BRITISH COLUMBIA PROSPECTORS ASSISTANCE PROGRAM MINISTRY OF ENERGY AND MINES GEOLOGICAL SURVEY BRANCH

PROGRAM YEAR:1999/2000REPORT #:PAP 99-33NAME:WILLIAM HOWARD

BRITISH COLUMBIA PROSPECTORS ASSISTANCE PROGRAM PROSPECTING REPORT FORM (continued)

B. TECHNICAL REPORT

- One technical report to be completed for each project area.
- Refer to Program Requirements/Regulations 15 to 17, page 6.
- If work was performed on claims a copy of the applicable assessment report may be submitted in lieu of the supporting data (see section 16) required with this TECHNICAL REPORT. No, not submitted

Name WMR. HOWARD

LOCATION/COMMODITIES

LUCATIONCOMMODITIES
Project Area (as listed in Part A) Target A CLEL 1/CLELZ MINFILE No. if applicable
Location of Project Area NTS 82F.014/82F.004 Lat 49° 05' 30" Long 117° 21' 00"
Description of Location and Access Location is immediately Sof Swift claims in Nelson M.D.
Access by Hellmaning CK Logging Rd, 1km 5 of Salmo, drive to Wheadwaters of Swift CK to UTM 473675/550490. Hike 3.3 Km to Coryell Peak at
Swift CK to UTM 473675/550490. Hike 3.3 Km to Corvell Peak at
Main Commodities Searched For head waters of W Swift CK and Lingid CK
Gold
Known Mineral Occurrences in Project Area None but gold tcopper veins on Swift
claims adjacent

WORK PERFORMED

1. Conventional Prospecting (area)	
2. Geological Mapping (hectares/scale)	
3. Geochemical (type and no. of samples) 25 soils 3 rock	
4. Geophysical (type and line km) Sabre VLF-EM 4.500 liv	ne km
5. Physical Work (type and amount) Flagged + Topofil grid 5.6	500 line Km
6. Drilling (no. holes, size, depth in m, total m)	
7. Other (specify) staking 24 units 18 man days	for CLEL1/CLEL2
5. Physical Work (type and amount) Flagged + Topofil grid 5.6	500 line Km

SIGNIFICANT RESULTS

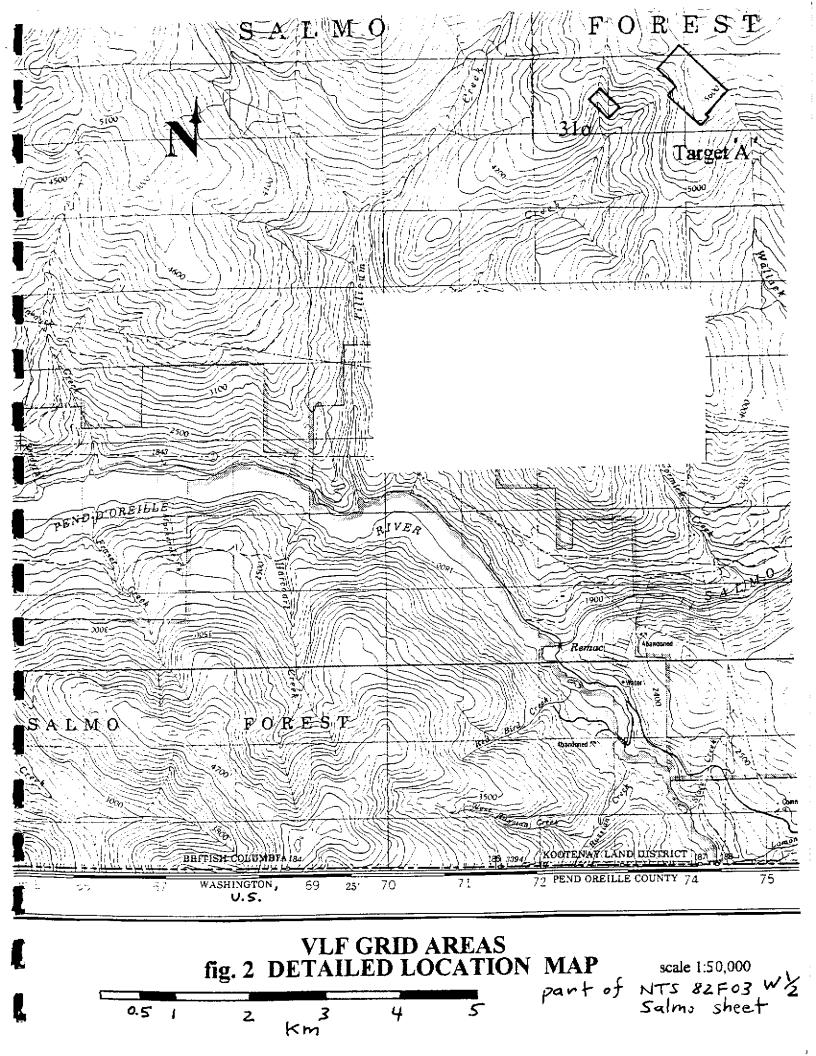
Commodities	nil	Claim Name	CLEL1
Location (show on map)	Lat L	ong	Elevation
Best assay/sample type of 3 rocks,		and AH-04	athfinders low. 18 was only 300 ppb Av.
Description of mineraliza	ation, host rocks, anomalies No	sulphide mi	nevalization was found on
			allack CK leucocuatic granito
veins and	rare breccia. Some	rust - colovatio	ptocrystalline, as cm-sized on -hematite- was noted
in fractured	l outcrops. Exposur	ic on the hid	lge is ten to twenty percent
Corona Corp.'s	soil geochem anomal	y on Lines 6	4 to 68 has proved to be a duced (ref. Gaunt 1990 A.
analytical art	, Ag, Zn, Pb and To F	E ICP values	are inaccurate and too high
			(Gaunt 1820).

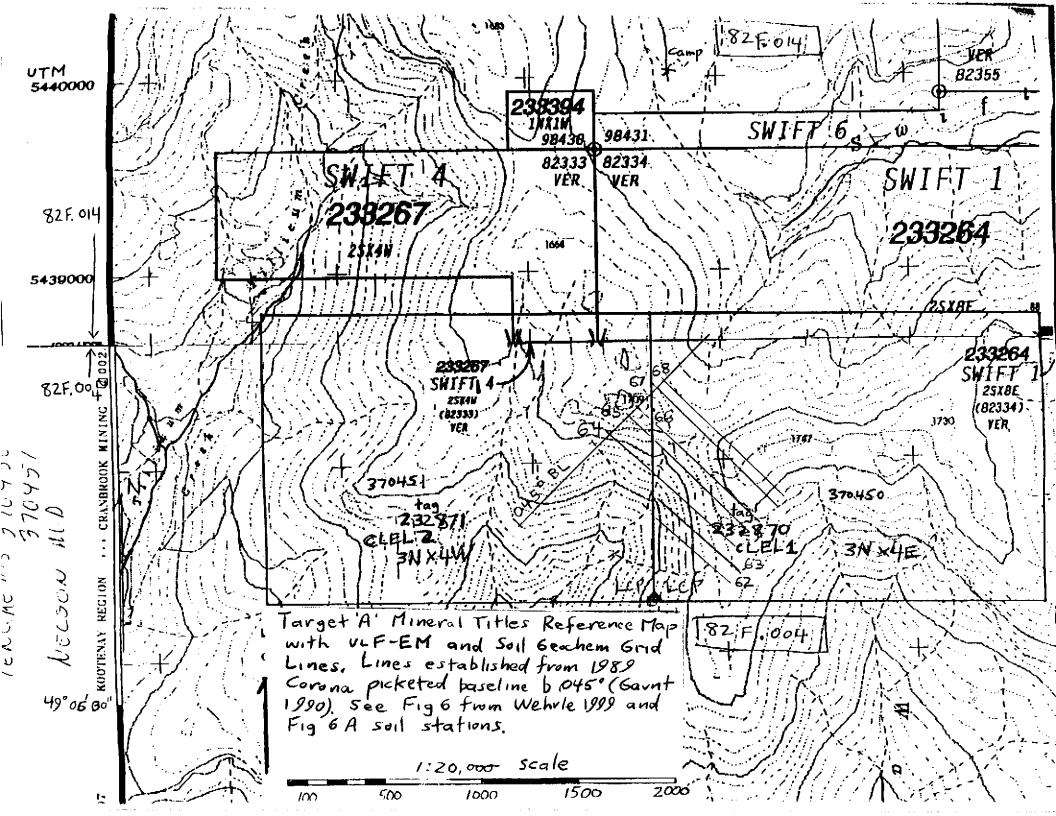
Supporting data must be submitted with this TECHNICAL REPORT

