

4174

92H/11E
GEOLOGICAL REPORT

on the
RIP CLAIM #1 ADIT ZONE
DRY CREEK PROPERTY
COQUIHALLA VALLEY AREA, B. C.

on behalf of

CORVAL RESOURCES LTD. (N.P.L.)

| <u>Claim Name</u> | <u>Record Number</u> | <u>Expiry Date</u> |
|-------------------|----------------------|--------------------|
| Rip 1 - 3 | 44104-06 | January 15, 1974 |
| Tab 1 & 2 | 41747-58 | August 6, 1973 |
| Julie 1 & 2 | 22707-08 | August 24, 1973 |
| Lucky 1 - 4 | 21403-06 | September 13, 1974 |
| Hope 5 & 6 | 18789-90 | September 4, 1976 |
| HDD #1 Fr. | 47956 | January 4, 1975 |
| Rip 9 - 12 | 49198-210 | April 16, 1975 |
| Rip 55 & 56 | 49244-45 | April 16, 1975 |
| Rip 58 - 61 | 49247-50 | April 16, 1975 |
| Rip 62 | 49251 | April 16, 1973 |
| Rip 67 | 49256 | April 16, 1974 |
| Rip 69 - 72 | 49258-61 | April 16, 1974 |
| Rip 77 | 49266 | April 16, 1973 |
| Rip 79 | 49268 | April 16, 1973 |
| Rip 81 | 49270 | April 16, 1973 |
| Rip 83 | 49272 | April 16, 1973 |

Nicola Mining Division

N.T.S. 92H/11E

by

G. C. GUTRATH, B.Sc., P.Eng., Geologist

ATLED EXPLORATION MANAGEMENT LTD.

Vancouver, B. C.

February 30, 1973

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 4174 MAP

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GEOLOGICAL REPORT
on the
RIP CLAIM #1 ADIT ZONE
CORVAL RESOURCES LTD. (N.P.L.)

INTRODUCTION

The writer carried out a surface geological mapping program on Corval's Dry Creek property in 1971. The underground workings on the Rip #1 claim were not mapped at that time because of a lack of underground equipment.

In August, 1972 the writer spent 2 days on the property surveying and mapping the underground working. The timbering at the portal was found to be in poor condition allowing a number of small "sluffs" to dam the water to a maximum depth of 3 feet for the first 200 feet of the cross-cut. The remainder of the underground workings were found to be in good condition. The raise to surface was open allowing excellent ventilation through out the workings.

This report is written at the request of Mr. W. L. C. Newsom, Vice-president of Corval Resources Ltd. (N.P.L.).

GEOGRAPHY

Access

The property can be reached by 40 miles of good gravel road from Merritt or by 33 miles of gravel road, of which approximately 15 miles is very narrow, from Hope. The main road runs through the eastern part of the claim group as well as the Trans Canada and West Coast Transmission Oil and Gas lines. Roads, suitable for all wheel driven vehicles connect the main road with the two mineralized areas.

