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GEOLOGY · GEOPHYSICS MINING ENGINEERING

LITHOGEOCHEMICAL AND GEOPHYSICAL REPORT

on the

OWL MOUNTAIN PROPERTY

Lillooet Mining Division - British Columbia

Lat. 50° 20' N. Long. 122° 48' W.

N.T.S. 92 J/7

for

GEORGE RESOURCE CO. LTD.

and

INTER-CANADIAN DEVELOPMENT CORP. LTD.

bу

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SUMMARY

George Resource Co. Ltd. holds 127 claim units near Pemberton, British Columbia. The western half of the property is accessible by logging road. The property is one of a number of base and precious metal deposits that lie along the eastern margin of the Coast Plutonic Complex. Included in this belt of mineral deposits are the Bralorne-Pioneer Mine, Northair Mine and Britannia Mine.

The property includes the Owl B, C, D, Owl Lake and Copper Queen copper-molybdenum showings and the Owl Mountain iron-gold-cobalt showing. The Copper Queen showing was discovered in 1913 and since that time 'a number of operators have held varying proportions of the known showings. More recently, Pine Lake Mining Co. carried out extensive drilling on the Copper Queen, Owl, C, and D zones in 1969 to 1972, and Utah Mines carried out drilling on the Owl Lake showings in 1974. The property is underlain by metamorphosed volcaniclastic and sedimentary rocks, presumably of the Triassic Cadwallader Group. These rocks intruded granodiorite of the Spetch Creek Pluton and smaller bodies and dykes of diorite and quartz diorite related to older phases of the Coast Plutonic Complex. Copper and molybdenum along Owl Creek and south of Owl Lake are related to the diorite intrusions and skarn type iron-gold-cobalt-zinc mineralization occurs in roof pendants in the granodiorite. Best known drill intersection is 100 metres grading 0.40% copper and 0.029% MoS₂ the Owl C zone. Gold values on Owl Mountain of up to 5.3 ounces per ton have been obtained.

In 1986, a program of geological mapping, geochemical sampling and magnetic and VLF-electromagnetic surveys was initiated. The presence of gold values in the Owl Mountain showing was confirmed and the preliminary geochemical sampling of soils in the Owl B zone revealed the presence of scattered gold and zinc geochemical anomalies.

In 1988-89 a work program of lithogeochemical sampling and geophysical surveys were conducted on the Owl Mountain property. The lithogeochemical sampling of the Owl Mountain skarn confirmed the presence of gold mineralization associated with the skarn and altered andesites



containing disseminated pyrite + arsenopyrite. The lithogeochemical sampling of the Copper Queen adit and the intrusions along Owl Creek, confirm elevated gold values (to 0.005 ounces per ton gold) associated with the intrusions, however, not necessarily associated with the copper-molybdenum mineralization. In addition, sampling of the Copper Queen adit confirmed significant copper values across significant widths (0.246% copper over 67 metres). The geophysical surveys over the Low Owl and Darcy claims show that the structures and associated intrusions which may host mineralization extend onto these claims.

Also conducted in late 1988 in conjunction with this study was an airborne magnetic and electromagnetic survey. This survey confirmed the presence of a linear structure lying along Owl Creek and also revealed several targets for skarn and/or porphyry-type mineralization.

An exploration program to evaluate the potential for large tonnage low grade copper deposits and associated gold mineralization of the Owl Creek property is proposed.

CONCLUSION

In the past, various parts of the present OWL Property were explored on a sporadic basis by a number of unrelated companies. This work was mainly directed toward investigating copper-molybdenum mineralization associated with doritic intrusions along a major linear feature (shear zone?) and for iron-gold-cobalt-zinc skarns. George Resosurces Company Ltd. and Inter-Canadian Development Corp. consolidated all these showings into the OWL Property. Concidering the recent increase in copper prices, and the presence of near economic copper grades and widths reported in drilling conducted in 1972, a comprehensive work program to eveluate full potential of the property is warranted.

RECOMMENDATION

A two-phase exploration program is recommended to evaluate the Owl Creek property. Phase I would consist of rock and soil geochemical and

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geophysical surveys of selected portions of the old grids, plus extensions to these grids. Geological mapping of the property and a limited drilling program to test previously drilled areas for copper + gold mineralization. Phase II would include further diamond drilling and geological, geochemical and geophysical surveys dependent upon the results of Phase I. Estimated costs of Phase I and II are \$275,000 and \$425,000 respectively, for a total of \$700,000.

\$275,000

\$425,000

\$425,000

\$700,000



ESTIMATED COST OF RECOMMENDATION

	•	pping, soil and rock geochemicurveys, drill site preparation	• •
Salaries P. Geol Geologis Assistan		30 man days @ 450/day 80 man days @ \$350/day 180 man days @ \$200/day	\$ 13,500 28,000 36,000
Room and bo	oard	250 man days @ \$50/day/	12,500
Vehicle re	ntal		4,500
Helicopter	support	12 hours @ \$650/hr	7,800
Bulldozer		30 hours @ \$100hr	3,000
Diamond dr	illing	2,500 ft. @ \$35/ft. (all incl.)	87,500
Camp, supp	lies, fuel		6,000
Geochemica	l analyses	1,200 soil samples @ \$17.50/samp 500 rock samples @ \$17.50/samp	
Reports, ma	aps, consulting	3 ,	25,000
	•	Subtotal Contingencies	253,550 21,450

PHASE II Provision for additional diamond drilling.

TOTAL PHASE I

TOTAL PHASE 11

TOTAL PHASE 1 AND II



INTRODUCTION

George Resource Co. Ltd. holds 127 claim units in the Owl Creek area near Pemberton, British Columbia by joint venture agreement with Inter-Canadian Development Corp. The claims cover quartz-veined and pyritized andesites and quartz diorite carrying low grade copper and molybdenum values and skarn-type iron-zinc-cobalt mineralization with appreciable gold values in a roof pendant in granodiorite.

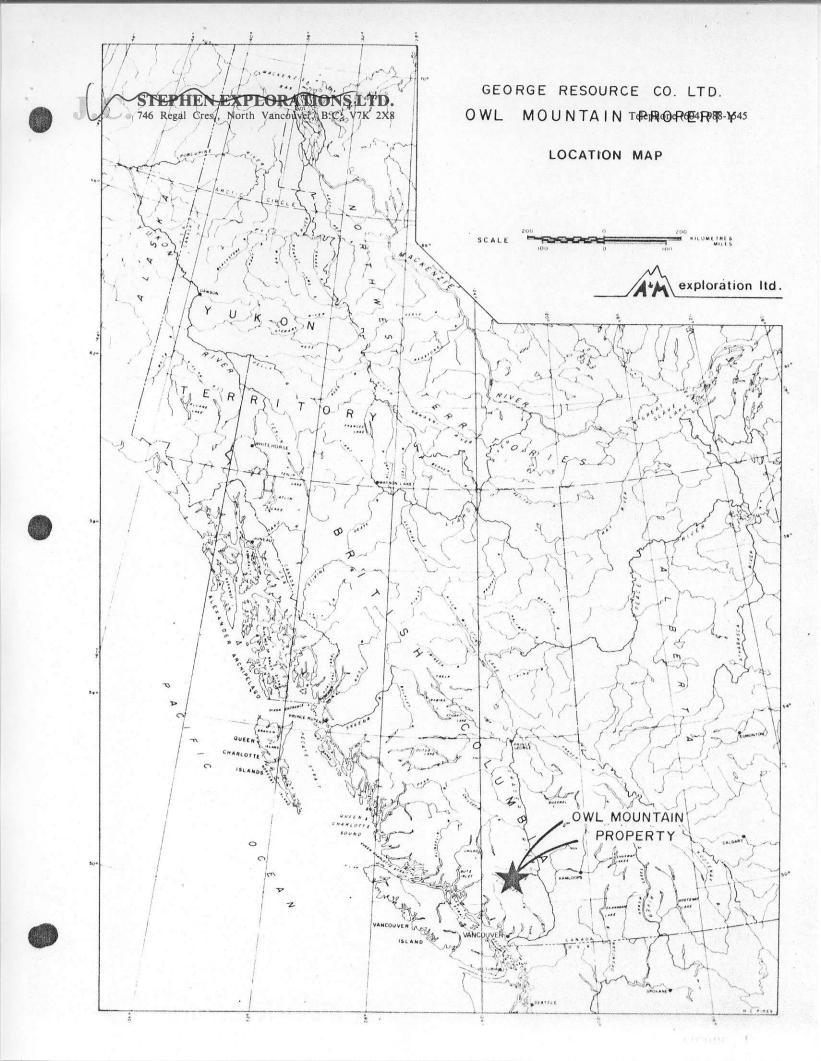
The property is one of a number of gold-base metal prospects which lie along the eastern edge of the Coast Plutonic Complex. The Bralorne-Pioneer Mine (past production of 7.95 million tons with recovered grade 0.552 oz/ton Au) lies 43 kilometres to the north and the Northair Mine (345,700 tons with recovered grade 0.34 oz/ton Au, 2.5 oz/ton Ag, 2.4% Zn, 2.0% Pb) lies 34 kilometres to the southwest. Both are hosted in part by volcaniclastic rocks of Mesozoic age.