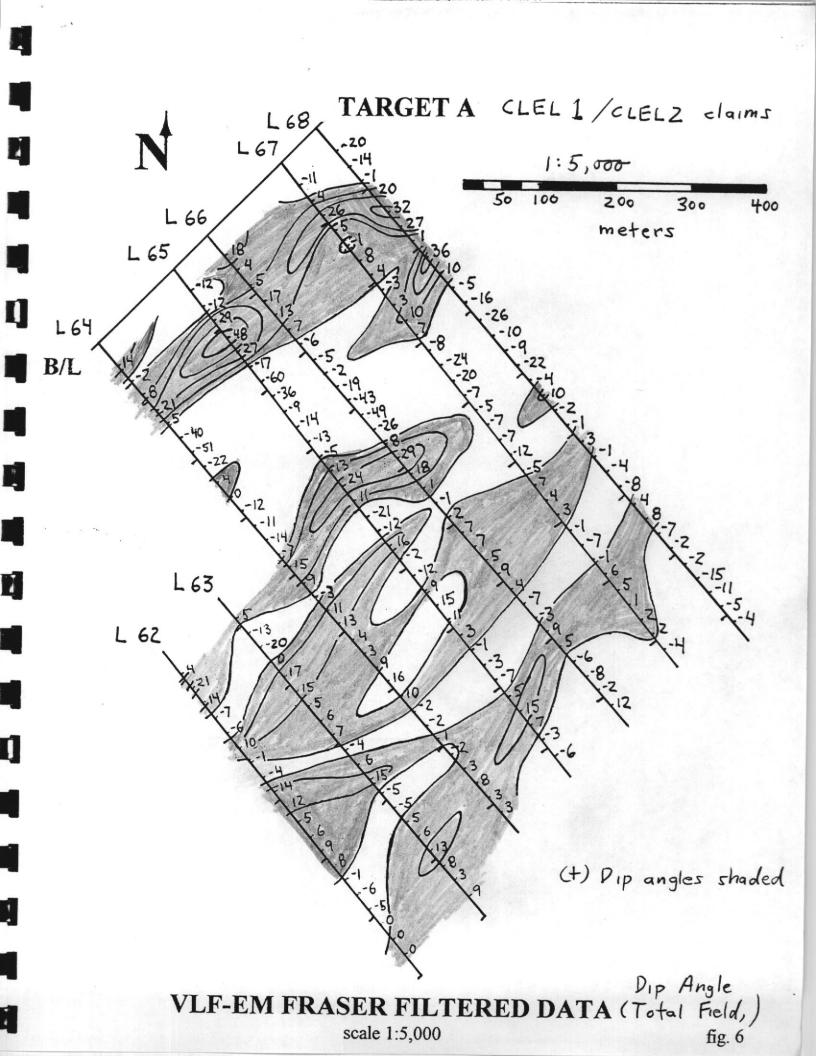
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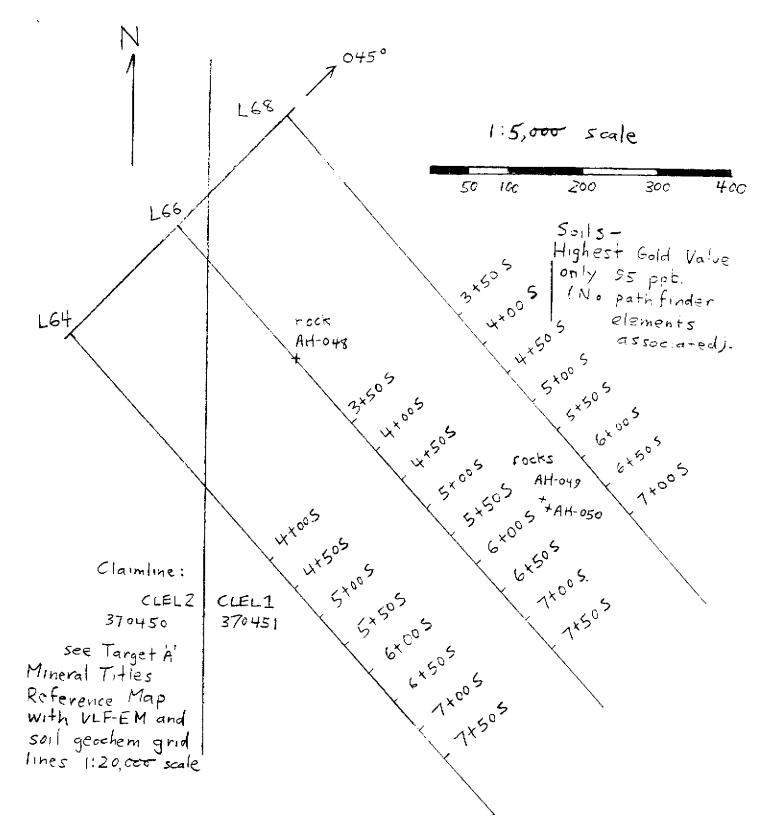
RECORDERS PROGRAM

Reference Number ____ P&3









Target A' on CLE'L1/CLELZ Claims - Soil Geochem Stations over a broad VLF-EM dipangle anomaly in Wallack Ck granitoid. Very low analytical results - see Loring Laboratories Ltd. certificates # 41657 and # 41658. NTS 82F.004 25 25 Of three rocks AH-048 AH-049 and AH-050, only AH-048 had 300 ppb gold(certificate # 41427) Wm. R. Howard Dec. '99



Loring Laboratories Ltd.

629 Beaverdam Road N.E. Calgary, Alberta T2K 4W7 Tel: 274-2777 Fax: 275-0541



FILE:41427

DATE: Sept.13,1999

TO:BILL HOWARD

215 Silvermead Cr. N.W. Calgary, Alberta T3B 3W4

GEOCHEMICAL ANALYSIS

Sample	Au	Bi	Te
No.	ppb	ppm	ppm
AH-048	300	<1	2
AH-049	<5	1	1
AH-050	<5	<1	1
		•	·

Gravimetric fire assays are recommended for samples with gold values over 1000 ppb.
Certified by: foregoing



Loring Laboratories Ltd.

629 Beaverdam Road N.E. Calgary, Alberta T2K 4W7 Tel: 274-2777 Fax: 275-0541



FILE:41657

DATE: Nov.26,1999

TO:**BILL HOWARD** 215 Silvermead Cr. N.W. Calgary, Alberta T3B 3W4

"Soil Samples"

30 ELEMENT ICP ANALYSIS

Sample	Au	Ag	AI	As	В	Ba	Bi	Са	Cd	Co	Cr	Сu	Fe	K	La	Mg	Mn	Mo	Na	NI	Р	Pb	Sh	Sr	Те	Ti	Se	v	W	
No.		ppm				ppm				ppm					ppm	_	ppm			ppm						· · ·				Zn
L66 3+50S		1.6		· · · · ·	52	823	5	0.47		91	33										0.389	ppm 64	25	83						ppm
L66 4+00S		0.9		22	57	93	3	0.12	_	59	32		3.51			0.60			0.02		0.309		20		10	0.08		101	<1	205
L66 4+50S		0.8			11	105	5	0.22	•	61	34			0.12			905	4	0.02				0 r	14	4	0.11	<1	74	<1	102
L66 5+00S		0.6			21	120	4	0.13	-	65	42			0.12		-	1149	•			0.121		5	21	4	0.11	<1	84	<1	92
L66 5+50S	1	<0.5			17	86	4	0.10		66	37			0.12	•				0.02		0.143		5	16	<u>′</u>	0.09		89	<1	84
		~0.0	0.20	1-4	17	00	-1	0.10	'	00	57	07	4.14	V. 12	10	0.79	1079	3	0.02	90	0.174	54	6	17	7	0.11	<1	88	<1	92
L66 6+00S	10	~0 F	2 04	11	12	101	5	0.09	~1	70	24	~~		0.40	40	~ ~ 4	4070	~					_							l
L66 6+50S					18	97	0 6		•	72	34						1278				0.151		6	16	7	0.08	<1	96	<1	86
L66 7+00S							0	0.09	-	65 67	32			0.13			1405	_	0.02				6	14	6	0.10	-	70	<1	94
1					11	97	0	0.12	-	65	35			0.13			1466		0.02		0.181	40	7	18	8	0.10	<1	69	<1	87
L66 7+50S		<0.5			13	81	6	0.08	•	72	46			0.14		0.78		2	0.02				6	14	8	0.09	<1	80	<1	78
L64 4+00S	20	<0.5	2.55	20	19	150	6	0.55	1	72	60	56	4.07	0.13	18	0.90	1235	2	0.02	114	0.157	45	7	48	8	0.11	<1	80	<1	91
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L64 4+50S					13	169	4	0.23		68	34					0.67	1211	2	0.02	92	0.216	32	5	21	7	0.06	<1	68	<1	138
L64 5+00S		<0.5			16	124	5	0.20		69	33			0.11		0.76	1361	3	0.01	93	0.146	46	6	23	7	0.07	<1	73	<1	173
L64 5+50S					11	109	4	0.15	1	66	24	50	3.90	0.11	11	0.68	969	3	0.02	86	0.189	41	5	18	6	0.09	<1	75	<1	100
L64 6+00S					17	124	3	0.09	1	52	17	34	3.05	0.11	9	0.41	1354	2	0.03	70	0.211	46	5	11	7	0.12	<1	62	<1	174
L64 6+50S	<5	<0.5	2.84	12	10	63	4	0.08	<1	57	28	46	3.57	0.11	8	0.57	768	3	0.02	82	0.179	38	6	12	7	0.10		70	<1	80
																											•		•	
L64 7+00S	<5	<0.5	2.93	10	10	79	4	0.07	<1	57	29	40	3.52	0.12	10	0.56	774	3	0.02	80	0.154	39	6	12	7	0.12	<1	74	<1	81
L64 7+50S	<5	<0.5	3.13	12	10	85	6	0.07	<1	62	37	60	3.84	0.11	8	0.68	548	3	0.02		0.121	36	5	13	7	0.10	<1	77	<1	68
L68 3+50S	<5	<0.5	3.18	7	11	109	4	0.11	<1	62	42	46	4.06	0.12	8	0.71	507	3	0.02		0.158		5	14	9	0.15		120	<1	67

Gold analyzed by Fire assay/A.A. 0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water. Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

antialing . Certified by:



Loring Laboratories Ltd.