Topography

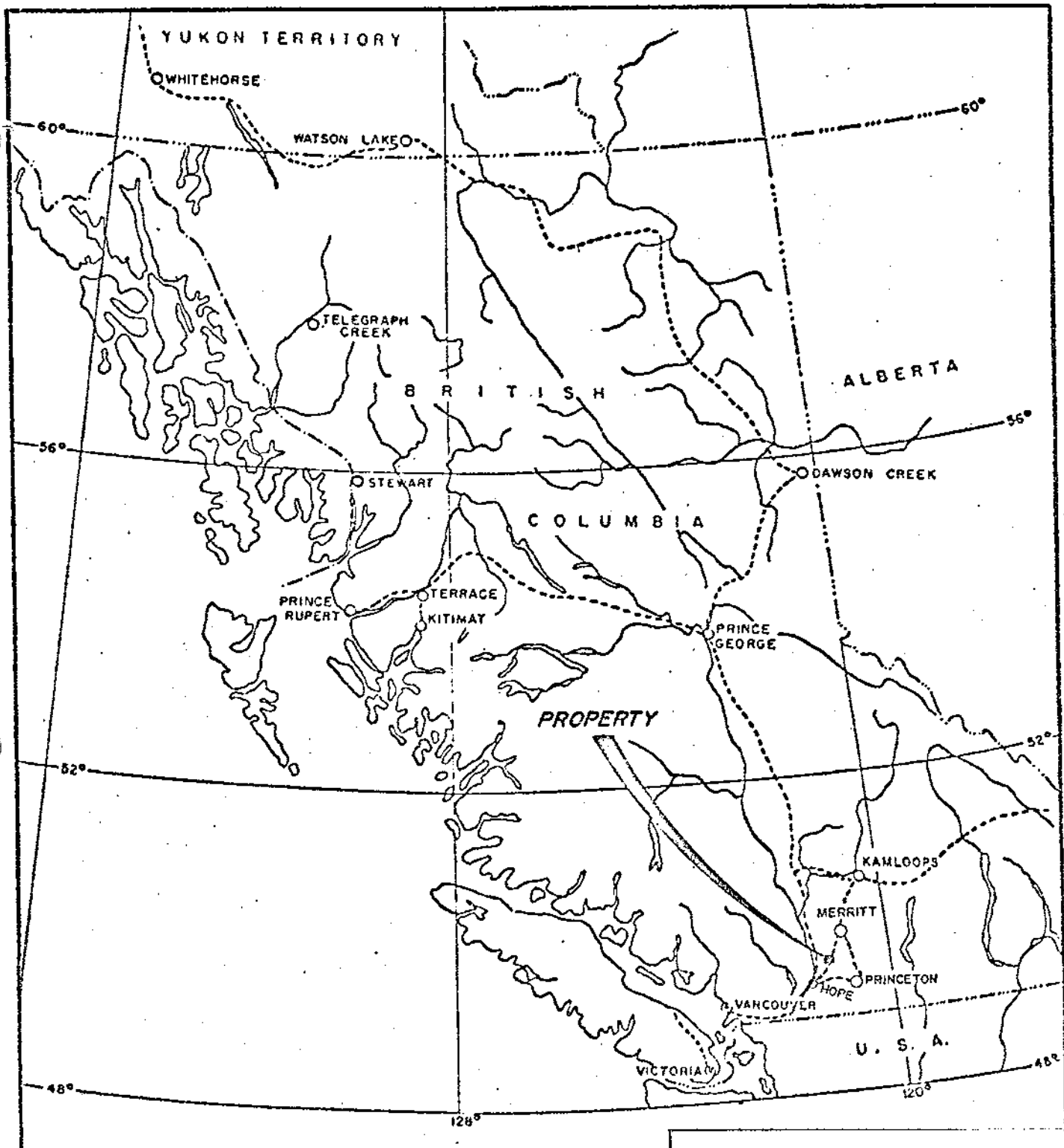
The claim group lies within the east flank of the Cascade Mountains. The elevation at the valley bottom is 3,500 feet and rises gently in a series of gravel benches to the adit on the Rip #1 claim at approximately the 3,750 foot elevation. From this point the hill rises steeply to an elevation of 5,300 feet within a distance of 3,000 feet. The top of the hill reaches a maximum height of 6,500 feet.

Dry Creek is deeply incised and forms a steep canyon on the Julie #1 and Lucky #4 claims. The creek has a steep gradient dropping from an elevation of 4,300 feet on the west side of the claim group to an elevation of 3,500 feet at its confluence with the Coldwater River.

The valley on the south side of Dry Creek and on the west side of the main valley rise steeply to an elevation of 5,100 feet within a distance of 5,000 feet. The mountain continues to rise to the east in a series of rolling benches to a maximum elevation of 6,000 feet near the western edge of the claim group.

Timber

The valley flats are covered with small pine and spruce. The slopes of the mountain to an elevation of 5,000 feet are heavily timbered with fir, spruce and scattered cedar suitable for construction lumber.



