GEOLOGICAL AND GEOCHEMCIAL REPORT

ON THE

BEALE GROUP

(BEALE #1-4)

LIARD MINING DIVISION, BRITISH COLUMBIA

27 kms southeast of McDame, B.C.
Latitude 58°58'N, Longitude 129°00'W

N.T.S. 104-I/14E, 15W

FOR

REGIONAL RESOURCES LTD.
720 - 800 W. Pender Street
Vancouver, B.C. V6C 2V6

BY

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CLAIMS	RECORD NUMBERS	EXPIRY DATES
Beale #1-4	751 - 754 inclusive	April 19, 1980

WORK PERIOD: June 28 to July 8, 1979

January, 1980

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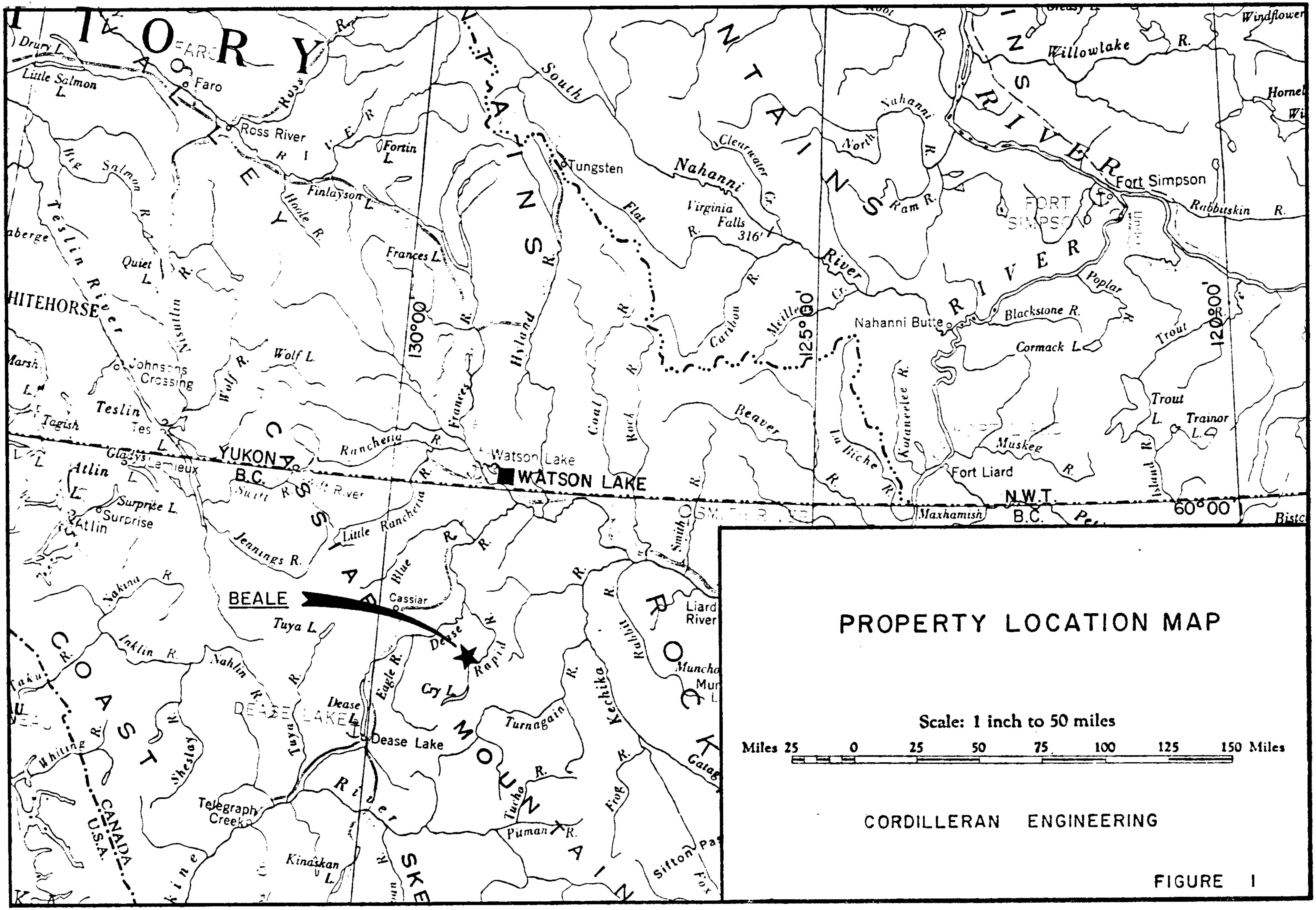
INTRODUCTION

The Beale claims were staked in April, 1979 to cover an area of previously located high gold geochemistry. The claim area contains strong topographic lineaments with associated silicification and pyritization which are regarded as potential targets for gold and silver.

The property is accessible by helicopter from McDame, B.C., 27 km to the northwest, or from Cassiar, B.C., 59 km to the northwest (Figure 1). A winter road runs from McDame up the Fourmile River, within 13 km of the Beale property.

During the period June 28 to July 8, 1979, forty mandays of work were conducted to systematically sample and prospect the property, and to map the geology at a scale of 1 to 5000. (22.3 km of grid established; 675 hectors of geological mapping; 565 soil samples; 35 rock chip samples).

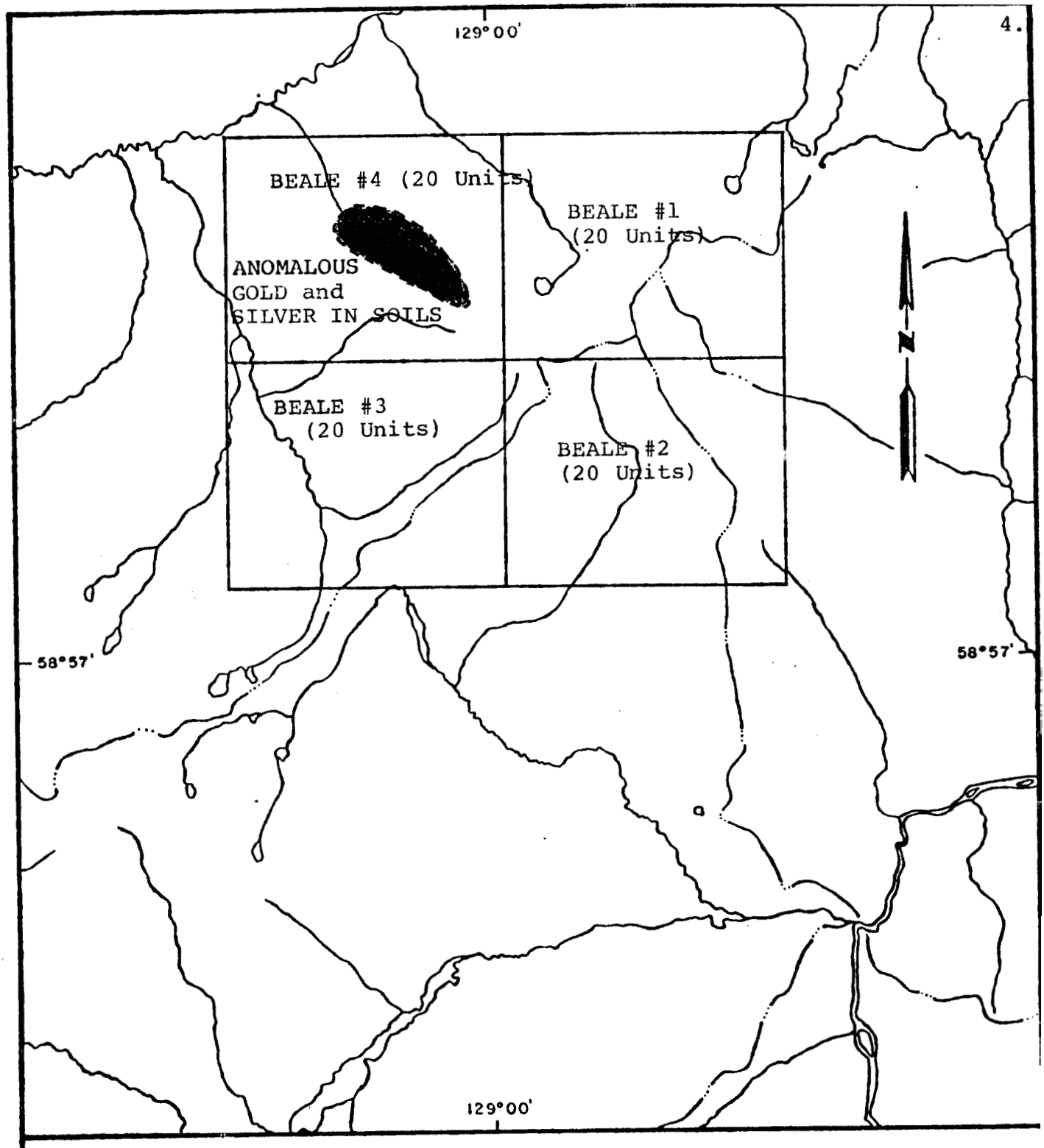

PROPERTY LOCATION MAP
Scale: 1 inch to 50 miles
Miles 25 0 25 50 75 100 125 150 Miles
CORDILLERAN ENGINEERING
FIGURE 1
BEALE
WATSON LAKE
YUKON
B.C.
N.W.T.
Dease Lake
Watson Lake
Fort Simpson
Fort Liard
Nahanni Butte
Tungsten
Ross River
Faro
Cassiar
Telegraph Creek

C L A I M S

(FIGURE 2)

The Beale group consists of four claims of twenty units each, held in trust by J. W. Stollery for Regional Resources Ltd. They are located in the Liard Mining Division (NTS 104-I, 14E/15W) at latitude 58°58'N and longitude 129°00'W. The claims, record numbers, and expiry dates are listed below.

Claim Name	Record No.	Expiry Date
Beale 1	751	April 19, 1980
Beale 2	752	April 19, 1980
Beale 3	753	April 19, 1980
Beale 4	754	April 19, 1980



CLAIM MAP

BEALE GROUP

Liard Mining Division, British Columbia
N.T.S. 104 I-14E, 15W

SCALE: 1:50,000

By

CORDILLERAN ENGINEERING

JANUARY, 1980

FIGURE 2

HISTORY

The ground covered by the Beale claims was previously held by the Nizi #1-60 mineral claims which were staked in 1969 to protect massive sphalerite and galena mineralization in veins filling shear zones. Assessment report number 2789 by C. E. Zimmerman, 1970, describes geology and mineral occurrences and gives copper, lead and zinc results for 84 soil samples. Assays of high grade vein mineralization from two different locations on the property produced the following results: 1) 0.02 oz/ton Au, 40.5 oz/ton Ag, 0.24% Pb, 44.70% Zn and 0.36% Cd; 2) 0.07 oz/ton Au, 35.1 oz/ton Ag, 3.92% Pb, 36.46% Zn, and 0.70% Cu. Vein thicknesses were not reported.

In 1972 the Nizi property was optioned by Sumac Mines Limited, and assessment report number 4096 by T. Rodgers describes the work done. In addition to geological mapping, soil samples were taken at 400 foot intervals along lines

spaced at approximately 800 feet, and local stream sediment and rock samples were collected. All samples were analysed for Cu, Ni, Zn, Mo, Ag and Au. Rock chips also included Pb analysis. West of "Zinc Lake" the soil sampling highlighted anomalous gold with coincident silver and zinc on two grid lines approximately 2500 feet apart over lengths of 800 feet. A northeast trending irregular zinc anomaly southeast of the lake measures 2500 feet by 1000 feet. Rock samples from the same area are anomalous in zinc, and four samples also contain anomalous gold, up to 0.10 oz/ton.

No further work was reported and the Nizi claims were allowed to expire in 1973.

GEOLOGY

The G.S.C. geological map (Cry Lake Map Sheet, 1:125,000, O.F. 610, 1978) shows the Beale property to be underlain by Upper Devonian to Permian metasedimentary rocks and tholeiitic basalt, intruded by Mid-Cretaceous granodiorite and quartz monzonite. The property is 2 km northeast of an extensive granodiorite pluton which may be a satellite of the Cassiar batholith 10 km to the south.

Topographically the property is very rugged, with steep (45°+) north facing cirque walls and gentler south slopes converging in sharp ridges. Elevations range from 4000 feet to 6500 feet above sea level. Jack pine, spruce, and juniper dot the slopes to about 4800 feet elevation. Approximately 10% outcrop exposure is confined predominantly to steep cirque walls and creek-cut banks.

GEOLOGY (cont'd)

LITHOLOGIES

The southern part of the Beale property is underlain by metamorphosed volcanic sedimentary rocks which have been locally intruded by small ultramafic bodies. Younger(?) felsic and intermediate volcanic flow rocks to the northwest are separated from metasediments by a large diorite body which may be related to the Cassiar batholith. (Plate I).

