



TOODOGGONE RIVER AREA (94E)

By T. G. Schroeter and D. V. Lefebure

INTRODUCTION

During the summer of 1986, the writers visited the Toodoggone gold-silver camp on three occasions in order to keep abreast of ongoing exploration activities. In excess of \$3.5 million was spent by companies in the Toodoggone area in 1986, down from the record figure of \$6 million last year. The drop in expenditures is principally due to the fact that Serem Inc. and St. Joe Canada Ltd. did not carry out major programs this year.

Positive exploration results have been obtained this summer, particularly on the Baker mine, Al and Mets properties, and a number of the properties in the area have indicated mineral reserves (Table 2-14-1).

ACCESS

Access into the area continued to be by fixed-wing aircraft from Smithers to the Sturdee airstrip (approximately 300 kilometres). Road access exists from the Sturdee airstrip to the Baker, Lawyers and Silver Pond properties. All other properties can be reached on foot or by helicopter or tractor (Figure 2-14-1).

A provincial government loan to Serem Inc., to upgrade and extend the Omineca Resource road to the Toodoggone, has been approved in the amount of \$4.5 million. The loan is conditional upon Serem Inc. making a production decision. The company had not made this decision as of October 1986.

REGIONAL GEOLOGY

The regional geology of the Toodoggone area is described in several publications including Barr (1978), Schroeter (1981 to 1985), Panteleyev (1982 to 1984), Diakow (1983 to 1985), Forster (1984) and Schroeter *et al.* (1986). Other references include Preliminary Map No. 61, Geology of the Toodoggone Area, NTS 94E (Diakow *et al.*, 1985) and numerous company assessment reports on file with the British Columbia Ministry of Energy, Mines and Petroleum Resources.

CLAIM STATUS

An unofficial status of claim holdings in the Toodoggone River area is shown in Figure 2-14-1. Current operators are listed in Table 2-14-2.

PROPERTY UPDATES

Brief visits were made to most of the active properties in the area and only the highlights of ongoing exploration activity are described in this article. The pertinent data on the major properties are summarized in Table 2-14-1.

BAKER MINE (CHAPELLE, MI 94E-026) — MULTINATIONAL RESOURCES INC.

During 1986, Multinational Resources Inc., working under an option agreement with Du Pont of Canada Exploration Ltd., drilled 1920 metres in 23 diamond-drill holes. All the drilling was on the B vein to the northeast of the Baker mine, except for one hole drilled

on the A vein, in an unsuccessful attempt to pick up an extension of the Baker mine at depth (Plate 2-14-1). The B vein does not outcrop, but its position is marked by a surface gossan underlain by altered volcanic rock with very minor quartz veinlets. The North Quartz zone, where erratic gold values have been intersected in drill holes, lies along strike to the northeast of the B vein.

Drilling on the B vein has delineated a steeply dipping white quartz vein with minor pyrite, chalcopyrite and sphalerite averaging 2.5 to 3 metres in width and hosted by altered Takla Group volcanic rocks. The mineralized zone, which has now been traced over a strike length in excess of 90 metres and to a depth of 90 metres, appears to be a northeast-raking shoot in the plane of the vein. Late season drill results include:

Hole No.	Gold g/tonne	Silver g/tonne	True Width (metres)
86-23	41.14	102.9	3.44
and	48.0	27.43	2.3
86-33	58.35	729	3.66
incl.	92.57	1114.3	3

Source: The Northern Miner, November 3, 1986.

LAWYERS (MI 94E-066) — SEREM INC.

During 1986, Serem Inc. was basically in a "holding pattern" pending completion of financial arrangements to bring the property into production at a rate of 500 tonnes per day. The deposit contains estimated reserves of 941 000 tonnes grading 7.2 grams of gold and 260 grams of silver per tonne. Serem completed only minor clean-up and assessment work in 1986.

AL — ENERGEX MINERALS LTD. — THESIS III (MI 94E-091) BV (MI 94E-091) BONANZA RIDGE (MI 94E-079)

Energex Minerals Ltd. completed 83 diamond-drill holes totaling 3683 metres as well as gradient-array, multipole induced polarization surveys, 4000 lineal metres of backhoe trenching in 41 trenches, soil sampling and boulder prospecting. The drilling was carried out on the Thesis III, Thesis II, BV and Bonanza Ridge zones to better define the previously estimated open-pit mineral inventory estimated at 239 550 tonnes grading 8.51 grams of gold per tonne. Exploration costs to the end of October were estimated at \$1.9 million with a further \$350 000 to be spent by the end of February 1987 for feasibility studies, environmental work, and other advanced studies.

The Thesis III zone was the the most active area on the Al property; a total of 29 holes was drilled in addition to channel sampling and test mining on the surface outcrop of the mineralized zone. Approximately 12 000 grams of gold have been recovered from Thesis III zone ore processed through a 6-tonne-per-day pilot mill. Head grades ranged from 34 grams per tonne up to a maximum of 130 grams per tonne. Energex Minerals Ltd. is pleased with the results and propose building a minimum 45 to 50-tonne-per-day mill on the site in 1987.