CORVAL RESOURCES LTD. Department of
 DRY CREEK PROPERTY Mines and Petroleum Resources
 LOCATION MAP ASSESSMENT REPORT
 49° 41' N 121° 0' W 4174 MAP #1
 NICOLA MINING DIVISION

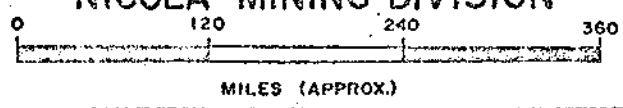


FIG. 1

TOPOGRAPHY

Water

Both Dry Creek and the Coldwater River run throughout the year. There is ample water for diamond drilling or for any future mining and milling requirements.

GEOLOGY

GENERAL GEOLOGY

(Geological Survey of Canada: Map 737A, Hope Geology by C. E. Cairnes, 1942, and Hope Map Area, West Half, Paper 69-47 J. W. H. Monger)

The property is located on the northwesterly trending east contact of the Coast Range Batholith of Jurassic age. This intrusive is primarily granodiorite in composition with local dioritic phases. Nicola Group volcanics of Upper Triassic age are in contact with the intrusive to the east. This volcanic group is primarily composed of andesitic flows, tuffs, related pyroclastics and minor intercalated sediments.

PROPERTY GEOLOGY

The claim group covers approximately 10,000 feet of observed and assumed contact between the Coast Range granodiorite intrusive and Nicola volcanics. The alteration and mineralization of economic interest is essentially confined to this contact zone.

PROPERTY GEOLOGY

(The property geology is taken from the report by G.Gutrath; Progress Report on the Corval Resources Ltd. (N.P.L.) Property, Coquihalla Valley, B. C. January 20, 1972)

Intrusive

The granodiorite intrusive underlies approximately 80% of the claim group and is referred to as the Eagle granodiorite in the Geological Survey of Canada reports. The majority of the main intrusive mass is represented by Specimen C-6 taken from outcrops on line 17S, station 25 + 00 west. This specimen is light grey, weakly foliated, medium grained, and is composed of approximately 75% subhedral, albite-twinned plagioclase, 15% anhedral quartz, 10% weakly chloritized, subhedral hornblende, and 5% subhedral to anhedral biotite.

Along the contact the granodiorite is highly-sheared giving the intrusive a gneissic appearance. Specimen C-5 taken from a small outcrop on line 4N, station 8 + 00 west is typical of this foliated granodiorite. The specimen is composed of approximately 50% light grey, irregular felsic bands with 15% quartz, and 35% dark green, thin mafic bands composed of coarse platy chlorite, minor biotite and remnant hornblende.

A dioritic phase of this intrusive or possibly a diorite dike outcrops on line 12N, station 9 + 00 west. No distinct contacts were located but there appears to be a relatively small occurrence although it could extend to the north. Specimen C-4, taken from this outcrop, is dark greyish green, fine-grained, and is composed of approximately 50% mafics, and 50% plagioclase.

The only other intrusive found on the property was a two foot wide basalt dike cutting fresh granodiorite exposed in Dry Creek near the west end of line 24S.

PROPERTY GEOLOGY

Volcanics

The volcanic rocks are exposed on only a very small portion of the claim group. They are seen in contact with the intrusive on the Rip #1 and Julie #1 claims, and there are a number of outcrops in and to the south of Dry Creek as well as outcrop exposed in the trenches, and road cuts. The majority of the area believed to be underlain by Nicola volcanics to the west, is covered by glacial overburden.

The volcanics have been identified as Nicola Group in the Geological Survey of Canada reports. What is thought to be typical rocks of this group outcrops between line 12N and 16N and is represented by Specimen C-2. This specimen is light green, aphanitic, massive tuff, possibly a tuffaceous sediment since there is some indication of weak bedding.

The rocks exposed in the trenches to the east of this area are so altered and brecciated it is difficult to identify whether they are predominately volcanics or intrusives. The trenches would have to be cleaned out and mapped in detail in order to get a better understanding of this complex contact zone.