629 Beaverdam Road N.E. Calgary, Alberta T2K 4W7 Tel: 274-2777 Fax: 275-0541



FILE:41658

TO:BILL HOWARD 215 Silvermead Cr. N.W. Calgary, Alberta T3B 3W4

"Soil Complee"

30 ELEMENT ICP ANALYSIS

DATE: Nov.26,1999

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Sample	Au	Ag	AI	As	В	Ba	Bi	Ca	Cd	Co	Cr	Ċu	Fe	К	La	Mg	Mn	Мо	Na	NI	Р	РЬ	Sb	Sr	Te	Tí	Se	V	W	Zn
No.	ppb	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	DDM	DDM	DDM	ppm
L68 4+00S	<5	<0.5	3.24	8	11	71	4	0.08	<1	60	31	45	3.74	0.12	10	0.62	574	3	0.02	83	0.183		6	11	8	0.11		82	<1	76
L68 4+50S	95	<0.5	2.87	7	14	67	6	0.08	<1	58	34	46	3.55	0.11	10	0.62	598	3	0.02	81	0.177	34	5	12	8	0.12	<1	76	<1	71
L68 5+00S	25	<0.5	3.01	12	10	79	5	0.08	<1	69	34	57	4.15	0.11	9	0.78	1007	3	0.01	95	0.201	38	5	14	8	0.09	<1	84	<1	76
L68 5+50S	14	<0.5	2.97	10	10	86	5	0.06	<1	66	38	61	3.83	0.11	9	0.76	978	2	0.01	90	0.150	37	7	11	7	0.09	-		<1	73
L68 6+00S	15	<0.5	2.70	8	16	77	4	0.09	1	62	27	40	3.44	0.11	11	0.63	1650	2	0.02	82	0.208	37	4	14	7	0.09	<1	55	<1	95
L68 6+50S	15	<0.5	2.67	11	11	120	4	0.12	1	67	31	40	3.52	0.11	14	0.71	1718		0.01		0.186		5	18	6	0.07	<1	47	<1	98
L68 7+00S	12	<0.5	2.61	11	10	95	3	0.10	1	64	26	39	3.45	0.11	12	0.65	1682	2	0.02	82	0.191	42	6	14	7	0.09	<1	49	<1	93
L64 6+00S-R	<5	<0.5	3.05	9	11	115	4	0.09	1	54	28	32	2.97	0.10	9	0.40	1303	3	0.03	70	0.207	45	6	12	7	0.11	<1	54	<1	172

Gold analyzed by Fire assay/A.A.

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water. Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W

Certified by:

310 VLF-EM FIELD DATA Dip Angles

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310	Station	Line 55	Line 56	Line 57
•••	4+25 NW			-20
	4+00			-24
	3+75			-18
	3+50		-38	-23
	3+25		-37	-20
	3+00		-40	-23
	2+75		-38	-27
	2+50	-47	-35	
	2+25	-43	-26	
	2+00	-41	-31	
	1+75	-43	-36	the second se
	1+50	-39	-34	
	1+25	-34	-35	
	1+00	-35	-32	
	0+75	-33	-31	
	0+50	-30	-33	-35
	0+25	-28	-28	
	B/L	-23		2 -31

TARGET A VLF-EM FIELD DATA Dip Angles

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Station	Line 62	Line 63	Line 64	Line 65	Line 66	Line 67	Line 68
B/L			-20	-7	-12	-15	-9
0+25 SE			-4	-6	-16	1	-18
0+50			-3	-7	-2	-13	-21
0+75			-7	-18	-7	-12	-26
1+00			-2	-7	-7	4	-28
1+25			0	11	3	-3	-20
1+50			12	12	0	0	-14
1+75			-9	19	9	0	-2
2+00			-19	-13	1	5	-5
2+25			-29	-16	2	-1	20
2+50			-21	-14	3	3	9
2+75			-23	-24	-2	4	16
3+00			-27	-20	-12	8	8
3+25			-29	31	-30	6	1
3+50	-24	-24	-32	-18	-33	-2	-3 2 -13
3+75	-29	-20	-38	-20	35	8	2
4+00	-29	-19	-30	5	-20	-8	-13
4+25	-20	-20	-25	-22	-19	-9	-10
4+50	-17	32	-34	-24	-18	-12	-5
4+75	-18	-27	-24	-15	-20		-8
5+00	-26	-25	-24	15	-18	-16	-9
5+25	-15	-17	-21	26	-18	-20	-5
5+50	-19	20	-23	-16	-13	-13	-9
5+75	-23	-17	-19	17	-16	-16	-6
6+00	~15	-14	-16			-13	-12
6+25	-13	-16	-11		-10		-11
6+50	-13		-14	-12			3
6+75	-10	-5	-14		-15	-16	-12
7+00	-10	-15	-13	-16	-10	-15	-9
7+25	4	-14	-14	-14	-8	-12	-8
7+50	8	-11	-15	8	-12	-13	-15
7+75	-7		-9	-7	-12	-13	-17
8+00	-11	-6	-12	-8	-16	10	-17
8+25	9	-5	-9	-10	-10	-14	-20
8+50	-9	-6	-9		-6	-13	-18
8+75	-11	-2					
9+00	-7	0					

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VLF-EM REPORT

on the

CLEL PROJECT

SOUTHEASTERN B.C.

Prepared for

William R. Howard

215 Silver Mead Cres. NW

Calgary, Alberta T3B 3W4

by

Dan M. Wehrle, P.Geo. B.Sc. Honours Geology

Box 562

Rossland, B.C. VOG 1Y0

September 30th, 1999

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APPENDICES

Appendix 1: VLF-EM field data

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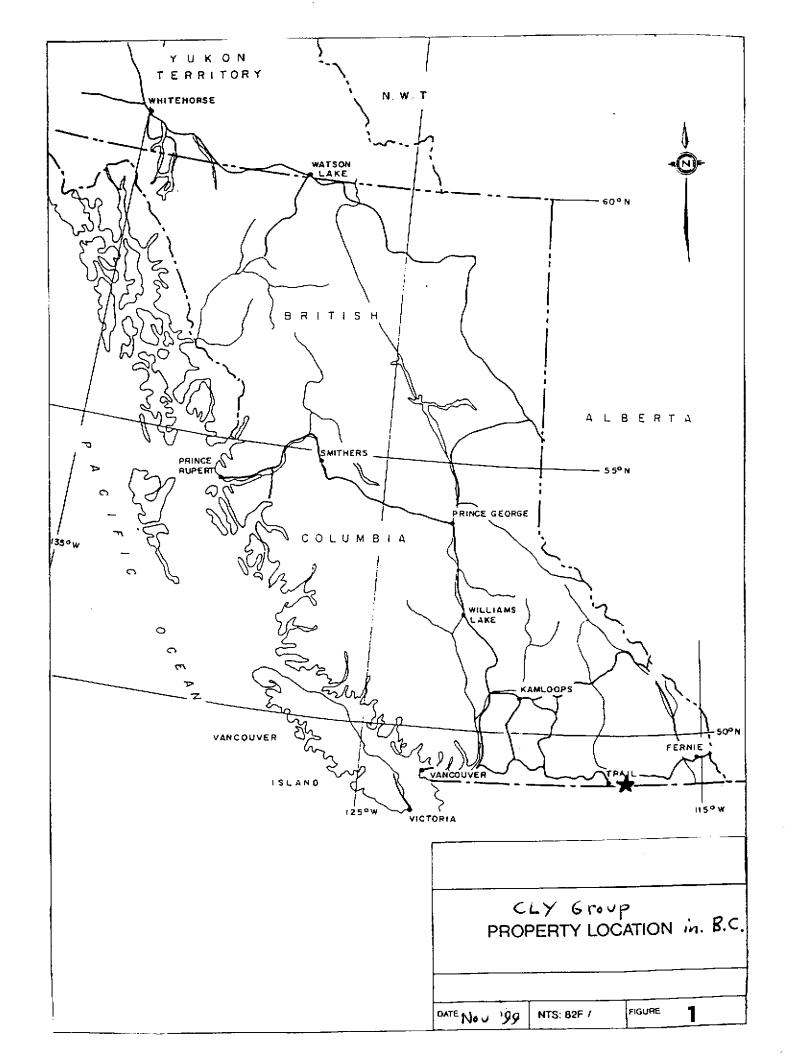
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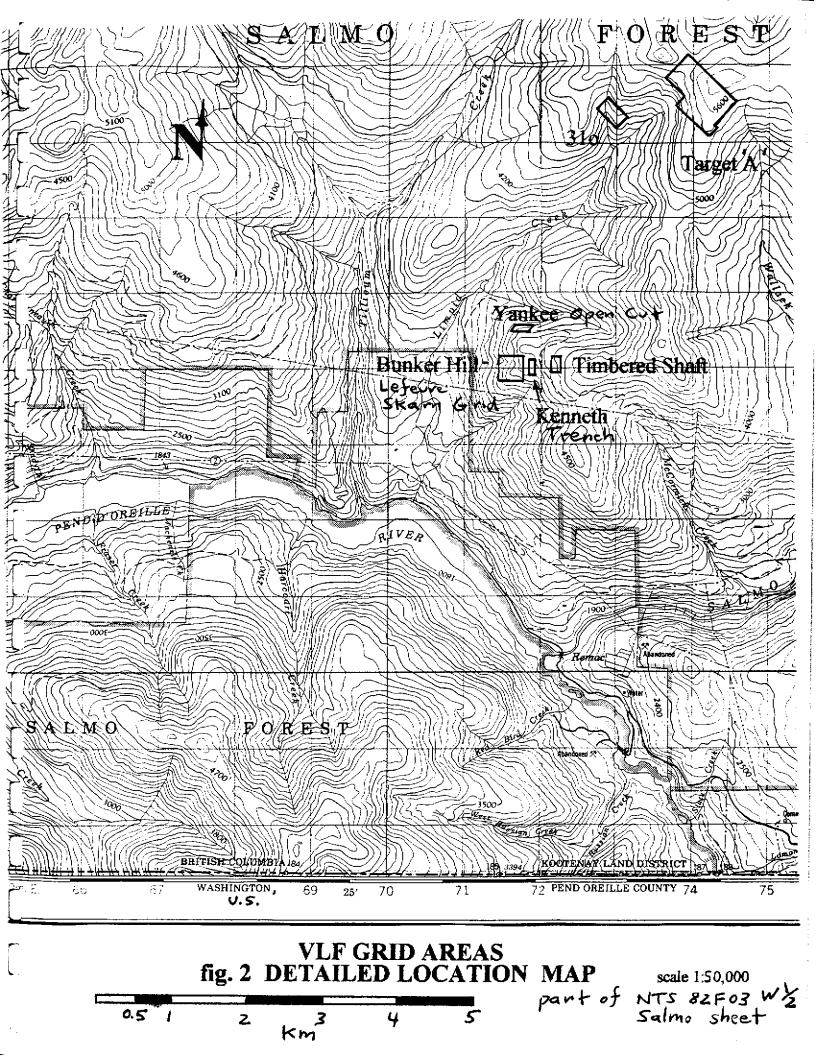
INTRODUCTION

