tons
Recovery:				
Limestone:	836,971,000	kilograms	1,845,204,680	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 009** NAME: **MARGARET (L.138)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1918	163		Silver	778	
			Gold	62	
			Copper		5,781
1917	344		Silver	2,084	
			Gold	124	
			Copper		13,381

SUMMARY TOTALS: 092B 009 NAME: **MARGARET (L.138)**

	Metric		Imperial	
Mined:	507	tonnes	559	tons
Milled:		tonnes		tons
Recovery:				
Silver:	2,862	grams	92	ounces
Gold:	186	grams	6	ounces
Copper:	19,162	kilograms	42,245	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 010** NAME: **WILLOW GROUSE (L.135)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1918	496		Silver	1,991	
			Copper		7,090
1916	303		Silver	2,395	
			Copper		15,264
1915	483		Silver	4,354	
			Gold	280	
			Copper		39,048

SUMMARY TOTALS: 092B 010 NAME: **WILLOW GROUSE (L.135)**

	Metric		Imperial	
Mined:	1,282	tonnes	1,413	tons
Milled:		tonnes		tons
Recovery:				
Silver:	8,740	grams	281	ounces
Gold:	280	grams	9	ounces
Copper:	61,402	kilograms	135,368	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 012** NAME: **EAGLE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1923	250		Talc		25,000

SUMMARY TOTALS: 092B 012 NAME: **EAGLE**

		Metric		Imperial	
Mined:		250	tonnes	276	tons
Milled:			tonnes		tons
Recovery:					
	Talc:	25,000	kilograms	55,116	pounds

Comments:

1923: Open File 1988-19.

MINFILE NUMBER: **092B 014** NAME: **RALPH (L.77)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1938	3		Silver	467	
			Copper		324
1900	56		Silver	11,010	
			Gold	62	
			Copper		6,007

SUMMARY TOTALS: 092B 014 NAME: **RALPH (L.77)**

	Metric		Imperial	
Mined:	59	tonnes	65	tons
Milled:		tonnes		tons
Recovery:				
Silver:	11,477	grams	369	ounces
Gold:	62	grams	2	ounces
Copper:	6,331	kilograms	13,957	pounds

MINFILE NUMBER: **092B 015** NAME: **KING SOLOMON (L.17G)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1907	174		Silver	3,950	
			Copper		11,446
1905	37		Silver	809	
			Copper		2,955
1904	43		Silver	1,586	
			Copper		3,573

SUMMARY TOTALS: 092B 015 NAME: **KING SOLOMON (L.17G)**

	Metric		Imperial	
Mined:	254	tonnes	280	tons
Milled:		tonnes		tons
Recovery:				
Silver:	6,345	grams	204	ounces
Copper:	17,974	kilograms	39,626	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 017** NAME: **BONNER'S QUARRY** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1982	15	15	Limestone		15,000
1981	247	247	Limestone		247,000
1980	666	666	Limestone		666,000
1979	1,201	1,201	Limestone		1,201,000
1978	1,368	1,368	Limestone		1,368,000
1977	1,225	1,225	Limestone		1,225,000
1976	1,316	1,316	Limestone		1,316,000
1975	1,270	1,270	Limestone		1,270,000
1974	1,162	1,162	Limestone		1,162,000
1973	1,179	1,179	Limestone		1,179,000
1972	1,080	1,080	Limestone		1,080,000
1971	1,033	1,033	Limestone		1,033,000
1970	1,155	1,155	Limestone		1,155,000
1969	1,145	1,145	Limestone		1,145,000
1968	1,036	1,036	Limestone		1,036,000
1967	1,098	1,098	Limestone		1,098,000
1966	1,180	1,180	Limestone		1,180,000
1965	1,260	1,260	Limestone		1,260,000
1964	1,735	1,735	Limestone		1,735,000
1963	1,781	1,781	Limestone		1,781,000
1962	1,520	1,520	Limestone		1,520,000
1961	1,551	1,551	Limestone		1,551,000
1960	1,239	1,239	Limestone		1,239,000
1959	1,042	1,042	Limestone		1,042,000
1958	1,065	1,065	Limestone		1,065,000
1957	1,005	1,005	Limestone		1,005,000
1955	740	740	Limestone		740,000
1954	771	771	Limestone		771,000
1953	590	590	Limestone		590,000

SUMMARY TOTALS: 092B 017 NAME: **BONNER'S QUARRY**

	Metric		Imperial	
Mined:	31,675	tonnes	34,916	tons
Milled:	31,675	tonnes	34,916	tons
Recovery:				
Limestone:	31,675,000	kilograms	69,831,402	pounds

MINFILE NUMBER: **092B 019** NAME: **RAYMOND** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1979	708,103	708,103	Limestone		708,103,000
1978	660,373	660,373	Limestone		660,373,000
1977	718,204	718,204	Limestone		718,204,000
1976	718,204	718,204	Limestone		718,204,000
1975	745,483	745,483	Limestone		745,483,000
1974	640,547	640,547	Limestone		640,547,000
1973	481,867	481,867	Limestone		481,867,000
1972	568,393	568,393	Limestone		568,393,000
1971	631,037	631,037	Limestone		631,037,000
1970	469,173	469,173	Limestone		469,173,000
1969	479,528	479,528	Limestone		479,528,000
1968	411,203	411,203	Limestone		411,203,000
1967	517,196	517,196	Limestone		517,196
1966	555,534	555,534	Limestone		555,534,000
1965	341,596	341,596	Limestone		341,596,000
1964	414,821	414,821	Limestone		414,821,000
1963	317,281	317,281	Limestone		317,281,000
1962	260,170	260,170	Limestone		260,170,000
1961	205,543	205,543	Limestone		205,543,000
1960	244,988	244,988	Limestone		244,988,000
1959	320,844	320,844	Limestone		320,844,000
1958	365,423	365,423	Limestone		365,423,000
1957	455,174	455,174	Limestone		455,174,000
1956	270,927	270,927	Limestone		270,927
1955	218,515	218,515	Limestone		218,515,000
1954	115,573	115,573	Limestone		115,573,000
1953	22,868	22,868	Limestone		22,868,000

SUMMARY TOTALS: 092B 019 NAME: **RAYMOND**

	Metric		Imperial	
Mined:	11,858,568	tonnes	13,071,834	tons
Milled:	11,858,568	tonnes	13,071,834	tons

Recovery:

Limestone:	11,071,233,123	kilograms	24,407,884,110	pounds

Comments:

1979: Includes a small quantity purchased from Ideal Cement Co.
1972: Geology, Exploration and Mining p. 599.
1969: Geology, Exploration and Mining 1969 p. 396.
1968: Annual Report 1968 p. 320.
1967: Annual Report 1967 p. 310.
1966: Annual Report 1966 p. 269.
1962: Annual Report 1962 p. 156.
1961: Annual Report 1961 p. 150.
1960: Annual Report 1960 p. 148.
1959: Annual Report 1959 p. 176.
1957: Annual Report 1957 p. 90.
1953: Annual Report 1953 p. 193.

MINFILE NUMBER: **092B 020** NAME: **PARSONS BRIDGE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1941	221	212	Limestone		221,000
1940	309	232	Limestone		309,000
1939	2,824	2,824	Limestone		2,824,000
1938	227	227	Limestone		227,000
1922	408	408	Limestone		408,233
1921	1,203	1,203	Limestone		1,202,927
1920	687	687	Limestone		687,465
1919	454	454	Limestone		453,592
1917	1,361	1,361	Limestone		1,360,777

SUMMARY TOTALS: 092B 020 NAME: **PARSONS BRIDGE**

	Metric		Imperial	
Mined:	7,694	tonnes	8,481	tons
Milled:	7,608	tonnes	8,386	tons

Recovery:

Limestone:	7,693,994	kilograms	16,962,348	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 022** NAME: **MALAHAT** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1950	318	318	Limestone		318,000
1948	386	386	Limestone		386,000
1947	254	254	Limestone		254,000
1946	227	227	Limestone		227,000
1945	145	145	Limestone		145,000
1944	95	95	Limestone		95,000

SUMMARY TOTALS: 092B 022 NAME: **MALAHAT**

	Metric		Imperial	
Mined:	1,425	tonnes	1,571	tons
Milled:	1,425	tonnes	1,571	tons
Recovery:				
Limestone:	1,425,000	kilograms	3,141,586	pounds

MINFILE NUMBER: **092B 024** NAME: **ROSEBANK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1933	269	92	Limestone		269,000
1932	879	342	Limestone		879,000
1931	3,413	1,810	Limestone		3,413,000
1930	7,409	3,592	Limestone		7,409,000
1929	17,157	5,451	Limestone		17,157,000
1928	8,057	3,851	Limestone		8,057,000
1927	2,837	2,837	Limestone		2,837,000
1926	9,677	9,677	Limestone		9,677,000
1925	335	335	Limestone		335,000
1924	368	368	Limestone		368,000
1921	1,052	1,052	Limestone		1,052,000
1920	2,241	2,241	Limestone		2,241,000
1919	800	664	Limestone		800,000
1918	1,360	1,360	Limestone		1,360,000
1917	835	835	Limestone		835,000
1916	970	970	Limestone		970,000
1915	324	324	Limestone		324,000
1914	143,299	1,820	Limestone		143,299,000
1913	8,100	8,100	Limestone		8,100,000
1912	8,900	8,900	Limestone		8,900,000

SUMMARY TOTALS: 092B 024 NAME: **ROSEBANK**

	Metric		Imperial	
Mined:	218,282	tonnes	240,615	tons
Milled:	54,621	tonnes	60,209	tons

Recovery:

Limestone:	218,282,000	kilograms	481,229,299	pounds

Comments:

1933: Tonnes milled = amount consumed on site for lime production.

MINFILE NUMBER: **092B 026** NAME: **ATKINS ROAD** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1911	3,589	2,999	Aggregate		589,670
			Limestone		2,999,000

SUMMARY TOTALS: 092B 026 NAME: **ATKINS ROAD**

	Metric		Imperial	
Mined:	3,589	tonnes	3,956	tons
Milled:	2,999	tonnes	3,306	tons

Recovery:

Aggregate:	589,670	kilograms	1,299,999	pounds
Limestone:	2,999,000	kilograms	6,611,661	pounds

Comments:

1911: Aggregate refers to limestone sold as rip rap.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 027** NAME: **HILL 60** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1920	3		Manganese		266,000
1919	526		Manganese		263,000

SUMMARY TOTALS: 092B 027 NAME: **HILL 60**

	Metric		Imperial	
Mined:	529	tonnes	583	tons
Milled:		tonnes		tons

Recovery:

Manganese:	529,000	kilograms	1,166,245	pounds

Comments:

1920: The recovery is only an estimate based on a 50% recovery for 1919.
1919: The recovery is an estimate based on a 50% recovery for this year.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 032** NAME: **LONG HARBOUR** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1965	9,977	8,163	Pozzolan		680,000

SUMMARY TOTALS: 092B 032 NAME: **LONG HARBOUR**

	Metric		Imperial	
Mined:	9,977	tonnes	10,998	tons
Milled:	8,163	tonnes	8,998	tons

Recovery:

Pozzolan:	680,000	kilograms	1,499,143	pounds

Comments:

1965: Minister of Mines Annual Report 1965, p. 269

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 035** NAME: **VIVA** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1916	217		Silver	995	
			Copper		5,575

SUMMARY TOTALS: 092B 035 NAME: **VIVA**

	Metric		Imperial	
Mined:	217	tonnes	239	tons
Milled:		tonnes		tons
Recovery:				
Silver:	995	grams	32	ounces
Copper:	5,575	kilograms	12,291	pounds

MINFILE NUMBER: **092B 038** NAME: **CORNUCOPIA** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1960	23		Silver	93	
			Gold	1,058	

SUMMARY TOTALS: 092B 038 NAME: **CORNUCOPIA**

	Metric		Imperial	
Mined:	23	tonnes	25	tons
Milled:		tonnes		tons
Recovery:				
Silver:	93	grams	3	ounces
Gold:	1,058	grams	34	ounces

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 050** NAME: **WOLFE CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1936			Gold	93	

SUMMARY TOTALS: 092B 050 NAME: **WOLFE CREEK**

	Metric		Imperial	
Mined:		tonnes		tons
Milled:		tonnes		tons
Recovery:				
Gold:	93	grams	3	ounces

Comments:

1936: Tonnes mined is unknown. Mining period - 1936-1940 (Bull.28, p.16)

MINFILE NUMBER: **092B 080** NAME: **BLUEBELL (L.15G)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1907	175		Silver	3,608	
			Copper		9,482

SUMMARY TOTALS: 092B 080 NAME: **BLUEBELL (L.15G)**

	Metric		Imperial	
Mined:	175	tonnes	193	tons
Milled:		tonnes		tons
Recovery:				
Silver:	3,608	grams	116	ounces
Copper:	9,482	kilograms	20,904	pounds

MINFILE NUMBER: **092B 108** NAME: **VALENTINE MOUNTAIN** STATUS: Developed Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1984	6	6	Silver	2,541	
			Gold	160	
			Lead		47
			Zinc		19

SUMMARY TOTALS: 092B 108 NAME: **VALENTINE MOUNTAIN**

	Metric		Imperial	
Mined:	6	tonnes	7	tons
Milled:	6	tonnes	7	tons
Recovery:				
Silver:	2,541	grams	82	ounces
Gold:	160	grams	5	ounces
Lead:	47	kilograms	104	pounds
Zinc:	19	kilograms	42	pounds

Comments:

1984: Crude ore.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092B 116** NAME: **PROSPECT LAKE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1921	180		Diatomite		180,000

SUMMARY TOTALS: 092B 116 NAME: **PROSPECT LAKE**

	Metric		Imperial	
Mined:	180	tonnes	198	tons
Milled:		tonnes		tons

Recovery:

Diatomite:	180,000	kilograms	396,832	pounds

Comments:

1921: Data is from CANMET Report 691, page 53.