On line 17S, station 23 + 00 west and at the west end of 24S are outcrops of green tuffaceous volcanics similiar to C-2. The volcanic-granodiorite contact zone at the end of 24S is highly sheared and altered for 25 to 30 feet. The outcrop in the road cut 300 feet to the east of this contact zone is tentatively identified as an altered, brecciated tuffaceous fragmental with 10% of the rock made up of round pebbles from 1/2" to 2" in diameter. Going further to the west along this outcrop it grades into a brecciated and altered granodiorite with no definite contact being observed.

PROPERTY GEOLOGY

Volcanics (con't)

This unusual rock with the round pebbles or rounded fragments was noted in a number of outcrops on the property. Specimen C-10 taken from outcrop on the road to the north of line 33S is light grey in colour, although limonitic stained from surface weathering, and appears to be a kaolinized crystal tuff with approximately 10% \pm 1/2" rounded pebbles. Specimen C-10 to the south of 33S is also kaolinized but appears to have originally been the granodiorite intrusive. No distinct contact was observed between the two rock types and it was thought at first that the volcanic rock was a recent Tertiary flow or crystal tuff. However, the volcanics may be Nicola Group cut by a swarm of granodiorite dikes near the contact. It would take a great deal more mapping and petrographic studies to get a better understanding of the detailed geology that is masked by the intense alterations.

Alteration

The alterations within the contact zone has been extensive and in some area so intense and pervassive that it is difficult to recognize original rock types or structures.

Kaolinization is the most predominant alteration and has affected both the volcanic and intrusive rocks. It is associated with sericitization, silicification, carbonization and pyritization. One of the most intensely kaolinized areas on the property is just to the south of Dry Creek in fresh, well exposed outcrop immediately below the trenched and diamond drilled area. The intense alteration has bleached the rock white, there is no indication of mafics, and the original feldspars have been completely altered to kaolin and sericite. The quartz occurs as fine to medium grained subhedral crystals and as veinlets. It is estimated that an additional 10% to 20% silica has been introduced into the

PROPERTY GEOLOGY

Alteration (con't)

rock as well as from 1% to 2% fine, disseminated crystalline pyrite. The original rock was first believed to be a tuffaceous fragmental, but a microscopic examination indicated that it has more characteristics of an intrusive breccia. The kaolinization in this area, to the south of Dry Creek, extends along the contact breccia zone from the end of line 25S to the trenched area on line 35S.

The granodiorite-volcanic breccia contact zone in the vicinity of the adit on the Rip #1 claim has been moderate to strongly kaolinized. The altered wall rocks from the mineralized zone in the adit are more highly silicified and carbonatized than the altered intrusive breccia to the south of Dry Creek.

The volcanic rocks on the Rip #1 claim are commonly sheared and altered to a chlorite biotite schist. In some area in the trenches the volcanics have a massive, dark hornfels appearance.

The surface outcrops, trenched areas, and dumps on the Rip #1 claim are highly oxidized and extensively manganese stained.

Mineralization

There are two main mineralized areas of economic importance on the property. These areas are approximately 6,000 feet apart and are both within the highly altered and brecciated granodiorite-volcanic contact zone. Both zones have a similar mineral assemblage and may be directly related but the majority of the granodiorite contact between the two zones is covered by overburden making it impossible to trace the mineralization in outcrop.

PROPERTY GEOLOGY

Mineralization (con't)

The first area is covered by the Rip #1 claim and has been investigated by approximately 300 feet of underground workings and a number of surface trenches. The underground workings could not be entered, but the dumps were examined. The mineralization consists primarily of sphalerite with minor amounts of galena, tetrahedrite, chalcopyrite, pyrite, and specular hematite in a quartz-carbonate gangue. The majority of this mineralization appears to have filled open fractures in the highly disturbed and altered granodiorite contact zone. The quartz is commonly crystalline forming a comb structure along the edge of the veinlets and is often interbanded with calcite and sulphide mineralization. Vugs, partially filled with crystalline quartz are common in all the veinlets. From 1% to 2% fine-grained, crystalline pyrite, with minor chalcopyrite is disseminated in the highly altered walls of the veins.

