1999 EXPLORATION REPORT

on the

JRV PROPERTY

Mount Mye Area
Whitehorse Mining District
Yukon Territory, Canada

Latitude: 62° 22' North Longitude: 133° 05' West
N.T.S. 105 K/6

- Prepared For -

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November 22, 1999

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SUMMARY

The JRV gold-silver-lead-zinc property is located in the Faro area of the Whitehorse Mining District, Yukon Territory, Canada. The property covers several ridges and valleys that trend northward and eastward from the peak of Mount Mye, approximately 15 kilometres east of the now dormant Anvil lead-zinc-silver mining facilities, 20 kilometres north of the Faro townsite, or 215 kilometres northeast of Whitehorse. Its geographic coordinates are centred at latitude 62° 22' North by longitude 133° 05' West (N.T.S. 105 K/6). Pacific Ridge Exploration Ltd. has an option to acquire all rights, titles and interests in the 171 contiguous mineral claims that comprise the 40 square kilometre property.

The property is readily accessible year-round with helicopter support from Ross River. The main haul road from the Faro townsite to the mine passes within 10 kilometres of the property. An old bulldozer trail leads from the haul road via the headwaters of Rose Creek to the valley north of the peak of Mount Mye, close to one of the mineralized zone on the property.

Topographic relief within the property is moderate to locally high with elevations ranging from 1,310 m (4,300 ft) within valleys to 1,980 m (6,500 ft) A.M.S.L. on the ridges of Mount Mye. The various mineral showings are situated between elevations of 1,825 and 1,450 m A.M.S.L. Bedrock exposures are limited to the steeper ridge slopes while the valleys are commonly covered by glacial till and outwash gravels. Most of the subject claims are above treeline while sparse alpine spruce occurs on lower slopes with local dwarf birch and willow in wetter areas of the valley floors. Permafrost is extensive throughout the property. The climate is typical of the central Yukon alpine terrain with long cold winters (-20° to –50° C), moderate snow cover and short cool summers (10° to 25° C). The exploration season extends from late May through September.

Past exploration work by Doron Explorations Inc. discovered three zones of silver and gold-bearing chalcedonic quartz stockwork mineralization occurring along a seven-kilometre strike length. This structurally controlled epigenetic mineralization is hosted by brecciated and altered granite of the mid-Cretaceous Anvil batholith. The discovery of similar epigenetic gold-silver mineralization at Donlin Creek, Pogo, Fort Knox, True North and Brewery Creek has focused exploration attention of both major and junior mining companies on the bulk tonnage precious metal potential of mid-Cretaceous intrusions from Fairbanks, Alaska to Faro, Yukon Territory.

In May, 1998 the writer examined and sampled the four mineral showings on the property. Later in July, 1998 employees of Western Prospector Group Ltd. prospected and sampled the Cirque and Kulan zones, and collected soil geochemical samples along two reconnaissance lines across the strike extensions of the Kulan zone. The results of this work indicated that the Kulan zone had the potential for hosting significant gold and silver values associated with near-surface sulphide-bearing quartz vein mineralization.

The 1999 exploration program included: prospecting, linecutting (19.6 line-km), geological mapping (1:5,000 and 1:10,000 scale), soil geochemical sampling (405 samples for gold plus 31-element I.C.P.), rock geochemical sampling (113 samples for gold and silver), geophysical surveying (20.4 line-km, induced polarization), NQ2- and BQTK-core diamond drilling (9 holes totalling 994.55 m), analyses of drill core (319 samples for gold and silver), check analyses of drill core samples (15 samples for gold and silver), drill site reclamation work and program documentation. Pacific Ridge Exploration Ltd. financed and operated the 1999 exploration program, in accordance with its option agreement with Western Prospector Group Ltd. and the Gullen-Risby Family Trust.

Prospecting and rock geochemical sampling was initially conducted along the upper Ace High Creek drainage and later expanded to other reported mineral showings within the property. This work confirmed the trend of the Kulan zone and discovered the Risby zone, situated southeast of the Kulan zone on the north-facing slopes of Ace High Creek. Prospecting and sampling show that significant precious metal values (i.e. 1 to over 15 gpT gold and 50 to 626 gpT silver) are genetically-associated with arsenopyrite- and galena-rich sheeted vein and vein breccia mineralization.