MINFILE NUMBER: **092C 007** NAME: **MONITOR** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1918	109		Silver	3,732	
			Copper		3,973
1917	36		Copper		2,540
1916	42		Silver	1,120	
			Copper		3,588
1902	107		Silver	6,252	
			Gold	62	
			Copper		8,906
1901	836		Silver	16,049	
			Copper		85,650
1900	158		Silver	9,984	
			Copper		12,289

SUMMARY TOTALS: 092C 007 NAME: **MONITOR**

	Metric		Imperial	
Mined:	1,288	tonnes	1,420	tons
Milled:		tonnes		tons
Recovery:				
Silver:	37,137	grams	1,194	ounces
Gold:	62	grams	2	ounces
Copper:	116,946	kilograms	257,822	pounds

MINFILE NUMBER: **092C 017** NAME: **BLUE GROUSE (L.32,L.33)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1960	60,254	60,254	Silver	460,387	
			Copper		1,149,702
1959	78,111	78,111	Silver	760,624	
			Copper		2,278,969
1958	87,116	87,116	Silver	796,486	
			Copper		1,979,165
1957	8,377	8,377	Silver	148,392	
			Copper		475,486
1956	2,790		Silver	47,930	
			Copper		158,875
1955	3,401		Silver	65,067	
			Copper		185,039
1954	7,332		Silver	173,182	
			Copper		471,908
1919	218		Silver	5,972	
			Gold	218	
			Copper		8,435
1918	454		Silver	12,410	
			Copper		19,968
1917	1,245		Silver	38,194	
			Copper		87,076

SUMMARY TOTALS: 092C 017 NAME: **BLUE GROUSE (L.32,L.33)**

	Metric		Imperial	
Mined:	249,298	tonnes	274,804	tons
Milled:	233,858	tonnes	257,784	tons
Recovery:				
Silver:	2,508,644	grams	80,655	ounces
Gold:	218	grams	7	ounces
Copper:	6,814,623	kilograms	15,023,668	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092C 034** NAME: **ROB** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1960	4,665		Copper		61,929

SUMMARY TOTALS: 092C 034 NAME: **ROB**

	Metric		Imperial	
Mined:	4,665	tonnes	5,142	tons
Milled:		tonnes		tons

Recovery:

Copper:	61,929	kilograms	136,530	pounds

Comments:

1960: Test run from open pits; copper concentrate shipped to Japan.

MINFILE NUMBER: **092C 039** NAME: **ALPHA-BETA** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1963	535		Silver	10,264	
			Gold	187	
			Copper		23,390

SUMMARY TOTALS: 092C 039 NAME: **ALPHA-BETA**

	Metric		Imperial	
Mined:	535	tonnes	590	tons
Milled:		tonnes		tons
Recovery:				
Silver:	10,264	grams	330	ounces
Gold:	187	grams	6	ounces
Copper:	23,390	kilograms	51,566	pounds

MINFILE NUMBER: **092C 067** NAME: **SOUTHERN CROSS (L.329)** STATUS: Showing

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1906	84		Silver	2,084	
			Copper		2,830
1905	206		Silver	3,048	
			Copper		3,274

SUMMARY TOTALS: 092C 067 NAME: **SOUTHERN CROSS (L.329)**

	Metric		Imperial	
Mined:	290	tonnes	320	tons
Milled:		tonnes		tons
Recovery:				
Silver:	5,132	grams	165	ounces
Copper:	6,104	kilograms	13,457	pounds

MINFILE NUMBER: **092C 073** NAME: **SUNRO** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1978			Silver	435	
			Gold	31	
			Copper		2,143
1975			Silver	9,331	
			Gold	902	
			Copper		53,735
1974	219,088	219,088	Silver	382,847	
			Gold	32,067	
			Copper		2,041,308
1973	248,230	248,230	Silver	317,873	
			Gold	29,330	
			Copper		1,994,811
1972	114,305	114,305	Silver	69,018	
			Gold	2,861	
			Copper		385,796
1968	138,384	138,384	Silver	219,712	
			Gold	16,796	
			Copper		1,029,658
1967	137,871	137,871	Silver	102,329	
			Gold	14,307	
			Copper		1,360,770
1966	97,685	97,685	Silver	124,412	
			Gold	12,441	
			Copper		842,770
1963	242,829	242,829	Silver	594,814	
			Gold	56,483	
			Copper		3,744,793
1962	130,642	130,642	Silver	441,880	
			Gold	37,883	
			Copper		2,298,487

SUMMARY TOTALS: 092C 073 NAME: **SUNRO**

	Metric		Imperial	
Mined:	1,329,034	tonnes	1,465,009	tons
Milled:	1,329,034	tonnes	1,465,009	tons
Recovery:				
Silver:	2,262,651	grams	72,746	ounces
Gold:	203,101	grams	6,530	ounces
Copper:	13,754,271	kilograms	30,322,968	pounds

Comments:

1978: Disposal of stockpile (unknown tonnage); copper concentrates-9 t.
1975: Copper concentrates-213 tonnes; from stockpile (unknown tonnage).

MINFILE NUMBER: **092C 108** NAME: **SUNNYSIDE (L.34,L.39)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1917	104		Silver	218	
			Copper		4,159

SUMMARY TOTALS: 092C 108 NAME: **SUNNYSIDE (L.34,L.39)**

	Metric		Imperial	
Mined:	104	tonnes	115	tons
Milled:		tonnes		tons
Recovery:				
Silver:	218	grams	7	ounces
Copper:	4,159	kilograms	9,169	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092C 113** NAME: **ROCKY** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1978	1		Rhodonite		140
1977	1		Rhodonite		415

SUMMARY TOTALS: 092C 113 NAME: **ROCKY**

	Metric		Imperial	
Mined:	2	tonnes	2	tons
Milled:		tonnes		tons

Recovery:

Rhodonite:	555	kilograms	1,224	pounds

Comments:

1978: Exploration in British Columbia page E293.
1977: Exploration in British Columbia 1977 page E255.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092C 117** NAME: **AMORE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1979	2	2	Gold	1,234	

SUMMARY TOTALS: 092C 117 NAME: **AMORE**

	Metric		Imperial	
Mined:	2	tonnes	2	tons
Milled:	2	tonnes	2	tons
Recovery:				
Gold:	1,234	grams	40	ounces

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092C 121** NAME: **WRECK BAY** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1900			Gold	23,996	

SUMMARY TOTALS: 092C 121 NAME: **WRECK BAY**

	Metric		Imperial	
Mined:		tonnes		tons
Milled:		tonnes		tons
Recovery:				
Gold:	23,996	grams	771	ounces

Comments:

1900: Qunatity removed to produce total is unknown (Annual Report 1900).

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092E 001** NAME: **GLENGARRY (L.410)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1959	56,700	56,700	Iron		22,680,000

SUMMARY TOTALS: 092E 001 NAME: **GLENGARRY (L.410)**

	Metric		Imperial	
Mined:	56,700	tonnes	62,501	tons
Milled:	56,700	tonnes	62,501	tons

Recovery:

Iron:	22,680,000	kilograms	50,000,827	pounds

Comments:

1959: Estimated mined/milled and iron concentrates shipped.

MINFILE NUMBER: **092E 002** NAME: **BEANO** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1949	11		Silver	529	
			Gold	1,213	
			Copper		23
1948	10		Silver	871	
			Gold	2,084	
			Copper		10

SUMMARY TOTALS: 092E 002 NAME: **BEANO**

	Metric		Imperial	
Mined:	21	tonnes	23	tons
Milled:		tonnes		tons
Recovery:				
Silver:	1,400	grams	45	ounces
Gold:	3,297	grams	106	ounces
Copper:	33	kilograms	73	pounds

MINFILE NUMBER: **092E 010** NAME: **GEO** STATUS: Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1895	1		Gold	31	

SUMMARY TOTALS: 092E 010 NAME: **GEO**

		Metric		Imperial	
	Mined:	1	tonnes	1	tons
	Milled:		tonnes		tons
Recovery:					
	Gold:	31	grams	1	ounces

MINFILE NUMBER: **092E 011** NAME: **INDIAN CHIEF** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1938	13,608		Silver	178,811	
			Gold	1,431	
			Copper		86,820
1923	30,031		Silver	539,357	
			Gold	3,732	
			Copper		470,881
1922	18,053		Silver	446,888	
			Gold	2,022	
			Copper		280,178
1920	5,064		Silver	83,978	
			Gold	218	
			Copper		48,515
1918	2,565		Silver	200,552	
			Gold	653	
			Copper		76,038
1917	196		Silver	31,538	
			Gold	187	
			Copper		14,901
1916	390		Silver	34,524	
			Gold	218	
			Copper		16,711
1909	670		Silver	24,602	
			Gold	12,877	
			Copper		13,400
1908	2,950		Silver	159,714	
			Gold	1,026	
			Copper		81,267
1904	81		Silver	7,434	
			Gold	93	
			Copper		13,653

SUMMARY TOTALS: 092E 011 NAME: **INDIAN CHIEF**

	Metric		Imperial	
Mined:	73,608	tonnes	81,139	tons
Milled:		tonnes		tons
Recovery:				
Silver:	1,707,398	grams	54,894	ounces
Gold:	22,457	grams	722	ounces
Copper:	1,102,364	kilograms	2,430,296	pounds

Comments:

1923: Operated by Tidewater Copper Co.

MINFILE NUMBER: **092E 026** NAME: **BALTIC NO. 1 (L.1582)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1938	39		Silver	3,141	
			Gold	1,306	
1937	30		Silver	995	
			Gold	591	
			Copper		11
1936	9		Silver	653	
			Gold	560	
			Copper		7
1935	22		Silver	1,773	
			Gold	1,026	
			Copper		39
1934	30		Silver	3,732	
			Gold	2,084	
			Copper		30

SUMMARY TOTALS: 092E 026 NAME: **BALTIC NO. 1 (L.1582)**

	Metric		Imperial	
Mined:	130	tonnes	143	tons
Milled:		tonnes		tons
Recovery:				
Silver:	10,294	grams	331	ounces
Gold:	5,567	grams	179	ounces
Copper:	87	kilograms	192	pounds

MINFILE NUMBER: **092E 028** NAME: **ELAINE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1939	5		Silver	103	
			Gold	240	
			Copper		3

SUMMARY TOTALS: 092E 028 NAME: **ELAINE**

	Metric		Imperial	
Mined:	5	tonnes	6	tons
Milled:		tonnes		tons
Recovery:				
Silver:	103	grams	3	ounces
Gold:	240	grams	8	ounces
Copper:	3	kilograms	7	pounds

Comments:

1939: Ore mined & shipped. Minister of Mines, Annual Rpt.,Index #3,p.219

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092E 031** NAME: **THELMA** STATUS: Developed Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	22		Silver	1,400	
			Gold	404	
			Copper		153

SUMMARY TOTALS: 092E 031 NAME: **THELMA**

	Metric		Imperial	
Mined:	22	tonnes	24	tons
Milled:		tonnes		tons
Recovery:				
Silver:	1,400	grams	45	ounces
Gold:	404	grams	13	ounces
Copper:	153	kilograms	337	pounds

MINFILE NUMBER: **092E 043** NAME: **ELIZA** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	13		Silver	93	
			Gold	435	
			Copper		10

SUMMARY TOTALS: 092E 043 NAME: **ELIZA**

	Metric		Imperial	
Mined:	13	tonnes	14	tons
Milled:		tonnes		tons
Recovery:				
Silver:	93	grams	3	ounces
Gold:	435	grams	14	ounces
Copper:	10	kilograms	22	pounds

MINFILE NUMBER: **092F 001** NAME: **BRYNNOR** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1998		245,000	Aggregate		245,000,000
1970			Iron		3,897,265
1969			Iron		37,941,185
1968	213,454	187,051	Iron		181,546,700
1967	295,999	170,177	Iron		124,492,040
1966	315,464	335,429	Iron		291,348,710
1965	926,862	765,603	Iron		597,394,730
1964	1,080,502	922,918	Iron		683,774,130
1963	1,011,081	878,251	Iron		681,205,890
1962	637,578	649,593	Iron		409,705,610

SUMMARY TOTALS: 092F 001 NAME: **BRYNNOR**

	Metric		Imperial	
Mined:	4,480,940	tonnes	4,939,391	tons
Milled:	4,154,022	tonnes	4,579,025	tons
Recovery:				
Aggregate:	245,000,000	kilograms	540,132,390	pounds
Iron:	3,011,306,260	kilograms	6,638,792,030	pounds

Comments:

1998: Limestone from dumps shipped/trucked to Washington state.
1969: Iron concentrates shipped from stockpile.
1968: Iron concentrates shipped.
1967: Iron concentrates shipped.
1966: Iron concentrates shipped.
1965: Iron concentrates shipped.
1964: Iron concentrates shipped.
1963: Iron concentrates shipped.
1962: Iron concentrates shipped.

