895176

1976 Property Report

TITLE	ERIE CREEK PROPERTY June 1 and 2 Claims
AUTHOR	D.G. Allen
DATE	April, 1977
COMMODITY	Mo - W - Cu
LOCATION-Area	11 km northwest of Salmo
-Mining Division	Nelson
-Coordinates	Latitude 49°16'N Longitude 117°23'W
-NTS	82 F/6W

AMAX VANCOUVER OFFICE

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SUMMARY

The Erie Creek property is situated 11 km (7 miles) northwest of Salmo, B.C. along the east slope of Erie Creek; it consists of two claims, June #1 and #2, totalling 12 units.

The property was staked in 1976. Preliminary work carried out in 1976 included 14 km (8.7 miles) of line cutting, geologic mapping, and geochemical soil sampling.

Geology of the property is complex. Lower Jurassic sedimentary and volcanic rocks are intruded by Nelson granite, an aplite stock and north-south trending swarms of quartz feldspar porphyry dykes. The aplite stock contains a well developed quartz vein stockwork containing molybdenite, scheelite and chalcopyrite. The quartz-feldspar porphyry dykes appear to be contemporaneous with mineralization but extend for a great distance beyond the property. All rocks in the vicinity of the property contain abundant pyrite.

The property was formerly explored by McIntyre Porcupine Mines who drilled 11 diamond drill holes in 1969 and 1970. The best intercepts obtained were 60 feet of 0.15% MoS_2 and 0.06% Cu in DDH 6 and 280 feet of 0.115% MoS_2 and 0.05% Cu in DDH 5. Tungsten values obtained by 1976 sampling range from 100 to 600 ppm W (0.01 to 0.08% WO_3).

CONCLUSIONS AND RECOMMENDATIONS

At the Erie Creek property, molybdenite, scheelite and chalcopyrite occur in a well developed quartz vein stockwork in an aplite stock. The intrusive complexity of the stock appears to increase to the west. If the Erie Creek valley is the expression of some structural feature, an increase in fracturing might be expected to occur to the west towards the bottom of the creek valley - an area as yet untested according to a McIntyre Porcupine report.

Parts of the west side of Erie Creek are covered by Crown Grant claims, some of which are due for expiry in 1977. Aplite has been found by some reconnaissance mapping on the southwest part of our claims, indicating favourable host rocks in that area. Further claim acquisition, geologic mapping and geochemical sampling are recommended.

On the east side of Erie Creek, further mapping will be required to sort out some of the intrusive dyke phases and geochemical sampling should be continued to close off the anomalous area to the south.

The widespread +200 ppm copper and +100 tungsten values in soils in the area south of the aplite stock suggests that contact areas of the stock and beyond may be favourable as far as potential porphyry copper-tungsten mineralization is concerned. Rock chip sampling and eventually drilling should be carried out in this area.

INTRODUCTION

Location and Access

The Erie Creek property is situated 11 km (7 miles) northwest of Salmo, and 29 km (18 miles) northeast of Trail, near the junction of Grassy Creek with Erie Creek. Access is by logging road from Highway 3, 10 km (6 miles) to the south.