UPPER DEVONIAN TO PERMIAN(?)

UNIT 1

This unit consists mainly of quartz-plagioclase-biotite(?) schists and amphibolite schists. Strong relict bedding and mineralogy suggest a volcanic sedimentary origin. Intercalated quartzite bands up to 20 cm+ thick may represent metamorphosed sandstone interbeds. A calc-silicate unit approximately 10 m thick occurs within the schist sequence.

UNIT 2

This unit consists of ultramafic rock of peridotite or pyroxenite composition. Small bodies of Unit 2 rock intrude Unit 1 rocks of the same? age. Chrysotile is developed locally along narrow fractures. White weathering is characteristic of the ultramafic rock.

GEOLOGY - Lithologies (cont'd)

TRIASSIC(?)

UNIT 3

Unit 3 is composed of porphyritic volcanic flow rocks of dacite to rhyodacite composition. Flow textures are not apparent in hand specimen but thin sections reveal a weak foliation of the groundmass. Pyrite occurs as disseminated grains in the groundmass and within some of the abundant fine veinlets of quartz, chlorite and calcite. Quartz veins from less than 1 cm to over 20 cm in thickness are common. Weathered surfaces are typically rusty-brown due to oxidation of pyrite. Silica and chlorite alteration of feldspars in the groundmass are generally moderate to strong.

UNIT 4

This unit is composed of rhyolite to rhyodacite with conspicuous phenocrysts of plagioclase from 0.3 to 2 mm in length aligned by moderate to strong flow banding. There is weak to moderate replacement of plagioclase phenocrysts by sericite and moderate to very strong replacement by quartz. Quartz and sericite alteration patches are common in the groundmass. Locally, thin bands of fine grained sericite accentuate the flow texture. The rock is cut by numerous fine veinlets of quartz with sericite, minor pyrite, and opaque grains, and local quartz veins up to 50 cm+ thick. Fresh rock is white to light grey in color and weathered surfaces are orange-brown to yellow.

UNIT 5

This unit is andesitic in composition with phenocrysts of plagioclase and hornblende up to 1 mm in length. Plagioclase

GEOLOGY - Lithologies (cont'd)

is moderately altered to calcite and minor sericite, and hornblende is completely altered to either quartz with calcite and sericite, or fine grained chlorite. The dark colored groundmass of chlorite contains fine plagioclase laths and scattered grains of hematite-opaque, probably pseudomorphic after pyrite. Abundant fine calcite veinlets cut the rock and quartz veins to 20 cm+ thick are common. Fresh rock is purple-grey in color and weathered surfaces are rusty-brown.

MID-CRETACEOUS

UNIT 6

Unit 6 is fresh to moderately altered diorite. Composition and grain size are variable, especially near contacts, where zenoliths of altered diorite up to 2m+ in diameter are included in a similar diorite host. Plagioclase grains are weakly to strongly altered to sericite and epidote(?), and brown hornblende is altered to light green hornblende and minor chlorite. The rock is cut by numerous veinlets of fine grained amphibole with scattered opaque grains, and local quartz veins up to 20 cm+ thick with disseminated pyrite. Diorite forms many of the steep, rugged bluffs on the property.

UNIT 7

This unit is composed of feldspar-quartz porphyry which forms dikes cutting Unit 6 diorite. Feldspar and quartz phenocrysts up to 5 mm in diameter occur in a fine felsic groundmass. Feldspar phenocrysts and groundmass have undergone

GEOLOGY - Lithologies (cont'd)

strong kaolinite(?) alteration. The fresh rock is white to light grey and weathered surfaces are commonly orange and black. This unit may be associated with Mid-Cretaceous quartz monzonite intrusions of the Cassiar batholith.

STRUCTURE

Aerial photographs of the area show two strong linear features trending northeast and northwest which intersect on the west side of the property. These may be major structural breaks, and they are parallelled by numerous lineaments which probably represent small localized shear zones. Shear zones transect all the rock types on the property, are steeply dipping with little evidence of displacement, and are often filled by quartz veins from a few centimetres to over 50 cm in thickness. The strongest linear trend is northeast with secondary sets trending northwest and north. Major lineaments are shown on the geological map, Plate I.

MINERALIZATION

Massive sphalerite, galena and silver occur as irregular veins and breccia matrix in shear zones from a few centimetres to 1 m in thickness. A sample of such mineralization reported by Zimmerman (1970), assayed 36.46% Zn, 3.92% Pb, 35.1 oz/ton Ag, and 0.07 oz/ton Au. Quartz veins to 20 cm+ thick contain up to 30% very finely disseminated pyrite and arsenopyrite(?) with locally significant amounts of gold and silver. A chip sample (Rowe, 1979) assayed 9.54 oz/ton Ag and 0.095 oz/ton Au, and a float sample of vuggy quartz assayed 0.36 oz/ton Au, 7.12 oz/ton Ag and 0.46% As. Mineralized veins are predominantly confined to northeast trending shear zones.

Major lineaments are often enveloped by gossanous soil and rock. Pyrite is a common alteration product as fine disseminations in silicified and carbonatized rock near lineaments. Manganese oxide stain is prominent on weathered surfaces, and

also appears to be related to shear zones. It should be noted that manganese oxide is often deposited from hypogene solutions at low temperatures near surface, in association with precious metal deposits. Gold and silver bearing quartz veins are sometimes coated by a yellow-green oxide.

GEOCHEMISTRY

Silt samples were collected from most of the streams on the property to highlight areas of anomalous gold. A soil sample grid was established to cover the areas drained by anomalous streams, and chip samples were taken from potentially mineralized rocks. Samples were analysed and assayed by Bondar-Clegg and Company Ltd. of North Vancouver.

Stream Sediment Sampling

In addition to regular silt samples, panned concentrates of the fine sediment were collected, where possible, to test for fine grained placer gold. All samples were sieved and the -80 mesh material was collected for gold analysis by a combined fire assay-atomic absorption method. Samples from

GEOCHEMISTRY - Stream Sediment Sampling (cont'd)

areas of potential lead-zinc mineralization were also analysed for lead and silver by atomic absorption.

The regular silt samples generally contain higher concentrations of gold than pan concentrate samples from the same location. This suggests that gold is present as very fine grains adsorbed to clay minerals in the sediment, and panning tends to wash the fine grains away.

Most of the streams draining the northwest part of the property contain anomalous gold, silver and lead in their sediments. Strong responses from these streams prompted the location of a soil sample grid to test the drainage area.

Soil Sample Grid

A 2800 m base line was established to follow the top of the ridge in the northwest part of the property (Plate I). Lines were spaced at 200 m intervals, and run to the northeast and southwest where topography permitted. Soil samples were collected every 50 m. A second grid area to the northeast was

GEOCHEMISTRY - Soil Sample Grid (cont'd)

tied into the main grid by line 40+00 NW.

Thick talus cover on steep cirque slopes prohibited soil sampling, however, talus-fine samples were collected across the slopes at a constant elevation. Samples were taken approximately every 50 metres, preferably from the base of gulleys.

A line was run along the east-west trending ridge north of the map sheet with sample stations at approximately 50 m intervals.

Samples were taken from the B horizon where present, but most samples of the immature soil were from the C horizon. All samples were sieved and the -80 mesh material collected for gold and manganese analyses by atomic absorption. Selected samples were also analysed for silver and lead.

The soil geochemistry shows a broad coincident anomaly in gold, silver, lead and manganese on the northwest end of the grid, approximately 700 m by 500 m and open to the northeast (see Plate 2). Anomalous sample locations appear to be related to northeast trending lineaments sub-parallel to the

GEOCHEMISTRY - Soil Sample Grid (cont'd)

sample lines. Highest geochemical values occur at intersections of two or more lineaments, and the highest gold values coincide with high silver, lead and manganese values. Northwest trending gold and lead anomalies on the southwest side of the grid may be misrepresentative, since the anomalous samples could be related to northeast trending lineaments cutting each of the sample lines at a low angle. Gold, silver, lead and manganese anomalies on line 58+00 NW are probably associated with a strong north-northeast trending lineament. Similarly, coincident anomalies on line 42+00 NW appear to overlie northeast trending lineaments.

Gold and manganese values less than background on each end of lines 56+00 NW, 58+00 NW and 60+00 NW coincide with vegetated areas below the tree line. Thicker overburden in these areas may have a masking effect, but more likely the lower values mark the edge of the mineralization.

Anomalous talus samples can often be related to strong northeast trending lineaments up slope.

Histograms prepared from geochemical values gave strongly anomalous cutoffs of $\geq$60 ppb for gold and $\geq$3300 ppm for manganese. Similar cutoffs of $\geq$4.0 ppm for silver and $\geq$160 ppm for lead were chosen.

GEOCHEMISTRY (cont'd)

Rock Chip Samples

Chip samples were collected from different rock types around the property but predominantly from quartz veins, with preference given to strongly pyritic rocks. Each sample contained several chips from the same rock type averaging 4 cm in diameter. Samples were crushed and a small portion of the fine material from each was assayed for gold. Samples containing significant gold were assayed for silver.

All of the rock chips assayed contain minor gold, but assays greater than .008 oz/ton are confined to quartz vein samples. One quartz vein approximately 50 cm wide with up to 30% finely disseminated pyrite assayed .095 oz/ton gold and 9.54 oz/ton silver. A sample of vein material containing blackjack sphalerite and galena assayed .030 oz/ton gold, 14.98 oz/ton silver, 10.50% zinc, and 2.63% lead. Mineralized quartz veins were observed predominantly within Units 3 and 6, but occur to a lesser extent within all the other rock units.

Chalcopyrite is present as disseminated blebs in some quartz veins with associated pyrite. A sample from one vein assayed .008 oz/ton gold, 0.51% copper.

ECONOMIC POTENTIAL

Several similarities can be drawn between the mineralized veins on the Beale property and the gold-bearing quartz vein of Table Mountain Mines Ltd., located 16 kms southeast of Casssiar, B.C., and 43 kms northwest of the Beale claims.

Regionally, the Table Mountain Mine lies about 6 kms northeast of the Cassiar batholith contact; the Beale property is about 2 kms northeast of the same intrusive body.

The Vollaug vein of Table Mountain Mines Ltd. follows a fault contact between andesite and argillite of the Devonian to Permian Sylvester Group. The Beale property is underlain by the same rock types. The Vollaug vein is irregular in thickness, and can be traced approxiamtely 5200 feet on surface in an east-west direction with right-hand displacements along offsetting faults. The vein is recessive and forms a pronounced lineament

on surface. Strong lineaments are abundant on the Beale property, and coincide with geochemical anomalies. More than 100 surface cuts of the Vollaug vein over a length of 990 feet have proved an average thickness of 4.2 feet grading 0.71 oz/ton Au. The Au:Ag ratio averages about 2:1. The Au:Ag ratio of eight surface rock samples from the Beale varies from 1:20 to 1:500. A decline following the Vollaug vein for 248 feet shows an average thickness of 2.2 feet grading 1.07 oz/ton Ag. Gold mineralization occurs sporadically within the vein, grading from trace to 5 oz/ton. The vein locally contains 1 to 2% sulfides, including pyrite, chalcopyrite, tetrahedrite and galena. An alteration halo over tens of feet includes carbonate, pyrite, and green mica. Quartz veins on the Beale property contain disseminated pyrite, chalcopyrite and arsenopyrite, and have alteration zones of silicification, pyritization, and carbonatization several tens of feet wide.

Diamond drilling of the Vollaug vein indicated a depth of at least 300 feet, but was unsuccessful in defining grades due to the small size of the core samples and the irregular nature of the gold mineralization.

In view of the similarities with the Table Mountain property, the abundance and length of strong lineaments, coincident geochemical anomalies, and local surficial mineralization, an excellent economic potential exists for the Beale property.

SUMMARY AND CONCLUSIONS

The Beale group of 4 full claims (Beale 1-4) was staked in April, 1979. The ground was held from 1969 to 1973 as the Nizi 1-60 claims. Fieldwork by Cordilleran Engineering in 1979 consisted of geological mapping, geochemical surveys, rock chip sampling and prospecting.

The topography is very rugged, and the property is underlain by intermediate to felsic volcanic flow rocks, metasedimentary rocks and diorite. A strong, northeast trending regional structure is parallelled by numerous lineaments on the property which may represent shear zones. These zones are often filled by quartz veins from a few centimetres to one metre or more in thickness. Some quartz veins contain abundant finely disseminated pyrite and arsenopyrite(?) with locally significant amounts of gold and silver. Two selected samples assayed 0.095 oz/ton Au, 9.54 oz/ton Ag and 0.36 oz/ton Au, 7.12 oz/ton Ag. Local shear zones contain massive sphalerite, galena, and silver. One such zone up to one metre thick reported by Zimmerman (1970),

SUMMARY AND CONCLUSIONS (cont'd)

assayed 36.46% Zn, 3.92% Pb, 35.1 oz/ton Ag and 0.07 oz/ton Au. Major lineaments are enveloped by gossanous soil and rock, and alteration zones of silicification, pyritization and carbonitization.