MINFILE NUMBER: **092F 015** NAME: **HETTY GREEN (L.1105)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1905	194		Silver	5,225	
			Gold	62	
			Copper		13,326

SUMMARY TOTALS: 092F 015 NAME: **HETTY GREEN (L.1105)**

	Metric		Imperial	
Mined:	194	tonnes	214	tons
Milled:		tonnes		tons
Recovery:				
Silver:	5,225	grams	168	ounces
Gold:	62	grams	2	ounces
Copper:	13,326	kilograms	29,379	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 031** NAME: **LEORA** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1915	272		Silver	1,369	
			Gold	7,558	
1914	91		Silver	280	
			Gold	622	
1910	4		Silver	31	
			Gold	62	
1909	7		Silver	995	
			Gold	62	
1902	9		Silver	156	
			Gold	467	

SUMMARY TOTALS: 092F 031 NAME: **LEORA**

	Metric		Imperial	
Mined:	383	tonnes	422	tons
Milled:		tonnes		tons
Recovery:				
Silver:	2,831	grams	91	ounces
Gold:	8,771	grams	282	ounces

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 032** NAME: **ROSE MARIE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1900	9		Silver	1,928	
			Gold	902	

SUMMARY TOTALS: 092F 032 NAME: **ROSE MARIE**

	Metric		Imperial	
Mined:	9	tonnes	10	tons
Milled:		tonnes		tons
Recovery:				
Silver:	1,928	grams	62	ounces
Gold:	902	grams	29	ounces

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 033** NAME: **TOMMY K** STATUS: Developed Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1934	4		Silver	62	
			Gold	31	
			Copper		11

SUMMARY TOTALS: 092F 033 NAME: **TOMMY K**

	Metric		Imperial	
Mined:	4	tonnes	4	tons
Milled:		tonnes		tons
Recovery:				
Silver:	62	grams	2	ounces
Gold:	31	grams	1	ounces
Copper:	11	kilograms	24	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 039** NAME: **MAPLE LEAF** STATUS: Developed Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	3		Gold	124	
			Copper		2

SUMMARY TOTALS: 092F 039 NAME: **MAPLE LEAF**

	Metric		Imperial	
Mined:	3	tonnes	3	tons
Milled:		tonnes		tons
Recovery:				
Gold:	124	grams	4	ounces
Copper:	2	kilograms	4	pounds

MINFILE NUMBER: **092F 040** NAME: **GOLD FLAKE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	45	18	Gold	809	

SUMMARY TOTALS: 092F 040 NAME: **GOLD FLAKE**

	Metric		Imperial	
Mined:	45	tonnes	50	tons
Milled:	18	tonnes	20	tons
Recovery:				
Gold:	809	grams	26	ounces

MINFILE NUMBER: **092F 041** NAME: **FANDORA (L.1902)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1964	844	844	Silver	3,204	
			Gold	22,830	
			Copper		9
			Lead		10
1963	44	44	Silver	2,457	
			Gold	10,295	
1962	36	36	Silver	2,644	
			Gold	12,068	
1960	48	48	Silver	62	
			Gold	467	
			Lead		72
			Zinc		36

SUMMARY TOTALS: 092F 041 NAME: **FANDORA (L.1902)**

	Metric		Imperial	
Mined:	972	tonnes	1,071	tons
Milled:	972	tonnes	1,071	tons
Recovery:				
Silver:	8,367	grams	269	ounces
Gold:	45,660	grams	1,468	ounces
Copper:	9	kilograms	20	pounds
Lead:	82	kilograms	181	pounds
Zinc:	36	kilograms	79	pounds

MINFILE NUMBER: **092F 053** NAME: **PROSPER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1950	4		Silver	311	
			Gold	249	
			Copper		37
1942	86		Silver	5,972	
			Gold	6,438	

SUMMARY TOTALS: 092F 053 NAME: **PROSPER**

	Metric		Imperial	
Mined:	90	tonnes	99	tons
Milled:		tonnes		tons

Recovery:

Silver:	6,283	grams	202	ounces
Gold:	6,687	grams	215	ounces
Copper:	37	kilograms	82	pounds

Comments:

1950: Some ore shipped. Amount not known.
1942: Shipped by Bucaneer Mines to Tacoma.

MINFILE NUMBER: **092F 060** NAME: **MUSKETEER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1975	7		Silver	280	
			Gold	435	
			Copper		4
1974	50		Silver	2,146	
			Gold	2,986	
			Copper		55
			Lead		2,247
1963	2		Silver	1,182	
			Gold	2,488	
			Copper		5
			Lead		130
1962	2,830		Silver	15,023	
			Gold	27,308	
			Copper		171
			Lead		2,199
1961	308		Silver	3,204	
			Gold	4,323	
			Copper		44
			Lead		626
1942	6,426	4,599	Silver	32,161	
			Gold	57,416	
			Copper		243
			Lead		5,897

SUMMARY TOTALS: 092F 060 NAME: **MUSKETEER**

	Metric		Imperial	
Mined:	9,623	tonnes	10,608	tons
Milled:	4,599	tonnes	5,070	tons
Recovery:				
Silver:	53,996	grams	1,736	ounces
Gold:	94,956	grams	3,053	ounces
Copper:	522	kilograms	1,151	pounds
Lead:	11,099	kilograms	24,469	pounds

MINFILE NUMBER: **092F 061** NAME: **BUCCANEER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1959		1,450	Silver	17,169	
			Gold	30,170	
			Copper		48
			Lead		2,993
1958	91	91	Silver	902	
			Gold	1,026	
			Copper		14
			Lead		213
1947	44		Silver	467	
			Gold	1,866	
1942	2,722	2,649	Silver	17,604	
			Gold	72,439	
			Copper		253
1941	2,130	1,767	Silver	2,986	
			Gold	16,080	

SUMMARY TOTALS: 092F 061 NAME: **BUCCANEER**

	Metric		Imperial	
Mined:	4,987	tonnes	5,497	tons
Milled:	5,957	tonnes	6,566	tons
Recovery:				
Silver:	39,128	grams	1,258	ounces
Gold:	121,581	grams	3,909	ounces
Copper:	315	kilograms	694	pounds
Lead:	3,206	kilograms	7,068	pounds

MINFILE NUMBER: **092F 068** NAME: **DELLA (L.591)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1906	5		Gold	1,337	

SUMMARY TOTALS: 092F 068 NAME: **DELLA (L.591)**

	Metric		Imperial	
Mined:	5	tonnes	6	tons
Milled:		tonnes		tons

Recovery:

Gold:	1,337	grams	43	ounces

Comments:

1906: Operated by Joe Drinkwater and Alvin Engvik.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 069** NAME: **SHERWOOD** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1942	20		Silver	3,110	
			Gold	1,866	
			Copper		50
			Lead		391

SUMMARY TOTALS: 092F 069 NAME: **SHERWOOD**

	Metric		Imperial	
Mined:	20	tonnes	22	tons
Milled:		tonnes		tons
Recovery:				
Silver:	3,110	grams	100	ounces
Gold:	1,866	grams	60	ounces
Copper:	50	kilograms	110	pounds
Lead:	391	kilograms	862	pounds

MINFILE NUMBER: **092F 071** NAME: **LYNX (MYRA FALLS)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1985	585,670	585,670	Silver	27,131,675	
			Gold	811,884	
			Copper		8,200,962
			Lead		1,377,572
			Zinc		29,484,968
1984	203,636	203,636	Silver	19,011,347	
			Gold	405,154	
			Copper		1,945,768
			Lead		1,978,933
			Zinc		14,056,197
1983	248,376	248,376	Silver	27,086,089	
			Gold	578,431	
			Cadmium		67,278
			Copper		2,580,863
			Lead		2,542,008
			Zinc		17,204,718
1982	287,584	287,584	Silver	33,364,451	
			Gold	656,781	
			Cadmium		75,528
			Copper		2,677,011
			Lead		2,409,516
			Zinc		17,923,645
1981	246,150	246,150	Silver	26,940,813	
			Gold	572,366	
			Cadmium		63,984
			Copper		2,402,823
			Lead		2,286,971
			Zinc		15,863,753
1980	278,244	278,244	Silver	20,453,988	
			Gold	444,126	
			Cadmium		76,262
			Copper		1,880,636
			Lead		1,568,857
			Zinc		17,918,936
1979	266,877	266,877	Silver	37,990,999	
			Gold	802,688	
			Cadmium		79,887
			Copper		3,595,016
			Lead		3,137,575
			Zinc		18,933,570
1978	269,033	269,033	Silver	36,150,053	
			Gold	628,094	
			Cadmium		71,704
			Copper		3,294,888
			Lead		2,768,914
			Zinc		18,003,921
1977	247,646	269,068	Silver	34,909,727	
			Gold	632,075	
			Cadmium		72,139
			Copper		2,856,881
			Lead		3,356,196
			Zinc		18,607,822
1976	269,293	269,293	Silver	40,435,642	
			Gold	695,494	
			Cadmium		72,800
			Copper		2,953,251
			Lead		3,586,262
			Zinc		18,987,531
1975	260,717	260,717	Silver	35,977,151	
			Gold	642,837	
			Cadmium		70,372
			Copper		2,707,398
			Lead		3,459,337
			Zinc		18,090,898
1974	308,823	269,696	Silver	35,815,384	
			Gold	792,660	
			Cadmium		85,947
			Copper		3,932,623
			Lead		2,719,464
			Zinc		21,482,459
1973	321,359	321,359	Silver	41,365,746	
			Gold	694,406	
			Cadmium		104,133
			Copper		3,405,008

MINFILE NUMBER: **092F 071** NAME: **LYNX (MYRA FALLS)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1973	321,359	321,359	Lead		3,805,197
			Zinc		25,388,147
1972	344,189	344,189	Silver	16,366,896	
			Gold	378,679	
			Cadmium		67,580
			Copper		6,721,354
			Lead		2,223,933
			Zinc		17,239,950
1971	315,157	350,662	Silver	15,492,124	
			Gold	386,361	
			Cadmium		89,595
			Copper		6,300,265
			Lead		2,158,452
			Zinc		21,215,471
1970	344,262	351,057	Silver	12,182,081	
			Gold	366,860	
			Cadmium		90,101
			Copper		6,352,510
			Lead		2,236,001
			Zinc		21,020,956
1969	348,294	348,294	Silver	15,489,481	
			Gold	433,794	
			Cadmium		114,485
			Copper		5,813,429
			Lead		2,900,319
			Zinc		25,875,759
1968	299,572	299,572	Silver	16,214,212	
			Gold	448,256	
			Cadmium		92,048
			Copper		5,328,617
			Lead		2,405,076
			Zinc		23,962,070
1967	281,774	281,774	Silver	12,761,592	
			Gold	339,085	
			Cadmium		54,335
			Copper		4,067,512
			Lead		1,786,191
			Zinc		14,529,417

SUMMARY TOTALS: 092F 071 NAME: **LYNX (MYRA FALLS)**

	Metric		Imperial	
Mined:	5,726,656	tonnes	6,312,558	tons
Milled:	5,751,251	tonnes	6,339,669	tons
Recovery:				
Silver:	505,139,451	grams	16,240,587	ounces
Gold:	10,710,031	grams	344,335	ounces
Cadmium:	1,348,178	kilograms	2,972,223	pounds
Copper:	77,016,815	kilograms	169,792,965	pounds
Lead:	48,706,774	kilograms	107,380,026	pounds
Zinc:	375,790,188	kilograms	828,475,316	pounds

Comments:

1985: Lynx, Myra (092F 072), H-W (092F 330); see H-W after 1985.
1984: 1972-84: Combined output of Lynx and Myra (092F 072).

MINFILE NUMBER: **092F 075** NAME: **IRON HILL** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1957		74,259	Iron		74,258,535
1956	115,032	115,032	Iron		186,786,660
1955	583,349	583,349	Iron		311,756,840
1954	418,159	418,159	Iron		149,130,320
1953	1,344,462	1,344,462	Iron		560,822,670
1952	957,923	972,438	Iron		604,536,290
1951	238,243	220,099	Iron		102,997,340

SUMMARY TOTALS: 092F 075 NAME: **IRON HILL**

	Metric		Imperial	
Mined:	3,657,168	tonnes	4,031,338	tons
Milled:	3,727,798	tonnes	4,109,194	tons

Recovery:

Iron:	1,990,288,655	kilograms	4,387,834,155	pounds

Comments:

1957: Iron produced was from retreated concentrate.
1956: Includes retreated tailings, Annual Report 1956.
1955: Produced 334,105 tonnes of concentrate, Annual Report 1955.
1954: Produced 238,695 tonnes of concentrate, Annual Report 1954.
1953: Produced 567,509 tonnes of concentrate, Annual Report 1953.
1952: Operated by The Argonaut Co. Ltd.
1951: Produced 93,010 tonnes of concentrate; shipped in Sept. 1951.