Property

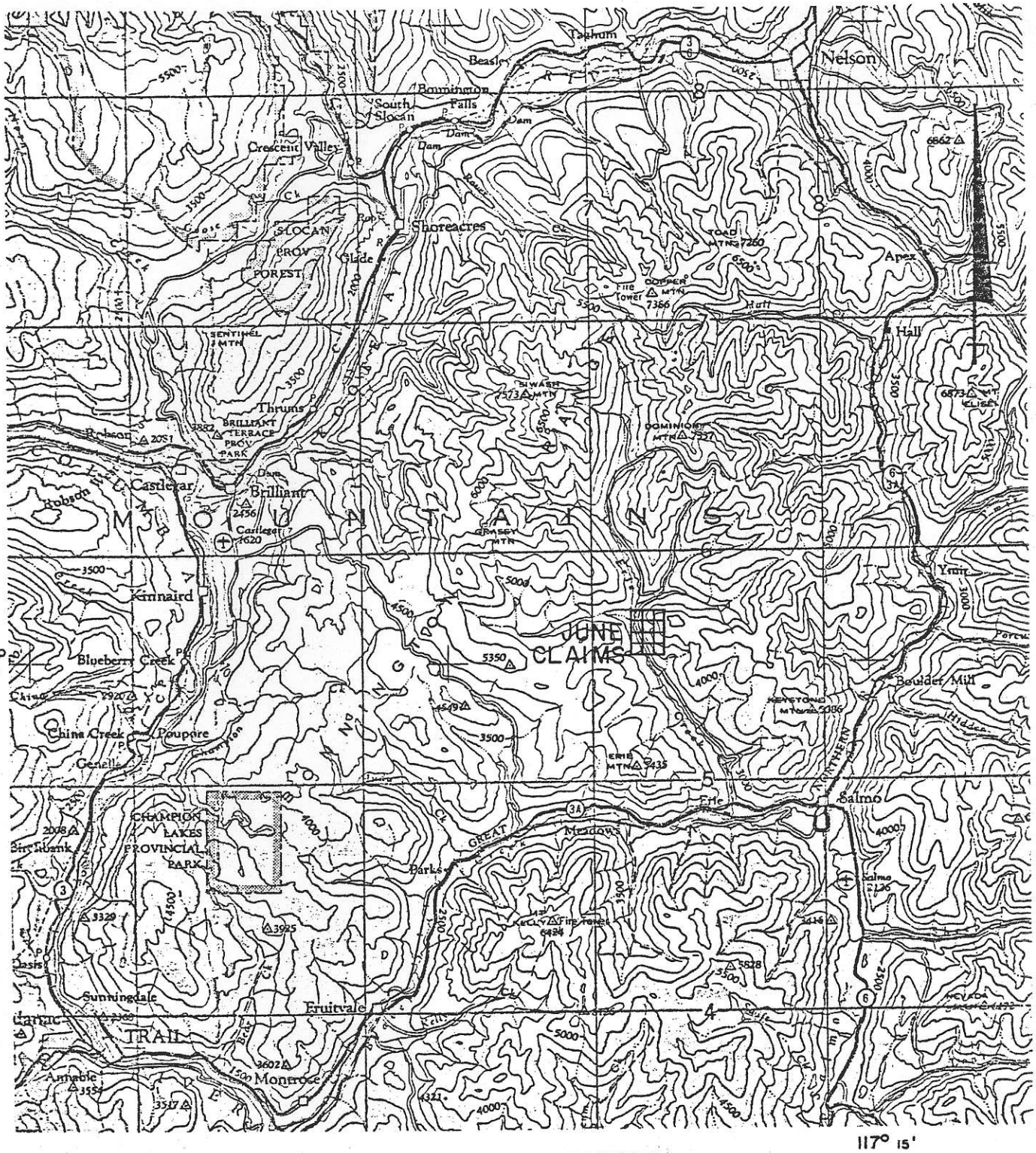
The property consists of two claims, June 1 (4 units) and June 2 (8 units) staked for AMAX Potash Limited and recorded on June 21, 1976.

History

Crown grant claims along the west side of Erie Creek date back to the early 1900's. Numerous old pits on the property indicate that work was carried out at that time. The Crown Grant claims are presently owned by Comaplex Resources International Ltd. The ground on the east side of Erie Creek was formerly covered by their claims. In 1968, the property was optioned to McIntyre Porcupine Mines who undertook geologic mapping, geochemical sampling and carried out 1711 m (5,614 feet) of diamond drilling in 12 holes, 11 on the east and 1 on a Crown Grant claim on the west. Most of the claims were allowed to lapse in 1975. The Crown Grant claims are due to expire on August 18, 1977, October 10, 1977 and June 10, 1978.

Physiography

The June claims lie on the east slope of Erie Creek between elevations 915 and 1400 m (3,000 and 4,700 feet). Topography is steep but not rugged.



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ERIE CREEK PROPERTY

JUNE CLAIMS

NELSON M. D. — B. C.