The upper Ace High Creek drainage is underlain by a fine-grained metasedimentary sequence belonging to the Lower Cambrian Gull Lake Formation (Gordey and Irwin, 1987) and fine- to medium-grained, muscovite-biotite granite with lesser granodiorite and quartz monzonite belonging to mid-Cretaceous Anvil batholith. The intrusive rocks are locally capped by roof pendants of the older metasedimentary sequence and occur as sills along the apparent metasedimentary bedding planes at higher elevations. The country rocks have undergone regional deformation and metamorphism, and have been intruded by a variety of fracture-controlled tourmaline- or garnet-bearing pegmatite, aplite and quartz-feldspar porphyry dykes. Aplitic and pegmatitic dykes are the youngest phase of the Anvil batholith while local quartz-feldspar porphyry dykes appear to be related to later Cretaceous- or Tertiary-age deformation and intrusive activity.

Steeply dipping fracture and joint sets within the upper Ace High Creek drainage reflect the two moderately to steeply dipping regional normal fault orientations at 060° to 070° and 160° to 170° which appear to be related to extensional faulting during the emplacement of the mid-Cretaceous Anvil batholith (Jennings and Jilson, 1986). Other minor steeply dipping fracture and joint sets which are oriented west-northwesterly and north-northeasterly appear to reflect later Cretaceous- and/or Tertiary-age transcurrent movement along the nearby Tintina Fault.

There appears to be at least two periods of localized post-intrusive hydrothermal alteration, silicification and sulphide mineralization. Firstly, mesothermal-style alteration of the granitic host rocks was accompanied by fracture-filling silicification and sheeted base and precious metal-bearing vein mineralization controlled by south-southeasterly and east-northeasterly fault zones. Later, epithermal-style open-space silicification and vein mineralization overprinted the earlier mineralization within the Kulan and Risby zones, controlled by tensional movement along pre-existing fault structures.

The earlier fracture-controlled quartz-sulphide veins and infilled tectonic breccias are hosted by sericitically- to argillically-altered granite. Individual quartz-sulphide veins vary from a few millimetres to more than 30 centimetres thick and may occur less than 5 centimetres to more than 2 metres apart within the mineralized zones. Quartz and sulphide infilled breccias may occur up to 14 metres thick. Fine-grained pyrite, sphalerite, galena and lesser arsenopyrite, chalcopyrite and rare pyrrhotite are the common sulphide minerals with significant gold and silver values being genetically-associated with arsenopyrite- and galena-rich mineralization. The later epithermal-style veining has distinct open-space quartz infilling textures and local very fine- to fine-grained pyrite and sulphosalts mineralization.

The soil geochemical sampling survey identified coincident gold-, silver-, lead- and arsenic-in-soil anomalies spatially-associated with a large induced polarization anomaly along the geological trend of the Kulan zone. The coincident anomalies form a continuous, north-northwesterly arcuate trend, measuring 1,200 to 1,450 metres long by 200 to 500 metres wide, from grid coordinates 10350 North by 10550 East to 11500 North by 9750 East. This trend is open to the north-northwest and terminates abruptly at or very near Ace High Creek, indicating a possible displacement of the vein mineralization by east-northeasterly strike-slip faulting along the Ace High Creek drainage.

The results of the induced polarization survey identified a large filtered chargeability high (i.e. >25 msec), resistivity low (<500 ohm-m) and metal factor (>50) anomaly along and immediately east of the projected geological trend of the Kulan zone. Chargeability measurements exceed 55 msec and resistivity readings are less than 300 ohm-m within the core of this anomaly,. This anomaly has a northerly trend, and measures 800 metres long by 600 metres wide. Several other chargeability anomalies were identified immediately east of the Kulan zone, coincident with anomalous lead- and arsenic-in-soil geochemical anomalies; along Ace High Creek; and immediately north and downslope of the Risby zone. Later diamond drilling directed at the core of the largest IP anomaly within the Kulan zone did not intersect sufficient sulphide mineralization or other geological evidence to explain the high chargeability and low resistivity measurements.

The diamond drilling campaign within the Kulan zone intersected dominantly pyrite, sphalerite and lesser galena vein mineralization with low attendant precious metal values. The most significant intervals of quartz-sulphide vein mineralization were intersected by drill-holes 99-04 and 99-05 which

returned values of 0.21 gpT gold and 52.3 gpT silver over 3 m and 1.50 gpT gold and 26.8 gpT silver over 7 m respectively. This drilling did not intersect the arsenopyrite- and galena-rich sheeted vein mineralization with high attendant gold and silver values (i.e. 1 to over 15 gpT gold and 50 to 626 gpT silver) that had been discovered in float boulder fields within the Kulan zone and along Ace High Creek.