**TABLE 2-14-1.
MAJOR EXPLORATION PROPERTIES IN THE TOODOGGONE GOLD CAMP**

PROPERTY NAME	OPERATOR	YEAR OF DISCOVERY (New Discovery)	DIMENSIONS (Drill Tested) Length × Width × Depth (Min.)			MINERALOGY		RESERVES (tonnes @ g/tonne)
			(m)	(m)	(m)	ORE	GANGUE	
BAKER (ex-Chapelle)	Multinational Resources Inc. (ex-DuPont of Canada Exploration Ltd.)	1969 (1986)	435 × 0.5 to 9 × 150			Electrum, argentite, with minor chalcopyrite, sphalerite, pyrite, galena, bornite, polybasite, stromeyerite	Quartz, chlorite, calcite and trace fluorite	— Produced 1 168 175 g Au (34072 oz.) and 23 084 969 Ag (673326 oz.) from 77 500 tonnes (85500 tons), 1980–1983 — Active exploration on 'B' Vein. Possible 50 000 tonnes outlined
LAWYERS AGB Zone Cliff Creek Zone Duke's Ridge Zone	Serem Inc.	1973	500 × 60 to 75 × 150 660 × 9 × 250 480 × 5 × 100	Native gold, native silver, electrum, argentite, with minor pyrite, chalcopyrite, sphalerite, galena and chalcocite		Chalcedony, quartz, amethyst, calcite, with minor adularia, hematite, barite, kaolinite, illite, montmorillonite	Total = 941 000 @ 7.2 Au (0.21 oz./ton) and 260 Ag (7.61 oz.) AGB — 50%; Cliff Creek — 45%; Duke's Ridge — 5%. Note: 20% of known surface strike-lengths drilled	
AL Thesis III Zone BV Zone Bonanza-Ridge Zone	Energex Minerals Ltd.	1981	200 × 5 to 30 × 75 500 × 5 × 50 300 × 3 5 × 35	Native gold with minor pyrite, tetrahedrite, electrum, argentite, chalcopyrite, galena and sphalerite		Quartz, barite, calcite with minor alunite, illite, hematite, sericite	Thesis III 121 624 @ 8.49 Au BV 117 926 @ 8.54 Au Total 239 550 @ 8.51 Au (open pitable) 1986: Pilot mill @ 6 tpd. ~12 000 g produced	
SHAS Creek Zone	International Shasta Resources Inc.	1982	370 × 5 to 23 × 100	Native silver, electrum, argentite, with minor native gold, galena, chalcopyrite and sphalerite		Chalcedony, quartz with minor barite	2 176 800 @ 2.7 Au (0.079 oz./ton) incl. 471 640 @ 5.9 Au (0.172 oz/ton)	
METS	Manson Creek Resources Ltd.	1981	125 × 5 to 9 × 60	Native gold, pyrite		Quartz, barite, hematite	OPEN, includes 13m @ 18 Au	
SILVER POND West Zone Cloud Creek Zone	St. Joe Canada Inc.	1985		Electrum, pyrite, argentite, with minor chalcopyrite and tetrahedrite		Quartz, kaolinite, alunite	OPEN, includes values to 44 Au	
JD Vein Zone Gasp Zone Gumbo Zone	Energex Minerals Ltd.	1981	600 × 1 to 4.6 × 50 150 × 20 × ? 400 × 10 × ?	Native gold, native silver, with minor galena, sphalerite, chalcopyrite and pyrite		Quartz, calcite, with minor hematite, barite, and various clays	OPEN, includes 27 210 @ 5.5 Au — Gumbo Zone (open pitable)	
METSANTAN — Several Zones	Lacana Mining Corp.	1981	550 × 4 to 7 × 100 (Ridge Zone)	Chalcopyrite, galena, pyrite, sphalerite and trace polybasite		Quartz, amethyst, sericite, kaolinite, barite	OPEN, includes 4m @ 7.54 Au and 20m @ 6.3 Au	
MOOSEHORN	Cyprus Metals (Canada) Ltd.	1981	670 × 1 to 5 × ?	Pyrite + argentite?		Amethyst, quartz, calcite	OPEN, include assays to 16.1 Au	
GOLDEN LION	Newmont Exploration of Canada Ltd.	1981	200 × 2 to 10 × 20	Galena, sphalerite, with minor pyrite, chalcopyrite, acanthite and linarite		Quartz, barite, calcite, hematite	OPEN, includes assays to 35 Au and 7540 Ag	
GOLDEN NEIGHBOUR	Lacana Mining Corp.	1980	460 × 3 to 130 × ? (geochemical anomaly)	Pyrite, argentite, sphalerite, galena, molybdenite		Quartz, kaolinite	OPEN	
GOLDEN STRANGER	Western Horizons Resources Ltd.	1983	460 × 3 to 45 × ? (trenched)	Pyrite, chalcopyrite, galena, sphalerite		Amethyst, quartz	OPEN, includes 4m @ 11.7 Au (trench)	

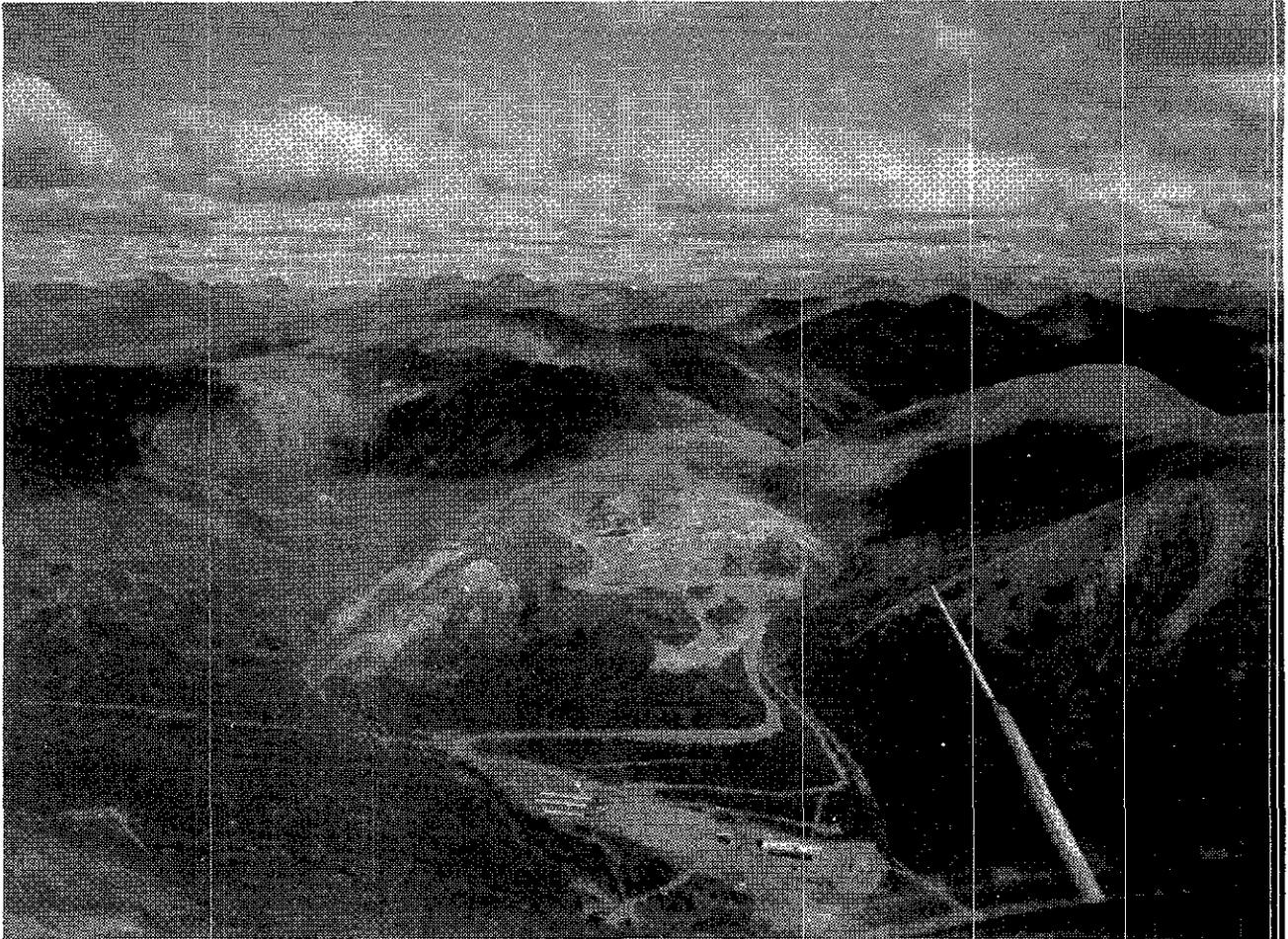


Plate 2-14-1. Looking north over the Baker mine property. Camp and mill in foreground; open cut and underground workings on A vein above; possible extension of B vein located along strike to the north east, across small creek.

Airborne magnetic data, geological mapping, trenching and drilling indicate that the Thesis III, Thesis II, BV and Bonanza Ridge mineralized zones can be traced for 3 to 6 kilometres along three separate north to northwest-trending fault systems. The Thesis II zone is now considered by company geologists to be the southeastern extension of the Thesis III zone with erratic mineralization extending over a strike length of 500 metres, only 20 per cent of the structure defined by airborne magnetometer survey (Plate 2-14-2). Energex maps alteration facies rather than primary lithologies because the biotite hornblende pyric ash flow is so strongly altered.