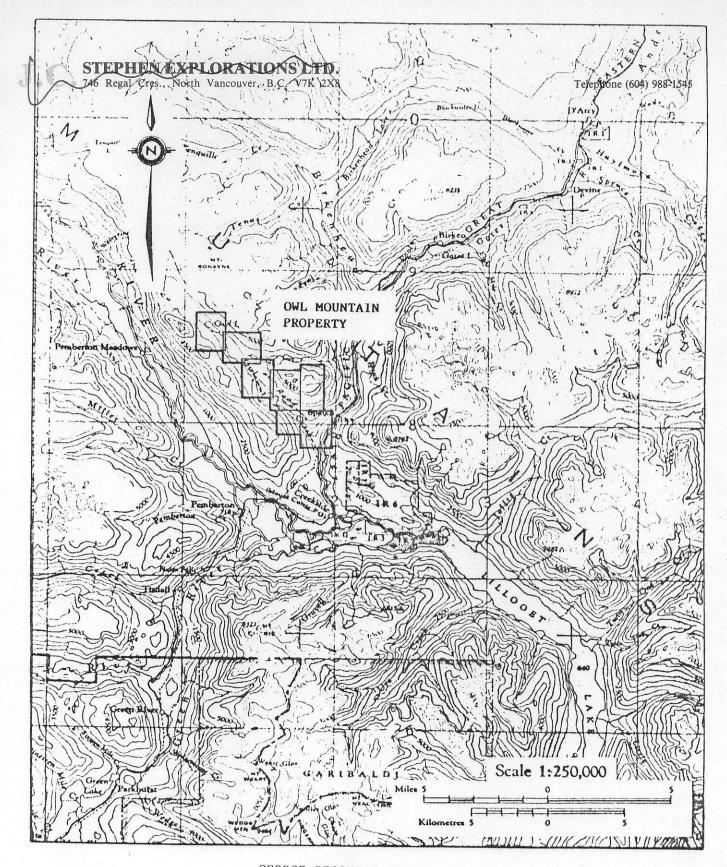
This report summarizes results of exploration work carried out on behalf of George Resource Co. Ltd. from October 1988 to January 1989. The work consisted of a follow-up lithogeochemical sampling program on the Owl Mountain skarn and a reconnaissance lithogeochemical survey of the Owl C Zone, Copper Queen adit area and the lower portion of Owl Creek to test for potential gold association. The Copper Queen adit was opened, drained and resampled. A grid was put in along the lower portion of Owl Creek and magnetic and VLF-electromagnetic surveys were conducted over the grid. Also carried out was an airborne magnetic and electromagnetic survey, the results of which are described in a separate report.

LOCATION AND ACCESS

The Owl Mountain Property is situated approximately nine kilometres northeast of Pemberton, B.C. (Figures 1 and 2).

The property covers the area between Owl Creek and the Birkenhead River, on map sheet $92\ J/7$. The property consists of five claim blocks which cover the northern side of the Owl Creek valley and includes Owl Lake and the top of Owl Mountain.





GEORGE RESOURCE COMPANY LTD.

ACCESS MAP

OWL MOUNTAIN PROPERTY

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Southern parts of the property can be reached by the seasonal Owl Lake Road which runs along the northern side of the Owl Creek valley. More remote areas of the claim block (north and northwestern extremities) are more efficiently reached by helicopter from Pemberton Meadows north of Pemberton.

CLAIM DATA

The property consists of 127 claim units (Figure 3) which are held by George Resource Company Ltd. Inter-Canadian Development Corp. holds an option to acquire a 30% interest. Claim data are as follows:

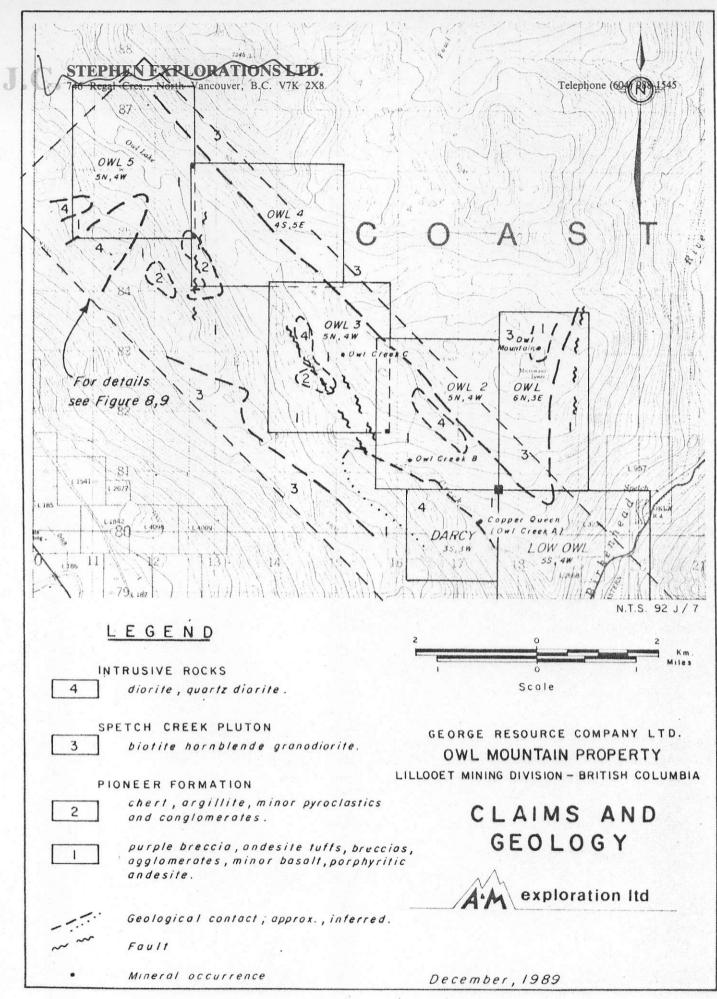
Claim name	Number of Units	Record Number	Expiry Date
Owl	18	3402	January 17, 1990
Owl 2	20	3601	November 26, 1990
Ow1 3	20	3602	November 26, 1990
Owl 4	20	3603	November 26, 1990
Ow1 5	20	3604	November 26, 1990
Low Owl 1	20		January 24, 1990
Darcy	9		January 24, 1990

PREVIOUS WORK AND HISTORY

The Owl Creek valley and the top of Owl Mountain are the main areas which have attracted the attention of miners and prospectors.

Owl Mountain

In 1917 the peak and north slope of Owl Mountain were staked as the Iron Man Group of Claims. Camsell (1917) described skarn type mineralization which consisted of massive magnetite, pyrite, and arsenopyrite in fractured greenstones. Secondary malachite and annabergite (cobalt-bloom) were observed on fracture surfaces. The showing was described as being approximately 50 feet long, 10 to 15 feet in width and of limited depth.



In 1934 the top of the mountain was staked as the North Star Group by the Darlington Gold Syndicate. Leckie (1934) stated that mineralization was traceable for 500 to 600 feet (150 to 180 metres) and implied considerable depth to showings. Gold values from 13 samples ranged from 0.03 to 5.3 ounces per ton.

By 1960 this property had been restaked by Owl Creek Gold Mines and prospected by Fawley (1961). Magnetite was abundant and observed in fractured andesites near intrusive contacts with the Spetch Creek granodiorite. Ore mineralization was described that consisted predominantly of arsenopyrite and pyrite. The distribution of gold was described as erratic and patchy and not amenable to the delineation of a mineable body of ore.

Owl Creek

One of the earliest discoveries in the Owl Creek area was the Copper Queen showing immediately to the south of the Owl and Owl 1 claims. In 1913 an adit was driven 66 metres under exposed copper mineralization. In 1920 Britannia Mines drilled several short holes and drove a 33 metres adit. Later that year, Britannia drilled another three holes on this property. Copper values in the range of 0.15 to 0.48% were reported.