Most of the streams draining the northwest part of the property contain anomalous gold, silver and lead in their sediments. Soil sampling in that area outlined a broad zone of coincident gold, silver, lead and manganese anomalies. Strongly anomalous soils appear to be related to northeast trending lineaments sub-parallel to the sample lines. Chip samples collected from different rock types around the property confirmed that significant gold and silver mineralization is confined to siliceous veins and breccia zones within shears. Mineralization and rock types on the Beale claims are similar in some respects to those of the Table Mountain Mine near Cassiar, B.C.

In view of the strong topographic lineaments with associated soil anomalies, local surficial mineralization, and similarities with the Table Mountain Mine, an excellent potential exists for economic gold and silver on the Beale property.

RECOMMENDATIONS

The following three-phase program is recommended for the Beale claim group. Phase II should be conducted during the same field season as Phase I after specific targets have been defined. Phase III is success-contingent upon the results of Phases I and II.

PHASE I

1) Grid Preparation

Approximately 40 kms of picketline to be chained and flagged for survey control.

2) Base Map Preparation

Enlargement and correction of portions of existing photo base. Plane table survey of anomalous areas and tie-ins with grid lines.

3) Geochemistry

Soil/talus fine sampling to further define existing anomalies and to complete reconnaissance survey (1500 samples for Au, Ag, Pb). Rock chip sampling to evaluate host rock and gossan outcrops in areas of soil anomalies (500 samples for Au, Ag).

RECOMMENDATIONS (cont'd)

4) Geophysics

Reconnaissance induced polarization, magnetometer and MaxMin EM survey tests should be conducted to evaluate the effectiveness of these methods in defining mineralized structures in talus or overburden covered areas.

5) Trenching

A full-scale trenching and sampling program should be carried out to test geochemical anomalies, gossans and potentially mineralized structural features.

6) Geological Mapping

To be conducted concurrently with grid preparation and soil sampling. The base map at a scale of 1:5000 is to be updated, minor showings are to be mapped at scales of 1:2500 and 1:500.

PHASE II

Diamond Drilling - a program of 2000 feet of BQWL diamond drilling should be conducted to test the vertical continuity of mineralized structures and to evaluate the showings at shallow depths.

PHASE III

Contingent upon the success of Phases I and II, a program of 5,000 feet of BQWL diamond drilling may be warranted. The purpose of this drilling would be to test for continuity of structure and mineralized zones at depth in preparation for underground sampling.

ESTIMATED COST OF RECOMMENDED EXPLORATION PROGRAM

BEALE #1-4 (80 Units)

PHASE I

PROGRAM: Grid preparation
Base Map Preparation
Geochemical Survey
Geophysical Tests
Geological Mapping
Trenching and Sampling

TIME PERIOD: One and one-half months

PERSONNEL: Geologist
Two line cutters/trenchers
Two geochemical samplers/Geophysical assistants
Two trenching crew
Cook

COSTS:

Salaries	$ 20,000
Fees and Administration	22,500
Helicopter support (casual) 15 hr. x $450/hr	6,750
Mobilization, demobilization	10,000
Trenching crew, drill, powder	15,000
Transport, expediting	3,000
Camp supplies, food	7,500
Assays, analyses	2,500
Geochemical survey (500 rock samples, Au,Ag 1500 soils, Au,Ag,Pb)	15,000
Camp equipment, rentals	3,500
Travel, hotel	4,000
Geophysical tests (7 days x $700/d)	4,900
Miscellaneous expenses	5,350
TOTAL PHASE I	$120,000

PHASE II

Fifteen hundred (1500) feet of BQWL diamond drilling is recommended to test the vertical continuity of the mineralized structures and to evaluate the showings at shallow depths 100,000

TOTAL PHASE I & II $220,000

ESTIMATED COST OF RECOMMENDED EXPLORATION PROGRAM (cont'd)

PHASE III

Contingent upon the success of Phase I and II, further diamond drilling (5000 feet) may be warranted.

allow $375,000

Respectfully submitted

J. D. Rowe

J. D. Rowe, B.Sc.

O. A. Hairsine

O. S. Hairsine, B.Sc.,P.Eng.

Vancouver, B.C.
January, 1980

CORDILLERAN ENGINEERING

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WRITER'S CERTIFICATE

I, Jeffrey D. Rowe of Vancouver, British Columbia hereby certify that:

1. I am a geologist residing at 121 E 27th St., North Vancouver, B.C., and employed by Cordilleran Engineering of 1418 - 355 Burrard Street, Vancouver, B.C. V6C 2G8

2. I received a Bachelor of Science degree from the Faculty of Geology at the University of British Columbia, Vancouver, B.C. (1975).

3. I am the author of this report which is based on field work conducted during June 28 to July 8, 1979 on behalf of Regional Resources Ltd.

CORDILLERAN ENGINEERING

J. D. Rowe

J. D. Rowe, B.Sc.
Geologist

January, 1980
Vancouver, B.C.

CORDILLERAN ENGINEERING

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SUPERVISOR'S CERTIFICATE

I, Owen S. Hairsine, of Burnaby, British Columbia hereby certify that:

1. I am a geological engineer residing at 1165 Ridley Drive, Burnaby, B.C.

2. I am employed by Cordilleran Engineering of 1418-355 Burrard Street, Vancouver, B.C., V6C 2G8.

3. I received a Bachelor of Science degree from Michigan Technological University, Houghton, Michigan in 1969 and have practiced my profession since that time.

4. I am a member of the Association of Professional Engineers of the Province of British Columbia.

5. I supervised the writing of this report and the field work upon which it is based.

O. S. Hairsine, P.Eng.
Geologist

January, 1980
Vancouver, B.C.

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PERSONNEL

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APPENDIX "D"

Vancouver Petrographics Ltd.

JAMES VINNELL, Manager
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P.O. BOX 39
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Report for: Jeff Rowe,
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1418 - 355 Burrard Street,
VANCOUVER, B.C., V6C 2G8

Samples: B-J -2, -8, -13B, -32, -34, -36, -44

The samples are mainly of volcanic flow rocks of intermediate to felsic composition. Nomenclature of volcanic rocks varies depending on the basis of distinction between dacite, rhyodacite, and rhyolite. Although all the samples contain more plagioclase than K-feldspar, in some the plagioclase composition is nearly pure albite, and thus according to some classifications would be considered as rhyolite. I have grouped the felsic rocks into two types, 1) rhyolite-rhyodacite containing abundant K-feldspar as indicated by the stained blocks, and 2) dacite-rhyodacite containing minor to moderate K-feldspar as indicated by the stained blocks.

A) Rhyolite-Rhyodacite Porphyritic Flow Rocks

B-J13B (silicified)
B-J8 (weaker silicification than B-J13B)

B) Dacite-Rhyodacite Flow Rocks

B-J2
B-J34

C) Porphyritic Andesite (Plagioclase and Hornblende phenocrysts)

B-J31

D) Metadiorite

B-J36

E) Amphibolite (after andesitic volcanogenic sediment?)

B-J44

John Payne
December, 1979

Sample B-J13B Silicified Rhyolite-Rhyodacite Flow

The sample consists mainly of a very fine grained aggregate of lathy to anhedral feldspars, which has been replaced by patches of quartz with minor sericite. The rock has a moderate to strong flow foliation produced by parallel orientation of plagioclase laths in the groundmass.

phenocrysts	
plagioclase	5-10% (almost all replaced by quartz, with original texture destroyed)
groundmass	
plagioclase	40-45
K-feldspar	20-25 ?
pyrite	1½-2
Ti-oxide	0.5
sericite	1- 2
alteration-replacement patches	
quartz	20-25
sericite	3- 4
pyrite	1
Ti-oxide	minor
veins	
quartz with minor sericite, pyrite, Ti-oxide	

One plagioclase phenocryst is preserved; it is subhedral and 1 mm long, It is moderately altered to fine grained mosaic quartz. Elsewhere in the section are rounded to slightly elongate patches of fine mosaic quartz which may in part be replacements of plagioclase.

In the groundmass, plagioclase forms subhedral aggregates of lathy grains averaging 0.05-0.1 mm long, and locally up to 0.15 mm. These generally are in subparallel orientation, defining a moderate to strong flow foliation in the rock. Intergrown with the lathy plagioclase is extremely fine grained feldspar composed mainly of K-feldspar as judged from the color of the stained block. Opaque forms scattered grains averaging 0.02 mm in size, with some grains and clusters of grain size up to 0.25 mm. Ti-oxide forms scattered dusty to very fine grains, which locally are concentrated in irregular patches. Clusters of Ti-oxide from 0.05-0.1 mm are present locally.

Sericite forms a very fine to extremely fine grained disseminated alteration? throughout the groundmass.

Alteration patches average 1 to 2 mm across; in hand sample they resemble amygdules, but the textures in thin section suggest that they are formed by replacement of the rock. Quartz is the most abundant mineral; it forms very fine grained aggregates along the borders of patches and in some smaller veinlike zones connecting larger patches, and grades up to 0.05-0.1 mm in grain size in the interiors of patches. It generally has a mosaic texture. Sericite forms scattered patches of very fine to fine grains and in places forms abundant disseminated grains in the interiors of patches. Pyrite and Ti-oxide occur as grains from 0.05-0.15 mm in size, commonly in clusters, and generally with subhedral to euhedral outlines.

The rock is cut by late quartz-rich veins of similar texture to the alteration patches. Some of these veins contain minor pyrite and Ti-oxide.

Sample B-J8 Rhyolite-Rhyodacite Porphyritic Flow

The sample is strongly flow banded on the scale of 0.2-2 mm. It contains plagioclase phenocrysts and patches of quartz (in part probably a replacement of plagioclase) in a very fine grained groundmass.

phenocrysts	
plagioclase	10-15%
quartz patches?	5- 7 (includes a few quartz phenocrysts)
groundmass	
plagioclase laths	5-7
irregular quartz patches	10-15
muscovite laths	minor
Ti-oxide	0.3
zircon	trace
limonite(after pyrite?)	0.3
extremely fine grained groundmass	50-55
sericite selvages along banding planes	3- 5
veins	
quartz, some with opaque, Ti-oxide, epidote	

Plagioclase forms phenocrysts from 0.3-0.8 mm in size with subhedral outlines, and several clusters of phenocrysts up to 2 mm long. Many are slightly to moderately altered to sericite, and some contain sericite and very fine grained quartz. Some patches of fine grained mosaic quartz have subhedral outlines resembling those of plagioclase phenocrysts, and may represent completely altered plagioclase. Grain size averages 0.03-0.1 mm.

Quartz forms a few phenocrysts up to 0.5 mm across; they have rounded to subhedral outlines.

The groundmass contains scattered lathy plagioclase grains from 0.02-0.05 mm in length, set in an extremely fine grained groundmass composed mainly of feldspar, probably both plagioclase and K-feldspar, but possibly mainly K-feldspar as judged from the bright yellow color of the stained block. Quartz forms irregular patches from 0.03-0.1 mm in grain size, the coarsest patches are up to 1 mm across.

Muscovite forms a few laths averaging 0.2 mm long; they are associated with Ti-oxide and minor hematite, and may be an alteration of primary biotite.

Ti-oxide forms a few patches up to 0.2 mm across, probably an alteration of sphene.

Zircon forms a few subhedral grains up to 0.05 mm long, and one euhedral grain 0.15 mm long in quartz.

Limonite forms scattered equant patches averaging 0.02-0.05 mm across composed of extremely fine grained aggregates. They may have formed by alteration of pyrite.

Sericite forms very fine grained, strongly contorted vein-like zones which parallel the flow banding in gross scale, and which probably represent concentrations along flow bands.

The rock is cut by veinlets of quartz averaging 0.02 mm wide, and by quartz veins up to 0.5 mm wide. The latter contain minor opaque, Ti-oxide, and epidote as grains up to 0.03 mm across.

Sample B-J2 Porphyritic Dacite-Rhyodacite Flow

The sample contains plagioclase phenocrysts in a groundmass dominated by intergrown lathy plagioclase, irregular interstitial patches of quartz and extremely fine grained K-feldspar? (based on yellow stain on block). It is cut by numerous discontinuous stringers of quartz and quartz-chlorite, and a few of calcite.

phenocrysts		
plagioclase	15-20%	
groundmass		
plagioclase	40-45	
quartz	15-20	
K-feldspar	10-15?	
chlorite	3- 5	
opaque	0.3	(in part at least pyrite)
Ti-oxide	0.5	
apatite	minor	
zircon	trace	
calcite	½- 1	

veinlets
- quartz
- quartz-chlorite
- chlorite-pyrite
- calcite
- hematite-limonite

Plagioclase forms subhedral to euhedral phenocrysts averaging 0.5 to 1 mm in size, and a few clusters up to a few mm across of phenocrysts of similar size. They are cut by a few veinlets of calcite and altered slightly to calcite patches and sericite flakes. Some clusters contain interstitial chlorite (up to 10%) among plagioclase grains averaging 0.2-0.5 mm across.