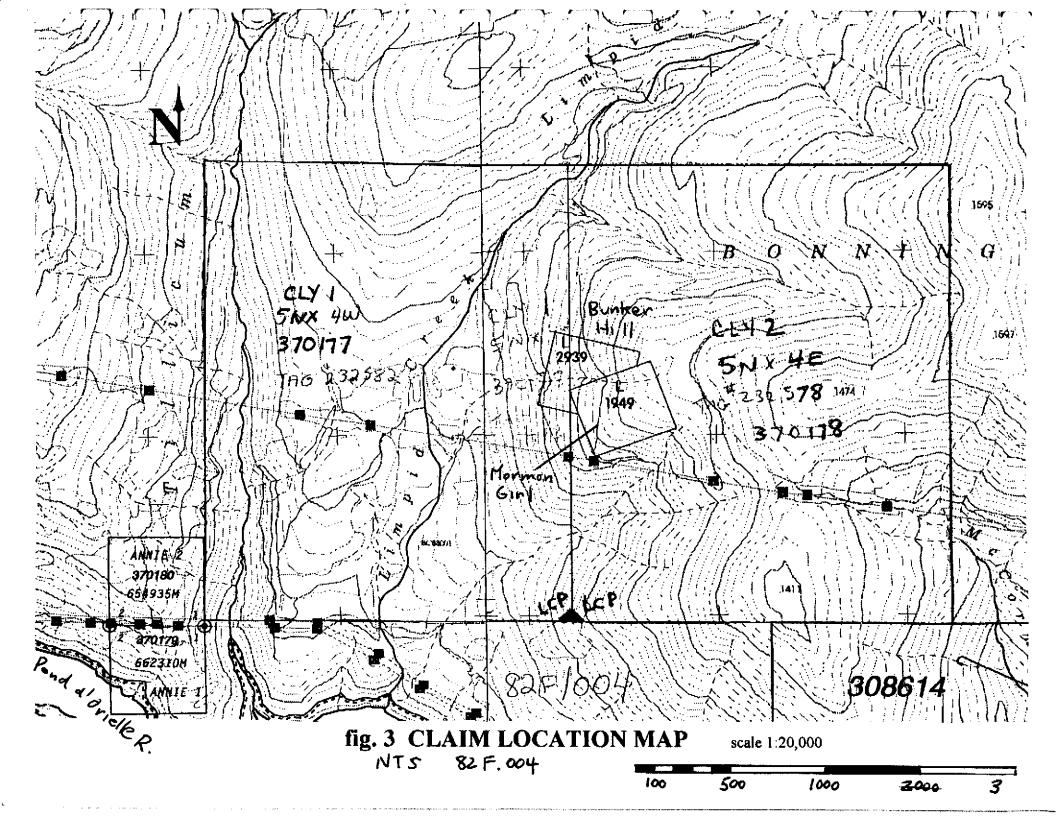
This report is written at the request of William R. Howard, B.Sc. Geology. It is based on fieldwork at the CLEL Project in southeastern British Columbia, carried out by the author during July 27, 28, August 9, 10, 24, 25 and Sept. 7, 8, 11, 1999. During this time 6 CLEL project targets were evaluated using ground-based VLF-EM geophysics. They are Bunker Hill mine area, Yankee open cut, Timbered shaft and Kenneth showings, Target A and part of airborne geophysical anomaly 310. The VLF-EM surveys, totaling 10 line kilometers, forms part of an ongoing exploration effort initiated in the fall of 1997, to help determine whether potentially economic gold, (tungsten, molybdenum) deposits may exist on the property.

LOCATION AND ACCESS

The CLEL property is located in the Nelson Mining Division of B.C., 16 km. southwest of the town of Salmo and 6 km. north of the international border (fig. 1 and 2). It is owned 100% by William R. Howard. The CLEL property consists of 44 claim units (fig. 3), two Crown Granted claims Bunker Hill, L2939 and Mormon Girl, L1949, two modified grid claims CLY 1, CLY 2 (tenure #'s 370177, 370178) and 2-post claims, Annie 1 and Annie 2 (tenure #'s 370179, 370180). Access from highway 6 west of Nelway is by Pend d'Orielle gravel road, then by Limpid Creek forestry road and B.C. hydro power line roads. The VLF grids are near the Bunker Hill workings (Yankee open cut, Timbered shaft and Kenneth showings) as well as 4 km. to the northeast (Target A and anomaly 310).







PHYSIOGRAPHY AND VEGETATION

The property's mountainous relief ranges from 600 to 1,700 meters above sea level. It is moderately treed and locally logged with some dense bushy areas. Interior Douglas fir and Lodgepole pine with localized stands of cedar are the predominant forest cover. Numerous stands of poplar and birch occur in the lower elevations and along drainages. Rock outcroppings are scarce (much less than 1%), with most areas overlain by drift covered slopes. Outcrop exposures are usually found near topographic highs, creeks or old logging roads.

EXPLORATION HISTORY

The Bunker Hill gold quartz veins were first discovered in 1896. They were developed by three adits, now caved. Some underground diamond drilling was done on the No. 3 level in 1936 (B.C. Mines Annual Report, 1936). Recorded production in 6 years from 1933 - 1942 totals 3,298 grams gold from 340 tonnes or 9.7 g/t (106 oz. Au from 375 tons or 0.28 oz/ton). Tungsten, in the form of scheelite, was discovered on the Bunker Hill property in 1942. In 1959, the area was geologically mapped by the B.C. Department of Mines, (Fyles and Hewlett, Bulletin 41). Minor assessment work was completed on the Bunker Hill claim in 1984 by Michael Harris. In late 1988 Corona Corp. undertook initial stream sediment samples and airborne magnetic, electromagnetic and VLF-EM surveys which were followed up in 1989 with further stream sediment sampling and grid installation, soil sampling and mapping in parts of the project area.

In 1995 structural geological mapping was completed southwest of the Bunker Hill area by Jon Einarsen, (unpublished University of Calgary Ph.D. thesis). In 1997 the Bunker Hill property was listed and classed as hosting tungsten-skarn by the Geological Survey Branch of B.C., (Ray and Webster, Bulletin 101).

GEOLOGY

Outcrop exposures near the Bunker Hill workings and around power line roads and towers show moderate to strongly crenulated and isoclinally folded phyllite, schist, slate and minor limestone. Formerly mapped as part of the Lower Cambrian Laib formation (Fyles and Hewlett, 1959 and Little, 1965), these rocks today are identified with the Carboniferous Cs unit (Little, 1982). This unit may include rocks of Slide Mountain Terrane (Hoy 1997). The Cs unit is divided into two assemblages, separated by the Tillicum Creek fault (Einarsen, 1995). They are the Harcourt Creek assemblage (HCA), of siliclastic rocks, chert, volcanic and volcaniclastic rocks, and limestone in the footwall and the Charbonneau Creek assemblage (CCA), of siliceous argillite, fine-grained sandstone, slate, and limestone in the hanging wall.