It appears that the exploration potential of the Kulan zone has been adequately tested at the present time but further work on the Risby zone is warranted. The Risby zone has good exploration potential but considerably more exploration must be undertaken. Precious metal bearing quartz-sulphide vein mineralization occurs over an 800 by 300 m area; spatially-associated with east-northeasterly and south-southeasterly faulting. Grab samples of mineralized float material averaged 1.76 to 3.31 gpT gold and 302.3 to 426.9 gpT silver, and preliminary chip samples returned values ranging up to 6.5 gpT gold and 786.0 gpT silver across 1 metre and 2.12 gpT gold and 384.7 gpT silver across 4 metres. A program of detailed prospecting, geological mapping, soil and rock geochemical sampling and reconnaissance diamond drilling is recommended to evaluate the economic potential of the Risby zone at an estimated cost of CAN $300,000.00.

RECOMMENDATIONS

It is recommended that the Risby zone be evaluated for its bulk tonnage precious metal potential. Field work could utilize the 1999 field camp site with intermittent, 'on-demand' helicopter support from Ross River. The proposed exploration program should include:

1) Detailed structural geological mapping and rock geochemical sampling over the Risby zone;

2) Establishment of a survey control grid (10 line-km) along the ridge immediately south of the known mineralization followed by 'B' or 'C'-horizon soil geochemical sampling to test for south-southeasterly extensions to the zone; and

3) Completion of 1,000 metres of BQTK-core diamond drilling (approximately 10 holes) to test the most favourable exploration targets within the Risby zone.

The total estimated cost of the recommended exploration program is CDN $300,000.00. Such a program could be completed within a 2-month field program in July and August, 2000.

INTRODUCTION

The JRV gold-silver-lead-zinc property is situated on the northern and eastern slopes of Mount Mye in the Whitehorse Mining District of central Yukon Territory, Canada. It comprises 171 contiguous mineral claims covering a northwesterly trending 40-square kilometre area, and is subject to an option agreement between Western Prospector Group Ltd., Gullen-Risby Family Trust and Pacific Ridge Exploration Ltd.

Past exploration discovered three zones of silver and gold-bearing chalcedonic quartz stockwork mineralization occurring along a seven-kilometre strike length. This structurally controlled epigenetic mineralization is hosted by brecciated and altered granite of the mid-Cretaceous (97 Ma) Anvil batholith. The discovery of similar epigenetic gold-silver mineralization elsewhere at Donlin Creek, Pogo, Fort Knox, True North and Brewery Creek has focused exploration attention of both major and junior mining companies on the bulk tonnage precious metal potential of mid-Cretaceous (95 to 100 Ma) granitic 'Tombstone' intrusions from Fairbanks, Alaska to Faro, Yukon Territory.

At the request of the directors of Pacific Ridge Exploration Ltd., the writer supervised the 1999 exploration program which was conducted from June 30th to September 13th, and included: prospecting, linecutting (19.6 line-km), geological mapping (1:5,000- and 1:10,000-scale), soil and rock geochemical sampling, geophysical surveying (induced polarization) and diamond drilling (nine BQTK- or NQ2-size bore holes totalling 994.55 m). The writer has prepared this report which documents the results of this program and includes recommendations for further exploration work.