The size of this well-mineralized zone is unknown since the underground workings could not be entered. It is limited to the west by the fresh granodiorite contact but could extend along this contact to the north and south.

The second mineralized zone is to the south of the first on the Julie #1 and Julie #2 claims. A portion of this zone was extensively bulldozer trenched and diamond drilled by Dorian Mines. The mineralization in these trenches is predominantly specular hematite and sphalerite with minor chalcopyrite, galena, magnetite and pyrite. The best mineralization occurs in massive lenses of specular hematite carrying 10% to 15% coarse-grained yellowish coloured sphalerite. The maximum width of these lenses is three feet and more commonly they are only a few inches wide and discontinuous. However, they do occur throughout the majority of the trenched granodiorite-volcanic contact zone.

PROPERTY GEOLOGY

Mineralization (con't)

Immediately below the trenched area on the steep south bank of Dry Creek is a large slide area exposing fresh outcrop. From 1% to 3% fine-grained crystalline pyrite with very minor amounts of sphalerite, chalcopyrite, specular hematite, tetrahedrite and galena is disseminated in the highly altered host rock which has been tentatively identified as an intrusive breccia. Coarse crystalline sphalerite, galena and quartz with minor chalcopyrite and pyrite occur throughout the outcrops in very irregular, randomly spaced and widely separated veinlets and vuggy lenses.

Outside of the granodiorite-volcanic contact zone the only mineralization located was small amounts of sphalerite and pyrite in very narrow east-west trending shear zones cutting the granodiorite. These shears were found in the small creeks that cross line 5S and 9S.

Structure

The majority of the granodiorite is weakly foliated and along the contact it is intensely foliated. The predominant foliation trend is in a southwesterly direction.

Mr. Livgard in his report of April 26, 1971 was able to interpret from the aerial photographs a strong north-south lineament pattern in the vicinity of the mineral showings that subparallels the main valley and continues beyond the limits of the claim group. The lineament pattern is not easily identified on the ground, but it may be represented by the strong north-south shearing in the trenches on the Rip #1 claim.

PROPERTY GEOLOGY

Structure (con't)

A cross cutting, southwesterly trending lineament pattern thought to represent a strong fault zone can be identified on the aerial photograph. On the property it appears as a sharp escarpment on the east side of the valley but because of the overburden and heavy timber it could not be recognized on the west side of the valley. However, on the aerial photograph it definitely appears to cross the main valley and strike towards the Rip #1 claim. The intersection of the north-south trending lineament pattern and this southwesterly trending feature may account for the strong brecciation and foliation in the vicinity of the old workings on the Rip #1 claim.

The volcanic rocks in the trenches on the Rip #1 claim had indication of weak banding but no other bedding was located on the property.

UNDERGROUND GEOLOGY

Survey Performed

The underground workings were tape and compass surveyed and geologically mapped by the writer and an assistant. The mapping was done on a scale of 1 inch equals 20 feet.

The last underground work was done in 1954 and over the years considerable limonite and manganese (pyrolusite) has accumulated on the walls in the area of the main crosscut and drift intersection and in the area of the raise making these areas difficult to map. The remainder of the workings are remarkably clean except in the timbered area where the backs were lagged.

Survey Results

The first 120 feet of the crosscut passes through a light grey to white, bleached intrusive rock. It may be the main Eagle Granodiorite or it may possibly be a more recent, intensely altered granitic stock that has intruded the Eagle Granodiorite. This intrusive phase is only weakly brecciated compared to the next 90 feet of the crosscut that is intensely altered and brecciated.