Minor outcroppings of leucocratic biotite granite occur near the Mormon Girl C.G. tungsten skarn workings. This small granitic body may be associated with the Cretaceous Wallack Creek stock, 2 km. to the east (Hoy and Andrew, 1990a). Garnet bearing skarn mineralization containing disseminations of pyrrhotite, pyrite, arsenopyrite and trace chalcopyrite is found in trenches on the Mormon Girl C.G. near the west contact of this small granitic body. Nearby outcrops show the presence of scheelite under a black light. Quartz veins in the skarn workings were up to 36 cm. thick and carried trace to 10 % pyrite. These quartz veins looked very similar to the vuggy, pyrite bearing, multi-phased quartz veins observed in the Bunker Hill adit dumps, 150 meters northwest (fig. 5).

Ultramafic rocks outcrop approximately 400 m. west of the Bunker Hill workings, at the intersection of the Limpid Creek forestry road and B.C. hydro road 9-1,2. Occurring over a minimum area of 100 X 100 m., these rocks display local silicification, serpentinization and in some cases disseminated pyrite with calcite (listwanite?). Listwanite is defined as a mineralogical assemblage that results from

the carbonatization of serpentinized ultramafic rocks and represents a distinctive alteration suite that is commonly associated with quartz-carbonate lode gold deposits (Ash and Arskey, 1990 and Ash et al, 1992). Locally, these ultramafic rocks contain fibrous (asbestos like) minerals, in thin layers up to 1 cm. thick.

Near the southern extent of this ultramafic body, a small outcropping of silicified granite exposed over a 15 m. length contains pervasive tourmaline breccia and sheeted tourmaline veins 1 to 10 mm. thick (Wehrle, 1997, 1998). Local areas of intense tourmaline breccia display only relict floating quartz fragments, the mafic and felsic components apparently driven off. Tourmaline veins also occur in granite outcrops near CLEL Creek and the ridge to the north. Here the tourmaline is dark black and cryptocrystalline, forming veins up to 5 cm. wide and occurring on average, one vein per outcrop. Granitic float in these areas often contained vein tourmaline. The tourmaline appears to be hydrothermal in nature rather than an original accessory mineral in the granite (Thompson and Thompson, 1995).

OBJECTIVE OF PRESENT WORK

With most areas of the CLEL property overlain by drift and rock outcroppings scarce, VLF-EM ground surveys hope to provide new, undiscovered, conductive trends or buried conductors near old workings and showings. Local workings and previous exploration show roughly north to northeast trending features. A VLF-EM grid geophysical program was designed to test for northeast trending conductors on each of the target areas. Field grids were set up with lines 100 m. apart and stations every 25 m. for Target A and 310 and lines 50 m. apart and stations at 25 m. intervals for Bunker Hill. Lines were 30 m. apart with stations every 15 m. for the Yankee open cut, Timbered shaft and Kenneth showings. VLF readings were taken at each station using the Seattle transmitter.

INSRUMENTATION AND THEORY

A VLF-EM receiver, model 27, manufactured by Sabre Electronic Instruments Limited of Burnaby B.C. was used for the VLF electromagnetic survey. This instrument is designed to measure the electromagnetic component of the very low frequency field (VLF-EM). The source of the primary field used was the U.S. navy submarine transmitter at Seattle, Washington which transmits at a frequency of 18.6 kHz.

In electromagnetic prospecting, a transmitter produces an alternating magnetic field (primary) by a strong alternating current usually through a coil of wire. If a conductive mass such as a sulfide body is within the magnetic field, a secondary alternating current is induced within it which in turn produces a secondary magnetic field which can be detected at surface through deviations of the normal VLF field.

VLF means very low frequency, about 15 to 25 kilocycles per second. Relative to frequencies generally used in geophysical exploration, this is actually very high. Consequently the high frequency of the VLF-EM method results in numerous anomalies from lower conductive sources such as swamps, creeks, topographic highs, electrolyte-filling faults or shear zones, porous horizons, graphite, carbonaceous sediments, lithological contacts, as well as sulfide bodies of too low a conductivity for other EM methods to pick up. On the other hand, the tendency for VLF to respond to poor conductors has aided in mapping faults and rock contacts as well as picking up conductors of too low a conductivity for conventional EM methods and too small for induced polarization (Paterson and Hallof, 1990).

VLF data may have anomalies and it is difficult to differentiate between those that are geologically significant and those that are not. Thus, VLF-EM preferably should not be interpreted without a good geological knowledge of the property and/or other geophysical and geochemical surveys.

PROCEDURE

Dip angle readings were taken at station intervals along grid lines. Readings were always made with the instrument pointed toward the 18.6 kHz transmitter station at Seattle Washington.

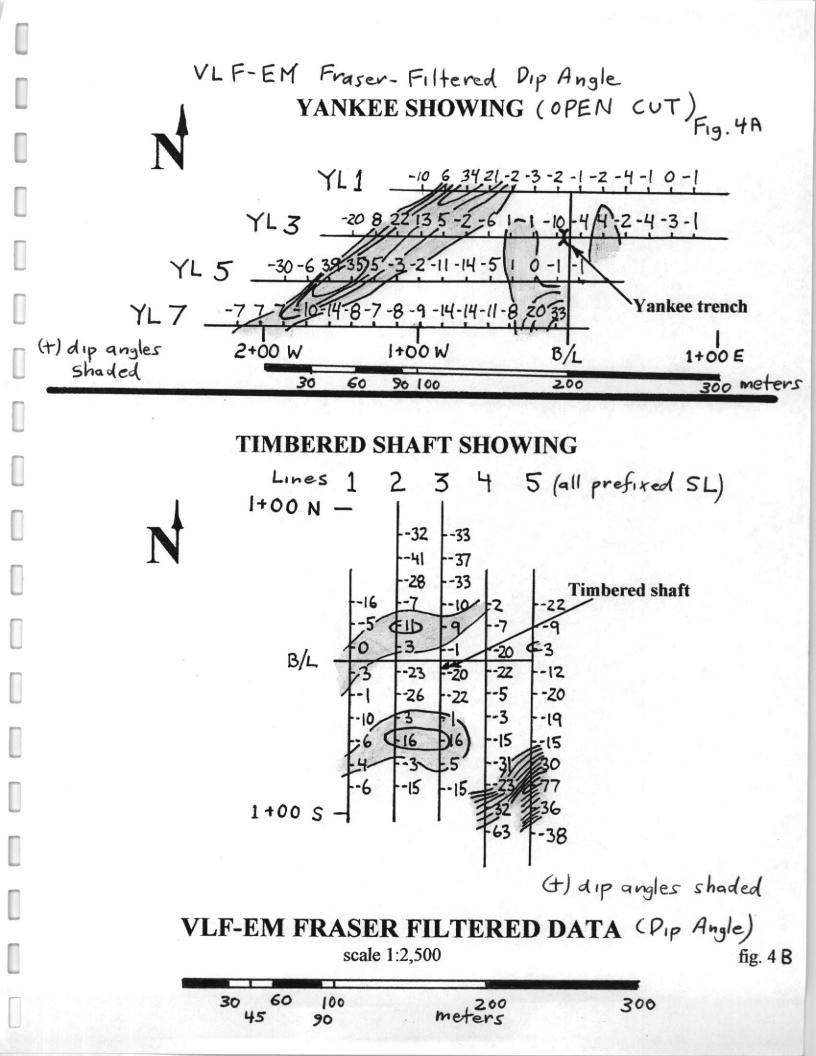
COMPILATION OF DATA

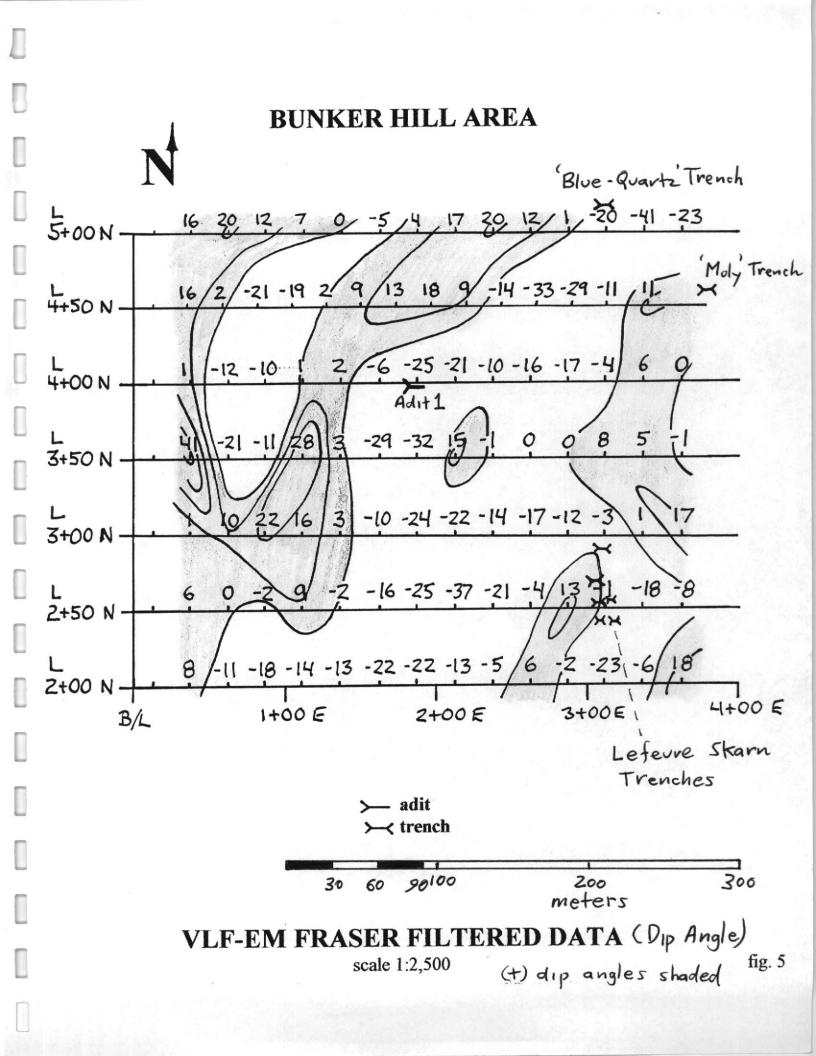
The VLF-EM field results were reduced for plotting by applying the Fraser filter. This is essentially a 4-point difference operator which transforms null crossings into peaks, and a low pass smoothing operator which reduces the inherent high frequency noise in the data. Thus noisy, non-contourable data are transformed into a less noisy, contourable form. Another advantage is that a conductor that does not show up as a cross-over on the unfiltered data will quite often show up as a peak on the filtered data. The original field data is recorded in Appendix A. The filtered data was plotted at reading station midpoints and the positive dip angle values contoured at 10 degree intervals beginning at zero (fig. 4, 5 and 6).