On the high-grade Verrenass area of the Bonanza Ridge zone, drilling intersected additional mineralization containing visible gold. Further trenching along strike to the south encountered characteristic silicification. Drilling on the BV zone confirmed continuity of the mineralization over a 6 to 9-metre width and containing 10.3 to 17.1 grams of gold per tonne. Several other geologically favourable zones, including the Golden Furlong (MI 94E-080), require further testing. Highlights from drilling include:

Zone	Hole No.	Width (metres)	Gold g/tonne
Bonanza Extension	A86-67	3.0	71
	incl.	1.5	139
	A86-69	6.2	5.14
BV	incl.	0.5	18.17
	A86-77	7.53	22.63
	incl.	4.54	34.98
Thesis III	A86-80	8.8	25.56
	incl.	3.2	59.33
	A86-54	5	138.5
	incl.	1	529.4
	A86-44	6.9	27.8
	incl.	1	160.8

Source: George Cross Newsletters, September 3, 1986 and November 12, 1986.

Preliminary ore reserve calculations by Energex suggest potential for open-pit deposits in the order of 3 million tonnes grading better than 3.4 grams of gold per tonne.

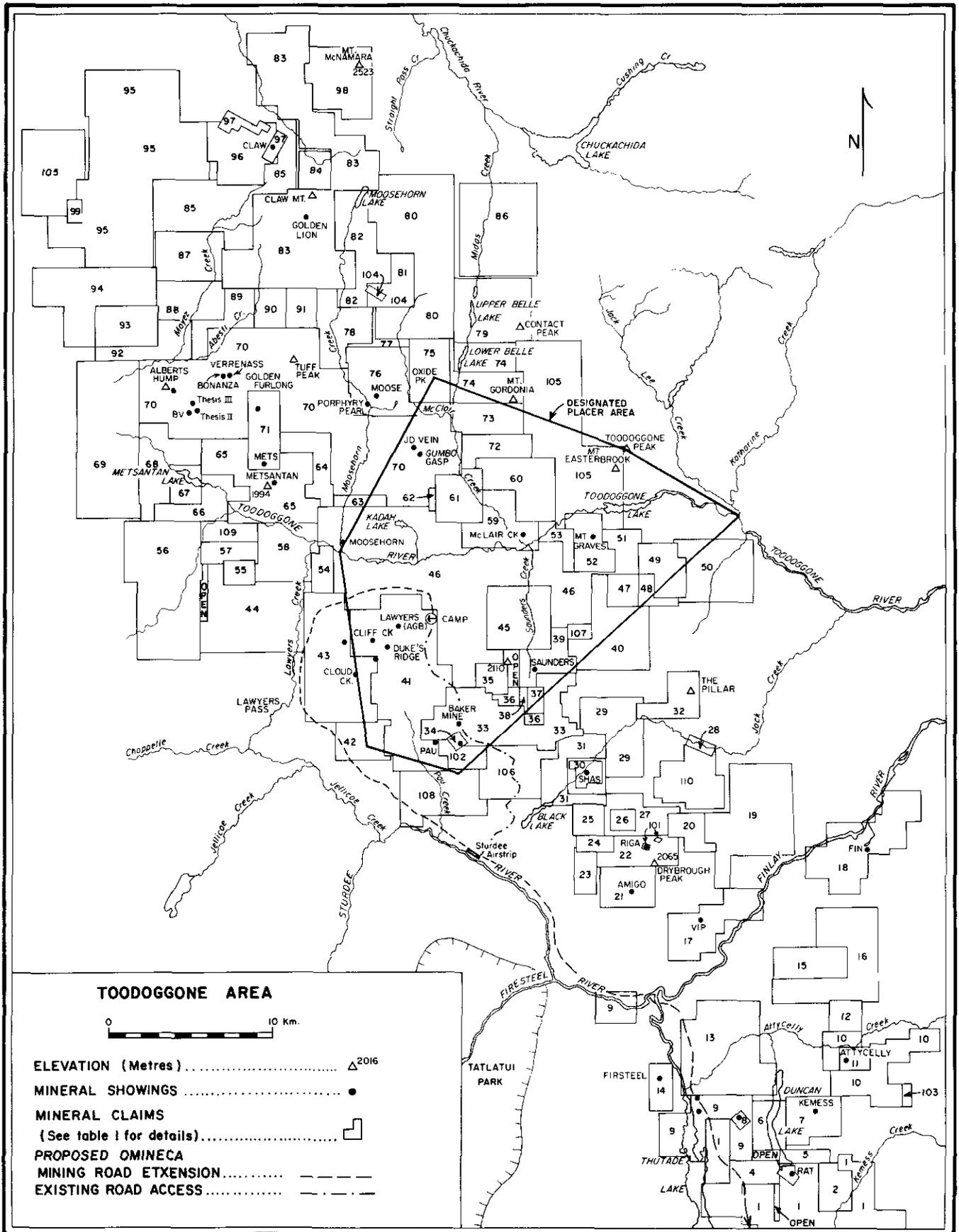


Figure 2-14-1. Claims in the Toodoggone River area, June 1986.