In the groundmass, plagioclase forms moderately to strongly intergrown aggregates of lathy grains averaging 0.02-0.1 mm long; locally plagioclase laths define a weak to moderate flow foliation in the groundmass. Quartz forms very irregular interstitial patches averaging 0.02-0.05 mm across. K-feldspar occurs in an extremely fine grained aggregate, possibly with quartz and plagioclase interstitial to lathy plagioclase. K-feldspar was not recognized in section, but the yellow stain on the block indicates its presence in the groundmass. The abundance of K-feldspar appears to vary slightly based on the color patterns in the block; this probably corresponds to patches in the groundmass where lathy plagioclase is variable in abundance relative to the extremely fine grained material interstitial to it.

Chlorite occurs as patches of very fine to fine grained aggregates up to 1.5 mm long. Commonly these patches contain lenses of pyrite up to 0.3 mm long, or scattered patches of Ti-oxide. Some of these are vein-like in shape, and others appear to be interstitial to plagioclase.

Opaque (in part pyrite) forms grains averaging 0.02-0.1 mm in size scattered in the rock; some of these are cut by quartz stringers. It also occurs with chlorite as described above.

Ti-oxide forms irregular extremely fine grained patches up to 0.1 mm across with opaque, and occurs as dusty to extremely fine grains (0.005-0.02 mm) in the groundmass.

Apatite forms euhedral to subhedral cross sections averaging 0.02 mm across. Zircon forms a few grains up to 0.1 mm long in chlorite patches. Calcite forms irregular very fine grained patches scattered in the rock.

(continued)

Sample B-J2 (continued)

Quartz forms numerous discontinuous veinlets averaging 0.02-0.05 mm wide. Some of these contain minor to important amounts of chlorite. Calcite forms a few stringers averaging 0.02 mm wide. Chlorite forms veinlets and lenses, commonly with pyrite lenses and grains. The coarsest grained chlorite occurs in a patch 0.5 mm long; chlorite forms fibrous, slightly radiating grains averaging 0.05-0.1 mm long. Pyrite is associated with this patch as a lens 0.3 mm long.

Hematite-limonite form late veins up to 0.05 mm across, and one patch of grains 0.2 mm across.

Chlorite has a light green color and moderate birefringence. Some appears to resemble secondary biotite, and may be gradational in composition from chlorite to biotite.

The rock contains one lens about 1 mm long composed of extremely fine grained epidote? and opaque.

Sample B-J34 Porphyritic Dacite-Rhyodacite Flow

The sample contains plagioclase phenocrysts in a very fine grained groundmass dominated by lathy plagioclase and patchy quartz, with some K-feldspar. Pyrite occurs disseminated in the rock and in late quartz veins. The rock contains abundant quartz veins and calcite stringers.

phenocrysts	
plagioclase	10-15%
groundmass	
plagioclase	40-45
quartz	10-15 ?
K-feldspar	5-10 ?
chlorite	10-12
pyrite	2- 3
Ti-oxide	½- 1
apatite	½- 1
veins	
quartz-(calcite-pyrite)	
calcite	

Plagioclase forms subhedral to anhedral phenocrysts from 0.2 to 1.5 mm in length. Alteration is slight to moderate to patches of very fine grained sericite and locally calcite. Some phenocrysts contain moderate to abundant patches of K-feldspar averaging 0.05 mm across. Composition by the Michel-Levy method on extinction angles in An_4.

Plagioclase in the groundmass consists of irregular intergrowths of laths averaging 0.05 mm long; locally they show a weak flow foliation. Alteration is slight to sericite. They are intergrown in parts of the section with poikilitic quartz? grains or plagioclase grains up to 0.7 mm across; the latter contain very abundant inclusions of irregular lathy plagioclase. Quartz also forms patches averaging 0.1-0.2 mm in size; these are mainly interstitial. K-feldspar may be present, as suggested by the yellow color of the stained block; it would occur as extremely fine grains, and was not recognized in the thin section study.

Chlorite forms a very fine to extremely fine grained diseminated intergrowth with plagioclase laths, with grain size averaging 0.01-0.02 mm. It also forms abundant coarser grained patches up to 0.5 mm long, generally associated with one or more of apatite, calcite, Ti-oxide, and pyrite.

Pyrite forms many subhedral to euhedral grains averaging 0.2-0.5 mm in grain size, and several clusters of grains up to 2 mm across.

Ti-oxide forms patches up to 0.3 mm across of grains up to 0.02 mm across; many patches are associated with calcite stringers and are surrounded by very fine grained calcite. It also occurs disseminated in the groundmass.

Apatite forms subhedral to euhedral prismatic grains up to 0.5 mm long, averaging 0.1-0.2 mm. They are mainly scattered in the groundmass or in chlorite patches.

The rock is cut by numerous discontinuous wispy quartz veinlets averaging 0.02 mm wide. Quartz also forms abundant coarser grained veins up to 0.5 mm wide, with average grain size 0.05-0.1 mm. Some veins also contain very fine grained calcite andmedium grained pyrite.

Calcite stringers cut the quartz veins and the rock; they average 0.02-0.03 mm wide in the rock and about 0.005 mm wide where they cut quartz veins. Several contain abundant pyrite and Ti-oxide.

Sample B-J31 Porphyritic Andesite with Quartz-Calcite-Chlorite in fracture-filling and alteration zones

rock	
phenocrysts	
plagioclase	25-30%
hornblende	7-10
groundmass	
plagioclase	30-35
chlorite	10-15
opaque-hematite	7-10
calcite	7-10
hornblende	2- 3
apatite	minor

alteration	
calcite	60-65%
quartz	30-35
chlorite	3- 5
hematite	0.5

veinlets
calcite

Plagioclase forms euhedral to subhedral prismatic grains from 0.3 to 1 mm in size, with a few up to 2 mm across. They are moderately altered to irregular, medium grained patches of calcite, and slightly altered to very fine grained clusters and flakes of sericite. The yellow stain on the hand sample is probably due to sericite in plagioclase phenocrysts.

Hornblende forms euhedral to subhedral phenocrysts from 0.3 to 1 mm in length; they are completely altered to one of two assemblages. Each has a thin (0.01-0.02 mm) rim of opaque enclosing either 1) very fine grained quartz, in part with calcite and sericite, or 2) extremely fine grained chlorite. Some overlap between alteration types is present. Dusty to very fine grained hematite occurs in some alteration assemblages.

In the groundmass, plagioclase forms elongated laths averaging 0.05-0.1 mm long; they are fresh to slightly altered to sericite and calcite. They are set in a matrix of patches of extremely fine grained chlorite and dusty to very fine grained hematite-opaque. Opaque also forms scattered clusters of grains up to 0.5 mm across, probably pseudomorphic after primary pyrite or pyrrhotite. Many of these patches have subhedral to euhedral outlines after pyrite, and commonly contain extremely fine grained intergrowths of quartz? Hornblende grains averaging 0.02-0.05 mm in size are altered as the hornblende phenocrysts. Apatite forms a few euhedral prismatic grains up to 0.2 mm long; they have a light to medium brown color. Calcite forms irregular very fine grained patches averaging 0.02-0.05 mm across.

The alteration patches commonly are zoned, with an outer zone against the rock of quartz, which has a mosaic texture and commonly increases in grain size from very fine to fine towards the center of the alteration patches. Interior to quartz are patches of very fine grained calcite up to a few mm across. In some patches chlorite occurs between quartz and calcite as extremely fine grained patches, or occurs with quartz in regions where calcite is not present. Translucent red hematite forms clusters of subhedral to euhedral grains 0.05-0.2 mm across, probably after pyrite.

The rock is cut by several calcite stringers up to 0.05 mm across, averaging 0.02 mm.

Sample B-J36 Metadiorite (slightly porphyritic)

The sample is mainly a medium to fine grained diorite with a few patches containing abundant coarser plagioclase phenocrysts, and with scattered hornblende phenocrysts. The rock contains patches and interstitial zones of a very fine to extremely fine grained groundmass, probably of primary igneous origin; they may represent the final crystallization product of the magma.

plagioclase	
phenocrysts	10-15%
other	40-45
hornblende	
phenocrysts	2- 3
other	12-15
quartz	5- 7
chlorite	2- 3
Ti-oxide	0.5
opaque	minor
apatite	minor
zircon	trace
epidote	trace
groundmass	10-15
actinolite veins	3- 5

Plagioclase forms a few subhedral phenocrysts from 1 to 3 mm in length, and numerous subhedral grains from 0.2-0.5 mm in size. Finer grained plagioclase grades in size down to that of the groundmass. Many grains are slightly to moderately compositionally zoned from more-calcic cores to more-sodic rims. Alteration is slight to strong to very fine grained sericite and patches of extremely fine grained epidote? Alteration in zoned grains is much more intense in cores than in outer zones.

A few relic phenocrysts of brown hornblende up to 1 mm are altered in a broad outer zone to light green hornblende with very ragged borders against the groundmass and other grains. Most hornblende is as fine to medium grained irregular aggregates, with light green color and local patches grading to brown. Locally it is associated with fine grained chlorite patches, and a few hornblende grains appear to be pseudomorphed by chlorite and patches of very fine grained Ti-oxide.

Quartz forms scattered grains averaging 0.03-0.05 mm in size, with a few up to 0.3 mm across, and a few patches up to 0.8 mm across composed of aggregates of quartz averaging 0.05-0.15 mm in grain size. It also occurs in the groundmass associated with plagioclase and lesser hornblende and possibly chlorite.

Ti-oxide forms a few patches by itself up to 0.2 mm across, and is intergrown with chlorite and light green hornblende as very fine patches.

Opaque forms scattered grains and clusters of grains averaging 0.05 to 0.1 mm in size, commonly associated with light green amphibole.

Apatite forms ragged prismatic grains up to 0.25 mm long.

Zircon forms anhedral to subhedral slightly elongate grains from 0.03-0.1 mm long.

Epidote forms a few patches of grains averaging 0.05 mm in size, and occurs as alteration of plagioclase as described above.

The rock is cut by numerous veinlets and braided vein zones from 0.05-0.2 mm in vein width, composed of fine grained amphibole, which generally is colorless, and locally is light green.

Sample B-J44 Amphibolite (after volcanic sediment?)

The sample is a fine to medium grained amphibolite, with the fresh rock composed mainly of hornblende and plagioclase. Light green layers in the rock have been strongly altered, with replacement of hornblende by epidote. A light whiteish green lens consists of an extremely fine grained intergrowth of epidote and quartz?

hornblende	50-55	(in some layers altered to epidote)
plagioclase	40	(altered to sericite)
Ti-oxide	3- 5	
apatite	½- 1	
quartz	minor	
opaque(pyrite)	trace	
sphene	trace	
calcite?	trace	

The darker layers in the sample are relatively fresh amphibolite composed of intergrowths of anhedral hornblende and plagioclase. Hornblende grains average 0.2-0.5 mm in length with a few up to 1 mm long, elongated parallel to layering. Pleochroism is from pale yellowish green to light green. Plagioclase forms grains averaging 0.1-0.2 mm in size; it is slightly altered to sericite in the freshest layers, and alteration intensity increases rapidly in more-altered layers.

Ti-oxide? forms extremely fine grained aggregates from 0.05-0.2 mm in size, with a few up to 0.5 mm across. These are intergrown coarsely with hornblende and plagioclase, and appear to be about equally abundant in fresh and altered layers.

Apatite forms equant anhedral grains averaging 0.03-0.05 mm in size. Quartz forms scattered grains averaging 0.03-0.05 mm across. Pyrite? forms a few grains from 0.02-0.05 mm in size, commonly with Ti-oxide. These opaque grains may be iron and/or titanium oxides. Sphene forms a few anhedral grains up to 0.05 mm across. Calcite forms a few extremely fine grains.

The lighter green layers contain irregular fine grained (0.05-0.1 mm) epidote intergrown with plagioclase of the same grain size. Plagioclase is completely altered to extremely fine grained sericite. Other primary minerals occur as they do in the fresher layers. Chlorite occurs locally with epidote in some thin layers.

The whiteish-green lens consists of an extremely fine grained aggregate of epidote with intergrown poikilitic quartz? grains from 0.05-0.25 mm across. Possibly some of the epidote in this lens may be misidentified, and some may be garnet or hydrogarnet.

The rock is cut by two types of veinlets. One consists mainly of quartz with lesser calcite. The other contains calcite, chlorite, and pyrite. Both are from 0.02-0.05 mm wide.

The composition of the sample suggests that it formed from a rock of andesitic composition; the most probable parent would be a volcanogenic sedimentary rock.