In 1963 the Mining Corporation of Canada Limited staked 91 mineral claims in the area of Owl Creek surrounding the Copper Queen showing. The original adit was rehabilitated and sampled. Grades reported were 66 metres grading 0.33% copper. Some trenching was performed and brush cleared to establish a geophysical and geochemical grid. By 1964, 34 of the original claims were held, 20 of which had been geologically mapped and a larger area geochemically surveyed for copper mineralization. Results of the geochemical survey outlined possible extensions of previously established low grade copper ore bodies.

The property was held by Pine Lake Mining Co. from 1968 to 1973. An access road was constructed up to Little Owl Lake. A total of 292 metres of diamond drilling in one hole on the A Zone, and 2473 metres of diamond drilling on the C zone, and 1737 metres of percussion drilling on the D zone were conducted.



In 1970 Utah Mines performed reconnaissance geological and geochemical surveys of the J claims near the southern tip of Owl Lake. By 1973 Utah Mines had optioned property between Little Owl and Owl Lakes and conducted detailed geological, geophysical and geochemical surveys in the area and in 1974 conducted 549 metres of diamond drilling in four holes.

In 1972 Pine Lake had carried out several exploration programs in the area surrounding Little Owl Lake. Pine Lake subdivided the area into four mineralized zones designated the A (Copper Queen), B, C and D Zones in order of occurrence upstream on Owl Creek. The work performed by Pine Lake in each of these zones can be summarized as follows:

- Zone A: one 291 metre hole of diamond drilling which intersected 182 metres grading 0.2% copper.
- Zone B: soil sampling that defined a weakly anomalous area of copper mineralization.
- Zone C: soil sampling, magnetometer and I.P. surveys including 8,113 feet of diamond drilling over 10 holes. All holes were mineralized with the best interaction in hole C-2 which graded 0.4% copper and 0.029% of molybdenum over an interval of 91.4 metres.
- Zone D: soil sampling, magnetometer and I.P. surveys, including 19 percussion holes, to an average depth of 90 metres which indicated subeconomic grades of copper mineralization coincident with surface geochemical anomalies.

Of main interest to this survey and possible future surveys was the combined geochemical, geophysical and geological programs performed by Etah Nines limited in 1973 and 1974.

During the course of these surveys 15.51 kilometres of grid line was established between the Owl and Little Owl Lakes.

The soil geochemical survey defined four distinct coincident copper and molybdenum anomalies to the southwest of Owl Lake. Two of the copper anomalies were centered at 140 NW:8 SW (on Utah Mines' grid) and at 120 NW, and 10 SW and described as being in areas of organic or swampy soil at the edge of the valley floor. These appeared to have been caused by the presence of metal ions trapped in a highly organic environment.



The third anomaly is similar to the previous two and was centered at 135 NW:26 SW. It is described as being caused by the metal ions which migrated downslope from known mineralized zones and were trapped behind a glacial lateral moraine (Gatchalian et al, 1974).

The fourth anomaly is described as being valid and is centered at 135 NW:17 SW. This anomaly appears to be developed on a fairly steep slope in glacial soil. Overburden is said to be shallow over most of the anomaly.

The induced polarization survey delineated two zones of anomalous chargeability. The largest lies to the southwest of Owl Lake and trends roughly parallel to the elongation of the lake extending from lines 120 N through 170 N and from station 15 SW to 5 W and extends to the ends of the lines. The second anomaly is at the north end of Owl Lake and extends across lines 155 NW to 170 NW at station 10 NE and is open to the north and northwest.

The first anomaly was initially detected in 1973. Subsequent work in 1974 revealed that the anomaly was comet-shaped and had an overall length of 5,000 feet and width of 2,000 feet.

The anomalous core of the n=1 plan is centered at 128 NW:205 SW.

Strong horizontal gradients and negative chargeability readings along the northeast side of the anomalies were interpreted as the result of faulting that had caused truncation of the anomalous zone.

Geophysical data failed to establish any correlation hetween resistivity and chargeability for the first anomaly. Tentative correlations were made between overburden thickness and resistivity values (values obtained near Owl Lake were an order of magnitude lower than values obtained further up slope).

The geology in this area consists of outcrops of granodiorite to quartz diorite with intermingled silicified volcanics which contain traces of pyrite. Intrusive activity was associated with pyritization and alteration of outcrops (Gatchalian et al., 1974).

The second chargeability anomaly is described as being located approximately 3,000 feet north of the midpoint of the first anomaly, open to the north and approximately 200 feet long and 1,000 feet wide.



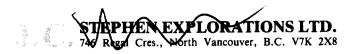
Resistivity results over the second anomaly do not show a marked correlation with chargeability highs and are generally lower than the values recorded over the first anomaly (1000 to 2000 ohm feet).

Outcrops in the area of the second induced polarization anomaly consist of mostly andesitic and lapilli tuff and minor andesitic breccia. Secondary disseminated pyrite was attributed to the presence of large amounts of sulphide in the original volcanic sequences. Observed coincident magnetic anomalies may have been caused by the presence of syngenetic magnetite (Gatchalian et al., 1974).

The ground magnetic survey revealed three anomalous magnetic highs. The first was a discrete high south of Owl Lake centered at approximately 132 N:124 SW. The second appears as a zone of narrow highs stretching across the northeast side of the grid. The third consists of a small discrete anomaly immediately north of the lake. The two discrete anomalies both have minor coincident induced polarization anomalies. Of interest is the correlation of mineralized quartz diorite with the distinct magnetic low in the vicinity of drill holes 74-2 and 74-3.

The lack of outcrop south of the lake rendered geological interpretations difficult. One outcrop at 125 NW:18SW was described as a diorite or granodiorite with low modal percentages of magnetite (up to 5%) located at the east end of one of the magnetic anomalies. It is suggested that these anomalies may be due to the variable percentages of magnetite in the rocks of this area.

A 1986 work program of geological mapping, geochemical sampling and magnetic and VLF-electromagnetic surveys were conducted over the Owl Mountain skarn by George Resource Company Ltd. Additional geochemical sampling was conducted over the C and D Zones. The work on the Owl Mountain skarn was hampered by snowfalls, however, the presence of gold associated with the skarn mineralization was confirmed. The soil geochemistry on the C and D Zones indicated the presence of scattered gold and zinc geochemical anomalies.



REGIONAL GEOLOGY

The Owl Creek area is covered by the Pemberton map sheet of Roddick and Hutchison (1973) and Woodsworth (1973). The geology of the immediate area was described by Cairnes (1924).

The property lies along the eastern margin of the Coast Plutonic Complex (Figure 4). These rocks intruded deformed and metamorphosed volcanic and sedimentary sequences, which may be the stratigraphic equivalents of the Cadwallader Group of Upper Triassic age (Fergusson Group of Cairnes and others).

The less competent volcanic and associated sedimentary units form northwest trending pendants in intrusive complexes and often contain northwest trending faults. Movement and displacement along these fault zones is largely responsible for the dominant northwest linear trends observed in topography.

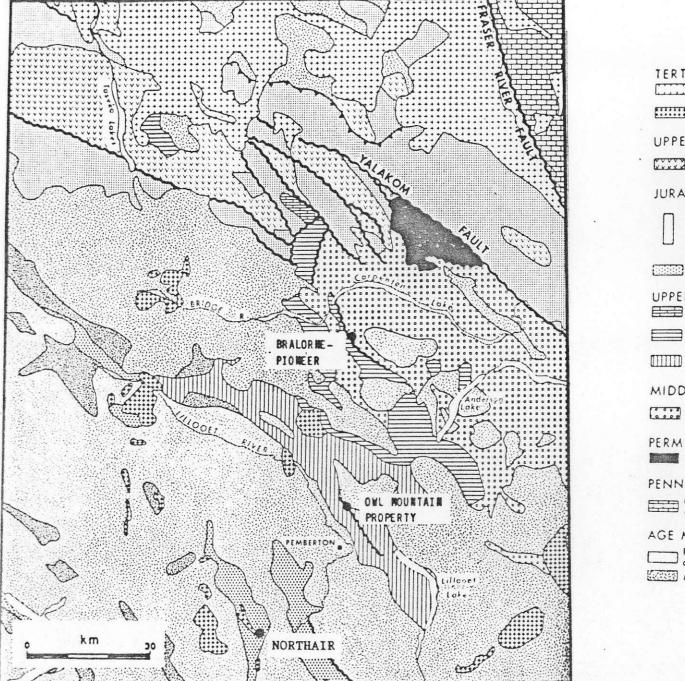
Owl Creek is parallel to regional structural trends and follows a major topographic lineament which strikes southwest and terminates in the northern part of the Upper Lillooet River Valley.