**TABLE 2-14-2.
TOODOGGONE RIVER AREA MINERAL PROPERTIES**

NO.	CLAIMS	MINERAL INVENTORY NUMBER (94E)	OPERATOR	NO.	CLAIMS	MINERAL INVENTORY NUMBER (94E)	OPERATOR
1	RON 1-11	13, 14, 15	Pacific Ridge Res.	57	SB 3, 4	—	S. Young
2	DU, DU 2	—	Pacific Ridge Res.	58	LAINNEY 1-4	—	Gold Texas Res.
3	RAT	25	Cominco	59	MAC III, HYFLY I, II	1	Black Diamond
4	TUT 1, 2	—	Univex Mining	60	MAC I, II, IV	—	Goldbrae Dev. Ltd.
5	DU 1, 2	—	Pacific Ridge Res.	61	BELLE 1, 2, 4	—	Manson Creek Res.
6	DUNCAN 1-4	—	Asitka Res.	62	BIG LODGE	—	Alexim
7	NEW KEMESS 1, 2	21	Kennco	63	KEY	—	Hi-Tec Res.
8	CROWN-GRANTED CLAIMS	12	Cominco	64	LEXIM 1-3, GWP 42	—	Mandusa Res.
9	LAKE 1-15	—	Pacific Ridge Res.	65	METSANTAN 1-9	64	Lacana
10	KEM 1-9	—	Inca Res.	66	SY 2-4	—	A. L. Constantine
11	AUDREY WEST, AUDREY EAST	22	ABM Mining Group	67	DISCOVERY 4	—	Black Diamond Res.
12	AWESOME	81	Inca Res.	68	DISCOVERY 1-3	—	Duke Minerals
13	ARK 1-7	—	Ark Energy	69	INDIAN GOLD 1-4, TOODOGGONE 1-4	—	Alexim
14	FIRESTEEL	2	SEREM	70	AL 1-8, BERT, ERNIE, WINKLE, BULL, CHUTE, SURPRISE GEROME, CALF MOOSE, ANTOINE, LOUIS, TOUR COW MOOSE, STURDEE, JM, JS, KADAH 1-2, BIG BIRD, GAS 1, JR, JB, JD	66, 65, 80, 78, 85, 84, 79, 91, 32	Energex
15	WRICH 1-3	82	SEREM	71	METS 1, 2	—	Manson Creek Res.
16	RICH 1-5	—	Golden Rule Res.	72	PEREGRINE, FALCON A	—	Multinational Res.
17	GRACE 1-5	48	Asitka Res.	73	JOANNA III, JOANNA IV	—	International Damascus
18	FIN 1-9	16	B. Pearson	74	JOANNA 1, II	36	Armour Res.
19	JOCK 4, 6-12	—	Golden Rule Res.	75	AMETHYST, KIDVIEW	—	Geostar
20	GOLDEN RING, GOLDEN RING 2	—	Newmont Expl.	76	SCREE 1-3, MOOSE 1-3, BULLMOOSE, GAS 2	31	New Ridge Res.
21	STAR, PULL, SUN	58	SEREM	77	OXIDE 1	—	Alexim
22	PARADISE 3, 4	—	Phillip Res.	78	HORN 1-5	20	Norman Res.
23	DALE	—	M. Bell	79	LAKE 1-IV, MAGIC I, II	23	PMA Technologies Inc.
24	LEGHORN	—	Energex	80	CAT 1-4, MID 1-3, BELL 1-3	59	A. L. Constantine
25	JERRY	—	Phillip Res.	81	GORD DAVIES, GORDON DAVIES	53	Lacana
26	DAWN	—	Newmont Expl.	82	HORN 1-4, AS 1-3	—	Gold Texas
27	SHASTEX, PARADISE 2	—	Alexim	83	GUARD, LYNX 1-8, GOLDEN LION 1-11, HUMP 1-2	77, 19	Newmont Expl.
28	BRENDA 1-8	8	Canasil	84	SPAR MOUNTAIN	—	C. Kowall
29	JK 1-5	39	Golden Rule Res.	85	PAW, PIKA, CAL 1, YET 1 SUET, GACHO	—	Hi-Tec Res.
30	SHAS, SHA 1-2	50	International Shasta	86	ORO I, II, URUS I-IV	—	Hi-Tec Res.
31	SHASTA 3-5, SILVERREEF 3	—	International Shasta	87	RANGER 1-4	—	Cusac Industries
32	ATLAS, HERCULES	42, 83	SEREM	88	MOYEZ 1, 2, 4	—	Geostar
33	CHAPPELLE	26, 71	Multinational Res.	89	SPIKE, WOLF I	—	Hi-Tec Res.
34	CROWN-GRANTED CLAIMS	27	O. McDonald	90	WOLF II	—	Texpez Oil and Gas
35	PEL	—	Multinational Res.	91	WOLF III	—	Skeena Res.
36	XT 1, 3	—	W. McClay	92	CHUCK 1, 2	—	Miramar
37	DAVE PRICE	—	Western Horizons	93	MOYTAN I, II	—	Yukon Gold Placers, Geostar
38	XT 2	—	Golden Rule Res.	94	ADOOG 1-5, STIK 1-4	—	Delaware Res., Golden Rule Miramar
39	GOLDEN NEIGHBOUR 1-4	37	Lacana	95	GACHO 1-3, WILDCAT 1-3, HEAVY METAL 1-8, SHEEP ROCK 1, 2	54, 62	Dayton Dev. Corp.
40	IAN, ADRIAN, PAUL, OTTO	—	Rhyolite Res.	96	COPPERKING 1-5 NAMERA IV	—	Sutton Res., Redfern Res.
41	NEW LAWYERS 1-4, LAW 1-3, BREEZE, ROAD 1-3, PERRY 1, 2, MASON 1, 2, GTW 1-3, ATTORNEY 2	66, 67, 74, 72, 73	SEREM	97	CLAW	46	Umex
42	ATTORNEY 1, 2	—	W. McClay	98	WOLVERINE I-IV	—	Hi-Tec Res.
43	SILVER POND, ASAP, SILVER SUN, SILVER CLOUD 1-3, SILVER CREEK	69, 75	St. Joe	99	DAR	90	Newmont Expl.
44	PC 1-4, MM 1-4	—	Tanker Oil and Gas	100	SILVER REEF	—	Newmont Expl.
45	SAUNDERS	40	Golden Rule Res.	101	RN	3	Windarra
46	GWP 1, 10-30, 34, 40, 41, 43, 200	86	Cyprus Metals	102	CASTLE MT. 1	—	Energex, Caprock
47	DEBRA LYNN	—	Kelley-Kerr Energy	103	MESS 4	70	SEREM
48	MARKER	28	Kelley-Kerr Energy	104	HAR	53	Kennco Expl.
49	SAMMY, SUN	89	Newmont Expl.	105	MET 1-2, GORD 1-4, MUL 1-4	—	M. Bell
50	KNIGHT, KEVIN, BISHOP, CASTLE	—	Hi-Tec Res.	106	BLACK	—	Hi-Tec Res.
51	GRAVY II, IV	—	Hemlo Expl.	107	ARGUS 2 plus?	—	Rhyolite Res.
52	GRAVES 1, 2	7, 87	Miramar	108	HECKLE, JECKLE, TITAN	—	M. Bell
53	GRAVY I, II, TODD	—	Kelley-Kerr Energy	109	SB 1, 2	—	P. Crook
54	KODAH 1-2	68	SEREM	110	JOCKY 1-5	—	Golden Rule
55	GOLDEN STRANGER, GOLDEN STRANGER 2	76	Western Horizons				
56	LASSIE 1-4, LADD 1-4	—	Alexim				