LOCATION MAP

SCALE 5 0 5 MILES

10 0 10 KILOMETERS

1 : 250,000

N. T. S. Ref. 82 F 6

FIG. 1

There is less than ten per cent outcrop on the property. Deposits of well cemented glacial till up to 9 m (30 feet) thick cover the lower slopes of Erie Valley.

Relatively sparse but highly varied stands of cedar, Douglas fir, balsam fir, hemlock, larch, birch, poplar and alder cover the property. Locally, thick patches of slide alder are found.

Scope of Exploration Program

The purpose of the 1976 field program was to provide a preliminary evaluation of the prospect. Line cutting totalling 14 km (8.7 miles), systematic geologic mapping, and geochemical soil sampling were carried out.

REGIONAL GEOLOGY

The Erie Creek property lies near the edge of one of the satellites of the large Nelson batholith. Ages from the northern part of the batholith are about 160 m.y. Phases of the Nelson batholith in this area contain numerous white orthoclase phenocrysts up to 13 cm long in a coarse grained groundmass of orthoclase, plagioclase and quartz with minor amounts of hornblende biotite.

The Nelson granite intrudes Lower Jurassic sedimentary rocks, the "Sinemurian beds" of Little (1960), and volcanic rocks of the Rossland Formation. The Sinemurian beds consist of impure grey sandstone intercalated with argillaceous beds and massive sandstone. Attitudes of the Sinemurian beds indicate an anticlinal structure, the axis of which coincides with the bed of Erie Creek. According to Little (1960) and Mulligan (1952) the Rossland Formation consists chiefly of dark green augite and augite-feldspar porphyry flows, breccia, agglomerate and contemporaneous intrusions.

Post Nelson dykes and sills are numerous in the Erie Creek basin. They cut both the Sinemurian beds, where they commonly form sills, and the Nelson granite. Their trend is north-south, parallel to the Erie Creek anticlinal axis. The dykes are found at least 8 km (5 miles) north of the property and according to Walker (1934) some are present as much as 24 km (15 miles) to the south. North of the property their density may average 3 per 100 m (1 per 100 feet) but locally and especially near the property they may be as abundant as 30 per 100 m (10 per hundred feet) or more.

The dyke rocks are described by Mulligan as "distinctive feldspar-quartz and feldspar-quartz-augite porphyries... and a variety of aplites, lamprophyres, and unclassified diabasic rocks". In the vicinity of the property they consist of various textured phases of quartz-feldspar-biotite porphyries, quartz porphyries and dark grey feldspar-quartz porphyries.

PROPERTY GEOLOGY

The prominent geological features of the Erie Creek property are an aplite stock containing a well-developed quartz vein stockwork and swarms of quartz-feldspar porphyry dykes. Host rocks are pyritized hornfelsic siltstone and argillite and augite andesite.

Host Rocks

Much of the host rock underlying the property is poorly to well-bedded hornfelsic siltstone, dark grey to purplish grey in colour. It contains abundant pyrite as disseminations and as fracture coatings.

Erie Creek Stock

Much of the Erie Creek stock consists of aplite, a fine grained (grain size 0.1 mm) light grey mixture of quartz and orthoclase with a sugary texture and local small amounts of biotite. It commonly contains a well developed quartz vein stockwork.

A younger(?) medium grained equigranular phase of the stock outcrops along the southeast side of the main stock. It consists of about 3 to 5% biotite, equal amounts of quartz, plagioclase and orthoclase. Quartz veining is only locally developed and relatively weaker. The rock contains miarolitic cavities up to 4 mm in diameter in places partially filled with pyrite and traces of molybdenite. In one outcrop it was found to contain abundant disseminated apatite and a small amount of fine grained tourmaline.

A porphyritic phase, which is texturally similar to some of the quartz-feldspar porphyry dyke phases described below, outcrops close to Erie Creek on the northeast side of the stock.

It also contains a well-developed quartz vein stockwork indicating an early age. It contains about 15% quartz phenocrysts, 25% plagioclase phenocrysts, 10% orthoclase phenocrysts all ranging from 1 to 3 mm in a fine grained pinkish grey quartz-orthoclase groundmass with about 3% finely disseminated biotite.