MINFILE NUMBER: **092F 077** NAME: **KALAPPA (L.1299)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1914	1,175		Silver	90,323	
			Gold	15,240	
			Copper		21,955
1913	197		Silver	19,906	
			Gold	2,457	
			Copper		5,425

SUMMARY TOTALS: 092F 077 NAME: **KALAPPA (L.1299)**

	Metric		Imperial	
Mined:	1,372	tonnes	1,512	tons
Milled:		tonnes		tons
Recovery:				
Silver:	110,229	grams	3,544	ounces
Gold:	17,697	grams	569	ounces
Copper:	27,380	kilograms	60,363	pounds

MINFILE NUMBER: **092F 079** NAME: **DEBBIE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1936	68		Silver	311	
			Gold	1,182	
1935	68		Silver	622	
			Gold	3,173	
			Copper		34
1934	36		Silver	746	
			Gold	3,608	
			Copper		54
1898	193		Gold	1,462	

SUMMARY TOTALS: 092F 079 NAME: **DEBBIE**

	Metric		Imperial	
Mined:	365	tonnes	402	tons
Milled:		tonnes		tons
Recovery:				
Silver:	1,679	grams	54	ounces
Gold:	9,425	grams	303	ounces
Copper:	88	kilograms	194	pounds

Comments:

1934: Operated by Vancouver Island Gold Mines, Ltd.
1898: Operated by Alberni Consolidated Gold Mines, Limited.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 082** NAME: **GILLESPIE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1939	943		Silver	43,482	
			Gold	7,589	
			Copper		1,925
			Lead		5,750
1936	6		Silver	187	
			Gold	467	

SUMMARY TOTALS: 092F 082 NAME: **GILLESPIE**

	Metric		Imperial	
Mined:	949	tonnes	1,046	tons
Milled:		tonnes		tons
Recovery:				
Silver:	43,669	grams	1,404	ounces
Gold:	8,056	grams	259	ounces
Copper:	1,925	kilograms	4,244	pounds
Lead:	5,750	kilograms	12,677	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 083** NAME: **THISTLE (L.91)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1942	1,015		Silver	7,651	
			Gold	7,091	
			Copper		35,608
1941	776		Silver	6,438	
			Gold	10,357	
			Copper		33,653
1940	2,522		Silver	28,646	
			Gold	42,829	
			Copper		152,828
1939	1,901		Silver	22,301	
			Gold	24,882	
			Copper		84,676
1938	69		Silver	933	
			Gold	715	
			Copper		2,323

SUMMARY TOTALS: 092F 083 NAME: **THISTLE (L.91)**

	Metric		Imperial	
Mined:	6,283	tonnes	6,926	tons
Milled:		tonnes		tons
Recovery:				
Silver:	65,969	grams	2,121	ounces
Gold:	85,874	grams	2,761	ounces
Copper:	309,088	kilograms	681,422	pounds

Comments:
1941: Operated by Vancouver Island Drilling & Exploration Company, Ltd.
1938: Operated by United Prospectors Ltd.

MINFILE NUMBER: **092F 084** NAME: **BLACK PANTHER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1950	1		Silver	218	
			Gold	218	
			Copper		4
			Lead		29
1948	1,606	1,606	Silver	29,175	
			Gold	14,525	
			Copper		195
			Lead		5,278
1947	109	109	Silver	249	
			Gold	1,089	
			Copper		27
			Lead		281

SUMMARY TOTALS: 092F 084 NAME: **BLACK PANTHER**

	Metric		Imperial	
Mined:	1,716	tonnes	1,892	tons
Milled:	1,715	tonnes	1,890	tons
Recovery:				
Silver:	29,642	grams	953	ounces
Gold:	15,832	grams	509	ounces
Copper:	226	kilograms	498	pounds
Lead:	5,588	kilograms	12,319	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 088** NAME: **ANDERSON BAY** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1916	97	97	Limestone		96,700

SUMMARY TOTALS: 092F 088 NAME: **ANDERSON BAY**

	Metric		Imperial	
Mined:	97	tonnes	107	tons
Milled:	97	tonnes	107	tons
Recovery:				
Limestone:	96,700	kilograms	213,187	pounds

MINFILE NUMBER: **092F 095** NAME: **MARBLE BAY LIMESTONE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1956	34,729		Limestone		34,728,844
1955	45,359		Limestone		45,359,235
1954	54,431		Limestone		54,431,082
1953	72,575		Limestone		72,574,776
1952	54,431		Limestone		54,431,082
1951	36,287		Limestone		36,287,388
1950	31,751		Limestone		31,751,464
1949	32,386		Limestone		32,386,493
1948	31,751		Limestone		31,751,464
1947	21,772		Limestone		21,772,432
1932	3,990		Limestone		3,989,798
1931	5,005		Limestone		5,004,938
1930	6,448		Limestone		6,448,269
1929	5,521		Limestone		5,521,126
1928	5,406		Limestone		5,405,914
1927	5,961		Limestone		5,961,111
1926	4,775		Limestone		4,775,420
1923	2,957		Limestone		2,956,515
1922	2,313		Limestone		2,313,321
1920	4,224		Limestone		4,223,852
1919	3,506		Limestone		3,506,269
1918	2,706		Limestone		2,706,132
1917	3,511		Limestone		3,510,805

SUMMARY TOTALS: 092F 095 NAME: **MARBLE BAY LIMESTONE**

	Metric		Imperial	
Mined:	471,795	tonnes	520,065	tons
Milled:		tonnes		tons
Recovery:				
Limestone:	471,797,730	kilograms	1,040,135,655	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 100** NAME: **NELSON ISLAND** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1929	726		Limestone		726,000

SUMMARY TOTALS: 092F 100 NAME: **NELSON ISLAND**

	Metric		Imperial	
Mined:	726	tonnes	800	tons
Milled:		tonnes		tons
Recovery:				
Limestone:	726,000	kilograms	1,600,556	pounds

MINFILE NUMBER: **092F 105** NAME: **LITTLE BILLIE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1952	963	963	Silver	13,654	
			Gold	3,266	
			Copper		10,431
1951	21,188	21,188	Silver	438,303	
			Gold	132,654	
			Copper		286,326
1950	9,344	9,344	Silver	164,379	
			Gold	53,466	
			Copper		129,516
1949	21,975	21,975	Silver	333,611	
			Gold	108,301	
			Copper		218,687
1948	4,530	4,530	Silver	27,899	
			Gold	15,396	
			Copper		37,301
1940	2	2	Silver	249	
			Gold	31	
			Copper		127
1916	1,104	1,104	Silver	37,821	
			Gold	9,611	
			Copper		26,247
1915	1,025	1,025	Silver	30,325	
			Gold	11,166	
			Copper		20,656
1913	1,554	1,554	Silver	73,279	
			Gold	19,191	
			Copper		47,739
1912	1,787	1,787	Silver	41,460	
			Gold	8,740	
			Copper		29,003
1908	161	161	Silver	27,993	
			Gold	280	
			Copper		6,459
1907	53	53	Silver	9,020	
			Gold	1,089	
			Copper		3,467
1896	27	27	Silver	560	
			Gold	8	
			Copper		3,266

SUMMARY TOTALS: 092F 105 NAME: **LITTLE BILLIE**

	Metric		Imperial	
Mined:	63,713	tonnes	70,232	tons
Milled:	63,713	tonnes	70,232	tons
Recovery:				
Silver:	1,198,553	grams	38,534	ounces
Gold:	363,199	grams	11,677	ounces
Copper:	819,225	kilograms	1,806,081	pounds

Comments:

1940: McLeod.

MINFILE NUMBER: **092F 106** NAME: **PRESCOTT-TEXADA MINES** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1956	257,794	254,210	Iron		158,322,867
1955	381,670	382,772	Iron		240,184,070
1954	524,777	526,437	Iron		340,197,036
1953	515,393	514,486	Iron		342,788,849
1952	317,679	312,091	Iron		218,973,294

SUMMARY TOTALS: 092F 106 NAME: **PRESCOTT-TEXADA MINES**

	Metric		Imperial	
Mined:	1,997,313	tonnes	2,201,661	tons
Milled:	1,989,996	tonnes	2,193,595	tons

Recovery:

Iron:	1,300,466,116	kilograms	2,867,036,210	pounds

Comments:

1956: Iron concentrates 148,830 tonnes.
1955: Iron concentrates 242,468 tonnes.
1954: Iron concentrates 336,889 tonnes.
1953: Iron concentrates 338,420 tonnes.
1952: Iron concentrates 212,365 tonnes.

MINFILE NUMBER: **092F 109** NAME: **MARJORIE (L.217)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1938	10		Silver	218	
			Gold	435	
			Copper		155
1921	27		Gold	311	
1916	27		Silver	2,053	
			Gold	249	
			Copper		1,125
1903	142		Silver	746	
			Gold	156	
			Copper		429

SUMMARY TOTALS: 092F 109 NAME: **MARJORIE (L.217)**

	Metric		Imperial	
Mined:	206	tonnes	227	tons
Milled:		tonnes		tons
Recovery:				
Silver:	3,017	grams	97	ounces
Gold:	1,151	grams	37	ounces
Copper:	1,709	kilograms	3,768	pounds

MINFILE NUMBER: **092F 112** NAME: **CORNELL (L.201)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1919	136		Silver	4,665	
			Gold	249	
			Copper		2,722
1914	1,754		Silver	32,347	
			Gold	7,247	
			Copper		21,492
1913	1,066		Silver	47,370	
			Gold	9,113	
			Copper		34,729
1911	1,662		Silver	61,273	
			Gold	17,542	
			Copper		43,882
1910	5,139		Silver	351,651	
			Gold	85,782	
			Copper		212,083
1909	8,879		Silver	420,046	
			Gold	93,433	
			Copper		16,779
1907	635		Silver	21,772	
			Gold	4,230	
			Copper		18,352
1906	917		Silver	44,197	
			Gold	41,056	
			Copper		20,715
1904	3,211		Silver	235,045	
			Gold	36,546	
			Copper		113,116
1903	3,706		Silver	114,615	
			Gold	26,064	
			Copper		106,452
1902	1,192		Silver	70,044	
			Gold	15,956	
			Copper		74,105
1901	2,534		Silver	179,215	
			Gold	33,342	
			Copper		144,086
1900	6,400		Silver	328,541	
			Gold	57,820	
			Copper		375,502
1899	3,072		Silver	205,653	
			Gold	39,128	
			Copper		151,872
1898	265		Silver	53,590	
			Gold	2,177	
			Copper		25,257
1897	119		Silver	24,447	
			Gold	1,400	
			Copper		7,368

SUMMARY TOTALS: 092F 112 NAME: **CORNELL (L.201)**

	Metric		Imperial	
Mined:	40,687	tonnes	44,850	tons
Milled:		tonnes		tons
Recovery:				
Silver:	2,194,471	grams	70,554	ounces
Gold:	471,085	grams	15,146	ounces
Copper:	1,368,512	kilograms	3,017,052	pounds

Comments:

1902: Includes production from Copper Queen (092F 271).
1900: Vanada Copper and Gold Co.

MINFILE NUMBER: **092F 114** NAME: **VULCAN (L.48G)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	9		Silver	156	
			Gold	435	
			Copper		10
1938	6		Silver	93	
			Gold	249	

SUMMARY TOTALS: 092F 114 NAME: **VULCAN (L.48G)**

	Metric		Imperial	
Mined:	15	tonnes	17	tons
Milled:		tonnes		tons
Recovery:				
Silver:	249	grams	8	ounces
Gold:	684	grams	22	ounces
Copper:	10	kilograms	22	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 115** NAME: **KING MIDAS** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	86	86	Silver	2,890	
			Copper		2,343

SUMMARY TOTALS: 092F 115 NAME: **KING MIDAS**

	Metric		Imperial	
Mined:	86	tonnes	95	tons
Milled:	86	tonnes	95	tons
Recovery:				
Silver:	2,890	grams	93	ounces
Copper:	2,343	kilograms	5,165	pounds

Comments:
1940: Bulletin 39 p. 38.