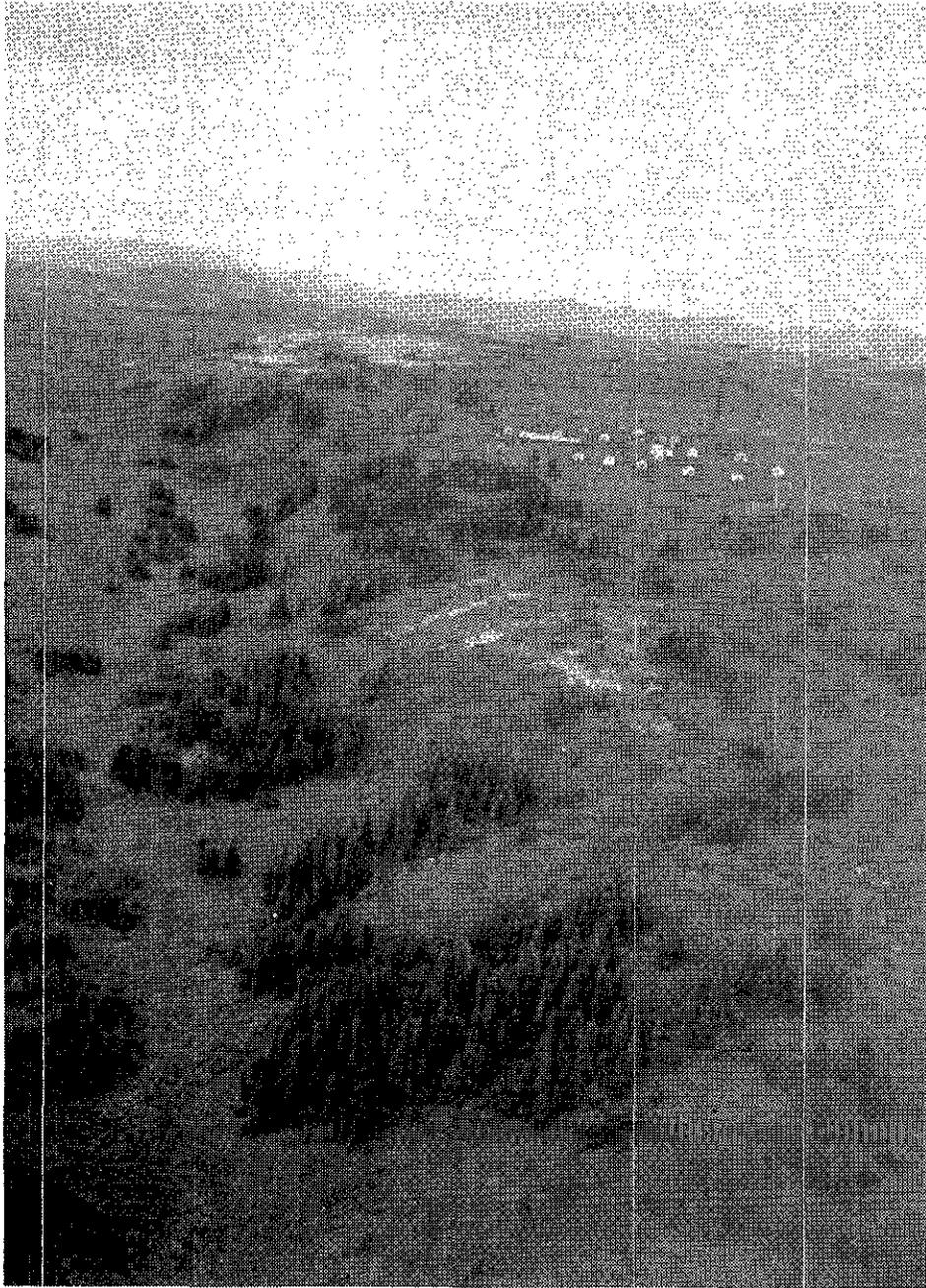


Plate 2-14-2. Looking northwest over the Thesis II (lower workings) and Thesis III (upper workings) zones, Al property. Energex camp to right. Note small mill set up on Thesis III zone.

METS (MI 94E-093) —
MANSON CREEK RESOURCES LTD.

A total of 20 diamond-drill holes, totalling 1653 metres, was drilled by Manson Creek Resources Ltd. on the A zone under an option agreement with Golden Rule Resources Ltd. Backhoe trenching, surface sampling and mapping were also completed in 1986. On surface the gold-bearing structure has been traced for 2400 metres (Plate 2-14-3). The A zone consists of a quartz-barite breccia with flanking clay-altered (dickite?) Toodoggone volcanic

rocks which are orange, pink or purple quartz-eye "andesite" porphyries. A similar lithology is found at the Cloud Creek showing (Silver Pond), Golden Stranger property, and AGE zone (Lawyers).

The mineralization is predominantly quartz and barite (locally coarsely bladed) with minor fine-grained galena, native gold and calcite. The A zone has been traced by drilling for a strike length of 150 metres and to a depth of 90 metres, with a true width of 5 to 10 metres. The vein strikes 340 degrees and dips 80 to 90 degrees to the west (Figure 2-14-2). An easterly trending fault bounds the zone to the north. Highlights from the drilling include:

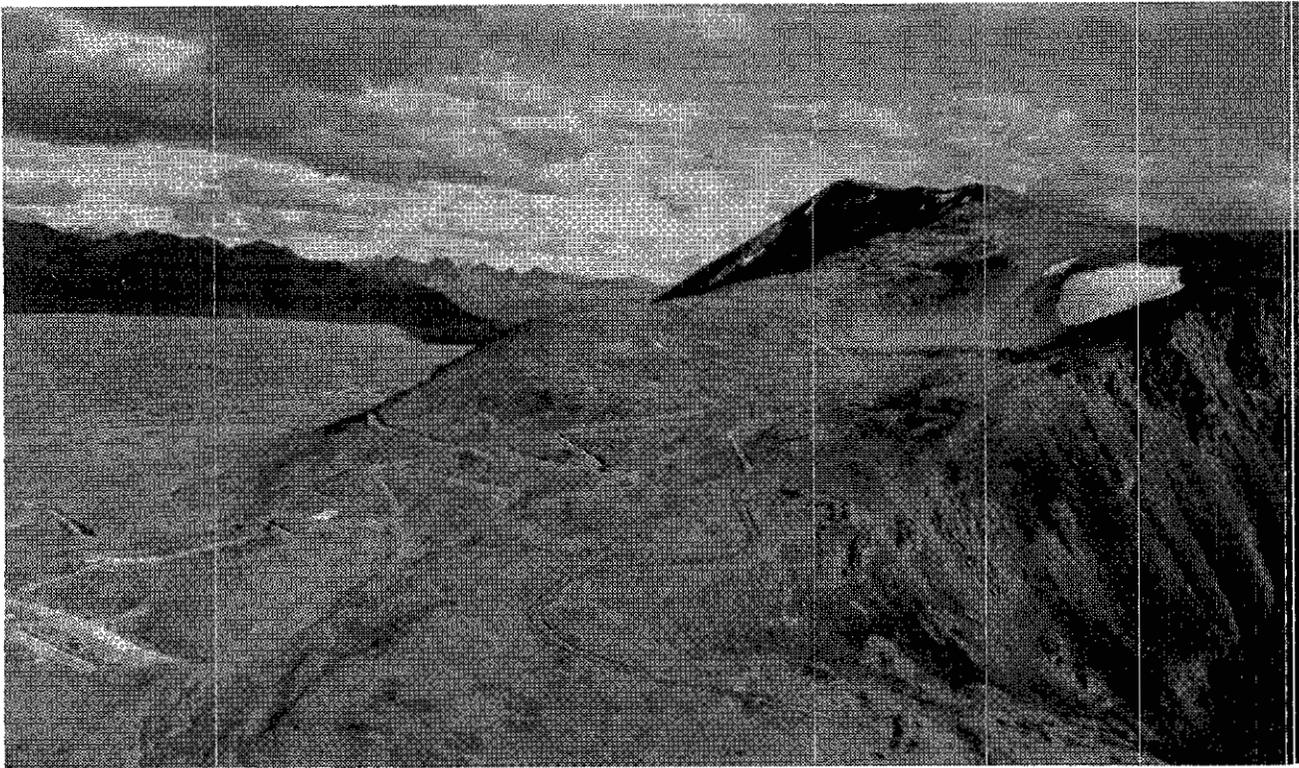


Plate 2-14-3. Looking southeast over the Mets property. A zone traced by drilling occurs near the top of Metsantan Mountain, immediately left of the large patch of snow.