The stock is at least 600 metres long by 150 to 360 metres wide (2,000 feet by 500 to 1,200 feet) on the east side. It apparently extends to the west side as well where mineralized aplite float has been found in an as yet unmapped area.

Dykes

Dykes of quartz feldspar porphyry of various textures are very abundant on the property, much more so than indicated on Figure 2. They range in width from several centimetres to about 20 metres and are most abundant in hornfels northwest of the stock. In general they trend north-south ($\pm 30^0$) and have steep dips. Further mapping is required to sort out the various phases, Most dyke phases appear to be intramineral and post-mineral in age. Where they occur in the stock, quartz vein development is less intense in the dykes than in the aplite.

Although age relationships between the various phases are somewhat ambiguous quartz porphyry appears to be one of the oldest phases. It is cut by most other dyke phases and is locally relatively intensely quartz veined. The rock typically contains 1 to 10% quartz phenocrysts up to 2 mm in diameter in a white aphanitic groundmass.

Quartz-feldspar porphyry dykes (quartz latite to rhyolite) contain varying proportions of subhedral partially resorbed quartz phenocrysts 0.5 to 5 mm in diameter; subhedral plagioclase phenocrysts 0.1 to 3 mm in length and white euhedral orthoclase phenocrysts 0.5 to 1.5 cm in length. Biotite occurs as disseminated subhedral to euhedral flakes. The groundmass is

aphanitic and light grey to cream in colour. A few dykes contain scattered miarolitic cavities. They are generally weakly mineralized relative to nearby host aplite.

The dark porphyry dykes appear to be the youngest phases although some fine grained phases of quartz feldspar porphyry cut them. They appear to be mainly post-mineral in age because a few contain fragments of quartz-veined aplite and are generally only weakly pyritic. The rock contains 0 to 15% quartz phenocrysts up to 3 mm in diameter, scattered white, partially resorbed feldspar phenocrysts up to 2 cm long in a fine grained dark grey groundmass.

STRUCTURE

As described above, Erie Creek valley appears to coincide with the axis of an anticline. The abundance of dykes in the Erie Creek basin perhaps can be related to longitudinal tensional joints in such an anticline.

Quartz veining is found throughout the aplite, the surrounding hornfels; the porphyritic phase on the northeast side and in some quartz porphyry dykes. The veins are up to 1 cm wide but average about 1 mm. In places the rock appears to have been brecciated but fragments have not been rotated. Where quartz veins cross, a displacement of up to 1 cm has occurred.

Beyond stock contacts, dyke rocks and hornfels may be fractured and contain pyrite and chalcopyrite.

MINERALIZATION

Pyrite occurs as disseminations and on fractures in all rock types on the property. Its distribution has not been mapped but is known to be widespread in the district. Small amounts of pyrite occur in quartz veins directly associated with mineralization.

Molybdenite and scheelite occur mainly in quartz veins in the stockwork zone and locally as disseminated grains along fractures.

Chalcopyrite does not appear to be contemporaneous with molybdenite and scheelite. Chalcopyrite occurs mainly on fractures with pyrite both in and around the stock.

ALTERATION

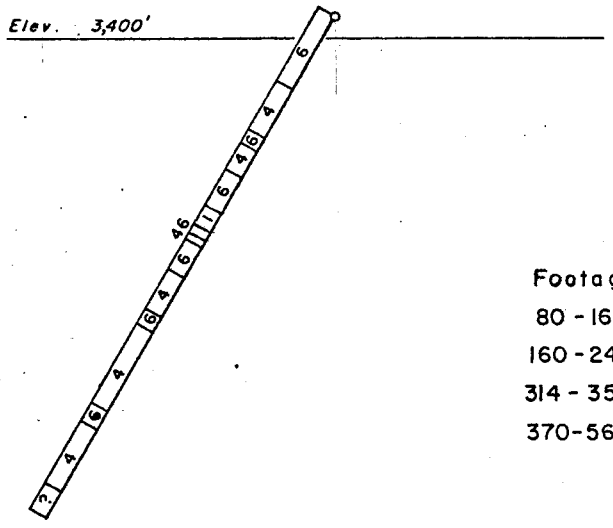
Except for abundant pyrite and quartz veining, all intrusive rocks appear quite fresh in hand specimen. Biotite is present in the hornfels and imparts the purplish colour to it. Its distribution may be related to a hornfels aureole about the aplite stock or the Nelson granite contact. Exposures are poor in contact areas, but it appears that at least some silicification and bleaching of the hornfels adjacent to the aplite stock contact has occurred.