GENERAL DESCRIPTION

Location and Access

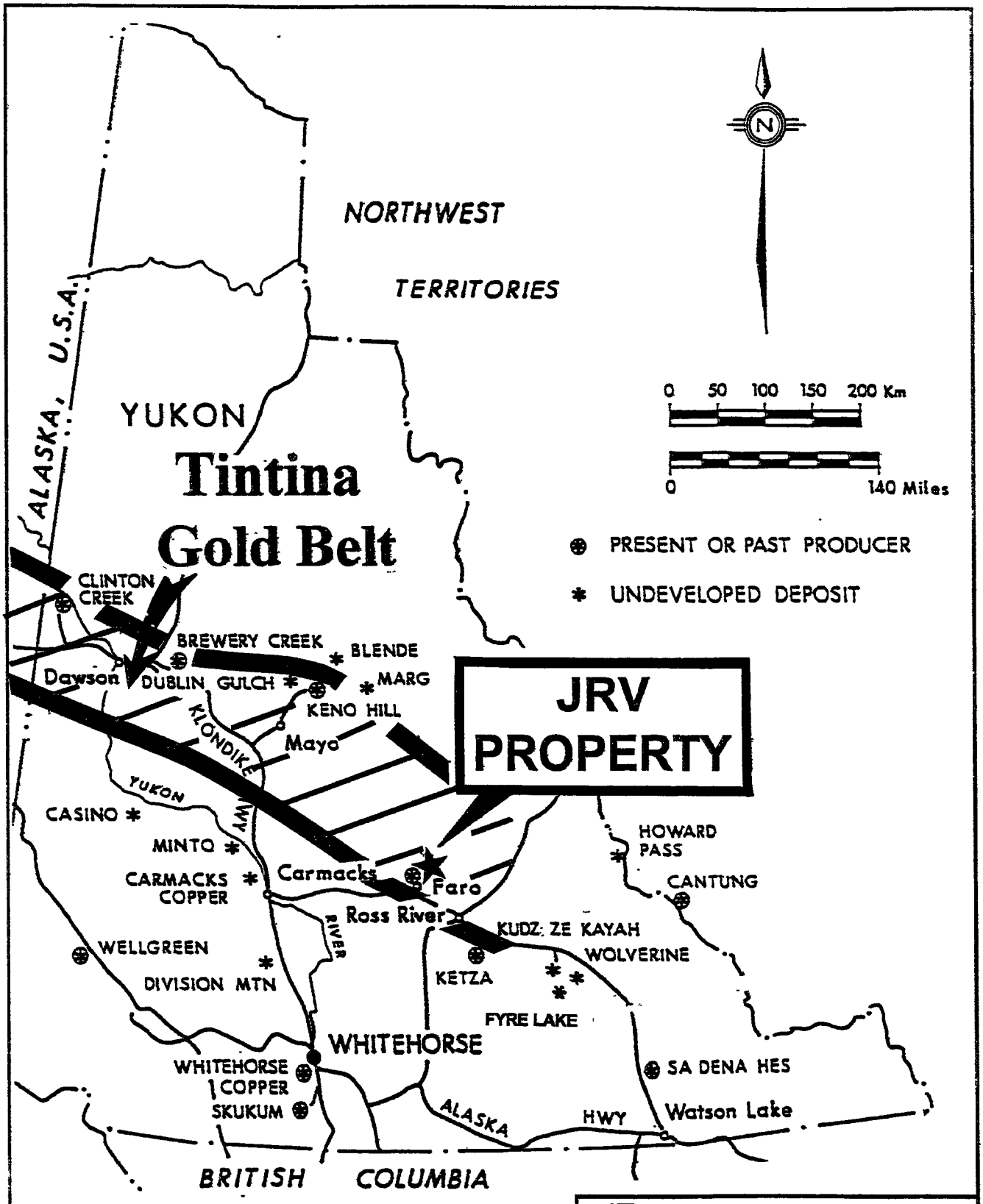
The property covers several ridges and valleys that trend northward and eastward from the peak of Mount Mye, approximately 15 kilometres east of the currently dormant Faro lead-zinc-silver mining facilities, 20 kilometres north of the Faro townsite, or 215 kilometres northeast of Whitehorse, Yukon Territory. Its geographic coordinates are centred at latitude 62° 22' North by longitude 133° 05' West (N.T.S. 105 K/6) in the Whitehorse Mining District (see Figure 1).

The property is readily accessible year-round with helicopter support from Ross River. The towns of Ross River and Faro both have commercial airfields which could be utilized for charter flights from Whitehorse that has daily scheduled airline flights from Vancouver, B.C. Ross River has helicopter charter, camp supply and expediting services while many of the facilities at Faro have been closed due to the Anvil-Grum mine shutdown (see Figure 2).

The main road from the Faro townsite to the Anvil and Grum mines passes within 10 kilometres of the property. An old bulldozer trail leads from the haul road via the headwaters of Rose Creek to the valley north of the peak of Mount Mye to the Cirque zone, one of the mineralized areas on the property.

Property and Ownership

The subject property covers approximately 40 square kilometres and is comprised of 171 Yukon Quartz mining claims; all located in the Whitehorse Mining District. The 'JRV's 1 to 74' and 'JRV's 76 to 127' were staked on behalf of the Gullen-Risby Family Trust during July, August and October, 1997. Western Prospector Group Ltd. optioned all rights, titles and interests (100 percent) to these mineral claims, and staked an additional 62 Yukon Quartz mining claims (i.e. JRV's 128 to 174) in April, 1998. Since April, 1998 the two mining claims have been allowed to lapse and Western Prospector Group has assigned its option agreement with the Gullen-Risby Family Trust to Pacific Ridge Exploration Ltd. The location and configuration of these claims are shown on Figure 3 of the report. This figure also shows that the northeastern and southeastern sides of the property are bounded by a block of land withdrawn from staking as part of a Yukon Indian land claim settlement (Block R-11). A summary of the pertinent claim data accompanies this report as Appendix I.