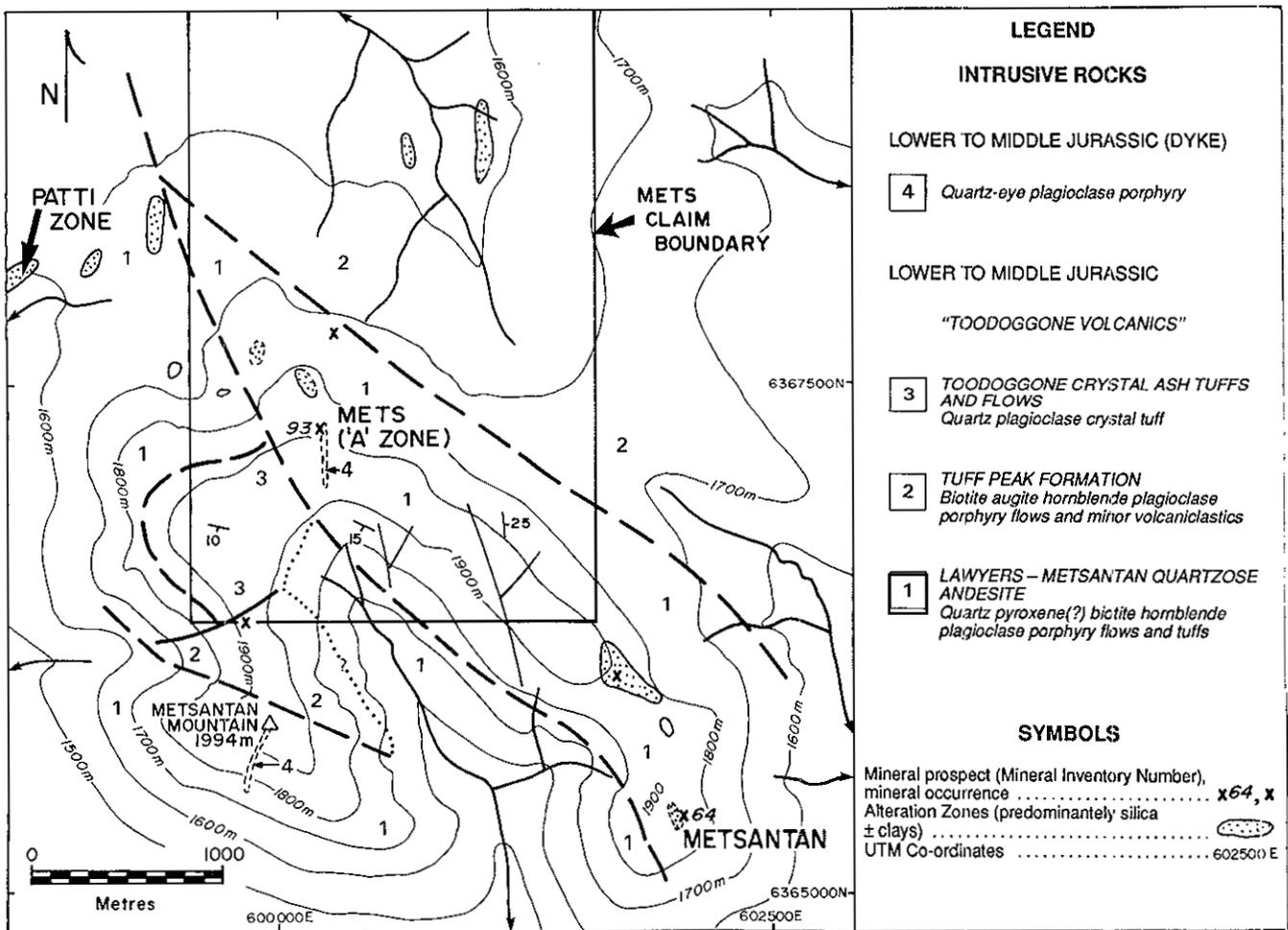


Figure 2-14-2. Sketch map of the geology of the Metsantan Mountain area (modified from Diakow *et al.*, 1985).

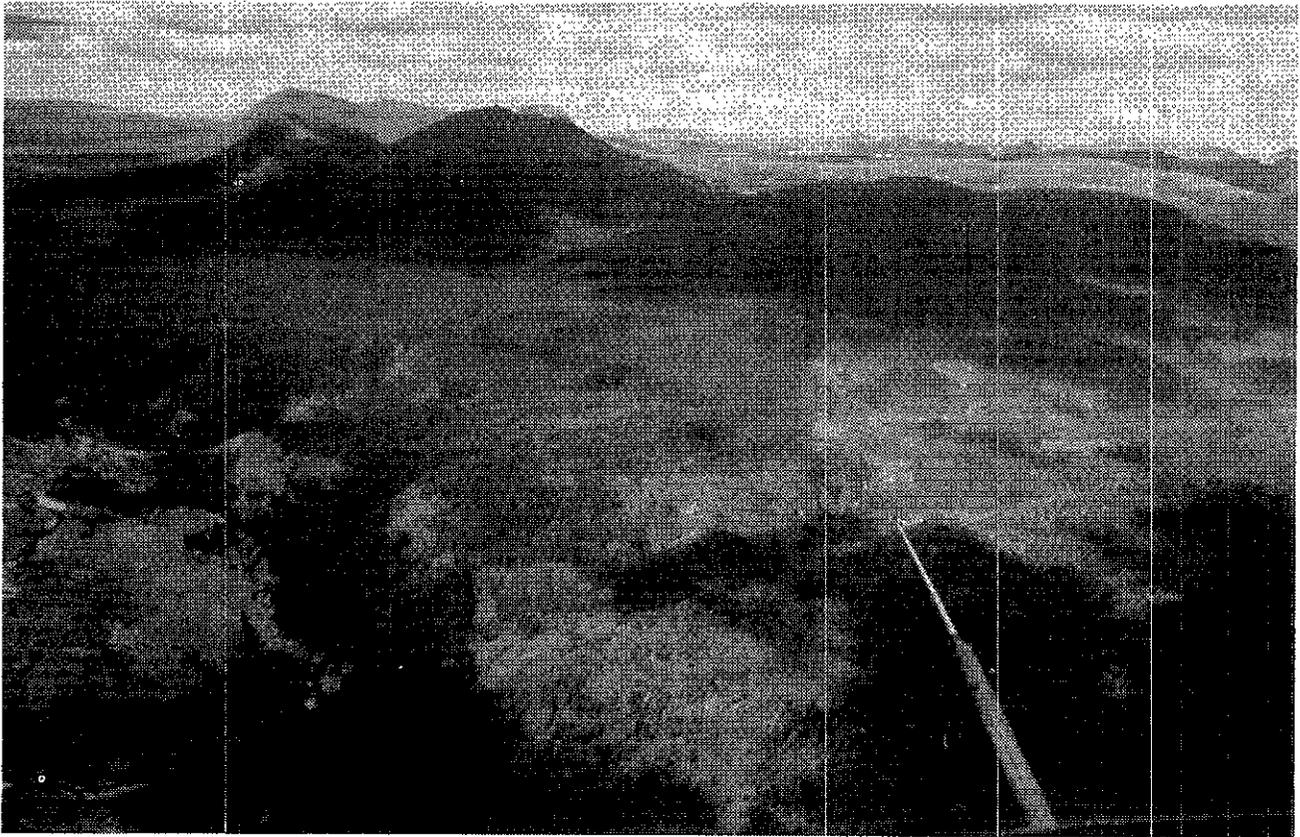


Plate 2-14-4. Looking northwest over the Moosehorn prospect. The Cyprus camp is located at tip of antenna. Metsantan Mountain is in the background to upper left.