DRILLING RESULTS

According to McIntyre Porcupine reports, 11 holes were drilled on the east side of Erie Creek in 1969 and 1970. Collars for eight holes have been found in this study and five have been identified. Those identified are shown on Figure 2 and drill hole cross sections plotted (Figure 2a and b).

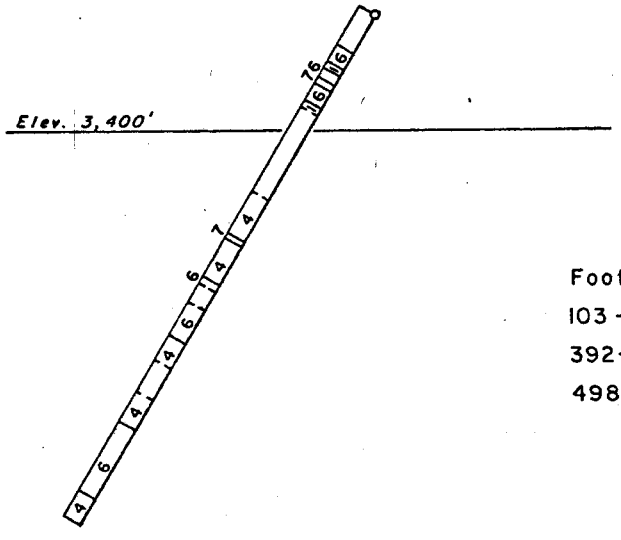
Copper and molybdenite grades from McIntrye reports are summarized in Table I. The highest grade molybdenite was obtained from drill hole 12 (3 m - 0.31% MoS_2). The best intercept (85 m - 0.115% MoS_2, 0.05% Cu) was obtained in drill hole 5. Unfortunately, the location of neither hole is known.

Apparently, scheelite was not recognized in drilling carried out by McIntyre Porcupine, as no analyses for tungsten have been reported. Analyses from a few sections of drill core found on the property range from 100 to 600 ppm W (0.01 - 0.08% WO_3).



D.D.H. No. 2
Coordinates 3+80 S 4+55 E
Collar Elevation 3,425'
Dip -60° Azimuth 307°
Depth 598'

Footage	% MoS_2	% Cu
80 - 160	0.01	0.05
160 - 240	0.02	0.11
314 - 354	0.02	0.07
370-565	0.02	0.07



D.D.H. No. 3
Coordinates 2+90 S 6+30 E
Collar Elevation 3,520'
Dip -60° Azimuth 307°
Depth 611'

Footage	% MoS_2	% Cu
103 - 123	0.05	0.12
392 - 498	0.05	0.04
498-601	0.01	0.10

For geological legend see FIG. 2

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ERIE CREEK PROPERTY
JUNE CLAIMS
NELSON M.D. — B.C.
DIAMOND DRILL HOLES
2 AND 3

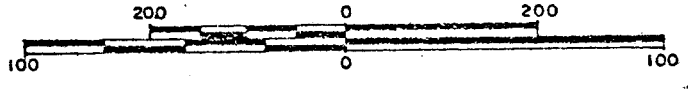

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FIG. 2a

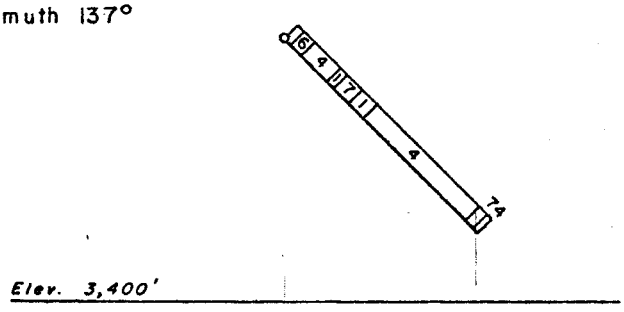
D.D.H. No. 8

Coordinates 5+10 N 14+45 E

Collar Elevation 3,675'