LOCAL GEOLOGY

The Owl Creek area is underlain by andesitic volcanics, pyroclastics and associated sedimentary rocks of the Cadwallader Group (Pioneer Formation) of Upper Triassic age (Figures 4 and 8). The rocks in the area of the property consists predominantly of grained tuffaceous sediments, volcanic breccias, minor rhyolites, dacites and andesites. Limy chlorite schists are present but not common.

Fine grained tuffaceous sediments are generally andesitic in composition and variably chloritized. Some units show distinct compositional layering. Silicification may be caused by the devitrification of glassy tuff or by hydrothermal alteration near contact margins.

Lapilli tuffs contain both lithic and crystal fragments. Lithic fragments contain low percentage of subhedral quartz eyes. The crystal fraction consists of small retrograde porphyroblasts of plagioclase feldspar.



LEGENI

	12
TERTIARY Basalt, andesite, docite GARIBALDI GROUP and related rocks and basalt, docite	746 Regal
UPPER CRETACEOUS REVERSE KINGS VALE GROUP andessie, basali, arka EVERY conglomerate, greywacke	res, Nort
JURASSIC and/or LOWER CRETACEOU. TAYLOR CREEK GROUP andesite, bosalt, sl JACKASS MOUNTAIN and RELAY MOUN GROUPS greywacke, arkase, conglomerate, Undivided, andesite, basalt, shale, greywack Metamorphosed sediments and volcanics	angouver
UPPER TRIASSIC TYAUGHTON GROUP limestone CADWALLADER GROUP argillite, greenst limestone, diorite Metamorphosed sediments and volcanics, in equivalent to Cadwallader Group	
MIDDLE TRIASSIC and (?) OLDER BRIDGE RIVER GROUP chert, orgillite, base phyllite	lı,
PERMIAN and TRIASSIC	
PENNSYLVANIAN and TRIASSIC CACHE CREEK and PAVILION GROUPS: greenstone, argillite, basalt, limestone, chert	
AGE MOSTLY UNKNOWN Plutonic rocks, mainly granodiarite and quar diarite	_
Migmatitic complexes	Telephone (
Fault	604)
Thrust foult	988-14

Figure 4. Regional Geology of Pemberton-Taseko Lakes Area (after Woodsworth, 1977)



Volcanic breccias are composed of angular to subrounded fragments of andesitic porphyry with infrequent areas of lighter fragmental siliceous tuff. Andesitic porphyry appears as a single unit or sill within the volcanic breccia and may contain moderate propylitic alteration and minor sulphide mineralization.

Three separate intrusive events in the Owl Creek area have been distinguished as follows:

- 1. The largest and presumably the youngest intrusion in the area is the Spetch Creek Pluton, a fine to medium grained unaltered biotite or hornblende granodiorite. Roof pendants and smaller xenoliths are found along contact areas. Foliations and lineations appear to be developed in contact areas along with numerous small dykes, minor pegmatitic and aplitic bodies.
- 2. A series of small irregular elongated stocks or dykes also occur in the area. They are fine to medium grained and are locally porphyritic. Copper and molybdenum mineralization and associated alteration (fracture controlled and disseminated pyrite, silicification, quartz veining, epidotization, chloritization) occur locally in and around these plutons.
- 3. In addition there are two small medium grained diorite plugs that exhibit weak chloritic alteration and contain minor disseminated sulphides on either side of the valley south of Owl Lake (de Quadros, 1982).

STRUCTURE

The most prominent structural feature is a northwesterly-trending fault which lies in the valley of the Lillooet River. A parallel lineament or fault lies in the valley of Owl Creek.

The localized structure of the Owl Creek area consists of several strong linear trends which suggest conjugate sets of faults and shears.

The intensive shearing observed in outcrop along Owl Creek suggests that a major fault passes up the centre of the Owl Creek valley. This fault appears to be offset by several distinct conjugate faults that trend



northeast and are defined as distinct photolinears that cross the top of Owl Mountain.

Conjugate intersections of faults may in part control the emplacement of diorite stocks and accompanying mineralization.

MINERALIZATION AND DESCRIPTION OF SHOWINGS

The following showing descriptions are based in part on information found in assessment reports (Leckie, 1934; Fawley, 1964; Manyoso et al., 1970; Noyler et al., 1973; de Quadros, 1982) and supplemented field observations made during the 1986 and 1988 surveys.

Owl Mountain's Skarn (Figure 6)

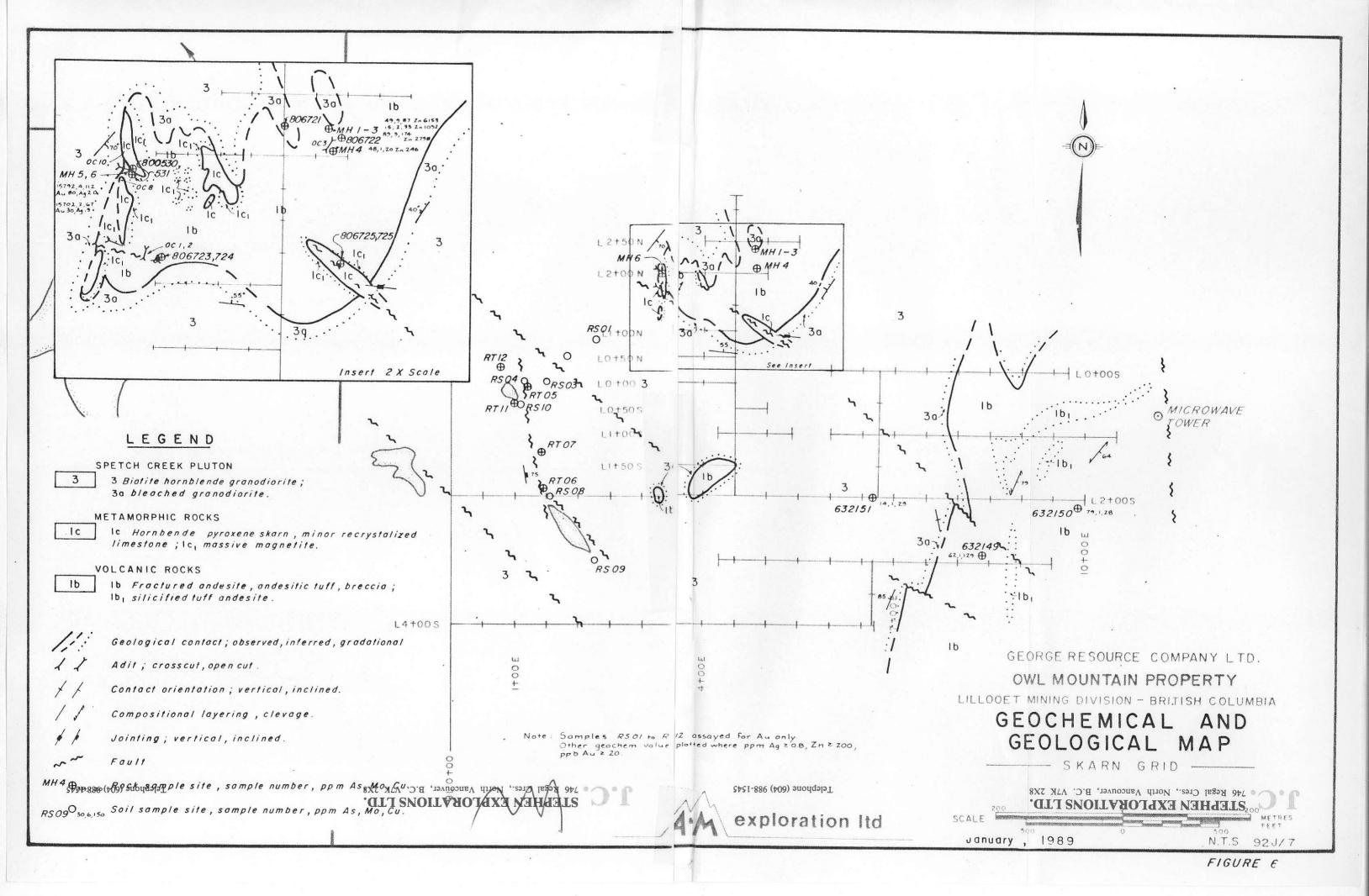
The main showings are centered on the highest peak and north slope of Owl Mountain. These showings have been partially developed by two short adits and several open cuts and trenches situated near a British Columbia Department of Surveys marker.