MINFILE NUMBER: **092F 117** NAME: **MOUNT WASHINGTON COPPER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1967		26,418	Silver	501,411	
			Gold	13,001	
			Copper		257,518
1966	156,490	162,841	Silver	3,105,946	
			Gold	61,584	
			Copper		1,481,644
1965	220,470	170,071	Silver	3,377,444	
			Gold	53,808	
			Copper		1,704,578
1964	4,813		Silver	250,379	
			Gold	2,395	
			Copper		104,451

SUMMARY TOTALS: 092F 117 NAME: **MOUNT WASHINGTON COPPER**

	Metric		Imperial	
Mined:	381,773	tonnes	420,833	tons
Milled:	359,330	tonnes	396,094	tons
Recovery:				
Silver:	7,235,180	grams	232,616	ounces
Gold:	130,788	grams	4,205	ounces
Copper:	3,548,191	kilograms	7,822,420	pounds

MINFILE NUMBER: **092F 122** NAME: **MARY MCQUILTON** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1938	13		Silver	467	
			Gold	1,711	
			Copper		21
1937	23		Silver	529	
			Gold	1,058	
			Copper		79
1935	42		Silver	2,208	
			Gold	4,448	
			Copper		165

SUMMARY TOTALS: 092F 122 NAME: **MARY MCQUILTON**

	Metric		Imperial	
Mined:	78	tonnes	86	tons
Milled:		tonnes		tons
Recovery:				
Silver:	3,204	grams	103	ounces
Gold:	7,217	grams	232	ounces
Copper:	265	kilograms	584	pounds

MINFILE NUMBER: **092F 123** NAME: **BIG BOY 1 (L.1714)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1941	8		Silver	498	
			Gold	467	
			Copper		24
1940	10		Silver	778	
			Gold	1,182	
			Copper		91
			Lead		99
1939	19		Silver	685	
			Gold	1,897	
			Copper		97
			Lead		82
1933	26		Silver	995	
			Gold	1,524	
			Lead		22

SUMMARY TOTALS: 092F 123 NAME: **BIG BOY 1 (L.1714)**

	Metric		Imperial	
Mined:	63	tonnes	69	tons
Milled:		tonnes		tons
Recovery:				
Silver:	2,956	grams	95	ounces
Gold:	5,070	grams	163	ounces
Copper:	212	kilograms	467	pounds
Lead:	203	kilograms	448	pounds

MINFILE NUMBER: **092F 129** NAME: **SUNSHINE (L.336)** STATUS: Developed Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1916	5		Silver	218	
			Copper		869

SUMMARY TOTALS: 092F 129 NAME: **SUNSHINE (L.336)**

	Metric		Imperial	
Mined:	5	tonnes	6	tons
Milled:		tonnes		tons
Recovery:				
Silver:	218	grams	7	ounces
Copper:	869	kilograms	1,916	pounds

MINFILE NUMBER: **092F 131** NAME: **VENUS (L.81)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1959	61		Silver	1,462	
			Gold	404	
			Copper		1,813
1939	24		Silver	1,648	
			Gold	342	
			Copper		1,329
1935	11		Silver	684	
			Gold	218	
			Copper		4
1931	47		Silver	4,448	
			Gold	591	
			Copper		2,424
1921	122		Silver	18,817	
			Gold	2,924	
			Copper		20,307
1920	13		Silver	1,400	
			Gold	373	
			Copper		1,696
1916	84		Gold	467	
			Copper		2,431

SUMMARY TOTALS: 092F 131 NAME: **VENUS (L.81)**

	Metric		Imperial	
Mined:	362	tonnes	399	tons
Milled:		tonnes		tons
Recovery:				
Silver:	28,459	grams	915	ounces
Gold:	5,319	grams	171	ounces
Copper:	30,004	kilograms	66,147	pounds

MINFILE NUMBER: **092F 132** NAME: **ST. JOSEPH (L.50)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1937	23		Silver	622	
			Gold	156	
			Copper		671
1909	21		Silver	746	
			Gold	342	
			Copper		1,119

SUMMARY TOTALS: 092F 132 NAME: **ST. JOSEPH (L.50)**

	Metric		Imperial	
Mined:	44	tonnes	49	tons
Milled:		tonnes		tons
Recovery:				
Silver:	1,368	grams	44	ounces
Gold:	498	grams	16	ounces
Copper:	1,790	kilograms	3,946	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 136** NAME: **HELEN K** STATUS: Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1959	61		Silver	1,462	
			Gold	404	
			Copper		1,813

SUMMARY TOTALS: 092F 136 NAME: **HELEN K**

	Metric		Imperial	
Mined:	61	tonnes	67	tons
Milled:		tonnes		tons
Recovery:				
Silver:	1,462	grams	47	ounces
Gold:	404	grams	13	ounces
Copper:	1,813	kilograms	3,997	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 138** NAME: **KITCHENER (L.49)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1929	168		Silver	653	
			Gold	124	
			Copper		5,366

SUMMARY TOTALS: 092F 138 NAME: **KITCHENER (L.49)**

	Metric		Imperial	
Mined:	168	tonnes	185	tons
Milled:		tonnes		tons
Recovery:				
Silver:	653	grams	21	ounces
Gold:	124	grams	4	ounces
Copper:	5,366	kilograms	11,830	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 139** NAME: **WHITE ROCK QUARRY** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1990	24,230		Limestone		24,230,000
1989	25,821		Limestone		25,821,000
1988	25,254		Limestone		25,254,000

SUMMARY TOTALS: 092F 139 NAME: **WHITE ROCK QUARRY**

	Metric		Imperial	
Mined:	75,305	tonnes	83,010	tons
Milled:		tonnes		tons
Recovery:				
Limestone:	75,305,000	kilograms	166,019,060	pounds

MINFILE NUMBER: **092F 140** NAME: **THREE JAYS (L.518-527)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1902	1,784		Silver	69,329	
			Gold	1,617	
			Copper		123,286
1899	92		Silver	3,452	
			Gold	156	
			Copper		12,755
1898	105		Silver	2,426	
			Gold	156	
			Copper		12,848

SUMMARY TOTALS: 092F 140 NAME: **THREE JAYS (L.518-527)**

	Metric		Imperial	
Mined:	1,981	tonnes	2,184	tons
Milled:		tonnes		tons
Recovery:				
Silver:	75,207	grams	2,418	ounces
Gold:	1,929	grams	62	ounces
Copper:	148,889	kilograms	328,244	pounds

MINFILE NUMBER: **092F 141** NAME: **WWW (L.37,38,39,53)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1985		98	Silver	23,591	
			Gold	7,834	
			Copper		1,377
			Lead		300
			Zinc		2,477
1941	10		Silver	871	
			Gold	871	
			Copper		26
			Lead		188
1940	60		Silver	7,745	
			Gold	8,553	
			Copper		171
			Lead		912
1935	14		Silver	1,928	
			Gold	2,053	
			Copper		47
1899	22		Silver	5,008	
			Gold	3,173	

SUMMARY TOTALS: 092F 141 NAME: **WWW (L.37,38,39,53)**

	Metric		Imperial	
Mined:	106	tonnes	117	tons
Milled:	98	tonnes	108	tons
Recovery:				
Silver:	39,143	grams	1,258	ounces
Gold:	22,484	grams	723	ounces
Copper:	1,621	kilograms	3,574	pounds
Lead:	1,400	kilograms	3,086	pounds
Zinc:	2,477	kilograms	5,461	pounds

Comments:

1985: Crude ore.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 147** NAME: **FLORENCE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1935	8		Silver	2,115	
			Copper		260
1928	39		Silver	4,106	
			Copper		1,889
			Zinc		4,781

SUMMARY TOTALS: 092F 147 NAME: **FLORENCE**

	Metric		Imperial	
Mined:	47	tonnes	52	tons
Milled:		tonnes		tons
Recovery:				
Silver:	6,221	grams	200	ounces
Copper:	2,149	kilograms	4,738	pounds
Zinc:	4,781	kilograms	10,540	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 157** NAME: **CASCADE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1905	28		Silver	902	
			Copper		4,055
1904	85		Silver	2,333	
			Copper		10,574

SUMMARY TOTALS: 092F 157 NAME: **CASCADE**

	Metric		Imperial	
Mined:	113	tonnes	125	tons
Milled:		tonnes		tons
Recovery:				
Silver:	3,235	grams	104	ounces
Copper:	14,629	kilograms	32,251	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 158** NAME: **IRON CAP** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1898	17		Silver	809	
			Gold	933	
			Copper		169

SUMMARY TOTALS: 092F 158 NAME: **IRON CAP**

	Metric		Imperial	
Mined:	17	tonnes	19	tons
Milled:		tonnes		tons
Recovery:				
Silver:	809	grams	26	ounces
Gold:	933	grams	30	ounces
Copper:	169	kilograms	373	pounds

MINFILE PRODUCTION REPORT

GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 237** NAME: **BIG G** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1917	83		Silver	4,074	
			Gold	31	
			Copper		14,018

SUMMARY TOTALS: 092F 237 NAME: **BIG G**

	Metric		Imperial	
Mined:	83	tonnes	91	tons
Milled:		tonnes		tons
Recovery:				
Silver:	4,074	grams	131	ounces
Gold:	31	grams	1	ounces
Copper:	14,018	kilograms	30,904	pounds

MINFILE NUMBER: **092F 258** NAME: **YELLOW KID-TEXADA MINES** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1976	841,962	848,477	Silver	1,337,149	
			Gold	33,687	
			Copper		1,332,202
1975	889,431	906,730	Silver	1,385,359	
			Gold	45,597	
			Copper		1,635,716
1974	839,921	840,635	Silver	1,452,510	
			Gold	35,364	
			Copper		1,346,009
1973	964,897	963,309	Silver	1,822,325	
			Gold	59,002	
			Copper		2,056,076
			Iron		440,021,309
1972	1,046,827	1,089,005	Silver	1,406,136	
			Gold	39,625	
			Copper		1,575,680
			Iron		439,972,321
1971	1,060,943	1,088,881	Silver	1,770,258	
			Gold	48,801	
			Copper		1,845,097
			Iron		454,020,911
1970	745,623	1,222,176	Silver	1,714,055	
			Gold	45,535	
			Copper		1,672,953
			Iron		494,431,244
1969	1,187,861	1,206,576	Silver	1,624,199	
			Gold	39,003	
			Copper		1,650,115
			Iron		511,877,222
1968	1,078,374	1,070,562	Silver	1,737,103	
			Gold	64,228	
			Copper		2,132,936
			Iron		539,201,484
1967	1,186,591	1,251,908	Silver	1,031,189	
			Gold	38,194	
			Copper		1,204,932
			Iron		666,777,300
1966	1,128,432	1,193,720	Silver	1,246,359	
			Gold	88,177	
			Copper		1,573,755
			Iron		604,493,950
1965	1,144,115	1,188,464	Silver	1,340,975	
			Gold	83,169	
			Copper		1,680,793
			Iron		581,392,611
1964	913,134	919,416	Silver	1,008,484	
			Gold	45,939	
			Copper		1,074,585
			Iron		519,033,965
1963	863,425	865,986	Silver	1,155,228	
			Gold	38,879	
			Copper		1,107,570
			Iron		447,138,136
1962	1,002,079	1,001,248	Silver	623,553	
			Gold	25,784	
			Copper		783,685
			Iron		559,608,498
1961	811,582	810,921	Silver	800,156	
			Gold	37,075	
			Copper		736,129
			Iron		452,683,727
1960	789,131	787,193	Silver	1,032,029	
			Gold	47,183	
			Copper		888,466
			Iron		393,426,730
1959	673,218	682,798	Silver	519,016	
			Gold	23,514	
			Copper		436,872
			Iron		358,265,340
1958	648,799	643,854	Silver	344,124	
			Gold	29,330	

MINFILE NUMBER: **092F 258** NAME: **YELLOW KID-TEXADA MINES** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1958	648,799	643,854	Copper		396,274
			Iron		339,321,607
1957	365,088	365,088	Silver	295,012	
			Gold	19,315	
			Copper		302,175
			Iron		187,613,896

SUMMARY TOTALS: 092F 258 NAME: **YELLOW KID-TEXADA MINES**

	Metric		Imperial	
Mined:	18,181,433	tonnes	20,041,599	tons
Milled:	18,946,947	tonnes	20,885,434	tons
Recovery:				
Silver:	23,645,219	grams	760,210	ounces
Gold:	887,401	grams	28,531	ounces
Copper:	25,432,020	kilograms	56,067,991	pounds
Iron:	7,989,280,251	kilograms	17,613,343,006	pounds

Comments:

1976: Copper concentrates 6394 tonnes; iron concentrates 368,412 tonnes.
1975: Copper concentrates 7426 tonnes; iron concentrates 296,250 tonnes.
1974: Copper concentrates 6236 tonnes; iron concentrates 314,343 tonnes.
1973: Copper concentrates 8814 tonnes; iron concentrates 468,628 tonnes.
1972: Copper concentrates 6709 tonnes; iron concentrates 482,803 tonnes.
1971: Copper concentrates 8732 tonnes; iron concentrates 492,126 tonnes.
1970: Copper concentrates 8175 tonnes; iron concentrates 451,448 tonnes.
1969: Copper concentrates 7861 tonnes; iron concentrates 559,096 tonnes.
1968: Copper concentrates 9808 tonnes; iron concentrates 536,385 tonnes.
1967: Copper concentrates 5523 tonnes; iron concentrates 691,364 tonnes.
1966: Copper concentrates 7482 tonnes; iron concentrates 523,329 tonnes.
1965: Copper concentrates 8453 tonnes; iron concentrates 540,020 tonnes.
1964: Copper concentrates 4936 tonnes; iron concentrates 523,408 tonnes.
1963: Copper concentrates 5280 tonnes; iron concentrates 457,623 tonnes.
1962: Copper concentrates 5307 tonnes; iron concentrates 545,878 tonnes.
1961: Copper concentrates 6670 tonnes; iron concentrates 449,325 tonnes.
1960: Copper concentrates 7191 tonnes; iron concentrates 380,699 tonnes.
1959: Copper concentrates 3517 tonnes; iron concentrates 383,344 tonnes.
1958: Copper concentrates 3028 tonnes; iron concentrates 324,567 tonnes.
1957: Copper concentrates 2325 tonnes; Iron concentrates 189,847 tonnes.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 259** NAME: **LAKE-TEXADA MINES** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1921			Gold	93	
			Iron		11
1917	331		Silver	9,642	
			Copper		11,322
1916	82		Copper		2,449
1907	131		Silver	4,168	
			Gold	124	
			Copper		6,246
1905	13		Silver	591	
			Copper		525
1903	122		Silver	5,847	
			Gold	156	
			Copper		6,944
1901	267		Silver	15,707	
			Gold	2,644	
			Copper		20,173

SUMMARY TOTALS: 092F 259 NAME: **LAKE-TEXADA MINES**

	Metric		Imperial	
Mined:	946	tonnes	1,043	tons
Milled:		tonnes		tons
Recovery:				
Silver:	35,955	grams	1,156	ounces
Gold:	3,017	grams	97	ounces
Copper:	47,659	kilograms	105,070	pounds
Iron:	11	kilograms	24	pounds