The brecciated zone is composed of 50% angular white fragments varying from 1/2 inch to 3 inches in cross sections. The light grey to white matrix is fine grained and appears to be the same composition and texture as the fragments. This zone has been intensely kaolinized and weakly silicified. The rock is fractured, and these have been only

partially filled leaving numerous vugs, filled with crystalline quartz, and minor crystalline sphalerite, galena, tetrahedrite, chalcopyrite, and pyrite. The ground mass is uniformly pyritized with from 2% to 10% fine grained, disseminated crystalline pyrite. Minor to trace amounts of very fine grained chalcopyrite, sphalerite and galena is disseminated in the ground mass.

The breccia zone is believed to be a tectonic breccia related to the contact zone of the younger stock with the Eagle Granodiorite. However, it may be in part, or wholly a result of the movement along the northeasterly trending sheared fissure vein zone that is in contact with the breccia zone. The contact of the breccia zone and the northeasterly trending sheared fissure vein zone is marked by a strong, oxidized shear striking N55°E and dipping steeply.

The overall fissure vein zone can be divided into three sections; footwall, central vein and hangingwall in the area where the main crosscut joins the drift and in the area of the raise.

The footwall is kaolinized, bleached, weakly sheared, pyritized and cut by a widely spaced quartz vein stockwork. The walls are limonite and manganese stained.

The hangingwall is sheared and highly fractured with a close spaced quartz vein stock work. The zone is heavily pyritized and near the contact of the hangingwall with the Eagle granodiorite there is a massive pyrite vein that varies from 2 to 5 feet wide, as well as a number of lenses of massive pyrite within the zone. Only minor amounts of sphalerite

and tetrahedrite were noted in the hangingwall zone. There is a thick coating of manganese (pyrolusite) and limonite on the walls.

The central, northeasterly trending and steeply dipping shear fissure vein zone can be traced for 640 feet, the entire length of the drift. In the area where the main crosscut intersects the fissure vein it is 3 to 5 feet wide and dips 60° to 75° to the northwest. The gangue is composed of interbanded quartz, rhodochrosite siderite and minor calcite, barite and specular hematite. The quartz banding commonly demonstrates a comb structure and the manganese carbonates and calcite often have a botryoidal texture.

The mineralization of economic interest is primarily sphalerite with variable amounts of galena, chalcopyrite and tetrahedrite. The galena and tetrahedrite probably carry the silver values. Only minor pyrite is directly associated with this mineralization. The best zone of continuous zinc-lead-copper mineralization is in the area of the raise where the "shoot" is estimated to be 70 feet long and varies from 1 to 2 feet wide.

To the northeast the fissure vein narrows from 1 to 3 feet but the zinc-lead-copper mineralization narrows to a few inches. At the end of the drift the entire zone, including alteration and pyritization is decreasing. The fissure vein is less than 1 foot wide and carries only minor economic mineralization.

To the southwest the fissure zone is partially hidden by the timbering and is masked by a manganese coating. The fissure vein is well exposed in

the low backs where the drift divides. The fissure vein has gradually changed its dip from the northwest to 65° to the southeast as well as making a fairly sharp change in strike to the southwest from the average strike of $S30^{\circ} W.$. Over a distance of 30 feet the vein returns to the average strike of $S30^{\circ} W.$

This 30 foot flexure is well mineralized with sphalerite, galena, tetrahedrite and minor chalcopyrite and pyrite in vuggy interbanded siderite and quartz over a width of 1 to 2 feet. There is a higher percentage of galena and tetrahedrite in this section of the vein resulting in better silver, lead and copper values.

Where the main crosscut intersects the fissure vein the vein is approximately 20 feet from the breccia zone. However, in the area where the drift divides the fissure vein comes into actual contact with the breccia zone.

Going to the southwest along the most westerly drift the fissure vein widens briefly but with a considerable decrease in zinc-lead-copper mineralization from the flexure zone. At the face of the drift the zone has narrowed to one foot and is very poorly mineralized.

The overall fissure zone is in contact to the northwest with fresh to weakly altered, medium grained Eagle granodiorite.