Skarns that host these various forms of mineralization appear to be derived from a heterogeneous mixture of andesite, andesitic tuff, and volcanic breccia with associated metasediments which occur in a crescent-shaped pendant suspended in granodiorite of the Spetch Creek Pluton.

These rocks have been silicified and converted to skarn along granodiorite contacts. The granodiorite has been bleached along contact.

Mineralization in the area of the skarn grid is concentrated in large irregular skarns and fractured andesites proximal to contact margins.

Skarn mineralization is restricted to the highest peak and north slope of the mountain and consists of massive magnetite (concentrated in veins up to several meters), sphalerite, pyrite, and arsenopyrite. Limonite, malachite, and minor amounts of annabergite occur as thin coatings on fracture surfaces. Mineralization in fractured andesites consists of disseminations and blebs of magnetite, pyrite and arsenopyrite and is proximal to contact areas.





Fawley (1960) reports the presence of six or more discrete deposits of magnetite of which only two were examined. The two deposits shown on Figure 3 are 30 and 45 metres long with an average width of 6 metres. Fawley estimated that "if both high and low grade magnetite were mined and concentrated there is a possibility of obtaining several hundred thousand and perhaps a few million tons of magnetite concentrate containing over 60% iron".

Gold values in the skarn are generally in the range trace to 0.07 ounces per ton, but values as high as 5.3 ounces per ton have been reported (See Appendix I). Of particular interest are gold values of 2.19 ounces per ton and 2210 parts per billion (0.06 ounces per ton) obtained by de Quadras (1980) from andesite containing disseminated pyrite and arsenopyrite.

Copper Queen Showing (Owl - A Zone)

This zone is in lower Owl Creek and lies immediately to the south of the Owl and Owl 1 claim. The main showing is at the site of an old adit where copper mineralization occurs as in fillings of malachite and azurite with traces of chalcopyrite and molybdenite in irregular joints and fractures in sheared diorite. As described above, copper values reported from drilling and underground sampling of 0.2 to 0.4%. A plan of the adit is presented in Figure 5.

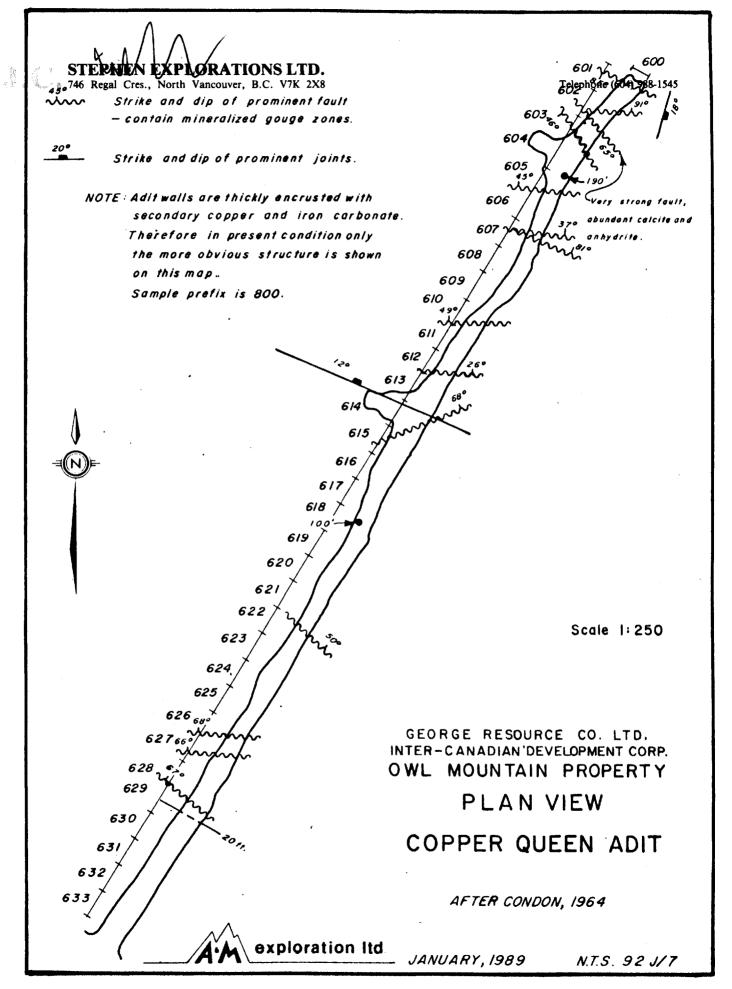
Owl B Zone

The B zone is in the bed of Owl Creek. Other than a few samples taken by the Mining Corporation of Canada Limited, which indicates the presence of copper in diorite, little work has been carried out.

Owl C Zone

The C zone is situated near the southern tip of Little Owl Lake. Faulting, shearing and proximity to a diorite contact appear to be the dominant controls of mineralization. Two types of mineralization were observed.

Drilling by Pine Lake was undertaken on a soil geochemical anomaly





measuring 760 metres by 340 metres. As described above, the best intercept obtained was 100 metres grading 0.4% copper and 0.029% MoS₂. Bacon (1972) mentioned that not all core had been split. Mineralization according to Bacon is in an intensely silicified, pyritized, epidotized and chloritized diorite cut by numerous quartz stringers. Gypsum and calcite are also present in veinlets and patches. Chalcopyrite occurs with pyrite and separately in streaks, in patches and also in quartz veins. Molybdenite occurs separately in fractures and magnetite is sporadically distributed in irregular patches not generally associated with sulphides. Seraphim (1971) concluded that the zone "could continue, or other mineralized bodies could exist to the north, as there is no outcrop in this direction.

Owl Lake Zone

According to Rayner and Witherly (1974), two types of mineralization occur in the vicinity of Owl Lake: 1) regional pyrite (less than 1%) and hydrothermal sulphides which are confined to the Younger Quartz diorite; and 2) pyrite occurs as disseminations, on fractures and to a lesser extent in quartz veinlets. Chalcopyrite occurs mainly on fractures and in quartz veinlets. Molybdenite occurs entirely in quartz veinlets. No assay results were reported. Accompanying hydrothermal alteration includes chloritization, silicification and sericitization.

1988-89 WORK PROGRAM

A multiple phase work program on the Owl Mountain property was conducted between October 27th 1988, and January 20th 1989, by D.J. Brownlee, P. Geol., D. Allen, P. Eng., E. Sykes, geophysicist; and D. Morneau, assistant of A & M Exploration Ltd.; and Coast Leisure Living Co. Ltd., subcontractor.

A total of 7 lithogeochemical samples were collected from the Owl Mountain skarn showing and 19 lithogeochemical samples along Owl Creek from the area of the "C" Zone to Birkenhead highway, including 2 samples from the ridge to the south of Owl Lake.

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The Owl Creek adit was opened and drained, and thirty-four chanel samples collected. The geology of the adit could not be mapped because walls were heavily coated with secondary copper and iron carbonates and oxides.

A total of 9.36 line kilometres of grid was established by compass and hip chain with stations at 25 metre intervals. A magnetometer survey utilizing a sintrex MP-2 proton magnetometer was conducted over 6.8 line kilometres of grid. VLF-electromagnetic survey utilizing a Sabre Model 27 receiver was conducted over 3.5 line kilometres of grid.

LITHOGEOCHEMICAL SURVEYS

Method

A total of 60 lithogeochemical samples were collected and sent to Rossbacher Laboratory Ltd. in Burnaby, B.C. for analyses by inductively coupled plasma spectrometry (1.C.P.) for 31 elements. Selected samples were analysed for gold and copper by standard assay techniques.

ANALYTICAL RESULTS

Skarn Zone

A total of 7 lithogeochemical samples were collected from the area of the Owl Mountain skarn, in order to confirm the results published by Leckie (1934), Fawley (1961) and de Quadros (1980; Appendix I). The 1986 sampling by J. Weick of A & M Exploration (Appendix I) returned a maximum value of 80 parts per billion gold.