MINFILE NUMBER: **092F 265** NAME: **LOYAL** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1918	30		Silver	1,244	
			Gold	311	
			Copper		2,767
1917	24		Silver	3,577	
			Gold	31	
			Copper		1,901

SUMMARY TOTALS: 092F 265 NAME: **LOYAL**

	Metric		Imperial	
Mined:	54	tonnes	60	tons
Milled:		tonnes		tons
Recovery:				
Silver:	4,821	grams	155	ounces
Gold:	342	grams	11	ounces
Copper:	4,668	kilograms	10,291	pounds

MINFILE NUMBER: **092F 270** NAME: **MARBLE BAY (L.154)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1929	239		Silver	6,625	
			Gold	871	
			Copper		5,486
1919	5,837		Silver	294,763	
			Gold	35,737	
			Copper		177,328
1918	7,766		Silver	495,906	
			Gold	77,197	
			Copper		284,148
1917	10,611		Silver	593,974	
			Gold	85,502	
			Copper		355,009
1916	11,829		Silver	467,478	
			Gold	59,873	
			Copper		313,193
1915	9,136		Silver	453,046	
			Gold	46,064	
			Copper		258,077
1914	12,527		Silver	526,574	
			Gold	84,973	
			Copper		346,900
1913	11,423		Silver	806,190	
			Gold	108,301	
			Copper		491,247
1912	16,211		Silver	634,501	
			Gold	68,924	
			Copper		467,701
1911	20,422		Silver	1,643,358	
			Gold	162,980	
			Copper		1,005,805
1910	9,094		Silver	837,293	
			Gold	79,530	
			Copper		394,942
1909	10,377		Silver	715,898	
			Gold	76,296	
			Copper		392,378
1908	6,149		Silver	627,783	
			Gold	65,534	
			Copper		318,699
1907	6,565		Silver	340,391	
			Gold	43,358	
			Copper		121,182
1906	95,020		Silver	741,029	
			Gold	87,151	
			Copper		290,182
1905	10,736		Silver	850,138	
			Gold	100,276	
			Copper		32,634
1904	16,637		Silver	1,562,677	
			Gold	166,836	
			Copper		610,700
1903	13,393		Silver	561,596	
			Gold	64,134	
			Copper		329,172
1902	5,775		Gold	69,297	
			Copper		329,176
1901	5,062		Silver	433,887	
			Gold	69,422	
			Copper		253,103
1899	219		Silver	28,646	
			Gold	2,924	
			Copper		12,820

SUMMARY TOTALS: 092F 270 NAME: **MARBLE BAY (L.154)**

	Metric		Imperial	
Mined:	285,028	tonnes	314,190	tons
Milled:		tonnes		tons
Recovery:				
Silver:	12,621,753	grams	405,798	ounces
Gold:	1,555,180	grams	50,000	ounces

MINFILE NUMBER: **092F 270** NAME: **MARBLE BAY (L.154)** STATUS: Past Producer

Copper:	6,789,882 kilograms	14,969,123 pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 271** NAME: **COPPER QUEEN (L.40)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1917	112		Silver	13,374	
			Gold	1,244	
			Copper		6,800
1916	174		Silver	11,975	
			Gold	1,493	
			Copper		7,206
1914	136		Silver	4,976	
			Gold	1,555	
			Copper		3,674
1907	327		Silver	44,913	
			Gold	5,599	
			Copper		14,737

SUMMARY TOTALS: 092F 271 NAME: **COPPER QUEEN (L.40)**

	Metric		Imperial	
Mined:	749	tonnes	826	tons
Milled:		tonnes		tons
Recovery:				
Silver:	75,238	grams	2,419	ounces
Gold:	9,891	grams	318	ounces
Copper:	32,417	kilograms	71,467	pounds

MINFILE NUMBER: **092F 315** NAME: **COMOX** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1953	15,584		Coal		10,647,630
1952	170,055		Coal		115,897,400
1951	194,192		Coal		142,420,780
1950	196,301		Coal		156,076,640
1949	188,798		Coal		145,205,840
1948	173,251		Coal		139,512,350
1947	215,974		Coal		215,974,160
1946	258,242		Coal		258,241,790
1945	290,488		Coal		290,487,600
1944	347,242		Coal		347,242,370
1943	321,239		Coal		321,238,870
1942	338,243		Coal		338,242,640
1941	285,847		Coal		285,847,530
1940	362,965		Coal		362,965,000
1939	332,717		Coal		332,716,620
1938	269,883		Coal		269,883,120
1937	294,104		Coal		294,103,550
1936	241,537		Coal		241,536,720
1935	210,431		Coal		210,430,870
1934	196,090		Coal		196,090,030
1933	183,866		Coal		183,865,520
1932	217,351		Coal		217,350,840
1931	214,158		Coal		214,157,560
1930	247,832		Coal		247,831,860
1929	278,652		Coal		278,652,220
1928	270,645		Coal		270,645,120
1927	237,636		Coal		237,636,300
1926	275,121		Coal		275,120,600
1925	244,683		Coal		244,683,280
1924	240,592		Coal		240,591,840
1923	215,684		Coal		215,683,590
1922	372,706		Coal		372,706,390
1921	447,737		Coal		447,736,970
1920	463,209		Coal		463,208,620
1919	561,031		Coal		561,031,130
1918	546,980		Coal		546,980,000
1917	516,084		Coal		516,084,310
1916	456,198		Coal		456,198,222
1915	265,695		Coal Fireclay		265,014,450 680,720
1914	401,999		Coal Fireclay		401,046,690 952,000
1913	517,293		Coal Fireclay		516,224,520 1,068,832
1912	487,296		Coal Fireclay		483,415,840 3,880,104
1911	449,964		Coal Fireclay		444,332,360 5,631,688
1910	531,262		Coal Fireclay		526,720,810 4,541,520
1907	396,794		Coal		396,793,720
1906	416,152		Coal Fireclay		414,790,120 1,361,440
1901	257,523		Coal		257,523,480
1900	330,466		Coal Fireclay		328,699,360 1,766,824
1897	271,135		Coal Fireclay		269,892,270 1,242,600
1896	237,476		Coal		237,347,760

MINFILE NUMBER: **092F 315** NAME: **COMOX** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1896	237,476		Fireclay		128,016
1895	268,783		Coal		268,782,800
1894	245,234		Coal		245,234,000
1893	146,230		Coal		146,229,830
1892	70,031		Coal		70,030,850
1891	116,629		Coal		116,628,670
1890	70,650		Coal		70,649,700
1889	31,703		Coal		31,703,264
1888	2,032		Coal		2,032,000

SUMMARY TOTALS: 092F 315 NAME: **COMOX**

	Metric		Imperial	
Mined:	16,407,695	tonnes	18,086,388	tons
Milled:		tonnes		tons
Recovery:				
Coal:	16,158,018,376	kilograms	35,622,322,788	pounds
Fireclay:	21,253,744	kilograms	46,856,472	pounds

Comments:

1953: No. 8 closed February 6, 1953.
1952: No. 8.
1951: No. 8.
1950: No. 8.
1949: No. 8.
1948: No. 8.
1947: No. 5 (25,295 tonnes) and No. 8 (190,679 tonnes).
1946: No. 5 (105,068 tonnes) and No. 8 (153,174 tonnes).
1945: No. 5 (113,021) and No. 8 (177,467 tonnes).
1944: No. 5 (134,496 tonnes) and No. 8 (212,746 tonnes).
1943: No. 5 (117,355 tonnes) and No. 8 (203,884 tonnes).
1942: No. 5 (130,920 tonnes) and No. 8 (207,323 tonnes).
1941: No. 5 (121,813 tonnes) and No. 8 (164,034 tonnes).
1940: No. 5 (234,136 tonnes) and No. 8 (128,829 tonnes).
1939: No. 5 (250,011 tonnes) and No. 8 (82,705 tonnes).
1938: No. 5 (206,591 tonnes) and No. 8 (63,292 tonnes).
1937: No. 5 (273,860 tonnes) and No. 8 (20,244 tonnes).
1936: No. 5 and No. 8.
1935: No. 5.
1934: No. 4 and No. 5.
1933: No. 4 and No. 5.
1932: No. 4, No. 5 and Scott's Slope.
1931: No. 4, No. 5 and Scott's Slope.
1930: No. 4, No. 5 and Scott's Slope.
1929: No. 4 and No. 5.
1928: No. 4, No. 5 and No. 6.
1927: No. 4.
1926: No. 4 and No. 5.
1925: No. 4 and No. 5.
1924: No. 4, No. 5 and No. 6.
1923: No. 4, No. 5 and No. 6.
1922: No. 4, No. 5 and No. 6.
1921: No. 4, No. 5 and No. 7.
1920: No. 4, No. 5 and No. 7.
1919: No. 4, No. 5 and No. 7.
1918: No. 4, No. 5 and No. 7.
1917: No. 4, No. 5, No. 6 and No. 7.
1916: No. 4, No. 5, No. 6 and No. 7.
1915: No. 4, No. 6 and No. 7.
1914: No. 4, No. 5, No. 6, No. 7 and No. 8.
1913: No. 4, No. 5, No. 6, No. 7 and No. 8.
1912: No. 4, No. 5, No. 6, No. 7 and No. 8.
1911: No. 4, No. 5, No. 6, No. 7 and No. 8.
1910: No. 4, No. 5, No. 6 and No. 7.
1907: No. 4, No. 5, No. 6 and No. 7.
1906: No. 4-7. Production not reported 1902 to 1905.
1901: No. 4, No. 5, No. 6 and No. 7.
1900: No. 4, No. 5, No. 6; Alexandria (092GSW025); Extension(092GSW028).
1897: No. 2, No. 4 and No. 5. Production not reported 1898 and 1899.
1896: No. 2, No. 4 and No. 5.
1895: No. 2, No. 4 and No. 5.
1894: No. 2, No. 4 and No. 5.
1893: No. 1.
1892: No. 1 and No. 4.
1891: No. 1 and No. 4.
1890: No. 1 and No. 2.

MINFILE NUMBER: **092F 315** NAME: **COMOX** STATUS: Past Producer

Comments:

1889: No. 1.
1888: Union Colliery began operations.

MINFILE NUMBER: **092F 319** NAME: **QUINSAM** STATUS: Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
2001	475,000	475,000	Coal		475,000,000
2000	300,000	300,000	Coal		240,000,000
1999	400,000	400,000	Coal		360,000,000
1998	702,450	702,450	Coal		684,000,000
1997	1,408,002	1,407,325	Coal		1,051,316,000
1996	1,170,731	1,170,422	Coal		902,659,000
1995	814,400	813,200	Coal		589,600,000
1994	691,000	693,000	Coal		508,000,000
1993	779,000	771,000	Coal		550,000,000
1992	613,000	637,000	Coal		469,000,000
1991	318,000	276,000	Coal		295,000,000
1990	253,551	253,551	Coal		253,551,000
1989	184,200	184,200	Coal		184,000,000
1988	131,349	131,349	Coal		131,349,000
1986	11,000	11,000	Coal		11,000,000

SUMMARY TOTALS: 092F 319 NAME: **QUINSAM**

	Metric		Imperial	
Mined:	8,251,683	tonnes	9,095,923	tons
Milled:	8,225,497	tonnes	9,067,058	tons

Recovery:

Coal:	6,704,475,000	kilograms	14,780,833,083	pounds

Comments:

2000: Clean coal production/tonnes are estimated on past production.
1999: Clean coal production.
1998: Thermal coal.
1997: Thermal coal.
1996: Thermal coal.
1995: Thermal coal.
1994: Thermal coal.
1993: Thermal coal.
1992: Thermal coal.
1991: Thermal coal.
1990: Thermal coal.
1989: Thermal coal.
1988: Thermal coal.
1986: Mine site was developed during 1986, Mining in BC 1986-1987, p.75.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 322** NAME: **WOLF MOUNTAIN** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1986	20,000	20,000	Coal		20,000,000
1985	62,117	62,117	Coal		45,900,000
1984	18,000	18,000	Coal		18,000,000

SUMMARY TOTALS: 092F 322 NAME: **WOLF MOUNTAIN**

	Metric		Imperial	
Mined:	100,117	tonnes	110,360	tons
Milled:	100,117	tonnes	110,360	tons
Recovery:				
Coal:	83,900,000	kilograms	184,967,786	pounds

Comments:

1986: Thermal coal.
1985: Thermal coal.
1984: Raw thermal coal.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 324** NAME: **LANTZVILLE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1943	51		Coal		50,800
1942	4		Coal		4,064
1941	2,461		Coal		2,460,752
1940	3,755		Coal		3,755,136
1939	4,411		Coal		4,411,472
1938	5,321		Coal		5,320,792
1937	6,453		Coal		6,452,616
1936	8,365		Coal		8,364,728
1935	7,811		Coal		7,811,008
1934	4,975		Coal		4,975,352
1933	5,412		Coal		5,412,232
1932	4,311		Coal		4,310,888
1931	5,054		Coal		5,053,584
1930	4,088		Coal		4,088,384
1929	4,491		Coal		4,490,720
1928	762		Coal		762,000
1927	287		Coal		286,512

SUMMARY TOTALS: 092F 324 NAME: **LANTZVILLE**

	Metric		Imperial	
Mined:	68,012	tonnes	74,970	tons
Milled:		tonnes		tons

Recovery:

Coal:	68,011,040	kilograms	149,938,635	pounds

Comments:

1943: No. 1 dumps.
1942: Lila.
1941: No. 1 closed.
1940: No. 1.
1939: No. 1.
1938: No. 1.
1937: No. 1.
1936: No. 1.
1935: No. 1.
1934: No. 1.
1933: No. 1.
1932: No. 1.
1931: No. 1.
1930: No. 1.
1929: No. 1.
1928: Diamond Jubilee.