APPENDIX "A"

CERTIFICATES

APPENDIX "B"

REFERENCES

APPENDIX "C"

PERSONNEL

APPENDIX "D"

PETROGRAPHIC REPORT

APPENDIX "E"

STATUTORY DECLARATION

APPENDIX "E"

STATUTORY DECLARATION

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
To Wit:

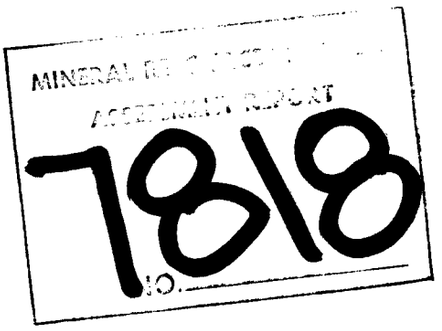
In the Matter of a Geological and Geochemical Report on the Beale Group (Beale #1-4 mineral claims)

I, O. S. Hairsine, agent for J. W. Stollery

of 1165 Ridley Drive, Burnaby, B.C.

in the Province of British Columbia, do solemnly declare that a total of 565 soil and 35 rock samples were collected and analysed in conjunction with geological mapping (1:5000) during the period June 28 to July 8, 1979. A portion of the cost of this work is as follows:

Professional Services (8 days)	$2,000.00
Management Fees	2,158.21
Salaries + Benefits (40 man days)	2,275.19
Food and accommodation	1,025.61
Instrument rental - transit	50.00
Geochemical analysis: 565 samples all Au,Mn some Pb, Ag	5,281.95
Assays: 35 samples all Au, some Pb,Zn,Ag	509.00
Transportation (Helicopter, truck, air fares)	10,728.17
Thin sections, radio rental, postage, telephone	782.33
Freight and express	68.10
Air photography	116.20
Field supplies	63.81
Printing; report preparation (salaries, supplies) ...	1,675.88
TOTAL	$26,734.45



And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the city of Vancouver, in the Province of British Columbia, this 4 day of February, 1980, A.D.

O. S. Hairsine

A Commissioner for taking Affidavits for British Columbia or A Notary Public in and for the Province of British Columbia.

APPENDIX "F"

GEOCHEMICAL AND ASSAY CERTIFICATES

To: Cordi[illegible]ran Engineering

PAGE No. 1

REPORT NO. A[illegible] - 378

DATE: June 29, 1979

1418 - 355 Burrard Street
Vancouver, B.C.
V6C 2G8

BONDAR-CLEGG & COMPANY LTD.

CERTIFICATE OF ASSAY

Samples Submitted: June 25, 1979
Results Completed: June 29, 1979

PROJECT: BEALE

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER									
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
12908	0.005		Rhyolite									
12909	0.004		Dacite									
12910	0.005		Dacite									
12911	0.004		Rhyolite									
12912	0.002		Dacite									
12913	0.36		Quartz - 50% diss Py.									
12913 New cut from reject	0.34											

cc Mr. Owen Hairsine

APPENDIX "F"

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

To: Cordilleran Engineering Ltd.

PAGE No. 1

1418 - 355 Burrard Street
Vancouver, B.C.
V6C 2G8

BONDAR-CLEGG & COMPANY LTD.

CERTIFICATE OF ASSAY

REPORT NO. A2[illegible] - 1630

DATE: December 18, 1979

Samples submitted: December 13, 1979
Results completed: December 18, 1979

PROJECT: BEALE

I hereby certify that the following are the results of assays made by us upon the herein described pulp samples.

MARKED	GOLD		SILVER		Pb	Zn	As					
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
12913	0.36		7.12		-	-	0.46	Quartz - 50% diss.Py.				
12935	0.095		9.54		-	-	-	Quartz vein 30-60 cm wide				
12937	0.020		2.70		-	-	-	Rhyolite porphyry 20-50% diss.Py				
12940	0.090		2.10		-	-	-	Quartz vein 50-60 cm wide				
12960	0.20		1.07		-	-	-	Py-arsenopyrite vein 2 cm				
12967	0.009		1.51		-	-	-	Quartz with Py blebs				
12969	0.030		14.98		2.63	10.50	-	Brecc[illegible]a-mtx of Sph,Py,Gl,Cp.				
12986	0.002		0.07		<0.01	1.45	-	Sph,Py,Gl,shear cutting diorite				

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

APPENDIX "F" ii.

To: Cordi eran Engineering Ltd.

PAGE No. 1

REPORT NO. A29 27

DATE: July 6, 1979

BONDAR-CLEGG & COMPANY LTD.

1418 - 355 Burrard Street
Vancouver, B.C. V6C 2G8

CERTIFICATE OF ASSAY

Samples submitted: July 3, 1979
Results completed: July 6, 1979

PROJECT: BEALE Shipment #8

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER		Cu							
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
12930	<0.002	Dacite			-							
12931	0.002	Dacite			-							
12932	<0.002	Feldspar-quartz porphyry										
12933	<0.002	Dacite			-							
12934	<0.002	Mn vein in Dacite?			-							
12935	0.095	Quartz vein 30-60 cm wide										
12936	0.012	Rhyolite porphyry			-							
12937	0.020	Rhyolite porphyry 20-50% diss.Py.										
12938	0.008	Quartz veins few cm wide			0.51							
12939	0.012	Quartz vein 10-20cm			0.09							
12940	0.090	Quartz vein 50-60cm			-							
12941	0.002	Dacite--diss.Py.			-							

cc Mr. O. Hairsine

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

APPENDIX "F" iii.

To: Cordilleran Engineering Ltd.

PAGE No. 1

1418 - 355 Burrard Street
Vancouver, B.C. V6C 2G8

BONDAR-CLEGG & COMPANY LTD.

CERTIFICATE OF ASSAY

REPORT NO. A29-473

DATE: July 12, 1979

Samples submitted: July 9, 1979
Results completed: July 12, 1979

PROJECT: BEALE #11

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER		Cu	Pb	Zn					
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
12943	<0.002				0.59	0.28	0.28					
12944	0.002	Silicified andesite			-	-	-					
12945	<0.002	"		"	-	-	-					
12946	<0.002	"		"	-	-	-					
12947	<0.002	"		"	-	-	-		BEALE	PROPERTY		
12948	<0.002	"		"	-	-	-					
12949	<0.002	"		"	-	-	-					
12950	0.006	"		"	-	-	-					
12451	<0.002	"		"	-	-	-					
12452	<0.002	"		"	-	-	-					

cc Mr. O. Hairsine

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

APPENDIX "V" iv.

To: Co[illegible]illeran Engineering Ltd.

PAGE No. 1

REPORT NO. A[illegible] - 522

DATE: July 20, 1979

BONDAR-CLEGG & COMPANY LTD.

1418 - 355 Burrard Street
Vancouver, B.C. V6C 2G8

CERTIFICATE OF ASSAY

Samples submitted: July 13, 1979
Results completed: July 20, 1979

PROJECT: LOGAN B.C.

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER		Cu							
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
12453	<0.002				-							
12454	<0.002				-							
12455	<0.002				-							
12456	<0.002				-							
12457	0.002				1.82							
12458	<0.002				-							
12459	<0.002				-							
12460	0.003				-							
12951	0.002	Py shear cutting diorite										
12952	<0.002	Rhyolite porphyry			-							
12953	0.002	Dacite			-							
12954	<0.002	Dacite			-							
12955	<0.002	Dacite			-							
12956	0.012	Qz vein 2-3 cm cutting dacite										
12957	<0.002	Quartz-feldspar-biotite schist										
12958	<0.002	Calc-silicate			-							
12959	<0.002	Andesite?			-							
12960	0.20	Py-arsenopyrite vein 2 cm										
12961	0.003	Quartz vein 20 cm+ wide										
12962	0.002	Quartz vein			-							
12963	0.002	Quartz vein 15cm+			-							
12964	<0.002	Sil.andesite			-							
12965	0.002	shear zone 4-6 m wide in andesite										
12966	<0.002	Dacite			-							
12967	0.009	Quartz-Py blebs			-							
12968	0.009	Quartz vein 20cm+			-							

BEALE PROPERTY

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

APPENDIX "F"
V.

To: Cordilleran Engineering Ltd.

PAGE No. 2

REPORT NO. A29-522

DATE: July 20, 1979

BONDAR-CLEGG & COMPANY LTD.

CERTIFICATE OF ASSAY

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER		Cu							
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
12969	0.030	Breccia-mtx. of sph.py-,gl,cp										
12970	0.002	Quartz vein - azurite stain										
12971	0.008	Diorite? Diss Py + Cp -										
12972	<0.002	Meta-andesite			-							
12973	0.002	Py-Cp shear 10 cm			-							
12974	0.010	Py-Cp shear			-				BEALE	PROPERTY		
12975	0.002	Py-Cp shear			-							
12976	<0.002	Andesite?			-							
12977	<0.002	Andesite			-							
12978	<0.002	Andesite			-							
12979	<0.002				-							
12980	<0.002				-							
12981	<0.002				-							
12982	<0.002				-							
12983	<0.002				-							
12984	<0.002	meta-andesite			-							
12985	0.002	Feldspar-quartz porphyry										
12986	0.002	Sph,Py,Gl shear cutting diorite										
12987	<0.002	Carbonate shear cutting andesite?							BEALE	PROPERTY		
12988	<0.002	Peridotite			-							
12989	<0.002	Py vein 2cm in schist -										
12990	<0.002	Calc-silicate?			-							
12991	<0.002	Andesite			-							
12992	<0.002				-							
12993	<0.002				-							
12994	<0.002				-							

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

APPENDIX "F"

vi.

BONDAR-CLEGG & COMPANY LTD.
1500 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-54554

Geochemical Lab Report

Extraction Fire Assay & Hot Aqua Regia
Method Atomic Absorption
Fraction Used

Report No. 29 - 545 PROJECT: BEALE #2
From Cordilleran Engineering Ltd.
Date June 28 19 79

SAMPLE NO.	Au ppb				SAMPLE NO.	Au ppb			
H79-B - E 2	55				H79-B - T 8	210			
E 4	< 5				T10	5			
E 5	5				L79-B - J 1	15			
E 6	20				J 2	85			
E 7	< 5				J 3	15			
E 8	5				J 4	15			
E 9	10				S79-B - E 1	80			
E10	65				E 2	80			
E11	10				E 3	< 5			
E12	160				E 4	10			
E13	65				E 5	25			
S 1	< 5				E 6	10			
S 3	< 5				E 7	5			
S 4	< 5				E 8	475			
S 7	< 5				E 9	10			
S 8	105				E10	20			
S10	130				E11	65			
S11	70				E12	160			
S12	15				E13	35			
S13	35				S 1	5			
S17	10				S 2	5			
S18	20				S 3	< 5			
S19	55				S 4	< 5			
S21	< 5				S 5	5			
S22	< 5				S 6	35*			
S23	< 5				S 7	< 5			
S24	< 5				S 8	325			
T 3	145				S 9	175			
T 4	265				S10	185			
T 5	145				S11	85			

BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 545

SAMPLE NO.	Au ppb				SAMPLE NO.				
S79-B - S12	20								
S13	50								
S14	15								
S15	25								
S16	60								
S17	25								
S18	35								
S19	115								
S20	10								
S21	25								
S22	5								
S23	<25*								
S24	< 5								
T 2	270								
T 3	90								
T 4	80								
T 5	105								
T 6	440								
T 7	15								
T 8	10								
T 9	10								
T10	< 5								
T12	< 5								

* detection limit on a small sample

cc Mr. O. Hairsine

BONDAR-CLEGG & COMPANY LTD.
1500 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-54554

Geochemical Lab Report

Extraction Fire Assay & Hot Aqua Regia
Method Atomic Absorption
Fraction Used

Report No. 29 - 567 PROJECT: BEALE #4
From Cordilleran Engineering Ltd.
Date June 28 1979

SAMPLE NO.	Au ppb				SAMPLE NO.				
H79B-S25 1041A	5								
1041B	< 5								

cc Mr. O. Hairsine

BONDAR-CLEGG & COMPANY LTD.
1500 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-54554

Geochemical Lab Report

Extraction: Mn; Hot Aqua Regia / Au; Fire Assay & Hot Aqua Regia
Method: Atomic Absorption
Fraction Used:

Report No. 29 - 695 PROJECT: BEALE Shipment #8
From: Cordilleran Engineering Ltd.
Date: July 12, 1979