SAMPLING

The following chip samples were taken from the fissure zone.

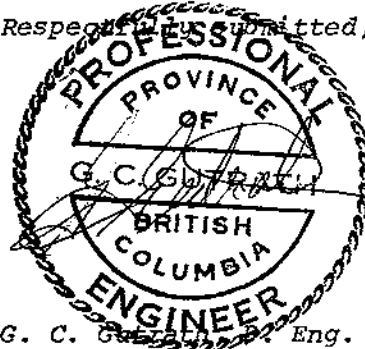
| <u>Sample Number</u> | <u>Description</u> | <u>Width Feet</u> | <u>Copper %</u> | <u>Lead %</u> | <u>Zinc %</u> | <u>Silver Oz/T</u> | <u>Gold Oz/T</u> |
|--------------------------|---|-----------------------|---------------------|-------------------|-------------------|------------------------|----------------------|
| 2582 | Massive pyrite and pyritized hangingwall. | 35' | 0.01 | 0.09 | 0.20 | 1.37 | 0.005 |
| 2583 | Main fissure vein zone | 10' | 0.05 | 0.41 | 1.15 | 3.86 | 0.003 |
| 2584 | Raise-fissure vein | 3' | 0.15 | 0.96 | 10.0 | 6.92 | 0.18 |
| 2585 | Fissure vein at flexure zone | 2' | 0.23 | 0.89 | 15.4 | 3.57 | 0.016 |

CONCLUSION

The fissure vein zone has good continuity over a strike length of 640 feet. The steep dip of the vein and "frozen" walls are amenable to low cost under ground mining methods. However, the vein is narrow and the values are erratic. The present mapping and very limited sampling indicate only two mineralized "shoots" of economic potential.

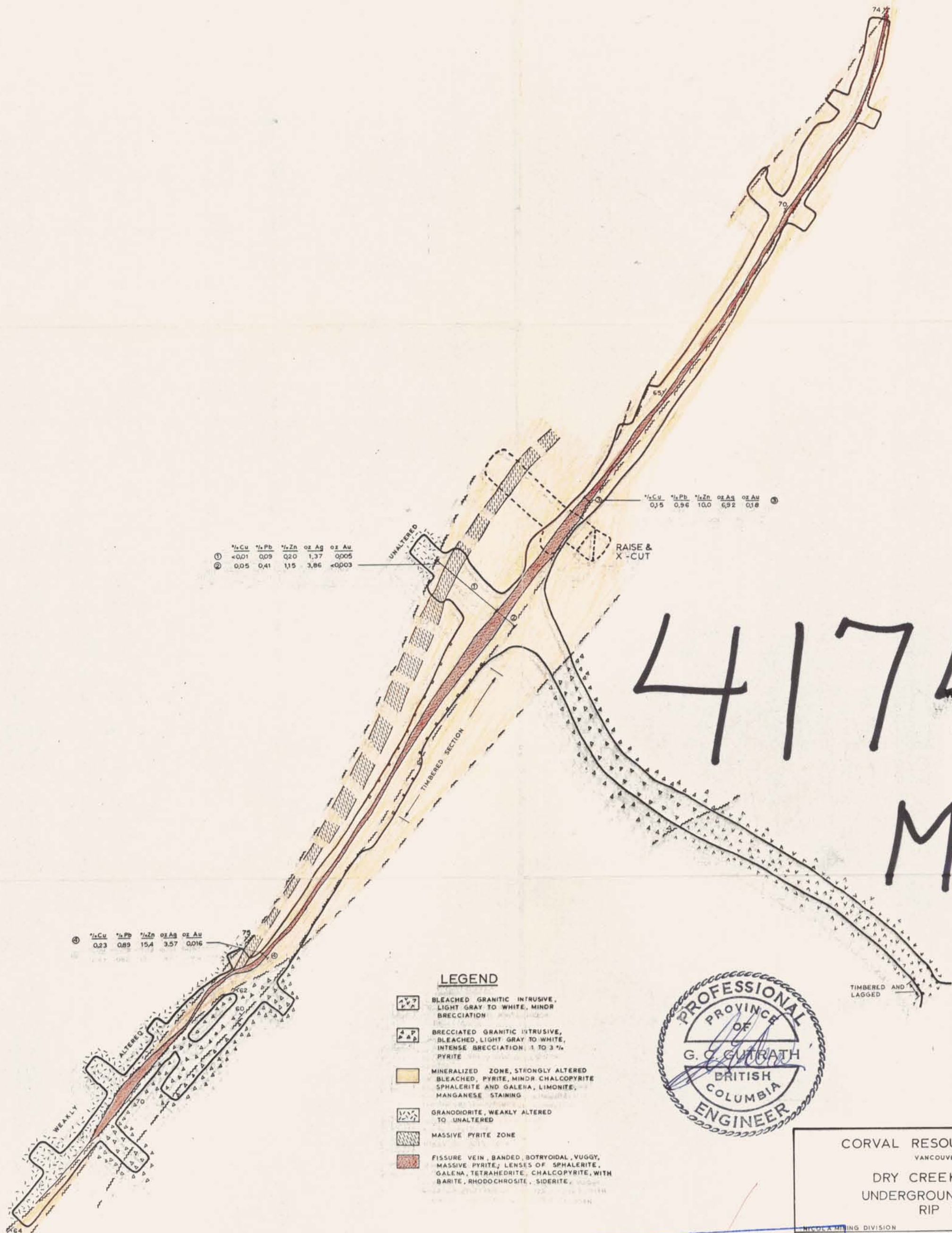
It is concluded that this fissure vein zone has limited potential but more closely spaced sampling is warranted to determine the overall value of the vein. The brecciated zone should also be sampled to see if it carries any economic values.