MINFILE NUMBER: **092F 325** NAME: **LITTLE ASH** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1931	2,170		Coal		2,170,176
1930	5,676		Coal		5,676,392
1929	5,551		Coal		5,551,424
1928	1,557		Coal		1,556,512

SUMMARY TOTALS: 092F 325 NAME: **LITTLE ASH**

	Metric		Imperial	
Mined:	14,954	tonnes	16,484	tons
Milled:		tonnes		tons

Recovery:

Coal:	14,954,504	kilograms	32,969,029	pounds

Comments:

1931: Little Ash.
1930: Little Ash.
1929: Little Ash.
1928: Reopened as Little Ash.

MINFILE NUMBER: **092F 326** NAME: **NANOOSE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1926	27,898		Coal		27,898,344
1925	76,891		Coal		76,890,880
1924	90,895		Coal		90,894,408
1923	87,313		Coal		87,313,008
1922	100,634		Coal		100,633,780
1921	51,009		Coal		51,009,300
1920	33,020		Coal		33,020,000
1919	21,988		Coal		21,988,272
1918	29,265		Coal		29,264,864
1917	28,267		Coal		28,267,152
1916	640		Coal		640,080

SUMMARY TOTALS: 092F 326 NAME: **NANOOSE**

	Metric		Imperial	
Mined:	547,820	tonnes	603,868	tons
Milled:		tonnes		tons

Recovery:

Coal:	547,820,088	kilograms	1,207,736,218	pounds

Comments:

1926: Lantzville mine closed October 2, 1926.
1919: Referred to as Lantzville mine.
1918: Nanoose Collieries.
1917: Nanoose Collieries.
1916: Nanoose Collieries.

MINFILE NUMBER: **092F 330** NAME: **MYRA FALLS (H-W)** STATUS: Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
2002			Silver	11,415,000	
			Gold	4,262,000	
			Copper		377,160
			Zinc		33,258,000
2001			Silver	12,068,000	
			Gold	631,840	
			Copper		13,167,000
			Zinc		59,892,000
2000	1,167,000	1,167,000	Silver	16,329,300	
			Gold	754,500	
			Copper		17,501,000
			Zinc		52,172,000
1999	740,000	740,000	Silver	6,375,500	
			Gold	421,809	
			Copper		10,397,000
			Zinc		37,861,000
1998	1,046,835	1,046,835	Silver	15,608,555	
			Gold	671,777	
			Copper		16,610,600
			Lead		1,534,000
			Zinc		54,312,200
1997	1,259,682	1,259,682	Silver	16,908,000	
			Gold	736,033	
			Copper		13,763,518
			Lead		2,089,395
			Zinc		61,131,530
1996	1,268,213	1,268,213	Silver	17,355,323	
			Gold	762,965	
			Copper		18,715,345
			Lead		1,218,864
			Zinc		45,971,704
1995	1,198,204	1,197,399	Silver	17,001,452	
			Gold	819,514	
			Copper		21,772,887
			Lead		1,163,000
			Zinc		26,778,733
1994	248,741	251,560	Silver	4,057,666	
			Gold	140,899	
			Copper		4,071,899
			Zinc		4,989,062
1993	433,853	433,410	Silver	5,555,000	
			Gold	324,383	
			Copper		14,964,000
			Zinc		9,425,000
1992	1,156,489	1,171,629	Silver	20,271,000	
			Gold	988,054	
			Copper		18,427,907
			Lead		1,963,466
			Zinc		32,840,938
1991	1,104,436	1,081,400	Silver	19,565,000	
			Gold	963,114	
			Copper		17,041,682
			Lead		1,626,605
			Zinc		31,293,015
1990	1,156,519	1,171,337	Silver	21,354,000	
			Gold	1,079,054	
			Copper		20,019,000
			Lead		265,000
			Zinc		34,428,000
1989	1,239,673	1,229,262	Silver	29,132,000	
			Gold	1,339,499	
			Copper		23,234,000
			Lead		302,000
			Zinc		39,222,000
1988	1,247,575	1,255,124	Silver	34,875,293	
			Gold	1,469,107	
			Copper		26,858,000
			Lead		99,000
			Zinc		45,385,000
1987	1,089,796	1,089,796	Silver	31,757,428	
			Gold	1,322,033	
			Copper		25,145,000

MINFILE NUMBER: **092F 330** NAME: **MYRA FALLS (H-W)** STATUS: Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1987	1,089,796	1,089,796	Lead		3,371,000
			Zinc		47,581,000
1986	1,066,664	1,066,664	Silver	43,637,121	
			Gold	1,704,588	
			Copper		24,728,110
			Lead		4,490,731
			Zinc		56,849,571

SUMMARY TOTALS: 092F 330 NAME: **MYRA FALLS (H-W)**

	Metric		Imperial	
Mined:	15,423,680	tonnes	17,001,697	tons
Milled:	15,429,311	tonnes	17,007,904	tons
Recovery:				
Silver:	323,265,638	grams	10,393,217	ounces
Gold:	18,391,169	grams	591,289	ounces
Copper:	286,794,108	kilograms	632,272,600	pounds
Lead:	18,123,061	kilograms	39,954,499	pounds
Zinc:	673,390,753	kilograms	1,484,572,069	pounds

Comments:

2002: Jan-Sept 2002 production, resumed March 2002.Tonnage not reported.
2001: Tonnage mined not reported. Production halted in October 2001.
1999: Boliden resumed mining operations in March 1999.
1995: Mineral statistics and Exploration in B.C. 1995, page 74.
1994: Mine re-opened in September after a 16-month mining hiatus.
1990: 1986-1990: Combined output of H-W and Lynx (092F 071).
1986: 1985 output included in Lynx (092F 071).

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 333** NAME: **TSABLE RIVER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1966	15,308		Coal		15,307,840
1965	37,254		Coal		37,253,552
1964	57,101		Coal		57,100,945
1963	67,035		Coal		65,374,472
1962	71,401		Coal		71,351,000
1961	68,333		Coal		68,332,802
1960	80,525		Coal		77,398,300
1959	132,653		Coal		119,021,760
1958	161,811		Coal		140,200,000
1957	177,302		Coal		151,448,180
1956	176,975		Coal		150,813,150
1955	185,400		Coal		146,310,800
1954	182,041		Coal		146,484,060
1953	151,491		Coal		130,794,300
1952	110,696		Coal		83,705,050
1951	109,377		Coal		80,536,260
1950	90,044		Coal		68,405,380
1949	71,861		Coal		53,289,000
1948	26,349		Coal		21,022,200
1947	4,323		Coal		4,170,680
1946	1,165		Coal		1,165,352
1877	1,524		Coal		1,524,000
1876	610		Coal		609,600

SUMMARY TOTALS: 092F 333 NAME: **TSABLE RIVER**

	Metric		Imperial	
Mined:	1,980,579	tonnes	2,183,215	tons
Milled:		tonnes		tons

Recovery:

Coal:	1,691,618,683	kilograms	3,729,379,764	pounds

Comments:

1966: Ceased production in September 1966.
1960: Canadian Collieries (35,730 tonnes) & Comox Mining(44,795 tonnes).
1946: Tsable River Colliery.
1877: Baynes Sound Colliery.
1876: Baynes Sound Coal Mines.

MINFILE NUMBER: **092F 345** NAME: **DUNSMUIR** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1988	100,000		Shale		67,617,000
1987	132,000		Shale		132,000,000
1986	170,000		Shale		152,000,000
1973	54,736		Shale		54,736,000
1972	58,716		Shale		58,716,000
1971	52,068		Shale		52,068,000
1970	41,095		Shale		41,095,000

SUMMARY TOTALS: 092F 345 NAME: **DUNSMUIR**

	Metric		Imperial	
Mined:	608,615	tonnes	670,883	tons
Milled:		tonnes		tons
Recovery:				
Shale:	558,232,000	kilograms	1,230,690,548	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 347** NAME: **BB AND M** STATUS: Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1942	3		Gold	156	

SUMMARY TOTALS: 092F 347 NAME: **BB AND M**

	Metric		Imperial	
Mined:	3	tonnes	3	tons
Milled:		tonnes		tons
Recovery:				
Gold:	156	grams	5	ounces

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 348** NAME: **BDQ** STATUS: Showing

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	1		Silver	156	
			Gold	62	
			Copper		11

SUMMARY TOTALS: 092F 348 NAME: **BDQ**

	Metric		Imperial	
Mined:	1	tonnes	1	tons
Milled:		tonnes		tons
Recovery:				
Silver:	156	grams	5	ounces
Gold:	62	grams	2	ounces
Copper:	11	kilograms	24	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 350** NAME: **AVON** STATUS: Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1966	7		Silver	435	
			Gold	31	
			Copper		861

SUMMARY TOTALS: 092F 350 NAME: **AVON**

	Metric		Imperial	
Mined:	7	tonnes	8	tons
Milled:		tonnes		tons
Recovery:				
Silver:	435	grams	14	ounces
Gold:	31	grams	1	ounces
Copper:	861	kilograms	1,898	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 357** NAME: **RETRIEVER (L.150)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1917	331		Silver	96	
			Gold	221	
			Copper		113
1916	3		Gold	57	

SUMMARY TOTALS: 092F 357 NAME: **RETRIEVER (L.150)**

	Metric		Imperial	
Mined:	334	tonnes	368	tons
Milled:		tonnes		tons
Recovery:				
Silver:	96	grams	3	ounces
Gold:	278	grams	9	ounces
Copper:	113	kilograms	249	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 358** NAME: **BLUE GROUSE** STATUS: Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1956	19		Silver	560	
			Copper		2,190
			Lead		13

SUMMARY TOTALS: 092F 358 NAME: **BLUE GROUSE**

	Metric		Imperial	
Mined:	19	tonnes	21	tons
Milled:		tonnes		tons
Recovery:				
Silver:	560	grams	18	ounces
Copper:	2,190	kilograms	4,828	pounds
Lead:	13	kilograms	29	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 359** NAME: **GEM (L.441)** STATUS: Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1914	2		Silver	249	
			Gold	4,541	

SUMMARY TOTALS: 092F 359 NAME: **GEM (L.441)**

	Metric		Imperial	
Mined:	2	tonnes	2	tons
Milled:		tonnes		tons
Recovery:				
Silver:	249	grams	8	ounces
Gold:	4,541	grams	146	ounces

MINFILE NUMBER: **092F 394** NAME: **IMPERIAL** STATUS: Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1991	147,614		Limestone		147,614,000
1990	169,575		Aggregate Limestone		1,226,000 168,349,000
1989	156,336		Limestone		156,336,000
1988	154,283		Limestone		154,283,000
1987	140,797		Limestone		140,797,000
1986	173,765		Limestone		173,765,000
1985	131,329		Limestone		131,329,000
1984	138,581		Limestone		138,581,000
1983	153,967		Limestone		153,967,000
1982	169,589		Limestone		169,589,000
1981	153,427		Limestone		153,427,000
1980	149,554		Limestone		149,554,000
1979	164,786		Limestone		164,786,000
1978	158,707		Limestone		158,707,000
1977	202,864		Limestone		202,864,000
1976	218,491		Limestone		218,491,000
1975	228,216		Limestone		228,216,000
1974	244,227		Limestone		244,227,000
1973	241,737		Limestone		241,737,000
1972	153,042		Limestone		153,042,000
1971	136,056		Limestone		136,056,000
1970	138,197		Limestone		138,197,000
1969	425,923		Limestone		425,923,000
1968	406,572		Limestone		406,572,000
1967	147,905		Limestone		147,905,000
1966	116,820		Limestone		116,820,000
1965	86,763		Limestone		86,763,000
1964	44,560		Limestone		44,560,000
1963	46,591		Limestone		46,591,000
1962	36,618		Limestone		36,618,000
1961	33,053		Limestone		33,053,000
1960	32,386		Limestone		32,386,000
1959	28,381		Limestone		28,381,000
1958	15,400		Limestone		15,400,000
1957	6,800		Limestone		6,800,000
1956	6,800		Limestone		6,800,000
1955	6,400		Limestone		6,400,000
1954	6,314		Limestone		6,314,000
1953	6,875		Limestone		6,875,000
1952	2,992		Limestone		2,992,000
1951	3,188		Limestone		3,188,000

SUMMARY TOTALS: 092F 394 NAME: **IMPERIAL**

	Metric		Imperial	
Mined:	5,185,481	tonnes	5,716,014	tons
Milled:		tonnes		tons
Recovery:				
Aggregate:	1,226,000	kilograms	2,702,867	pounds
Limestone:	5,184,255,000	kilograms	11,429,322,627	pounds