The lithogeochemical sampling confirmed the presence of anomalous gold values associated with skarn (to 2620 parts per billion gold; Table I, Figure 6). The elevated gold values are associated with the pyrite, arsenopyrite, magnetite \pm arsenopyrite skarn mineralization (Sample #800531 - 2620 ppb gold; 806724 - 370 ppb gold; 800726 - 260 gold). Samples 806723 and 806724 were collected from weakly rusted fine grained andesite and sulphide bearing chips, \pm magnetite in skarn and altered andesite similar to de Quadras samples, OC3 and OC6 (0.065 and 2.19 ounces

Sample No.	Type	Description	Au ppb	Cu ppm
Owl Mountain	Skarn			
800530	Grab '	Crystalline calcite/epidote & pyrite cubes.	220	2000
800531	Grab	Pyrrhotite, pyrite, magnetite; dark green matrix.	2620	710000
806722	Grab	Magnetite-rich skarn.	60	
806723	Grab	Weakly rusted fine-grained andesite no visible sulphides.	10	
806724	Grab	Sulphide-bearing chips(?) + magnetite in altered volcanic.	370	
806725	Chip	Garnet skarn/sparse pyrite.	20	
806726	Grab	Sulphide-rich pod near contact.	260	
Owl Valley				
800532	Grab	Chloritically altered diorite 10% crystalline pyrite & disseminated fractured coating.	40	316
800533	Grab	Well fractured andesite, chlorite, minor argillic altered calcite 15% pyrite + arsenopyrite & chalcopyrite	5	52
800534	Grab	Talcose qtz sericite schist/xtaline & dissem. pyrite.	10	52
800535	Grab	Sheared diorite/pyrite, chalcopyrite malachite, serpentinite on fracture surfaces.	, 10	5200
800536	Grab	Calcite, silica and chlorite altered diorite/malachite on fracture surface.	20	136
800537	Grab	Light greenish coloured silica flooded amorphous diorite/pyrite chalcopyrite fracture filling.	20	3960

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Table I 1988-1989 SAMPLE DESCRIPTIONS (Cont'd.)

Sample No.	Туре	Description	Au ppb	Cu ppm
Owl Valley	(Cont'd.)		
800538	Grab	Diorite/extensive malachite & azurite fracture filling.	140	2620
800539	Grab	Diorite/extensive malachite & azurite fracture filling.	40	710000
806727	Grab	Diorite, ridge south of Owl Lake.	5	
806728	Grab	Diorite, ridge south of Owl Lake.	5	
Lower Owl V	alley			
900000	Grab	Dark green/altered diorite, weakly feldspathized and argillized.	5	51
900001	Grab	Massive greenstone.	5	21
900002	Grab	Diorite/minor fracturing & epidote altered.	5	43
900003	Grab	Greenish chert in greenstone.	5	29
900004	Grab	Calcareous fragmental greenstone.	5	29
900005	Grab	Chloritic greenstone/calcite.	10	261
900006	Grab	Chloritic greenstone/calcite.	5	19
900007	Grab	Andesite/calcite & qtz fracture filling.	5	31
900008	Grab	Medium-green sugary textured greenstone, rusty.	20	14
900009	Grab	Light to medium-green fragmental tuff/argillized & chlorite altered.	5	16



per ton gold). Samples 806723 and 806724 returned 10 and 370 parts per billion gold indicating potential for the weakly to moderately altered volcanics to host gold mineralization.

Owl Creek

A total of 19 lithogeochemical samples were collected along Owl Creek to test for potential gold mineralization associated with the copper mineralized intrusives and the volcanic and sedimentary host rocks.

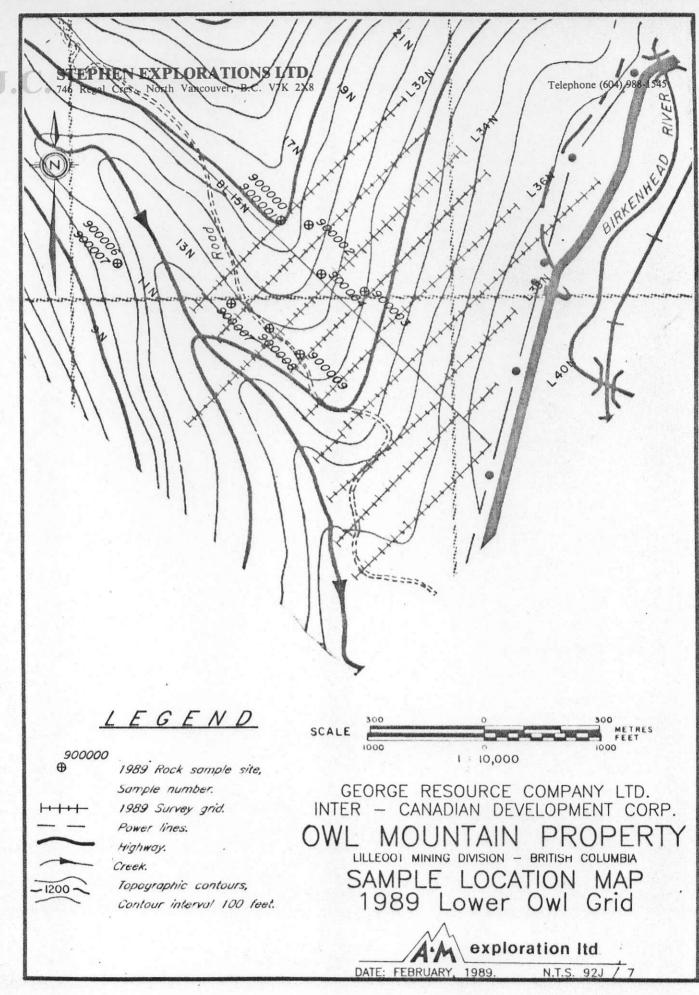
The two samples collected from above Owl Lake on the south ridge and the 10 samples collected from the new grid all returned 5 parts per billion gold (Figures 7a and 8). The samples collected from the "C" zone each returned 40 and 5 parts per billion gold with the weakly altered andesite and sericite schist to the south of the "C" zone, each returned 10 parts per billion gold (Figure 8). The four samples collected in the vicinity of the Copper Queen adit returned from 20 to 140 parts per billion gold, with the elevated gold being associated with the copper mineralization (Figure 8).

Copper Queen Adit (Figure 5)

The entrance to the Copper Queen adit was partially opened by hand and then the majority of the water in the adit was pumped out. The entire length of the adit was sampled at two metre intervals, with a total of 34 samples being collected.

A 20 metre section of the first third of the adit was encrusted with up to 3-4 centimetres of secondary copper and iron carbonates and sulfates, mainly azurite, malachite, limonite + siderite (from Sample #800617 to 800626). Even after washing of the walls, this encrustation may have resulted in elevated copper value for some samples (e.g. 800620 - 0.54% copper).

The copper grades in the adit range from 0.06% to 0.54% copper with a weighted average of 0.246% copper over 67 metres (219.8 feet). The gold values range from 0.001 to 0.005 ounces per ton gold, in a roughly inverse relationship to the copper values.



GEOPHYSICAL RESULTS

Magnetometer Survey

A total of 6.8 kilometres of magnetic surveying was carried out on the Low Owl 1 and Darcy claims. A Scintrex MP-2 proton magnetometer was used for the survey. The purpose of the survey was to aid in geologic mapping by defining contacts between rock units and to detect intrusive rocks which might have effected a control on mineralization. Data was corrected for diurnal variation using the loop method and is presented in contour form on Figure 7b.