Respectfully submitted,



G. C. Galt, Eng.

ATLED EXPLORATION MANAGEMENT LTD.



| | %Cu | %Pb | %Zn | oz Ag | oz Au |
|---|-------|------|------|-------|--------|
| ① | <0.01 | 0.09 | 0.20 | 1.37 | 0.005 |
| ② | 0.05 | 0.41 | 1.15 | 3.86 | <0.003 |

| | %Cu | %Pb | %Zn | oz Ag | oz Au |
|---|------|------|------|-------|-------|
| ③ | 0.15 | 0.96 | 10.0 | 6.92 | 0.18 |

| | %Cu | %Pb | %Zn | oz Ag | oz Au |
|---|------|------|------|-------|-------|
| ④ | 0.23 | 0.89 | 15.4 | 3.57 | 0.016 |

- LEGEND**
- BLEACHED GRANITIC INTRUSIVE, LIGHT GRAY TO WHITE, MINOR BRECCIATION
 - BRECCIATED GRANITIC INTRUSIVE, BLEACHED, LIGHT GRAY TO WHITE, INTENSE BRECCIATION, 1 TO 3% PYRITE
 - MINERALIZED ZONE, STRONGLY ALTERED BLEACHED, PYRITE, MINOR CHALCOPYRITE, SPHALERITE AND GALENA, LIMONITE, MANGANESE STAINING
 - GRANODIORITE, WEAKLY ALTERED TO UNALTERED
 - MASSIVE PYRITE ZONE
 - FISSURE VEIN, BANDED, BOTRYOIDAL, VUGGY, MASSIVE PYRITE; LENSES OF SPHALERITE, GALENA, TETRAHEDRITE, CHALCOPYRITE, WITH BARITE, RHODOCHROSITE, SIDERITE,

4174

M-2



CORVAL RESOURCES LTD.
VANCOUVER, B.C.
DRY CREEK PROPERTY
UNDERGROUND GEOLOGY
RIP NO. 1

MINING DIVISION
ATLCO EXPLORATION MANAGEMENT LIMITED
FEBRUARY, 1973
SCALE IN FEET
N.T.S. 92H/11E
DRAWN BY: GBP

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4174 MAP #2