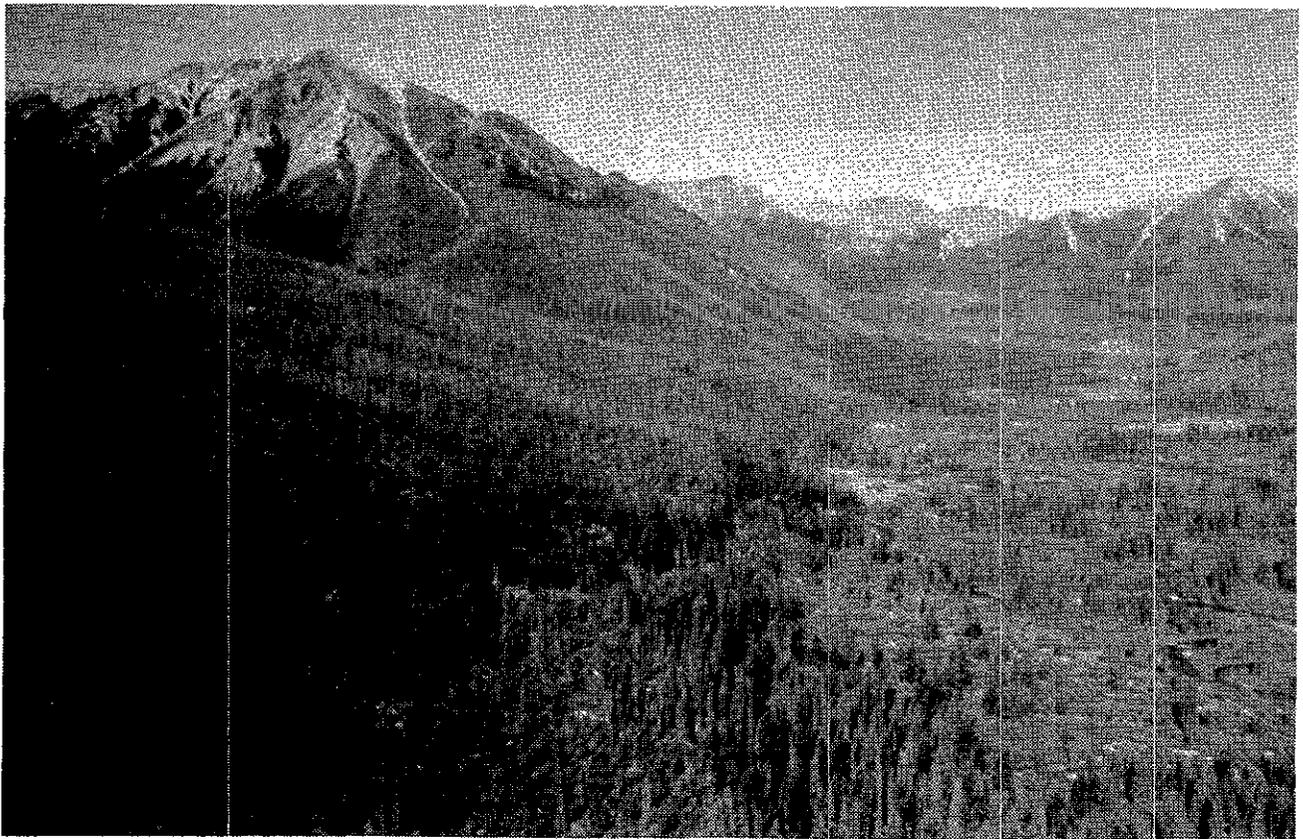


Plate 2-14-5. Looking west over the Brenda property. Jock Creek to the right, camp in the centre, and main zones of interest in the foreground.

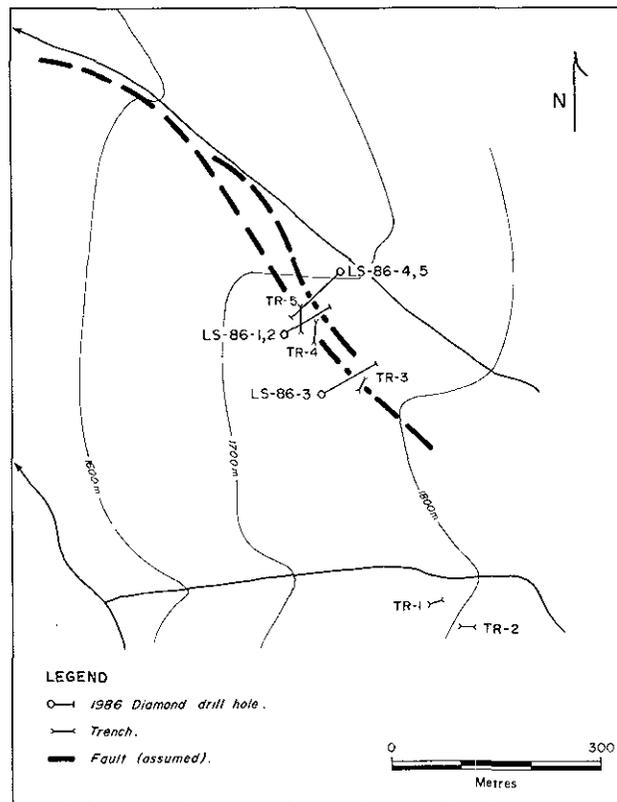


Figure 2-14-3. Sketch of surface plan, Golden Neighbour property (after company plans).