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.	Mn ppm	Au ppb		
L79BPE1 40+00NW 40+00SW	1240	15			L42+00NW-43+25SW	3700	120		
L79BPE2 40+00NW 40+00SW	1020	10			43+80SW	3900	10		
L79BPE3 4+00NW 40+00SW	2200	<25*			44+00SW	1440	10		
S79BH1	1330	IS			44+50SW	1300	5		
S79BH2	640	<20*			45+00SW	1130	20		
S79BH3	1010	<10*			45+50SW	1320	10		
S79BH4	>20000	105			46+00SW	1610	5		
L40+00NW-40+00SW	1510	10			46+50SW	1220	25		
40+50SW	1300	5			47+00SW	1650	45		
41+10SW	800	10			L44+00NW-40+50SW	1780	10		
41+50SW	1270	10			L46+00NW-40+00SW	2150	40		
42+00SW	1550	5			L47+00NW-40+00SW	5100	275		
42+70SW	560	< 5			T48+00NW-40+00SW	5050	485		
43+00SW	1100	< 5			TL49+00NW-40+00SW	2100	75		
43+30SW	1540	20			T51+00NW-40+00SW	3150	30		
44+00SW	1590	< 5			L52+00NW-40+00SW	6000	95		
44+50SW	1560	15			L53+00NW-40+00SW	9600	150		
45+00SW	1900	30			L54+00NW-40+50SW	4500	30		
45+50SW	1400	10			41+50SW	4300	160		
46+00SW	2050	20			42+00SW	4050	100		
46+50SW	1450	< 5			42+50SW	3000	5		
47+00SW	1400	5			43+00SW	8400	25		
L41+00NW-40+00SW	1930	35			43+50SW	6750	20		
L42+00NW-40+00SW	900	30			L55+00NW-40+00SW	1240	30		
40+50SW	1250	15			56+00NW-40+00SW	2050	20		
41+00SW	1110	45			TL56+00NW-40+50SW	3800	25		
41+50SW	1995	80			L56+00NW-41+00SW	5750	45		
42+00SW	1860	40			41+50SW	2650	20		
42+50SW	1300	135			42+00SW	3100	55		
43+00SW	2900	95			42+50SW	3600	155		

7818 NO.

BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 695

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.				
L56+00NW-43+00SW	1640	< 5							
43+50SW	1400	5							
44+00SW	2000	30							
44+50SW	1300	30							
45+00SW	8350	5							
45+50SW	2000	15							
46+00SW	1530	5							
46+50SW	1190	10							
47+00SW	960	10							
47+50SW	880	10							
TB-E1 80M	2550	< 5							
E2 80M	1500	< 5							
E3 80M	2000	75							
E4 80M	2000	90							
E5 80M	1030	220							
E6 80M	2000	40							
E7 80M	1640	45							
E8 80M	1850	< 5							
E9 80M	1130	230							
E10 80M	970	10							
E11 80M	730	10							
E12 80M	2500	10							
E13 80M	1800	50							
E14 80M	1160	25							
E15 80M	1580	20							
E16 80M	1260	20							
L54+00NW-41+00SW T79BH1	1700	25							

IS denotes 'insufficient sample

* detection limit on a small sample

cc Mr. Owen Hairsine

BONDAR-CLEGG & COMPANY LTD.
1500 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-54554

Geochemical Lab Report

Extraction: Au; Fire Assay & Hot Aqua Regia / Mn; Hot Aqua Regia
Method: Atomic Absorption
Fraction Used:

Report No. 29 - 768 PROJECT: BEALE Shipment
From: Cordilleran Engineering Ltd.
Date: July 13, 19 79

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.	Mn ppm	Au ppb		
L40+00NW 29+00SW	400	10			L40+00NW 36+00SW	1310	< 5		
29+25SW	530	< 5			36+25SW	1980	5		
29+50SW	230	< 5			36+50SW	1900	40		
30+00SW	1020	<15*			36+75SW	1080	< 5		
30+50SW	900	10			37+00SW	1060	< 5		
30+75SW	1280	10			37+25SW	1420	15		
31+50SW	1780	< 5			37+75SW	925	5		
31+75SW	1540	< 5			38+00SW	240	5		
32+00SW	1500	10			38+25SW	460	100		
32+25SW	2000	< 5			38+50SW	1180	15		
32+50SW	1440	<25*			L44+00NW 40+00SW	1020	15		
32+75SW	2600	10			41+00SW	1460	95		
33+00SW	1600	10			41+50SW	1520	35		
33+25SW	1740	20			42+00SW	1100	30		
33+50SW	1800	45			42+50SW	990	30		
33+75SW	1340	10			43+00SW	960	15		
33+85SW	3200	75			43+50SW	1700	80		
33+95SW	2000	10			44+00SW	2800	20		
34+05SW	2300	5			44+50SW	1200	50		
34+15SW	1940	35			45+00SW	835	15		
34+25SW	1900	30			45+50SW	950	30		
34+35SW	1960	15			46+00SW	550	10		
34+45SW	330	10			47+00SW	1100	< 5		
34+55SW	1930	20			L79 - B - J5	1980	15		
34+65SW	2600	15			J6	1630	< 5		
34+75SW	1600	30			J7	1260	10		
35+00SW	1200	10			J8	2400	40		
35+25SW	1900	20			J9	3700	115		
35+50SW	1520	15			J10	1160	10		
35+75SW	1540	5			J11	925	130		

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cc Mr. O. Hairsine
* detection limit on a small sample

V-16

BONDAR-CLEGG & COMPANY LTD.
1500 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-54554

Geochemical Lab Report

Extraction: Mn; Hot Aqua Regia / Au; Fire Assay & Hot Aqua Regia
Method: Atomic Absorption
Fraction Used:

Report No. 29 - 819 PROJECT: BEALE #12
From: Cordilleran Engineering Ltd.
Date: July 18 19 79

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.	Mn ppm	Au ppb		
L 0+00 0+50E	885	< 5			L32+00NW 47+50SW	525	< 5		
1+00E	960	10			L32+50NW 42+00SW	725	10		
1+50E	765	< 5			L33+00NW 23+00SW	645	5		
2+00E	1005	10			23+50SW	630	< 5		
2+50E	1160	15			24+00Sw	835	< 5		
3+00E	1135	< 5			24+50SW	1115	< 5		
3+50E	870	5			25+00SW	860	< 5		
4+00E	725	5			25+50SW	645	10		
4+50E	1370	10			26+00SW	790	< 5		
5+00E	1050	< 5			26+50SW	625	25		
5+50E	790	5			27+00SW	670	15		
6+00E	985	5			27+50SW	1495	< 5		
6+50E	970	5			28+00SW	850	< 5		
7+00E	805	10			28+50SW	1240	< 5		
7+50E	965	10			29+00SW	820	< 5		
8+00E	860	50			29+50SW	890	20		
8+50E	1310	215			30+00SW	840	< 5		
9+00E	1240	70			42+00SW	1060	10		
9+25E	1340	110			L33+40NW 23+00SW	480	< 5		
L32+00NW 42+00SW	815	5			L33+50NW 42+00SW	830	< 5		
42+50SW	1020	< 5			L34+00NW 23+00SW	510	< 5		
43+00SW	1125	< 5			23+50SW	780	55		
43+50SW	335	< 5			24+00SW	735	< 5		
44+00SW	665	< 5			24+50SW	800	< 5		
44+50SW	835	< 5			25+00SW	1020	< 5		
45+00SW	850	< 5			25+50SW	1065	< 5		
45+50SW	715	< 5			26+00SW	800	< 5		
46+00SW	625	< 5			26+50SW	560	< 5		
46+50SW	460	< 5			27+00SW	740	5		
47+00SW	365	< 5			27+50SW	990	25		

BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 819

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.	Mn ppm	Au ppb		
L34+00NW 28+00SW	1740	5			L37+00NW 23+00SW	750	< 5		
28+50SW	880	< 5			42+00SW	825	< 5		
29+00SW	1115	< 5			42+50SW	1875	45		
29+50SW	1120	5			43+00SW	2930	20		
30+00SW	1200	5			43+50SW	2555	20		
42+00SW	495	< 5			44+00SW	1000	< 5		
L34+50NW 42+00SW	1370	245			44+50SW	352	<20*		
L35+00NW 23+00SW	660	5			45+00SW	795	1540		
42+00SW	1450	75			45+50SW	1230	< 5		
42+50SW	1965	15			46+00SW	870	<20*		
43+00SW	1980	95			46+50SW	1100	<20*		
43+50SW	1515	< 5			47+00SW	1070	< 5		
44+00SW	1695	< 5			47+50SW	1315	< 5		
44+50SW	2010	10			L37+50NW 42+00SW	1330	10		
45+00SW	1435	< 5			L38+00NW 23+00SW	1155	< 5		
45+50SW	1650	< 5			23+50SW	710	20		
46+00SW	725	< 5			24+00SW	645	10		
L35+50NW 42+00SW	1600	5			24+50SW	765	< 5		
L36+00NW 23+00SW	705	5			25+00SW	580	< 5		
23+50SW	885	< 5			25+50SW	540	< 5		
24+00SW	570	< 5			26+00SW	1085	< 5		
24+50SW	905	< 5			26+50SW	540	< 5		
25+00SW	1375	< 5			27+00SW	740	< 5		
25+50SW	470	< 5			27+50SW	505	< 5		
26+00SW	580	< 5			28+00SW	615	10		
26+50SW	770	< 5			28+50SW	800	10		
27+00SW	1155	60			29+00SW	680	< 5		
27+50SW	1450	< 5			29+50SW	1015	5		
28+00SW	575	< 5			30+00SW	715	5		
28+50SW	730	5			42+00SW	1745	5		
29+00SW	700	5			L38+50NW 42+00SW	1285	40		
29+50SW	700	5			L39+00NW 23+00SW	835	5		
30+00SW	725	< 5			42+00SW	1565	5		
42+00SW	1000	10			L39+50NW 42+00SW	1570	10		
L36+50NW 42+00SW	1000	< 5			L40+00NW 23+00SW	640	< 5		

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BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 819

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.	Mn ppm	Au ppb		
L40+00NW 23+50SW	1710	< 5			L46+00NW 47+00SW	610	5		
24+00SW	690	10			L48+00NW 40+50SW	1960	30		
24+50SW	690	< 5			41+00SW	2895	15		
25+00SW	885	15			41+50SW	4045	190		
25+50SW	780	5			42+00SW	1910	5		
26+00SW	620	< 5			42+50SW	1245	40		
26+50SW	555	< 5			43+00SW	1425	35		
27+00SW	600	< 5			43+50SW	1545	10		
27+50SW	680	< 5			44+00SW	855	15		
28+00SW	540	< 5			44+50SW	1490	40		
28+50SW	435	< 5			45+00SW	1430	160		
29+75SW	505	10			45+50SW	2110	15		
30+25SW	1860	20			46+00SW	1090	65		
37+50SW	1665	15			46+50SW	2170	250		
38+68SW	615	15			L50+00NW 40+00SW	5990	20		
39+00SW	1205	10			40+50SW	9230	95		
39+25SW	1345	20			41+00SW	3790	225		
39+50SW	1380	20			41+50SW	17400	510		
39+75SW	1690	25			42+00SW	2485	55		
L43+00NW 40+00SW	1155	65			42+50SW	2550	55		
L44+00NW 46+50SW	925	90			43+00SW	1025	10		
L45+00NW 40+00SW	1190	270			43+50SW	700	35		
L46+00NW 40+50SW	2325	110			44+00SW	645	405		
41+00SW	1925	65			44+50SW	760	140		
41+50SW	1045	245			45+00SW	425	55		
42+00SW	1275	45			45+50SW	595	90		
42+50SW	1485	15			46+00SW	1530	20		
43+00SW	1995	45			46+50SW	1300	15		
43+50SW	1410	25			47+00SW	1195	40		
44+00SW	660	15			L52+00NW 32+00SW	850	10		
44+50SW	1490	15			32+50SW	715	10		
45+00SW	1780	5			33+00SW	870	10		
45+50SW	630	5			33+50SW	840	20		
46+00SW	2265	10			34+00SW	1960	100		
46+50SW	2125	10			34+50SW	1725	40		

BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 819

Page No. 4

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.	Mn ppm	Au ppb		
L52+00NW 35+00SW	1940	40			L54+00NW 37+50SW	4670	55		
35+50SW	3510	80			38+00SW	4330	130		
36+00SW	2820	210			38+50SW	4980	70		
36+50SW	3470	50			39+00SW	3730	195		
37+00SW	5250	55			39+50SW	19860	835		
37+50SW	7710	70			40+00SW	4710	325		
38+00SW	13500	335			44+00SW	4850	20		
38+50SW	12740	105			44+50SW	2350	20		
39+00SW	8250	95			45+00SW	3390	60		
39+50SW	12640	705			45+50SW	4340	25		
40+50SW	2060	60			46+00SW	2970	50		
41+00SW	3800	95			46+50SW	2620	30		
41+50SW	10780	125			47+00SW	2250	20		
42+00SW	5280	105			L56+00NW 32+00SW	715	< 5		
42+50SW	3400	40			32+50SW	860	10		
43+00SW	1215	55			33+00SW	1100	10		
43+50SW	1835	85			33+50SW	1065	< 5		
44+00SW	2780	15			34+00SW	1320	10		
44+50SW	1330	55			34+50SW	1455	95		
45+00SW	2060	20			35+00SW	1360	15		
45+50SW	1570	10			35+50SW	2090	150		
46+00SW	1615	10			36+00SW	1560	25		
46+50SW	1275	35			37+00SW	2090	35		
47+00SW	925	< 5			37+50SW	2090	105		
L54+00NW 32+00SW	1395	25			38+00SW	2880	40		
32+50SW	1770	80			38+50SW	2420	30		
33+00SW	575	< 5			39+00SW	1935	65		
33+50SW	960	5			39+50SW	1655	145		
34+00SW	835	5			L57+00NW 40+00SW	1805	10		
34+50SW	935	10			L58+00NW 32+00SW	950	15		
35+00SW	3290	30			32+50SW	810	10		
35+50SW	1240	30			33+00SW	610	10		
36+00SW	4470	32			33+50SW	300	5		
36+50SW	1530	40			34+00SW	560	10		
37+00SW	10180	125			34+50SW	460	10		