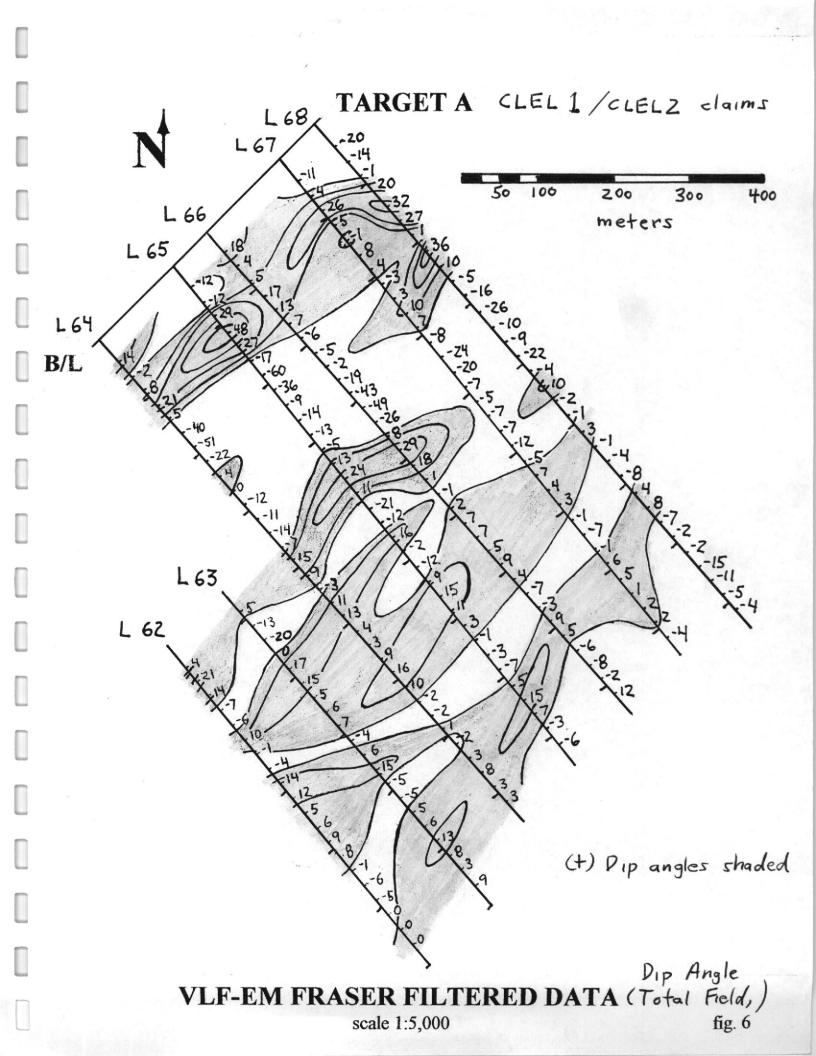
DISCUSSION OF RESULTS

Four of the six target areas showed successful results. Field VLF-EM data from the Yankee and Timbered shaft showings, Bunker Hill workings and Target A was Fraser filtered and contoured onto maps (fig. 4, 5 and 6). Results from the Kenneth showing and 310 area showed no significant anomalies. Field VLF-EM data for all the target areas is listed in Appendix 1.

Two significant anomalies are evident from the Yankee showing results (fig. 4a). A northeast trending, 4 line conductor, associated with significant, silicified float occurs 100 m. west of the Yankee trench. This conductor is 170 m. long, 10 to 40 m. wide, is open at both ends and appears to be strengthening to the northeast. The







second anomaly occurs 60 m. south of the Yankee open cut. Values are strong only on line 7, where the anomaly appears open to the south and east.

Three significant anomalies occur near the Timbered shaft showing (fig. 4b). Two weak to moderate strength, northeast to east trending anomalies occur 30 m. north and south of the Timbered shaft, respectively. They are approximately 80 m. in length, 10 to 30 m. in width and appear to be relatively isolated. A third, strong, northeast trending anomaly occurs 100 m. southeast of the Timbered shaft. It is at least 40 m. long, 40 m. in width and is open to the northeast and southwest.

VLF anomalies near the Bunker Hill workings appear in two main groups (fig. 5): a broad, north to northeast trending package on the west and north parts of the grid and a moderate, northeast trending, disjointed group on the east and south parts of the grid. Stronger portions of the west group appear to converge at line 3+00 N and 0+60 E, while stronger sections of the east group appear to be spatially associated with the Mormon Girl tungsten skarn trenches near line 2+50 N and 3+10 E.

Target A appears to show two types of northeast trending VLF anomalies (fig. 6). The first type occurs at approximately 1+00 SE on lines 64 through 68 and is strongly suspect because it is coincident with creek drainage patterns. The second type forms a broad, weak to moderate package of anomalies associated with Wallack granite southeast of 3+00 SE, on lines 62 through 68.

CONCLUSIONS AND RECOMMENDATIONS

The VLF-EM responded well to the known mineralized trends of the area. Since grid areas tested on the CLEL property lay in close proximity to the past producing Bunker Hill mine workings and other significant showings, it is possible that VLF anomalies generated in the Yankee, Timbered shaft, Bunker Hill and Target A areas represent areas of increased sulfide content in associated vein systems. No significant VLF-EM anomalies were generated at the Kenneth or 310 areas.

It is highly recommended that soil geochemical sampling be carried out over the Yankee, Timbered shaft, Bunker Hill and Target A Wallack granite VLF-EM anomalies. Areas of increased conductivity within the known VLF-EM anomalies should be prospected and rock sampled. Positive results from this recommended work would help define potential gold bearing conductors. At that point the VLF grids should be expanded to follow up significant or refined conductor targets.

Prior to any future work on the CLEL property, it is strongly recommended that a map of all rock, soil geochemical, geophysical and historical data be compiled.

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AUTHOR'S QUALIFICATIONS

I, Dan Wehrle, of 1619 Spokane Street, in the City of Rossland in the Province of British Columbia do hereby certify that:

- 1) I am a Professional Geoscientist registered with the Association of Professional Engineers and Geoscientists of British Columbia.
- 2) I am a 1985 graduate of the University of Saskatchewan with a B.Sc. Honours degree in Geology and have practiced my profession as Exploration Geologist continuously since 1985.
- 3) This report is based on work supervised by myself on the CLEL property, southeastern British Columbia.
- 4) I have not received nor expect to receive any interest direct or indirect, in the properties mentioned in this report.

Dated this 30th day of September, 1999 in the City of Rossland, British Columbia.

Day Michele D. M. Wehrle, P.Geo.