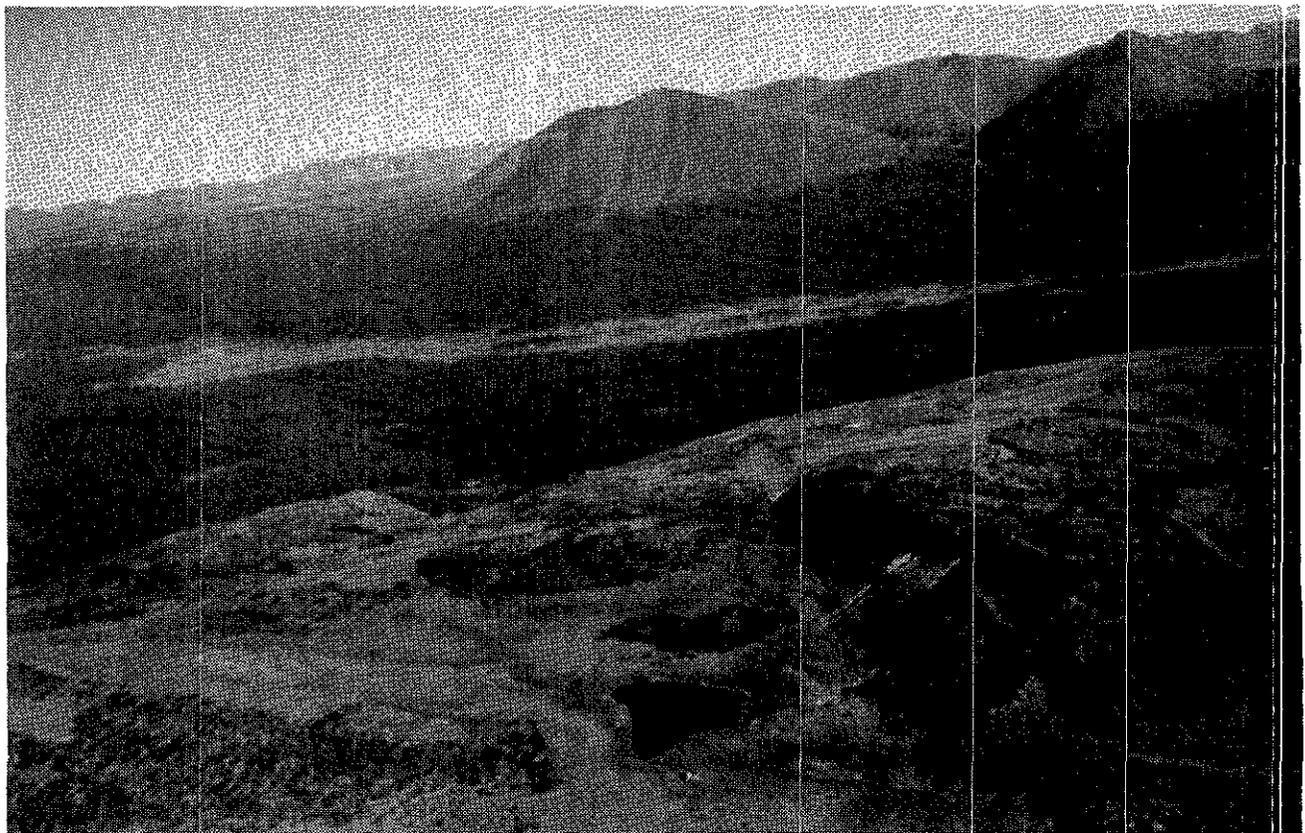


Plate 2-14-6. Looking over the Golden Stranger prospect. The trenches trace the quartz-amethyst zone. The zone ends near the small lake at the junction of the north-trending structure with a northwest-trending structure. Metsantan Mountain is in the background.

Hole No.	Width (metres)	Gold g/tonne
M-86-8	13	18.1
incl.	4.6	42.75
M-86-9	6.9	14.2
incl.	4.6	17.25

Source: George Cross Newsletters, September 8, 1986 and September 30, 1986.

**MOOSEHORN (MI 94E-086) —
CYPRUS METALS CANADA LTD.**

A comprehensive geochemical sampling and geological mapping program was completed over the the Moosehorn property by Cyprus Metals Canada Ltd. in 1986, under an option agreement with Cassidy Resources Ltd. and Imperial Metals Corp. Approximately 4500 soil and 500 stream sediment samples were collected. Twelve diamond-drill holes, totalling 1066.5 metres, were drilled at the western end of the property on the Moosehorn zone, its southern extension and in an area of newly discovered quartz float approximately 1100 metres southwest of the Moosehorn zone (Plate 2-14-4).

The Moosehorn zone crops out as quartz and quartz-amethyst veins cutting altered plagioclase andesite porphyry, part of the Toodoggone volcanic rocks. The dip of the zone is not clearly established and no significant veins were intersected in the three drill holes completed. The drilling on the southern extension of the Moosehorn zone intersected some geochemically anomalous gold values. The most exciting results came from a new mineralized area, with little or no outcrop, approximately 1100 metres southwest of the Moosehorn showing. The zone was found by soil geochemistry which identified a gold-silver anomaly. Quartz float from this zone contains more than 7000 parts per billion (ppb) gold and 175 grams of silver per tonne. Four drill holes intersected geochemically anomalous gold values which appear to define a steep southwest-dipping zone. Further drilling and trenching will be necessary to properly evaluate the large Moosehorn property.

**BRENDA (MI 94E-093) —
CANASIL RESOURCES INC.**

During 1986, Canasil Resources Inc. completed geological mapping, hand trenching, an EMR-16 resistivity survey and limited Winkie diamond drilling on their Brenda claim group located approximately 6 kilometres east-northeast of the Shas prospect (Figure 2-14-1). Three areas of favourable geology were identified: the south side of Jock Creek; a quartz-chalcedonic breccia zone; and the White Creek area.

On the south side of Jock Creek an EMR-16 resistivity survey identified four anomalies, over a strike length of 825 metres, which are open to the north and south (Plate 2-14-5). Several zones of quartz-barite breccia epithermal veining in Toodoggone volcanic tuffs and hypabyssal syenite have been found in this area. Disseminated pyrite with minor galena, sphalerite and chalcopryrite occur in the veins. A mineralized quartz-chalcedonic breccia zone, located at a higher elevation to the south, has been traced by an EMR-16 resistivity survey for 700 metres. Hand trenching has exposed an area with encouraging gold and silver values. In the White Creek area, 2.5 kilometres to the southeast, there are two parallel quartz-chalcedonic breccia zones at timberline with silver and gold values. Mechanical trenching and drilling will be required to assess the potential of these showings.

**GOLDEN NEIGHBOUR
(SAUNDERS, MI 94E-037) —
LACANA MINING CORP.**

In 1986 Lacana Mining Corp. completed five diamond-drill holes totalling 610 metres to test a quartz zone on their Golden Neighbour

property 7 kilometres northeast of the Baker mine. The holes were drilled from three setups and tested 150 metres of strike length within a 1200-metre-long soil anomaly with gold values up to 1800 ppb (Figure 2-14-3). Intersections of the quartz zone averaged 10 to 12 metres in length and contained minor pyrite and chalcopryrite as disseminations and "patches"; a pinkish alteration halo is present in the wallrock. Minor amethyst occurs locally in the host rock, a green feldspar andesite porphyry. Geochemically anomalous values range up to 1000 ppb gold, but no high-grade mineralization was intersected.

**METSANTAN (MI 94E-064) —
LACANA MINING CORP.**

During 1986 Lacana Mining Corp. completed five diamond-drill holes totalling approximately 610 metres on the Patti zone located on the northwest flank of Metsantan Mountain, immediately south of the Energex A1 claim boundary (Figure 2-14-2). The holes intersected intensely silicified and pyritized andesitic rocks. The Patti zone, exposed over an area 230 metres by 400 metres, appears typical of several structurally related high silica-clay + barite + native gold alteration zones occurring north of Metsantan Mountain.

**GOLDEN STRANGER (MI 94E-076) —
WESTERN HORIZONS RESOURCE LTD.**

Western Horizons Resources Ltd. carried out hand trenching, geological mapping and sampling over a quartz-amethyst epithermal breccia system in Toodoggone andesitic rocks (Plate 2-14-6). The zone has been traced for a strike length of over 600 metres. The breccia zone is commonly 2.5 to 4 metres wide. Sulphides identified to date are pyrite, galena, sphalerite and chalcopryrite. An aplite dyke follows the north-trending structure but is rarely mineralized. Grab samples have been collected for assay.

**SHAS (MI 94E-50) —
INTERNATIONAL SHASTA
RESOURCES LTD.**

No work was carried out in 1986 on the Shas property because of a legal dispute over tenure. During the summer the court case involving International Shasta Resources Ltd., Newmont Exploration of Canada Ltd. and Arctic Red Resources Ltd. ruled in favour of International Shasta Resources (see Table 2-14-1 for results from previous years).

ACKNOWLEDGMENTS

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