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BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 819 Page No. 5

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.	Mn ppm	Au ppb		
L58+00NW 35+00SW	435	15			L60+00NW 36+50SW	635	5		
35+50SW	495	10			37+00SW	715	5		
36+00SW	1420	25			37+50SW	2550	20		
36+50SW	1170	20			38+00SW	1100	25		
37+00SW	2160	160			38+50SW	2130	20		
37+50SW	1300	50			39+00SW	860	20		
38+00SW	2080	110			39+50SW	975	10		
38+50SW	2550	170			40+00SW	1110	30		
39+00SW	4740	35			40+50SW	1535	10		
39+50SW	4970	80			41+00SW	7290	100		
40+00SW	1315	15			41+50SW	3720	10		
40+50SW	4330	125			42+00SW	800	70		
41+00SW	6040	65			42+50SW	1485	10		
41+50SW	2730	180			43+00SW	2130	< 5		
42+00SW	5400	250			43+50SW	890	< 5		
42+50SW	4140	80			44+00SW	2500	< 5		
43+00SW	4800	55			44+50SW	1685	5		
43+50SW	3880	15			45+00SW	1215	< 5		
44+00SW	970	5			45+50SW	5600	5		
44+50SW	625	5			46+00SW	1730	< 5		
45+00SW	1085	10			46+50SW	640	5		
45+50SW	675	10			47+00SW	387	< 5		
46+00SW	590	10			104I-L79-B J 12	2940	< 5		
46+50SW	1135	5			13	1220	5		
47+00SW	885	10			14	1300	< 5		
L59+00NW 40+00SW	1610	15			15	1340	< 5		
L60+00NW 32+00SW	3120	40			16	1195	< 5		
32+50SW	2070	30			17	1830	15		
33+00SW	660	15			18	2390	< 5		
33+50SW	1020	5			104I-S79-B J 1	2770	280		
34+00SW	415	5			2	2230	65		
34+50SW	2550	30			104P-L79-W-2B J 1	204	-		
35+00SW	490	10			2	110	-		
35+50SW	615	5			104P-S79-W-2B J 1	600	-		
36+00SW	333	10			BR E 1	1345	< 5		

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BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 819

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.	Mn ppm	Au ppb		
BR E 2	730	< 5							
3	960	< 5							
4	2140	20							
5	1310	10							
6	920	10							
7	595	10							
8	960	10							
9	1075	35							
10	1340	25							
11	885	85							
12	1785	125							
13	1585	30							
14	1280	5							
15	925	5							
16	1265	< 5							
17	1370	< 5							
18	297	< 5							
19	278	< 5							
20	445	15							
21	270	< 5							
22	590	< 5							
23	195	< 5							
24	1470	< 5							
25	760	< 5							
26	910	< 5							
27	530	< 5							
28	324	< 5							
29	470	< 5							
					S79-B T13	1390	30		
					14	1180	30		
					15	199	10		
					16	1600	10		
					17	1430	< 5		

BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 819

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.	Mn ppm	Au ppb		
S79-B T18	1700	5			TB S14	590	< 5		
L40+00NW 31+00SW ROCKS	420	< 5			15	610	< 5		
31+25SW	580	< 5			16	440	< 5		
TB E17	182	85			17	475	< 5		
18	720	185			18	470	< 5		
19	1440	5			19	500	< 5		
20	750	25			20	375	< 5		
21	1740	190			21	505	< 5		
22	1650	35			22	560	< 5		
23	1780	30			23	1330	< 5		
24	4840	55			24	500	< 5		
25	3950	30			25	545	< 5		
26	2100	15			26	645	< 5		
27	2120	10			27	720	< 5		
28	1900	5			28	1360	15		
29	2430	< 5			29	1000	35		
30	2620	40			30	1230	45		
31	3100	100			31	975	< 5		
32	2750	105			32	665	< 5		
33	2500	120			33	1260	160		
34	2700	30			34	1310	40		
35	2800	5			35	1515	15		
S 1	575	< 5			36	1330	20		
2	237	< 5			37	1420	5		
3	400	5			38	1375	5		
4	570	< 5			39	1790	< 5		
5	535	< 5			40	615	< 5		
6	550	< 5			41	555	< 5		
7	540	< 5			42	635	< 5		
8	470	< 5			43	1100	< 5		
9	355	< 5			44	1575	< 5		
10	595	< 5			45	1310	< 5		
11	805	< 5			46	1055	< 5		
12	355	< 5			47	890	< 5		
13	595	< 5			48	810	< 5		

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BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 819

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.	Mn ppm	Au ppb		
TB S49	690	< 5			TB T34	1170	15		
50	820	< 5			35	1255	35		
T 1	490	< 5			36	785	20		
2	670	< 5			37	1110	10		
3	675	< 5			38	1625	30		
4	425	< 5			39	2660	10		
5	645	5			40	930	10		
6	375	< 5			41	700	< 5		
7	1015	5			42	300	10		
8	870	< 5			43	620	< 5		
9	840	< 5			44	1145	10		
10	1000	5			45	1040	10		
11	800	< 5			46	3200	10		
12	830	5			47	660	95		
13	1170	5			52	2450	5		
14	830	< 5			53	620	< 5		
15	3540	< 5			54	730	< 5		
16	1120	10			55	535	< 5		
17	790	< 5			57	560	< 5		
18	2000	20			58	535	< 5		
19	1890	60			59	1195	5		
20	1320	< 5			60	900	< 5		
21	2500	30			61	1225	5		
22	220	25			62	670	< 5		
23	1170	160			63	1345	< 5		
24	220	100			64	560	< 5		
25	1060	35			65	665	< 5		
26	1130	65			66	610	< 5		
27	1195	40			67	605	< 5		
28	850	15			68	610	< 5		
29	620	210			69	610	< 5		
30	460	345			70	515	< 5		
31	930	15							
32	940	65							
33	1160	60			* detection limit on a small sample				
					cc Mr. O. Hairsine				

MINING LAND ... ACCESSION NO. 7818

BONDAR-CLEGG & COMPANY LTD.
1500 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-54554

Geochemical Lab Report

Extraction: Mn; Hot Aqua Regia / Au; Fire Assay & Hot Aqua Regia
Report No. 29 - 899 PROJECT: BEALE #15
Method: Atomic Absorption
From: Cordilleran Engineering Ltd.
Fraction Used:
Date: July 24, 1979

SAMPLE NO.	Mn ppm	Au ppb			SAMPLE NO.				
TB - T48	3000	170							
49	1070	50							
50	1570	35							
51	1130	30							
52	2050	10							
56	850	L 5							

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"L" denotes Less Than

cc Mr. O. Hairsine

BONDAR-CLEGG & COMPANY LTD.
130 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-352667

Geochemical Lab Report

Extraction Hot Aqua Regia
Method Atomic Absorption
Fraction Used

Report No. 29 - 2628 PROJECT: BEALE
From Cordilleran Engineering Ltd.
Date December 20 19 79

SAMPLE NO.	Pb ppm	Ag ppm			SAMPLE NO.	Pb ppm	Ag ppm		
L79-B - J 1	181	2.6			L42+00NW - 45+00SW	138	3.6		
2	96	2.7			45+50SW	142	2.5		
3	96	0.9			46+00SW	120	1.7		
4	62	0.6			46+50SW	114	3.1		
S79-B - E 2	130	3.3			47+00SW	30	0.8		
8	30	0.5			L46+00NW - 40+00SW	70	2.4		
11	66	0.6			L47+00NW - 40+00SW	192	3.8		
12	143	3.7			L48+00NW - 40+00SW	1150	9.5		
13	166	5.0			L49+00NW - 40+00SW	560	6.0		
S 8	170	4.9			L51+00NW - 40+00SW	88	2.4		
13	240	4.7			L52+00NW - 40+00SW	980	4.8		
16	109	1.3			L53+00NW - 40+00SW	192	4.4		
19	176	20.			L54+00NW - 40+50SW	42	5.3		
21	14	0.2			41+50SW	73	5.3		
T 2	665	7.0			42+00SW	195	2.6		
5	280	3.5			L55+00NW - 40+00SW	43	1.2		
6	35	0.5			L56+00NW - 40+00SW	67	1.0		
10	20	0.3			40+50SW	56	0.7		
L41+00NW - 40+00SW	98	1.2			41+00SW	127	1.3		
L42+00NW - 40+00SW	141	2.2			41+50SW	47	0.3		
40+50SW	IS	IS			42+00SW	74	1.0		
41+00SW	114	3.8			42+50SW	57	0.8		
41+50SW	163	1.8			TB - E 1 80M	76	1.5		
42+00SW	265	4.8			2	85	1.5		
42+50SW	184	3.5			3	87	2.3		
43+00SW	950	11.			4	54	3.9		
43+25SW	675	7.3			5	72	5.9		
43+80SW	143	1.4			6	57	3.4		
44+00SW	100	1.1			7	45	3.1		
44+50SW	106	0.8			8	25	0.5		

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BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 2628

SAMPLE NO.	Pb ppm	Ag ppm			SAMPLE NO.	Pb ppm	Ag ppm		
TB - E 9 80M	57	18.			L 0+00 - 6+50E	190	1.3		
10	34	2.5			7+00E	120	0.5		
11	29	1.5			7+50E	155	0.7		
12	18	2.2			8+00E	94	0.7		
13	40	3.0			8+50E	92	0.7		
14	96	3.3			9+00E	136	1.8		
15	185	2.9			9+25E	87	1.0		
16	133	1.9			L32+50NW - 42+00SW	15	0.2		
L54+00NW - 41+00SW T79BH1	22	2.0			L33+00NW - 42+00SW	10	0.2		
L44+00NW - 40+00SW	96	1.1			L33+50NW - 42+00SW	51	0.2		
41+00SW	151	2.0			L34+00NW - 42+00SW	14	0.2		
41+50SW	129	1.0			L34+50NW - 42+00SW	71	2.4		
42+00SW	122	4.5			L35+00NW - 42+00SW	152	2.4		
42+50SW	90	1.3			42+50SW	110	1.0		
43+00SW	86	0.7			43+00SW	68	1.0		
43+50SW	80	1.5			43+50SW	12	0.2		
L79-B - J 5	30	1.0			44+00SW	165	0.9		
6	10	0.2			44+50SW	131	1.7		
7	54	0.8			45+00SW	74	0.6		
8	26	1.9			45+50SW	13	0.2		
9	280	3.7			46+00SW	25	0.2		
10	36	0.4			L35+50NW - 42+00SW	60	0.4		
11	29	1.5			L36+00NW - 42+00SW	39	0.2		
L 0+00 - 0+50E	16	0.2			L36+50NW - 42+00SW	14	0.2		
1+00E	31	0.3			L37+00NW - 42+00SW	19	0.2		
1+50E	16	0.2			42+50SW	108	2.3		
2+00E	19	0.2			43+00SW	1500	11.		
2+50E	93	0.3			43+50SW	38	0.2		
3+00E	18	0.2			44+00SW	67	0.2		
3+50E	16	0.2			44+50SW	13	0.2		
4+00E	23	0.2			45+00SW	7	0.2		
4+50E	34	0.6			45+50SW	9	0.2		
5+00E	38	0.2			46+00SW	5	0.2		
5+50E	63	0.7			46+50SW	15	0.2		
6+00E	88	0.5			47+00SW	10	0.2		

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BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 2628