Appendix 1

VLF-EM field data

TIMBERED SHAFT AND YANKEE VLF-EM FIELD DATA

	Station	Line 1	Line 2	Line 3	Line 4	Line 5
TIMBERED SHAFT	1+05 N		19	27		
	0+90		23	27		
	0+75		10	13		· · · · · ·
	0+60	10	0	8	-10	-4
	0+45	-4	-8	-5	-3	-3
	0+30	-3	-10	-6	-6	-14
	0+15	-7	-5	-1	-5	-15
	B/L	-5	-2	-1	11	-11
	0+15 S	-5	-10	-7	-20	-15
	0+30	-4	-20	-15	-18	-23
	0+45	-7	-18	-15	-18	-23
	0+60	-12	-9	-6	-23	-34
	0+75	-5	-13	-8	-28	-27
	0+90	-10	-17	-8	-44	0
	1+05	-13	-20	-21	-30	16
	1+20	1			-10	-7
	1+35				-1	
	Station	Line 1	Line 3	Line 5	Line 7	
YANKEB	1+05 E	3	3			
	0+90	5	5			
	0+75	3	4			
	0+60	4	3			
	0+45	4	3			
	0+30	2	0	1		
	0+15	2	4	0	2	
	B/L	2	3	0	-4	
	0+15 W	1	-3	0	13	
	0+30	1	0	-1	18	
	0+45	-1	1	1	11	
	0+60	1	-3	-1	12	
	0+75	20	-2	-4	6	
	0+90	14	-2	-10	3	
	1+05	13	2	-6	1	
	1+20	11	7	-10	-1	
	1+35		15	-9	-3	
	1+50		2	-2	-4	
	1+65		0	18	-8	
	1+80			10	-13	
	1+95			0	-9	
	2+10			-2	-5	
	2+25				-10	
	2+40				-12	

BUNKER HILL VLF-EM FIELD DATA

Station	L 2+00 N	L 2+50 N	L 3+00 N	L 3+50 N	L 4+00 N	L 4+50 N	L 5+00 N
B/L	0	-3	-13	-12	7	-6	-16
0+25 E	5	-10	-9	-18	12	0	-16
0+50	10	-2	-12	23	19	3	-12
0+75	3	-5	-9	-12	11	7	-4
1+00	1	-7	-2	-4	8	-2	-4
1+25	-6	-2	3	4	12	-9	0
1+50	-4	-1	2	8	8	-5	-1
1+75	-14	-10	2	-5	14	-4	-3
2+00	-18	-18	-7	-12	0	-1	-3
2+25	-22	-18	-13	-17	-3	5	3
2+50	-23	-28	-14	-15	-4	8	8
2+75	-22	-29	-20	-15	-9	5	12
3+00	-17	-21	-24	-17	-14	-6	11
3+25	-30	-23	-22	-13	-16	-14	10
3+50	-32	-28	-25	-11	-11	-16	-7
3+75	-21	-34	-20	-14	-13	-15	-13
4+00	-23	-25	-10	-11	-14	-4	-7

TARGET A VLF-EM FIELD DATA

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Station	Line 62	Line 63	Line 64	Line 65	Line 66	Line 67	Line 68
B/L			-20	-7	-12	-15	-9
0+25 SE		1	-4	-6	-16	1	-18
0+50			-3	-7	-2	-13	-21
0+75			-7	-18	-7	-12	-26
1+00			-2	-7	-7	4	-28
1+25			0	11	3	43	-20
1+50			12	12	0	0	-14
1+75			-9	19	9	0	-2
2+00			-19	-13	1	5	-5
2+25			-29	-16	2	-1	20
2+50			-21	-14	3	3	9
2+75			-23	-24	-2	4	16
3+00			-27	-20	-12	8	8
3+25			-29	-31	-30	6	1
3+50	-24	-24	-32	-18	-33	-2	-3
3+75	-29	-20	-38	-20	-35	-8	2
4+00	-29	-19	-30	-5	-20	-8	-13
4+25	-20	-20	-25	-22	-19	-9	-10
4+50	-17	-32	-34	-24	-18	-12	-5
4+75	-18	-27	-24	-15	-20	-12	-8
5+00	-26	-25	-24	-15	-18	-16	-9
5+25	-15	-17	-21	-26	-18	-20	-5
5+50	-19	-20	-23	-16	-13	-13	-9
5+75	-23	-17	-19	-17	-16	-16	-6
6+00	-15	-14	-16	-10	-10	-13	-12
6+25	-13	-16	-11	-12	-10	-13	-11
6+50	-13	-19	-14	-12	-12	-17	-3
6+75	-10	-5	-14	-11	-15	-16	-12
7+00	-10	-15	-13	-16	-10	-15	-9
7+25	-4	-14	-14	-14	-8	-12	-8
7+50	-8	-11	-15	-8	-12	-13	-15
7+75	-7	-13	-9	-7	-12	-13	-17
8+00	-11	-6	-12	-8	-16	-10	-17
8+25	-9	-5	-9	-10	-10	-14	-20
8+50	-9	-6	-9	-11	-6	-13	-18
B+75	-11	-2					
9+00	-7	0					

310 AND KENNETH VLF-EM FIELD DATA

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310	Station	Line 55	Line 56	Line 57
	4+25 NW			-20
	4+00			-24
	3+75			-18
	3+50		-38	-23
	3+25		-37	-20
	3+00		-40	-23
	2+75		-38	-27
	2+50	-47	-35	-18
	2+25	-43	-26	-25
	2+00	-41	-31	-34
	1+75	-43	-36	-38
	1+50	-39	-34	-31
	1+25	-34	-35	-34
	1+00	-35	-32	-33
	0+75	-33	-31	-40
	0+50	-30	-33	-35
	0+25	-28	-28	-30
	B/L	-23	-32	-31
Kenneth		Line 2	Line 4	
	1+05 S	-9	-11	
	0+90	-11	-13	
	0+75	-10	-9	
	0+60	-10	-11	
	0+45	-10	-11	
	0+30	-10	-13	
	0+15	-11	-11	
	8/L	-7	-6	
	0+15 N	-5	-7	
	0+30	_4	-4	
	0+45	-7	-2	
	0+60	-4	-1	ļ
	0+75	_4	-1	
	0+90	0	4	
	1+05	0	-1	<u> </u>

99/2000 P83

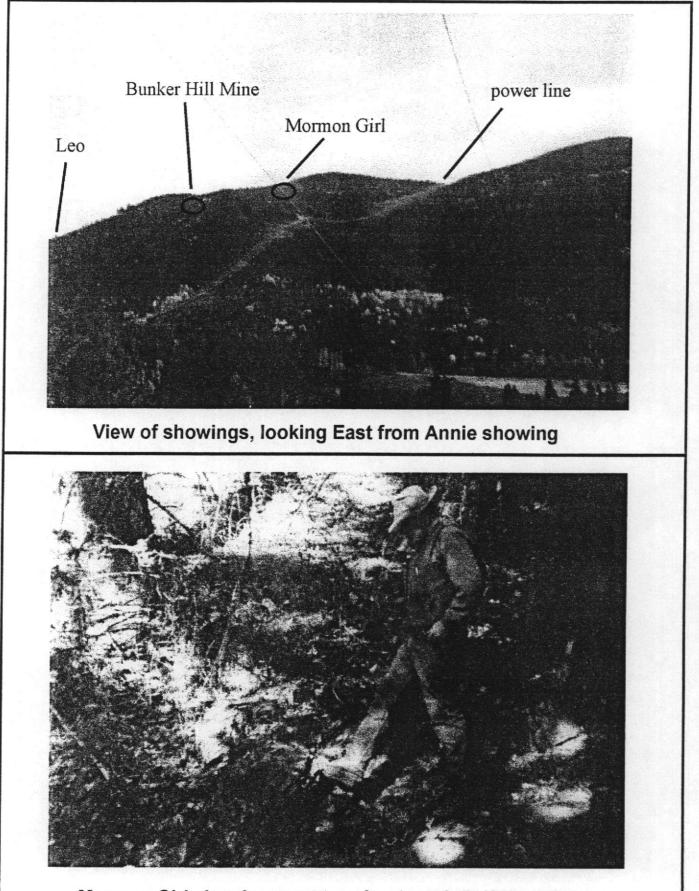
Pratico Resources Ltd. 111 Oakchurch Place SW, Calgary, AB T2V 4G1 tel/fax (403) 251-9887 vpratico@home.com

Review of the Bunker Hill Area Gold Showings

by

Valmar Pratico, P.Geol.

October 26, 1999



Mormon Girl showing, quartz vein - trench 5 (6.7 g/t Au)

Photos by Valmar Pratico

Conclusions

The project area contains gold mineralization occurring in fractured volcanics and sediments, and associated quartz veins adjacent to granitic intrusions. The gold mineralization may be associated with silver, molybdenum, tungsten, bismuth, arsenic and lead. Arsenopyrite and sphalerite also appear to be present.

The thrust faults, serpentinite and lamprophyre indicate a deep crustal break that provides a "plumbing system" for heat, intrusive magma and metal bearing hydrothermal fluids.

Recommendations

I recommend a work plan that consists of geologic mapping, ground magnetometer surveys, stream and soil geochemistry and prospecting using panned Heavy Mineral Concentrates from both streams and soils. I recommend that the work be conducted in target area "A" and the Leo - Bunker hill - Mormon Girl area. I estimate this work plan to cost approximately \$ 45,000, including the cost of assessment work filing.

The objective of the work plan is to assess the property for the presence of a gold deposit of potential economic merit.

Due to the presence of magnetic pyrrhotite, the writer suggests that ground magnetometer surveys would be very effective and would provide less ambiguous results than VLF-EM. Instruments in use today also record VLF-EM data simultaneously with the magnetic data.

It is my opinion that the exploration potential of the project area is of sufficient merit to make the recommended work plan a worthwhile undertaking.

Respectively submitted,

Value Reatino

Valmar Pratico, P. Geol.



October 26, 1999.

<u>References</u>

British Columbia Prospectors Assistance Program Application dated April 17, 1999; Parts A and B: prepared by Mr. Howard.

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Wehrle. D.M.; 1999; VLF-EM Report on the CLEL Project; prepared for Mr. W. Howard.