Dip -45° Azimuth 137°

Depth 283'



Footage	% Mo S_2	%Cu
120-260	0.05	0.06

D.D.H. No. 9

Coordinates 3+65 N 9+00 E

Collar Elevation 3,510'

Dip -45° Azimuth 326°

Depth 552'

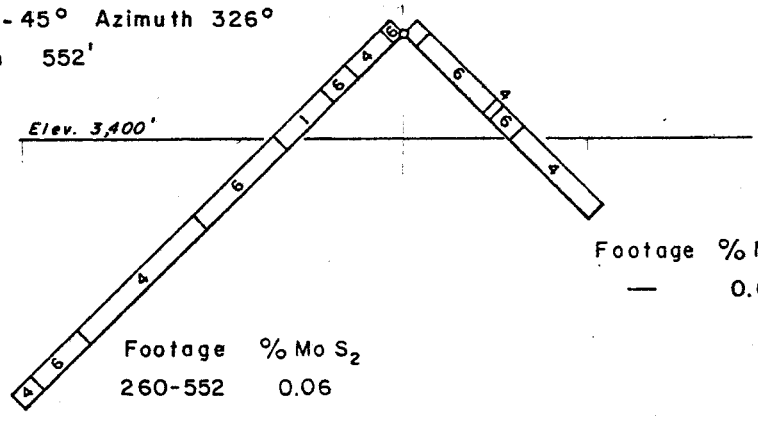
D.D.H. No. 10

Coordinates 3+65N 9+00 E

Collar Elevation 3,510'

Dip -45° Azimuth 142°

Footage 268'



Footage	% Mo S_2
—	0.06

Footage	% Mo S_2
260-552	0.06

For geological legend see FIG. 2

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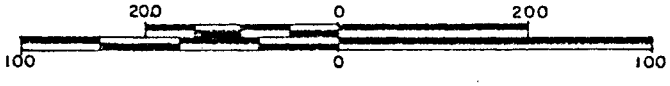
ERIE CREEK PROPERTY
JUNE CLAIMS
NELSON M.D. — B.C.

DIAMOND DRILL HOLES
8, 9 AND 10



N. T. S. Ref. 82 F 6

FIG. 2b

TABLE I - SUMMARY OF DRILLING RESULTS

Drill Hole	Location	Depth	Footage	Length	% MoS_2	% Cu
1	21+20W 9+25N	506'	54-99'	45'	-	0.08
	West side		203-340	137	-	0.12
	Erie Creek		370-401	31	-	0.08
			446-486	40	-	0.08
2	4+55E 3+80S	598	80-160	80	0.01	0.05
			160-240	80	0.02	0.11
			314-354	40	0.02	0.07
			370-565	195	0.02	0.07
3	6+30E 2+90S	611	103-123	20	0.05	0.12
			392-498	106	0.05	0.04
			498-601	103	0.01	0.10
4	Unknown	47	Abandoned in overburden			
5	Unknown	602	50-330	280	0.115	0.05
	Note: A 100 foot composite sample from 80'-180' ran 1.2 oz ox Ag/ton					
6	Unknown	522	50-110	60	0.15	0.06
			390-420	30	0.12	0.04
			8-522	514	0.06	0.05
7	Unknown	604	-	-	-	-
8	14+45E 5+10N	283	120-260	140	0.05	0.06
9	9+00E 3+65N	552	260-552	292	0.062	-
10	9+00E 3+65N	268	20-268	248	0.06	-
11	Unknown	497	22-497	475	0.065	-
12	Unknown	527	36-527	491	0.062	-

possibly reversed

A 30 metre composite from drill hole 5 is reported to contain 1.2 oz/ton Ag.