SAMPLE NO.	Pb ppm	Ag ppm			SAMPLE NO.	Pb ppm	Ag ppm		
L37+00NW - 47+50SW	24	0.2			L50+00NW - 44+00SW	87	1.9		
L37+50NW - 42+00SW	23	1.4			44+50SW	45	1.7		
L38+00NW - 42+00SW	72	2.0			45+00SW	55	2.6		
L38+50NW - 42+00SW	94	1.3			45+50SW	22	2.9		
L39+00NW - 42+00SW	87	0.6			46+00SW	40	1.6		
L39+50NW - 42+00SW	200	1.6			46+50SW	57	2.3		
L43+00NW - 40+00SW	72	0.3			47+00SW	45	0.5		
L44+00NW - 46+50SW	41	0.8			L52+00NW - 34+00SW	180	1.7		
L45+00NW - 40+00SW	190	1.9			34+50SW	155	2.4		
L46+00NW - 40+50SW	186	3.3			35+00SW	147	2.8		
41+00SW	100	2.5			35+50SW	470	9.6		
41+50SW	285	4.0			36+00SW	200	7.2		
42+00SW	120	0.7			36+50SW	295	6.0		
42+50SW	78	0.5			37+00SW	240	6.5		
43+00SW	160	2.9			37+50SW	141	5.4		
43+50SW	120	1.7			38+00SW	350	12.		
44+00SW	69	1.0			38+50SW	350	15.		
44+50SW	255	3.2			39+00SW	1700	36.		
45+00SW	65	1.3			39+50SW	7300	88.		
45+50SW	98	1.0			40+50SW	570	6.7		
46+00SW	138	0.4			41+00SW	595	7.0		
46+50SW	220	0.8			41+50SW	1200	10.		
47+00SW	60	1.2			42+00SW	1100	24.		
L48+00NW - 45+00SW	96	1.9			42+50SW	380	4.0		
45+50SW	178	1.6			43+00SW	200	3.3		
46+00SW	120	1.2			43+50SW	72	2.6		
46+50SW	320	3.8			L54+00NW - 37+00SW	515	73.		
L50+00NW - 40+00SW	90	2.8			37+50SW	160	14.		
40+50SW	230	6.6			38+00SW	160	8.4		
41+00SW	520	9.2			38+50SW	170	20.		
41+50SW	400	18.			39+00SW	144	9.7		
42+00SW	61	2.1			39+50SW	300	20.		
42+50SW	95	3.4			40+00SW	250	14.		
43+00SW	39	0.8			L56+00NW - 34+50SW	65	0.9		
43+50SW	62	1.5			35+00SW	63	0.8		

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BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 2628 Page No. 4

SAMPLE NO.	Pb ppm	Ag ppm			SAMPLE NO.	Pb ppm	Ag ppm		
L56+00NW - 35+50SW	150	1.3			L60+00NW - 38+00SW	138	1.0		
36+00SW	105	1.4			38+50SW	138	0.9		
37+00SW	365	1.1			39+00SW	129	0.9		
37+50SW	82	0.9			39+50SW	78	0.4		
38+00SW	465	1.2			40+00SW	102	1.1		
38+50SW	185	1.8			40+50SW	50	0.4		
39+00SW	95	1.8			41+00SW	107	1.9		
39+50SW	82	1.0			41+50SW	41	0.9		
L57+00NW - 40+00SW	42	0.4			42+00SW	31	0.4		
L58+00NW - 37+00SW	345	1.3			104I-S78-B J 1	440	6.9		
37+50SW	114	1.3			2	280	3.4		
38+00SW	166	2.5			BR - E 9	28	0.4		
38+50SW	107	4.7			10	17	0.4		
39+00SW	300	1.4			11	10	1.2		
39+50SW	490	2.0			12	15	0.4		
40+00SW	58	0.5			13	15	1.2		
40+50SW	110	5.5			TB - E17	235	3.3		
41+00SW	112	2.6			18	128	4.2		
41+50SW	114	7.4			19	13	0.8		
42+00SW	525	4.3			20	30	3.9		
42+50SW	880	2.1			21	183	6.9		
43+00SW	310	1.0			22	170	2.7		
L59+00NW - 40+00SW	50	0.9			23	355	6.5		
L60+00NW - 32+00SW	260	8.6			24	870	8.2		
32+50SW	184	6.4			25	3000	3.7		
33+00SW	42	1.0			26	490	1.6		
33+50SW	35	0.3			27	121	1.4		
34+00SW	28	0.2			28	870	0.9		
34+50SW	52	3.0			29	200	0.6		
35+00SW	47	0.5			30	200	2.3		
35+50SW	87	0.5			31	180	4.3		
36+00SW	34	0.3			32	174	3.4		
36+50SW	108	0.2			33	193	4.2		
37+00SW	90	0.3			34	285	11.		
37+50SW	380	0.4			35	420	1.8		

BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 29 - 2628

SAMPLE NO.	Pb ppm	Ag ppm			SAMPLE NO.				
TB - S33	26	0.9							
34	34	0.2							
35	129	1.2							
36	50	0.7							
T18	130	1.8							
19	330	4.1							
20	35	0.7							
21	192	2.9							
22	44	2.0							
23	86	5.0							
24	138	2.6							
25	25	0.8							
26	50	1.4							
27	26	0.8							
28	67	1.0							
29	440	25.							
30	42	1.8							
31	29	1.0							
32	30	1.2							
33	51	1.3							
34	58	0.8							
35	57	1.4							
36	28	1.3							
37	22	0.6							
38	230	2.8							
47	230	10.							
48	155	5.4							
49	156	4.2							
50	196	1.5							
51	115	2.3							
52	91	1.7							

BEALE 4 BEALE 1

BEALE 3 BEALE 2

ZINC LAKE

Pb,Zn,Ag,Au

Pb,Zn,Ag float

Pb,Zn,Ag

LEGEND

MID-CRETACEOUS ?

7 Feldspar-quartz porphyry

6 Diorite and metadiorite

TRIASSIC ?

5 Andesite (dark coloured, porphyritic)

4 Rhyolite to rhyodacite flow (sometimes porphyritic)

3 Dacite to rhyodacite flow (sometimes porphyritic)

UPPER DEVONIAN TO PERMIAN ?

2 Peridotite or pyroxenite

1 Quartz-feldspar-biotite schist, amphibolite schist, quartzite, minor calc-silicate

SYMBOLS

- Stream
- Ridge
- Legal corner post and claim boundaries
- Grid lines
- Limit of outcrop
- Geological contact (assumed)
- Lineament (possible fault)
- G Gossan
- X Pb, Ag Mineral occurence

ASSESSMENT REPORT

7818

NO.

LOGAN JOINT VENTURE

BEALE PROPERTY

GEOLOGICAL MAP

LIARD MINING DIVISION, BRITISH COLUMBIA
N.T.S. 104 I-14E/15W

100 0 100 200 300 400

APPROXIMATE SCALE IN METRES

BY

CORDILLERAN ENGINEERING
416-355 BURRARD STREET
VANCOUVER, BC V6C 2G8

JANUARY, 1980

PLATE I

BEALE 4 BEALE 1

BEALE 3 BEALE 2

LEGEND

MID-CRETACEOUS ?

7 — Feldspar – quartz porphyry

6 — Diorite and metadiorite

TRIASSIC ?

5 — Andesite (dark coloured, porphyritic)

4 — Rhyolite to rhyodacite flow (sometimes porphyritic)

3 — Dacite to rhyodacite flow (sometimes porphyritic)

UPPER DEVONIAN TO PERMIAN ?

2 — Peridotite or pyroxenite

1 — Quartz–feldspar–biotite schist, amphibolite schist, quartzite, minor calc–silicate

SYMBOLS

- Stream
- Ridge
- Legal corner post and claim boundaries
- Grid lines
- Limit of outcrop
- Geological contact (assumed)
- Lineament (possible fault)
- G — Gossan
- X Pb, Ag — Mineral occurence

SOIL GEOCHEMISTRY

- Au — Gold ⩾ 60 ppb
- Ag — Silver ⩾ 4 ppm
- Pb — Lead ⩾ 160 ppm
- Mn — Manganese ⩾ 3300 ppm
- Area of coincident anomalies

ASSESSMENT REPORT 7818

LOGAN JOINT VENTURE

BEALE PROPERTY

GEOLOGICAL AND GEOCHEMICAL COMPILATION MAP

LIARD MINING DIVISION, BRITISH COLUMBIA
N.T.S. 104 I–14E/15W

100 0 100 200 300 400
APPROXIMATE SCALE IN METRES

BY
CORDILLERAN ENGINEERING
(418–355 BURRARD STREET
VANCOUVER, B.C. V6C 2G8

JANUARY, 1980

PLATE 2

BEALE 4 BEALE 1
BEALE 3 BEALE 2
LEGEND
Stream
Ridge
Grid lines
Legal corner posts and claim boundaries
Soil sample location and gold content in p.p.b. (parts per billion)
Stream sediment sample location and gold content in p.p.b. (parts per billion) normal / heavy mineral concentrate
Rock chip sample location, assay number, and gold content in ounces per ton
Note: * indicates small sample
GOLD CONCENTRATION IN P.P.B.
Background <15 p.p.b.
Weakly anomalous 15–34 p.p.b.
Anomalous 35–59 p.p.b.
Strongly anomalous ≥60 p.p.b.
GOLD FREQUENCY DISTRIBUTION
NUMBER OF SAMPLES
GOLD P.P.B.
641 SAMPLES
7818
LOGAN JOINT VENTURE
BEALE PROPERTY
ASSAY AND GEOCHEMICAL RESULTS
GOLD
LIARD MINING DIVISION, BRITISH COLUMBIA
N.T.S. 104 I-14E/15W
APPROXIMATE SCALE IN METRES
1 5,000
BY
CORDILLERAN ENGINEERING
1418-355 BURRARD STREET
VANCOUVER, B.C. V6C 2G8
JANUARY, 1980
PLATE 3

BEALE 4 BEALE 1

BEALE 3 BEALE 2

NOTE: SAMPLE LINE CONTINUES ALONG THIS RIDGE TO THE NORTHWEST AND SOUTHEAST. SAMPLES WERE TAKEN AT APPROXIMATELY 50 METRE INTERVALS FROM SAMPLES 12670, 12672 AND 12674 WERE TAKEN AT APPROXIMATELY 100 METRE INTERVALS AND MORE FROM SITE'S RECONNAISSANCE.

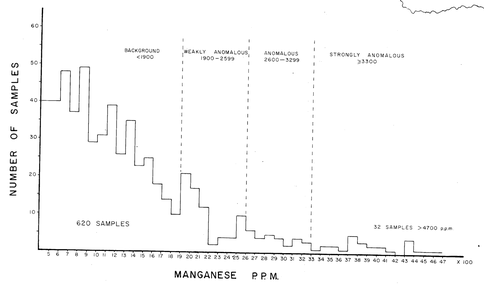
LEGEND

- Stream
- Ridge
- Grid lines
- Legal corner posts and claim boundaries
- 2970 — Soil sample location and manganese content in p.p.m. (parts per million)
- 2200 — Stream sediment sample location and manganese content in p.p.m. (parts per million)
- X 12982 — Rock chip sample location and assay number

MANGANESE CONCENTRATION IN P.P.M.

○	Background	<1900 p.p.m.
○	Weakly anomalous	1900–2599 p.p.m.
○	Anomalous	2600–3299 p.p.m.
○	Strongly anomalous	⩾3300 p.p.m.

MANGANESE FREQUENCY DISTRIBUTION



ASSESSMENT REPORT RECEIVED
JAN 29 1980
NO. 7818

LOGAN JOINT VENTURE

BEALE PROPERTY

ASSAY AND GEOCHEMICAL RESULTS MANGANESE

LIARD MINING DIVISION, BRITISH COLUMBIA
N.T.S. 104 I-14E/15W

APPROXIMATE SCALE IN METRES

BY
CORDILLERAN ENGINEERING
1418-355 BURRARD STREET
VANCOUVER, B.C.

JANUARY, 1980

PLATE 4

LOGAN JOINT VENTURE

BEALE PROPERTY

ASSAY AND GEOCHEMICAL RESULTS SILVER

LIARD MINING DIVISION, BRITISH COLUMBIA
N.T.S. 104 I-14E/15W

BY

CORDILLERAN ENGINEERING
1418–355 BURRARD STREET
VANCOUVER, B.C. V6C 2G8

JANUARY, 1980

PLATE 5


BEALE 4 BEALE 1
BEALE 3 BEALE 2
LEGEND
Stream
Ridge
Grid lines
Legal corner posts and claim boundaries
Soil sample location and lead content in p.p.m. (parts per million)
Stream sediment sample location and lead content in p.p.m. (parts per million)
Rock chip sample location, assay number, and lead content in percent
LEAD CONCENTRATION IN P.P.M.
Background <40 p.p.m.
Weakly anomalous 40-99 p.p.m.
Anomalous 100-159 p.p.m.
Strongly anomalous ⩾160 p.p.m.
7818
LOGAN JOINT VENTURE
BEALE PROPERTY
ASSAY AND GEOCHEMICAL RESULTS
LEAD
LIARD MINING DIVISION, BRITISH COLUMBIA
N.T.S. 104 I-14E/15W
APPROXIMATE SCALE IN METRES
1 5,000
BY
CORDILLERAN ENGINEERING
1418-355 BURRARD STREET
VANCOUVER, B.C. V6C 2G8
58° 57'
128°57
JANUARY, 1980
PLATE 6