The magnetic field over the Low Owl 1 and Darcy claims reveals an increase in the field strength (300-400 gammas) along a 50 to 100 metre band which lies near the baseline and is parallel to the baseline. This is due to a dioritic dyke which has been observed in outcrop at station 15+00N on line 35+00E

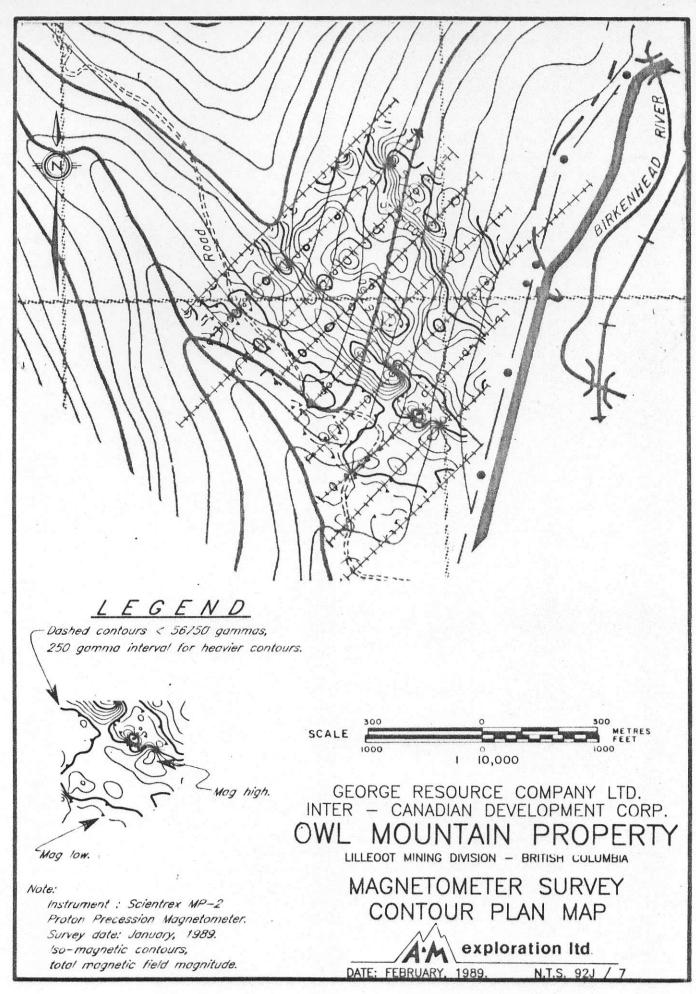
A regional increase (200-400 gammas) in the magnetic field is noted in the norteastern portion of the grid. This increase is due to the presence of granodiorite which were observed in outcrop at several location in the northeastern portion of the grid.

VLF-Electromagnetic Survey

A total of 3.5 kilometres of VLF-electromagnetic surveys were conducted on the Low Owl 1 and Darcy claims.

The VLF-electromagnetic method utilizes an electromagnetic field transmitted from radio stations in the 12 to 24 kilohertz range (long range submarine communication signals). The signals are propagated with the magnetic component of the field being horizontal in undisturbed areas.

Conductivity contrasts in the earth's crust (such as the presence of massive sulphides or fault structures) produce a local vertical component to the electromagnetic field and changes in field strength or amplitude. The conductive zones can be located, and to a degree, evaluated by measuring the various parameters of this electromagnetic field. A Sabre Model 27 VLF-electromagnetic receiver, tuned to either Cutler, Maine or Annapolis, Maryland was used for observations. This instrument is



manufactured by Sabre Electronic Instruments. It measures the dip angle of the resultant field (in degrees) and the normalized horizontal component of the field strength (in relative percent).

Data is filtered by a technique described by Fraser (1969 - Geophysics, Vol. 34, No. 6, pp. 958-967). The data is presented in profile form on Figure 7. The conductive zones are interpreted to underlie the point on a survey line where there is a distinct change in dip angle associated with an increase in field strength. Topography will effect the dip angle measurement. The Fraser filtered values, which are derived from the dip angle measurement, reduces the topographic effect and will show high values over conductors.

Conductors in the Low Owl 1 and Darcy claims are few. A relatively strong conductor is observed approximately 75 metres southwest of the baseline paralleling Owl Creek in the same vicinity as a magnetic high. This is due to the presence of a dioritic dyke seen in outcrop at station 15+00N on line 35+00E. A weaker conductor lies 100 to 200 metres northeast of Owl Creek. This conductor parallels a major fault in the area and is likely a shear zone associated with the major fault.

Airborne Survey

In December 1988, Aerodat Limited was contracted to perform magnetic, VLF-electromagnetic (VLF-EM) airborne surveys. The survey area is approximately centred at latitude 50 degrees 24 minutes, longitude 122 degrees 48 minutes. An area of 2.8 kilometres by 10.2 kilometres was covered by the survey. A total of 250 line kilometres at a nominal line spacing of 100 metres was flown for the survey. Flight lines were oriented at a bearing of N50E, approximately perpendicular to the major geological structures in the area.

The electromagnetic system used for the survey was an Aerodat 4-frequency system. The VLF-EM receiver was tuned to NLK, Jim Creek, Washington (24.8 kilohertz) and NAA, Cutler, Maine (24.0 kilohertz). Only the results from NAA, Cutler, Maine were used to compile a contour map of the VLF-EM signals.

The magnetometer used was a Scintrex Model VIW-2321 H8 Cesium, optically pumped magnetometer sensor. Diurnal variation was corrected for by using an IFG-2 proton procession magnetometer as a base station.

The airborne survey revealed five main areas of interest. These areas are indicated on Figure 9.

Anomaly 1 lies along the northeast edge of the survey grid and strongest electomagnetic response found. The incorporates the electromagnetic response which is the expected responses within a magnetic high. There is a magnetic lineation, which is possibly a fault or shear zone, that can be followed into this area. As with most magnetic lineations, in the survey area, this lineation trends east-west. magnetic high in this area is probably a response to the presence of a dioritic body in the area. The strong electromagnetic response is located at the contact of the diorite with conglomerates and volcanic rocks and could reflect underlying skarn type mineralization.

Also shown on the complitation map is Anomaly 2 derived from an induced polarization survey performed by Utah Mines Limited in November, 1974. The survey indicated two anomolous chargeability highs. Both chargeability highs were located on diorite/volcanic contacts. The airborne survey shows a weak conductive zone is also in this area. The chargeability highs would indicate a high percentage of sulphides and the presence of a conductivity high supports this, possibly indicating skarn type mineralization.

Anomaly 3 is located near Little Owl Lake. In the north-western portion of this zone there is a weak electromagnetic conductor coincident with a magnetic low. The low magnetic field strength combined with the way the conductor follows Owl Creek indicates the anomaly is a conductive body lying along a fault, however the presence of deep, conductive overburden cannot be ruled out. This zone also contains a magnetic lineation and two VLF anomalies. All these anomalous features trend east-west indicating they are related to a common fault system.

Anomaly 4 in the north-west corner of the survey grid shows a series of negative EM anomalies which also could reflect the presence of abundant magnetite. These EM anomalies lie either within or on the edge of a

magnetic high. There is no geologic mapping in this area, however, high magnetics often signify diorite elsewhere on the property. If this is the case then the EM anomalies would appear to be located along the contact of a dioritic body. These factors could indicate skarn type mineralization.

Anomaly 5 lies along the south-west edge of the survey area and shows EM anomalies and magnetics which are similar to those in anomaly 4. In addition to the EM and magnetic high there is also a magnetic lineation and a strong VLF-EM anomaly in this zone. The magnetic lineation trends approximately S65E. The presence of these features, with their large differences in orientation indicates the area has complex geology or is badly faulted and sheared.

Over the south shore of Owl Lake there is a weak EM conductor (Anomaly 6) which is coincident with a very weak VLF-EM anomaly. These anomalies lie along the edge of a magnetic low. This indicates either deep conductive overburden (lake sediments) or a fault structure.

DISCUSSION OF RESULTS

The lithogeochemical sampling of the Owl Mountain skarn confirmed the presence of gold mineralization (800531-2620 parts per billion gold) and the potential of the moderately altered volcanics for hosting gold mineralization (De Quadros - 2210 parts per billion gold; 806724-370 parts per billion gold). However the previous reported high grades (up to 5.3 ounces per ton) could not be confirmed.

The lithogeochemical sampling along Owl Creek and within the Owl Creek adit indicates that there is potential enriched gold mineralization related to the diorite intrusions and associated copper-molybdenum mineralization (800548-140 parts per billion gold; 800602-0.005 ounces per ton gold).

The sampling of the Owl Creek adit confirmed that the copper mineralization is of consistent grade across significant widths (0.246% copper over 67 metres). Due to the encrustation of the adit walls with secondary copper carbonates and iron oxides, it was not possible to determine anything more than the obvious alteration features and

structures hosting the copper mineralization.

The magnetic survey outlined a 50 to 100 metre wide zone subparallel to the baseline which most likely reflects a dioritic dyke. The contact with the granodiorites of the Coast Plutonic Complex is shown in the northeastern portion of the grid by a 200-400 gamma increase in the magnetic field.

The VLF-electromagnetic survey outlined a relative strong conductor subparallel to the baseline and along the southwest margin of the magnetic high. This conductor is interpreted as being related to the west northwest trending fault zone and that the dioritic dyke has possibly intruded along this zone of weakness. A weaker conductor lying to the southwest of the strong conductor is likely a shear associated with this fault zone.

EXPLORATION POTENTIAL

The Owl Creek property is considered to have good exploration potential for at least three types of mineral deposits.