MINFILE NUMBER: **092F 395** NAME: **GILLIES BAY** STATUS: Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1995	20,000		Limestone		20,000,000
1991	1,619,387		Limestone		1,619,387,000
1990	2,219,168		Aggregate		232,986,000
			Limestone		1,958,473,000
			Railroad Ballast		27,709,000
1989	2,356,461		Aggregate		347,271,000
			Limestone		1,987,930,000
			Railroad Ballast		21,260,000
1988	2,364,988		Aggregate		445,896,000
			Limestone		1,907,517,000
			Railroad Ballast		11,575,000
1987	1,907,629		Aggregate		277,730,000
			Limestone		1,579,923,000
			Railroad Ballast		49,976,000
1986	1,140,985		Aggregate		166,170,000
			Limestone		944,944,000
			Railroad Ballast		29,871,000
1985	1,230,890		Aggregate		368,418,000
			Limestone		862,472,000
1984	1,260,075		Limestone		1,260,075,000
1983	1,322,967		Limestone		1,322,967,000
1982	1,230,522		Limestone		1,230,522,000
1981	1,627,142		Limestone		1,627,142,000
1980	1,919,638		Limestone		1,919,638,000
1979	1,559,660		Limestone		1,559,660,000
1978	1,686,958		Limestone		1,686,958,000
1977	952,118		Limestone		952,118,000
1976	966,956		Limestone		966,956,000
1975	1,435,622		Limestone		1,435,622,000
1974	1,105,052		Limestone		1,105,052,000
1973	1,123,730		Limestone		1,123,730,000
1972	1,025,459		Limestone		1,025,459,000
1971	981,384		Limestone		981,384,000
1970	795,098		Limestone		795,098,000
1969	759,309		Limestone		759,309,000
1968	1,004,889		Limestone		1,004,889,000
1967	610,620		Limestone		610,620,000
1966	390,707		Limestone		390,707,000
1965	441,386		Limestone		441,386,000
1964	313,000		Limestone		313,000,000
1963	89,570		Limestone		89,570,000
1962	120,754		Limestone		120,754,000
1961	180,571		Limestone		180,571,000
1960	56,367		Limestone		56,367,000
1959	59,265		Limestone		59,265,000
1958	35,067		Limestone		35,067,000
1956	34,729		Limestone		34,729,000
1955	28,800		Limestone		28,800,000
1954	22,700		Limestone		22,700,000
1953	61,700		Limestone		61,700,000
1952	41,700		Limestone		41,700,000

SUMMARY TOTALS: 092F 395 NAME: **GILLIES BAY**

	Metric		Imperial	
Mined:	36,103,023	tonnes	39,796,770	tons
Milled:		tonnes		tons
Recovery:				
Aggregate:	1,838,471,000	kilograms	4,053,133,613	pounds
Limestone:	34,124,161,000	kilograms	75,230,876,072	pounds
Railroad Ballast:	140,391,000	kilograms	309,509,087	pounds

Comments:

1995: White limestone.

MINFILE NUMBER: **092F 396** NAME: **LAFARGE LIMESTONE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1986	341,384		Limestone		341,384,000
1985	77,514		Limestone		77,514,000
1984	549,253		Limestone		549,253,000
1983	629,014		Limestone		629,014,000
1982	1,199,781		Limestone		1,199,781,000
1981	786,709		Limestone		786,709,000
1980	1,032,659		Limestone		1,032,659,000
1979	935,271		Limestone		935,271,000
1978	930,120		Limestone		930,120,000
1977	1,051,276		Limestone		1,051,276,400
1976	811,078		Limestone		811,077,550
1975	949,614		Limestone		949,613,720
1974	921,966		Limestone		921,966,000
1973	1,089,000		Limestone		1,089,000,000
1972	1,089,000		Limestone		1,089,000,000
1971	951,534		Limestone		951,534,230
1970	868,167		Limestone		868,166,680
1969	1,133,981		Limestone		1,133,980,800
1968	1,090,578		Limestone		1,090,577,500
1967	648,637		Limestone		648,637,060
1966	639,565		Limestone		639,565,210
1965	601,286		Limestone		601,285,640
1964	567,176		Limestone		567,176,410
1963	513,467		Limestone		513,466,540
1962	455,660		Limestone		455,659,820
1961	486,634		Limestone		486,633,830
1960	351,504		Limestone		351,504,130
1959	274,297		Limestone		274,297,270
1958	200,712		Limestone		200,711,890
1957	75,431		Limestone		75,430,593
1956	107,404		Limestone		107,404,310
1955	118,368		Limestone		118,367,640
1954	120,011		Limestone		120,010,550
1953	77,521		Limestone		77,520,746
1952	78,689		Limestone		78,689,200
1951	70,815		Limestone		70,814,837
1950	70,720		Limestone		70,719,583
1949	51,121		Limestone		51,120,765
1948	38,339		Limestone		38,339,439
1947	42,980		Limestone		42,979,689
1946	30,480		Limestone		30,479,591
1945	26,710		Limestone		26,710,239
1944	28,261		Limestone		28,260,617
1943	25,021		Limestone		25,021,061
1942	32,383		Limestone		32,382,865
1941	26,914		Limestone		29,914,355
1939	40,157		Limestone		40,157,437
1938	3,912		Limestone		3,911,780
1937	12,995		Limestone		12,994,513
1936	18,621		Limestone		18,620,873
1935	15,015		Limestone		15,014,813
1934	10,404		Limestone		10,403,594

SUMMARY TOTALS: 092F 396 NAME: **LAFARGE LIMESTONE**

	Metric		Imperial	
Mined:	22,299,109	tonnes	24,580,560	tons
Milled:		tonnes		tons

Recovery:

MINFILE NUMBER: **092F 396** NAME: **LAFARGE LIMESTONE** STATUS: Past Producer

Limestone:	22,302,104,770	kilograms	49,167,710,822	pounds

MINFILE NUMBER: **092F 397** NAME: **HIESHOLT** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1966	797,460		Limestone		797,459,800
1965	771,107		Limestone		771,106,990
1964	684,924		Limestone		684,924,440
1963	635,029		Limestone		635,029,290
1962	351,988	24,427	Limestone		351,987,660
1961	290,502	29,588	Limestone		290,502,310
1960	370,519	42,631	Limestone		370,518,720
1959	287,827	37,444	Limestone		287,827,020
1958	147,979	29,446	Limestone		147,979,060
1957	163,413	40,351	Limestone		163,412,990
1956	194,047	32,758	Limestone		194,046,800
1955	93,230	23,503	Limestone		93,229,557
1954	135,492	60,863	Limestone		135,491,660
1953	115,652	56,463	Limestone		115,651,530
1952	107,867	67,434	Limestone		107,866,980
1951	157,109	76,275	Limestone		157,108,960
1950	146,446	68,559	Limestone		146,445,910
1949	193,309	81,098	Limestone		193,309,260
1948	45,145	34,400	Limestone		45,144,776

SUMMARY TOTALS: 092F 397 NAME: **HIESHOLT**

	Metric		Imperial	
Mined:	5,689,045	tonnes	6,271,099	tons
Milled:	705,240	tonnes	777,394	tons
Recovery:				
Limestone:	5,689,043,713	kilograms	12,542,190,929	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 471** NAME: **B.C. CEMENT** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1957	14,378		Limestone		14,377,970
1956	74,589		Limestone		74,588,726
1955	140,180		Limestone		140,179,990
1954	117,914		Limestone		117,914,050
1953	198,559		Limestone		198,559,140
1952	178,401		Limestone		178,401,490
1951	163,057		Limestone		163,057,370
1950	152,398		Limestone		152,397,950
1949	182,077		Limestone		182,077,410
1948	147,211		Limestone		147,210,670
1947	129,309		Limestone		129,309,190
1946	87,084		Limestone		87,084,288
1945	62,752		Limestone		62,751,780
1944	50,131		Limestone		50,131,026
1943	48,411		Limestone		48,411,004
1942	37,195		Limestone		37,195,479
1941	34,112		Limestone		34,111,959
1940	24,062		Limestone		24,062,166
1939	15,652		Limestone		15,652,657
1938	23,351		Limestone		23,350,934
1937	22,261		Limestone		22,261,405
1936	14,160		Limestone		14,160,245
1935	10,174		Limestone		10,174,076
1934	6,271		Limestone		6,271,368
1933	9,210		Limestone		9,209,739
1932	19,900		Limestone		19,900,003
1931	45,584		Limestone		45,584,216
1930	47,741		Limestone		47,740,594
1929	19,295		Limestone		19,295,818

SUMMARY TOTALS: 092F 471 NAME: **B.C. CEMENT**

	Metric		Imperial	
Mined:	2,075,419	tonnes	2,287,758	tons
Milled:		tonnes		tons
Recovery:				
Limestone:	2,075,422,713	kilograms	4,575,522,572	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 472** NAME: **BEALE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1941	1,579		Limestone		1,579,000

SUMMARY TOTALS: 092F 472 NAME: **BEALE**

	Metric		Imperial	
Mined:	1,579	tonnes	1,741	tons
Milled:		tonnes		tons
Recovery:				
Limestone:	1,579,000	kilograms	3,481,098	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 473** NAME: **COULTER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1937	54		Limestone		54,431

SUMMARY TOTALS: 092F 473 NAME: **COULTER**

		Metric		Imperial	
	Mined:	54	tonnes	60	tons
	Milled:		tonnes		tons
Recovery:					
	Limestone:	54,431	kilograms	120,000	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **092F 474** NAME: **FOGH** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1931	7,394	227	Limestone		7,393,555
1930	962		Limestone		961,616

SUMMARY TOTALS: 092F 474 NAME: **FOGH**

	Metric		Imperial	
Mined:	8,356	tonnes	9,211	tons
Milled:	227	tonnes	250	tons

Recovery:

Limestone:	8,355,171	kilograms	18,419,994	pounds

Comments:

1931: Milled refers to limestone burnt for manufacturing.

MINFILE NUMBER: **092F 479** NAME: **BLUBBER BAY** STATUS: Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1998	1,742,000		Aggregate		454,000,000
			Limestone		1,288,000,000
1991	1,029,640		Limestone		1,029,640,000
1990	1,028,066		Aggregate		579,691
			Limestone		1,027,486,400
1989	937,241		Aggregate		230,425
			Limestone		937,010,210
1988	883,455		Aggregate		2,039,351
			Limestone		881,415,210
1987	1,046,011		Limestone		1,046,011,000
1986	1,056,981		Limestone		1,056,981,000
1985	1,049,714		Limestone		1,049,714,000
1984	941,150		Limestone		941,150,000
1983	800,267		Limestone		800,267,000
1982	435,795		Limestone		435,795,000
1981	541,289		Limestone		541,289,000
1980	689,338		Limestone		689,338,000
1979	778,692		Limestone		778,691,960
1978	789,103		Limestone		789,102,810
1977	668,347		Limestone		668,347,460
1976	627,826		Limestone		627,826,240
1975	581,003		Limestone		581,002,810
1974	871,145		Limestone		871,145,000
1973	1,023,123		Limestone		1,023,122,900
1972	722,845		Limestone		722,844,760
1971	748,337		Limestone		748,336,650
1970	780,179		Limestone		780,178,840
1969	588,754		Limestone		588,753,790
1968	758,044		Limestone		758,043,530
1967	862,968		Limestone		862,967,610
1948	112,861	51,600	Limestone		112,861,940
1947	131,542	74,949	Limestone		131,541,780
1946	100,404	67,862	Limestone		100,403,570
1945	114,142	70,786	Limestone		114,141,970
1944	102,907	63,633	Limestone		102,907,400
1943	87,947	50,186	Limestone		87,947,020
1942	63,001	33,394	Limestone		63,001,255
1941	87,321	44,165	Limestone		87,321,063
1940	72,334	31,898	Limestone		72,334,372
1939	38,068	27,263	Limestone		38,068,191
1938	26,160	25,173	Limestone		26,159,578
1937	34,888	32,733	Limestone		34,887,602
1936	29,924	29,373	Limestone		29,924,394
1935	25,326	19,408	Limestone		25,325,875
1934	37,777	27,951	Limestone		37,776,985
1933	35,272	28,251	Limestone		35,272,248
1932	30,293	22,970	Limestone		30,292,711
1931	37,411	37,258	Limestone		37,411,389
1930	104,075	48,628	Limestone		104,074,950
1929	68,569	50,698	Limestone		68,569,186
1928	71,712	46,351	Limestone		71,712,652
1927	111,369	71,446	Limestone		111,368,710
1926	61,870	49,520	Limestone		61,870,314
1925	48,476	29,074	Limestone		48,476,412
1924	55,948	29,396	Limestone		55,947,990
1923	75,986	48,770	Limestone		75,985,790
1922	43,363	34,292	Limestone		43,363,428

MINFILE NUMBER: **092F 479** NAME: **BLUBBER BAY** STATUS: Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1921	29,732	23,448	Limestone		29,732,137
1920	35,666	33,659	Limestone		35,665,937
1919	24,768	23,959	Limestone		24,768,393
1918	32,435	21,601	Limestone		32,434,895
1917	20,564	13,458	Limestone		20,563,708
1916	23,587	23,587	Limestone		23,586,802
1915	53,652	47,322	Limestone		53,651,810
1914	29,550	6,413	Limestone		29,550,271
1913	22,360	13,288	Limestone		22,359,834
1912	13,993	12,859	Limestone		13,993,323
1911	9,163	8,573	Limestone		9,162,565

SUMMARY TOTALS: 092F 479 NAME: **BLUBBER BAY**

	Metric		Imperial	
Mined:	24,085,729	tonnes	26,549,971	tons
Milled:	1,375,195	tonnes	1,515,893	tons
Recovery:				
Aggregate:	456,849,467	kilograms	1,007,180,386	pounds
Limestone:	23,628,879,630	kilograms	52,092,747,868	pounds