Author's Certificate

I, Valmar Pratico, P.Geol. of 111 Oakchurch Place SW, Calgary, Alberta, T2V 4G1 do hereby certify that :

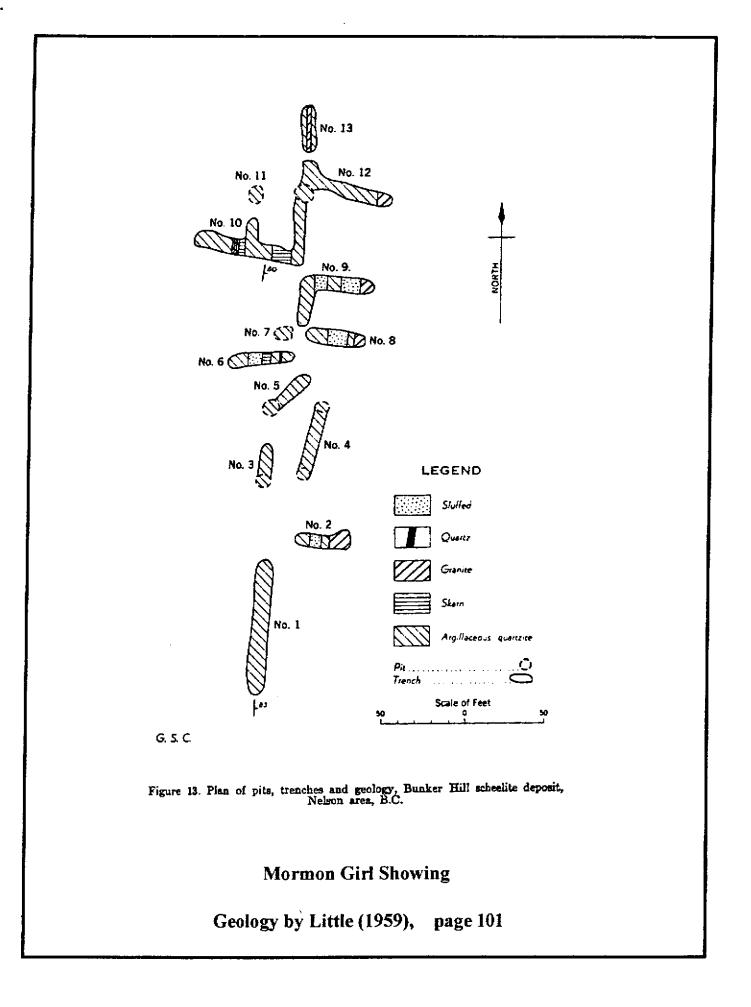
- 1. I am a graduate of the University of British Columbia, with a degree of Bachelor of Science in Geology (1972);
- 2. I am a graduate of the British Columbia Institute of Technology with a Diploma of Mining Engineering Technology (1979);
- 3. I am a registered member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta since 1991;
- 4. I have practiced my profession since 1972 as a Geologist in mineral exploration and mining for various companies in Canada and the United States;
- 5. My report is based on a visit to the CLEL property on October 23, 1999, my personal review of project technical data, interviews with personnel responsible for conducting recent exploration work on the property and on personal experience conducting exploration activities for gold; and
- 6. I have not received nor expect to receive any interest, direct or indirect, in the CLEL property other than professional fees for the preparation of this report.

Dated at Calgary this 26 day of October, 1999.

Valuon Cratico

Valmar Pratico, P.Geol.





Nelson Area

Bunker Hill Group (80)

References: Minister of Mines, B.C., Ann. Repts., 1934, p. E25; 1942, p. 81. Walker, 1934, p. 89. Stevenson, 1943, pp. 153, 154.

The Bunker Hill group of two claims, on the east side of Limpid Creek, a tributary of Pend-d'Oreille River, is about 10 miles by road from either Nelway or Waneta. The claims were owned by Waneta Gold Mines Limited.

The property was worked intermittently for gold until 1940. In 1942, scheelite was reported in open-cuts several hundred feet above the underground workings. These were examined by M. S. Hedley of the British Columbia Department of Mines in 1942 and in 1951 by V. L. Eardley-Wilmot of the Mines Branch, and the writer. Scheelite has not been reported in the old workings, but some occurs in open-cuts 400 fect above, and 1,000 feet from them, at an elevation of about 4,500 feet.

Bedrock consists of argillaceous quartzite and micaceous schist, and minor skarn, of Lower Cambrian age. These are intruded by granite, probably Nelson intrusions of Cretaceous (?) age.

The scheelite occurs in granitized argillaceous quartizite just west of a granite body. The bedding in the quartizte strikes north 4 degrees east and dips 83 degrees east. Most of the pyrite is weathered to yellow iron oxide.

In trenches Nos. 1 and 2 (see Figure 13) no scheelite is known in place, and only a little is present in trench No. 3. In trench No. 4 and in the pits at either end, finely disseminated scheelite is distributed evenly. A chip sample from this trench taken across 35 feet assayed 0.33 per cent WO_3 , with no detectable M_0S_2 . This represented the best scheelite-bearing material observed, except over narrow widths. There is very little scheelite in trench No. 5 but in the pit at the southwest end the grade was estimated to be about one-quarter of one per cent WO_8 across 3 feet.

In trench No. 6 a lenticular vein of quartz about 10 inches wide is estimated to contain 2 to 3 per cent WO_3 , but the vein ends to the north, and to the south passes under drift. This vein to the south in the pit in trench No. 5, is low

grade. The skarn exposed in trench No. 6 and at two points in trench No. 10 probably represents calcarcous, argillaceous quartzite. The skarn exposed contains little scheelite and almost all of the scheelite in the two trenches is in the quartz vein.

Pit No. 7 exposes argillaceous quartzite that contains only a few specks of scheelite. A small quartz vein is barren. In trench No. 8 only a few specks of scheelite are present at the west end. Only one or two small crystals of scheelite were noted in trench No. 9.

In trench No. 10, scheelite occurs only in the skarn and this is estimated to grade about 0.1 per cent WO_3 . In pit No. 11, a few specks of scheelite occur in the northeast corner. The remaining pits and trenches show little scheelite.

Little (1959), pages 100 - 102

JAN 2 6 2000

BRITISH COLUMBIA PROSPECTORS ASSISTANCE PROGRAM PROSPECTING REPORT FORM (continued)

SECTECHNICAL REPORT

• One technical report to be completed for each project area.

- Refer to Program Requirements/Regulations 15 to 17, page 6.
- If work was performed on claims a copy of the applicable assessment report may be submitted in lieu of the supporting data (see section 16) required with this TECHNICAL REPORT. Yes, 50b milted

Name Wm R. HOWARD	Reference Number <u>P83</u>
LOCATION/COMMODITIES	Bunker Hill 082FSW003
Project Area (as listed in Part A) Target B CLY Group	MINFILE No. if applicable
Location of Project Area NTS 082 F03 W Vz	Lat 49° 03' 36" Long 117° 23' 15"
Description of Location and Access CLY 1, CLY 2, Bunker	
and ANNIE 1, ANNIEZ are claims in Nelson H.D.	16 km 5 of Salmo. Accers by pared
road to Nelway, then W on Pend d'oreille gravel re	oad to Limpid CK Forestry Road, 4 Km N and W.
Main Commodities Searched For <u>Gold</u>	J M N and W.
Known Mineral Occurrences in Project Area Bunker Hill Min + Bi-Te minerals + Pb-Bi minerals + scheelife + minerals	alybdenite. Lefeure W-AU skarn:
Pyroxene - garnet - scheelite, minor arsenopyrite	and sphalerite contact skarn
WORK PERFORMED	
1. Conventional Prospecting (area)	
2. Geological Mapping (hectares/scale) 0.0186 ha at 1:50	scale 0.117 ha at 1:500 scale
3. Geochemical (type and no. of samples) 155 Soils 37	roc KS
4. Geophysical (type and line km) Sabre VLF-EM dip ang	le 5.170 line-km
5. Physical Work (type and amount) flagged + topofil.	grid 5.965 line-Km
6. Drilling (no. holes, size, depth in m, total m)	
7. Other (specify)	
SIGNIFICANT RESULTS (Submitted A.R.) see C Commodities gold Claim Na	"LY Group Total Field VLF-EM me Marmon Girl Jan 15 'or
Commodities <u>9616</u> Location (show on map) Lat. <u>49° 03' 37"</u> Long <u>117°</u>	23'28" Elevation 1180 m
	AU 1, 150 ppm Bi 92 ppm Te
Soil LZTSON 3tooE (B horizon) 300 ppbA	U 27.3ppm Bi 12 ppm Te 166ppm W
	Fe 2,016 Mn 15.4 ppm Mo
CLY Group hosts meter-plus thick, multiphase	: partly ungay tabular groutz veins
with triangular pyrite and Bi-Te-Au min	revals, in the Harcourt CK Assemblye
(Einavien '05) part of the CS Unit (How + Dunne's	Pol in the contact zone of a dyke or
sill of Wallack CK Cretaceous leucocratic gra	anitoid. At the contact the Leterre
W-AU SKANN is developed, and is also Crossed Soil geochem survey shows ULF-EM Domain 5	+ by grtz veins. A geophysical-
Soil geachem survey shows ULF-EM Domain 5	is a new exploration target. (A.R.)
Rock BH-306 from the Aditz dump was a 10 cm	piece with Juggy, Coxcomb quartz
and minor 2 2 % undetermined die gr Supporting data must be submitted with this TECHNICA	AL RÉPORT
Information on this form is confidential for one year from the date of receipt subject	to the provisions of the Freedom of Information Act.

Assessment Report 26159 has been accepted in lieu of the supporting data required with the Technical Report. Please refer to the Assessment Report for further details on the Cly property.