- 1) Copper-molybdenum porphyry deposits with possible peripheral precious metal mineralization. The known copper-molybdenum mineralization and associated alteration is widespread, however, no attempt has been made to determine the full extent of this mineralization or whether or not a precious metal association exists.
- 2). Gold bearing skarn deposits. The known skarns on Owl Mountain have significant gold values. The presence of limy phyllites in the volcano-sedimentary sequence at Owl Creek has been reported. Such rocks are potentially favourable host rocks for skarn deposits.
- 3) Massive sulphide deposits of the Britannia type. The presence at Owl Creek of submarine volcanic rocks (tuff and volcanic breccia) with widespread disseminated pyrite and presence of cherts and indicate an environment favourable for the presence of massive sulphide deposits.

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APPENDIX 1

Previous Geochemical Assay Result Assays by Leckie (1934) Assays by Fawley, 1961 Assays by de Quadros (1980)

Assays by Leckie (1934)

Description	<u>Au</u>	Ag
To one side of open cut close to wall.	0.03	
Across 3 feet 6 inches in face of cut.	0.03	
Across 3 feet 6 inches to right of above.	0.12	
Across 3 feet 6 inches to right of above	0.14	
Magnetite from surface showing.	0.05	
Heavy arsenical ore.	0.06	
	0.16	1.40
	0.40	0.80
	0.02	0.10
	0.45	
	5.30	
	0.22	
	0.44	0.28

Assays by Fawley, 1961

Sample No.	Au oz/ton	Iron %	Remarks
001/00	0.02		12 ft. channel sample from open cut.
002/C0	0.02		Magnetite with arsenopyrite streaks.
003/C0	0.02		Limonite.
004/CO	Tr.		Grey siliceous felsite stained brown along fractures.
005/CO	Tr.	55.6	Chip sample across 20 feet of magnetite.
006/CO	0.04		Chip sample from old waste dump of specimens high in sulphide or with copper staining.
007/C0	Tr.	61.86	Massive magnetite specimens.
008/C0	0.02		Specimens with pyrite and arseno- pyrite.
009/C0	0.03		Channel sample across adit face.
0010/C0	0.07		Specimens of dark volcanic rock with arsenopyrite and copper staining.
0011/C0	0.07		Specimen with 10% pyrite cubes.
0012/CO	Tr.		Gossan.
0013/C0	0.02		Porous oxidized green volcanic rock.
0014/CO	0.02		Chip sample of rusty rock with 10-15% arsenopyrite and pyrite.
0015/CO .		63.10	Specimen of massive magnetite.

Assays by de Quadros (1980)

Sample Description	Geo	chemical) zysza	1980)		Assays	(1982)	
•	Cu ppe	Ag ppe	Au ppe	Co ppe	Cux	Pbx	Zn¥	Cox
OC-1 Chips-skarn, cliff deposit								
cobalt stained.	4100	5.0	180	8.5	0.350	0.015	7.400	0.010
OC-2 Chips-skarn/limestone.			•					
cliff deposit	1980	3.0	80	115	0.180	0.010	13.600	0.012
OC-3 Chips-pyrite and arsenopyrite								
in volcanic rocks, cliff adit	1470	7.5	2210	250	0.140	0.010	0.090	0.022
OC-4 Chips-pyrite arsenopyrite in								
skarn, monument deposit	142	5.0	400	112	0.014	0.020	19.600	0.012
OC-5 Chips-mineralized deposit at								
survey monument	10600	9.8	310	97	0.940	0.025	0.570	0.014
OC-6 Chips-cobalt-stained andesite								
with pyrite and arsenopyrite,	44	5.1	-50000	1000	n.1.	, 0.2-	0.1.	0.3.
survey monument.	**	J. 1	-30000	1000	*****			
OC-7 Chips-large open cut at cliff	77		100	116		0.015	0.034	0.014
deposit-skarn	73	1.1	190	110	0.006	0.015	0.034	0.014
Sample	4	oz/ton	-	Ag oz/	ton			
FIRE ASSAYS .	Αυ	25/ 100		ny 011	(VIII			

	Sample	Au oz/ton	Ag oz/ton
FIRE ASSAYS	•		
	oc-s	0.007	0.30
	0C-6	2.19	0.22
	OC-7	0.006	0.01

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O : A&M EXPLORATION LTD.

#714-850 W. HASTINGS ST.

VANCOUVER. B.C.

ROJECT :

YPE OF ANALYSIS : GEOCHEMICAL OWL 488

CERTIFICATE # : 89017.g

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ROSSBACHER LABORATORY LTD.

CERTIFICATE OF ANALYSIS

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CERTIFICATE # : 89017.1 INVOICE # : 90187

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CERTIFIED BY

Monsbord

DRILL HOLE SUMMARY

OWL "C" ZONE

	Depth	Intercept	Length		
Drill Hole	Metres	Metres	Metres	<u>%Cu</u>	%MoS ₂
C-1	338.9	27.4- 42.7	15.3	0.15	0.004
		97.5-198.1	100.6	0.40	0.029
C-2	273.1	30.5- 43.9	13.4	0.21	0.008
		45.7- 67.0	21.3	0.40	0.002
•		67.0- 83.8	16.8	0.24	0.002
		109.7-125.0	15.3	0.35	0.004
	•	170.6-210.3	39.7	0.54	0.031
C-3	283.1	85.3- 88.4	3.0	0.21	0.006
	•	97.5-100.6	3.0	0.20	0.004
		109.7-115.8	6.1	0.20	0.001
		152.4-158.5	6.1	0.21	0.006
		246.9-249.9	3.0	0.21	0.007
	•	259.1-274.3	15.2	0.25	0.003
C-4	297.5	73.1- 82.3	9.2	0.23	0.002
		128.0-140.2	12.2	0.20	0.009
•		246.9-254.5	7.6	0.22	0.006
C-5	224.0	Nothing over 0	.2% cu		
C-6	214.9	15.2- 30.5	15.3	0.27	0.004
		88.4-149.4	61.0	0.23	0.007
		164.6-167.6	3.0	0.22	0.001
		170.7-179.8	9.1	0.20	0.001
C-7	243.8	89.9- 93.0	3.1	0.07	0.055
		102.1-105.1	3.0	0.14	0.042
		143.3-154.2	10.9	0.28	0.014
		167.6-196.6	29.0	0.22	0.015
		210.3-213.4	3.1	0.25	0.010
C-8	202.3	16.8- 30.5	13.7	0.29	0.012
		39.6- 57.9	18.3	0.26	0.007
		67.1- 76.2	9.1	0.22	0.007
		176.9-192.0	15.2	0.21	0.018
C-9	136.8	103.6-106.7	3.1	0.60	0.014
C-10	258.1	134.1-170.7	36.6	0.32	0.066

GEOLOGICAL TARGETS - OWL CREEK PROPERTY

Zone A

Drill hole

183 metres - 0.2% copper

Adit

66 metres - 0.33% copper incl. - 29 metres - 0.41% copper

Zone B

Low grade copper reported but not investigated, deep glacial till to northeast

Zone C

Potentially significant copper grades

Zone D

425 metres by 60-90 metres copper anomaly in soil. 19 shallow percussion holes indicated low copper grades.

Zone E (Owl Lake)

Northeast trending zone 1500~metres by 300~metres copper and molybdenum soil geochemical anomalies.

Owl Mountain Skarn

Significant gold grades reported by not confirmed.

GEOPHYSICAL TARGETS - OWL CREEK PROPERTY

- 1. Strong negative electromagnetic response within a prominent magnetic high confirming presence of abundant magnetite. Anomaly lies along the edge of an elongate diorite intrusion suggesting the presence of the skarn-type mineralization.
- 2. Strong induced polarization anomaly associated with copper and molybdenum soil geochemical anomalies. This large area of interest has only been tested by one drill hole (results of which are not known). A good target for porphyry-type copper-molybdenum mineralization.
- 3. Weak electromagnetic anomaly in Owl Creek Valley with an associated magnetic low could possibly reflect known porphyry-type copper mineralization in C and D zones. The D zone and a considerable area to the northwest along Owl Creek are potentially favouable.
- 4 & 5. A series of negative electromagnetic anomalies along the margins of magnetic highs indicate the presence of locally abundant magnetite and possibly attendent skarn-type mineralization.
- 6. A weak electromagnetic conductor lies along the south shore of Owl Lake. The anomaly could be conductive overburden, or mineralization along fault structure.