GEOCHEMISTRY

The molybdenum content in soils at Erie Creek appears low when compared to drill hole intercepts. Soil values range up to 46 ppm. Plus 8 ppm soil values appear to coincide well with the distribution of the stock. Although soil pH ranges from 4.9 to 6.9, most values fall around 6.0, the boundary between the relatively soluble molybdate ion and the immobile acid molybdate anion in the molybdenum-water system. In spite of the abundant pyrite, apparently the soils are not acid enough to develop the acid molybdate anion. An increase of molybdenum with depth is noted in a soil profile in glacial till.

Copper values range up to 2000 ppm; the highest values occur in the northern part of the stock. The +200 ppm anomaly extends well beyond the stock contact.

Tungsten values range up to 640 ppm. A prominent +100 ppm anomaly also extends well beyond the stock contact to the northwest and south and possibly, along with copper, represents a halo effect about a more molybdenum-rich core. Relatively good grade tungsten (300 ppm) along with copper (800 ppm) are found in quartz-veined hornfels about 30 metres east of the aplite stock contact (6GA445). Contact areas and beyond, therefore represent undrilled targets that should be investigated further.

Except for a number of weakly anomalous lead values (up to 74 ppm) all other elements Ni, Co, Fe, Ag, Zn are near background levels.

ROCK GEOCHEMISTRY

Ten samples of most of the intrusive rock types at Erie Creek were selected for major and minor element analyses. Only one rock type, quartz porphyry, has an anomalous "i" number of 100. One of the most notable features is the unusually high niobium content (up to 230 ppm) which is considered favourable when compared to intrusions of the Climax type. Other possible favourable geochemical features are the relatively high uranium (up to 15 ppm) and tin (up to 75 ppm). Most contain unusually high amounts of barium (up to 4300 ppm) and strontium (up to 1200 ppm) and several are relatively high in nickel (up to 84 ppm), considering their acid nature.

TABLE II - MAJOR AND MINOR ELEMENT GEOCHEMISTRY

Sample	SiO_2%	K_2O%	Na_2O%	CaO%	F%	ppm Li	U	Mo	Cu	W
6GA 54	71.9	4.1	3.9	2.9	0.10	10	6	6	200	0
64	77.9	6.3	2.4	0.99	0.10	20	10	20	262	100
65	72.7	5.5	3.2	0.58	0.09	10	15	22	152	2
66	63.3	4.8	2.7	2.6	0.17	30	10	126	370	200
68	78.3	6.0	2.0	0.71	0.086	10	13	160	648	200
87	64.6	3.4	3.9	4.2	0.098	10	10	18	4	n.d.
88	68.9	3.3	3.0	3.8	0.056	10	<2	6	2	n.d.
137	74.0	4.1	3.6	1.3	0.064	50	2	1	2	n.d.
444	74.4	5.4	4.3	0.54	0.04	10	12	6	60	2
446	73.6	4.5	3.9	0.19	0.037	<10	4	4	100	2

6GA54 - Quartz feldspar porphyry
64 - As above
65 - As above
66 - Dark porphyry
68 - Aplite

6GA87 - Quartz feldspar porphyry
88 - Nelson granite
137 - As above
444 - Late quartz-feldspar porphyry
446 - Quartz porphyry

Sample	ppm Sn	Zn	Mn	Ni	Ba	Sr	Rb	Nb	Ti	Zr	Ta	i	d
6GA54	75	77	550	84	3500	790	180	140	1600	340	<53	44	26
64	<24	66	180	18	2200	560	370	100	490	310	<48	59	206
65	24	40	88	29	1200	280	300	140	1100	160	<49	55	215
66	28	72	310	50	2300	740	290	140	820	290	<58	60	43
68	23	19	180	10	860	120	220	230	160	100	<39	37	331
87	72	30	700	18	4300	950	110	76	650	140	<43	32	13
88	24	140	660	30	1700	1200	160	22	1100	130	<43	48	20
137	45	60	660	11	1500	250	210	<10	810	150	<43	51	65
444	<22	44	40	<10	1600	420	250	110	1400	130	<33	46	173
446	<24	70	530	<10	330	96	450	70	650	83	<43	100	447

Anomalous ~~areas~~ values underlined

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