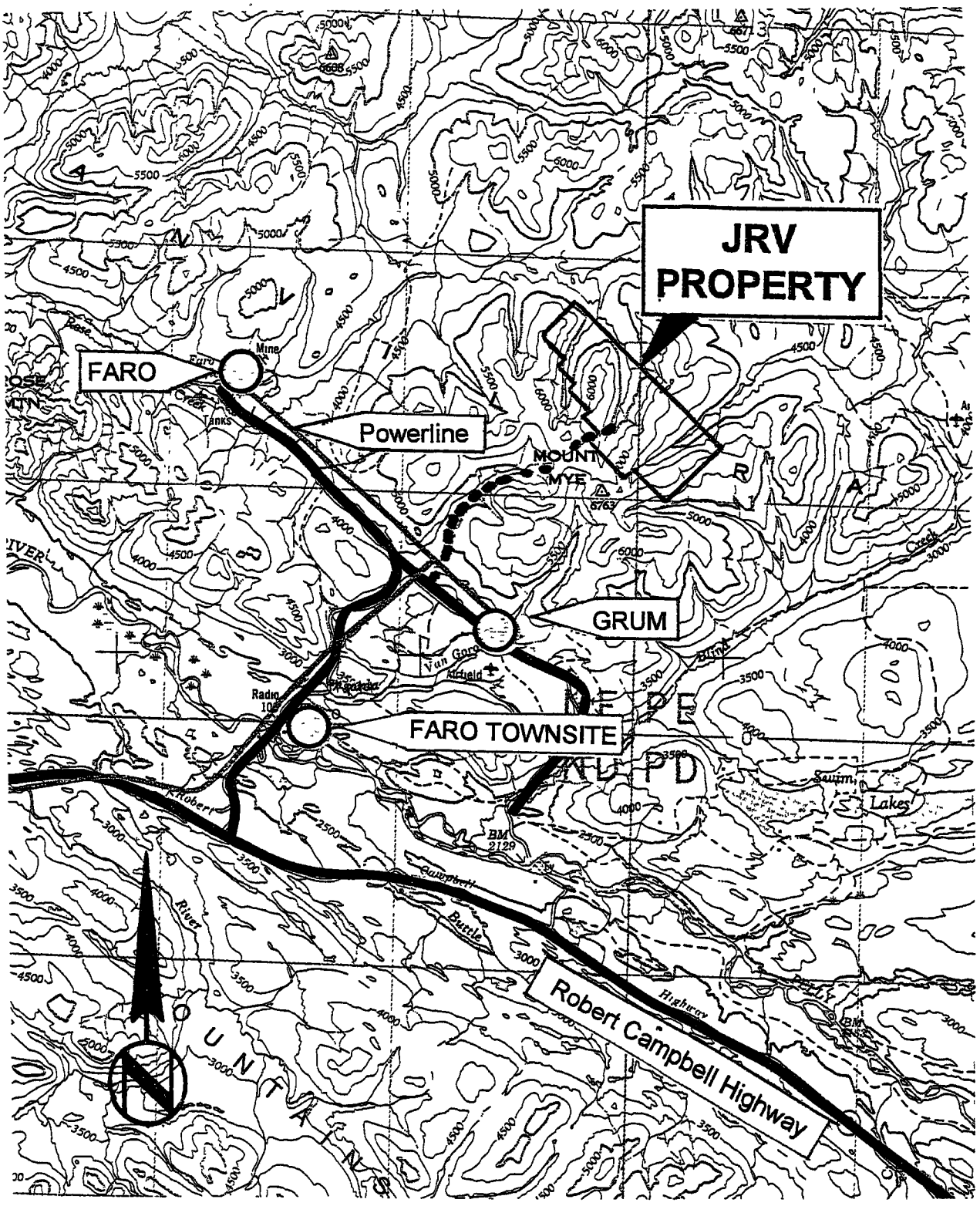
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Vancouver, British Columbia, Canada

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. D. Blanchflower
GEOSCIENTIST

LOCATION MAP

JRV PROPERTY
Whitehorse Mining District, Yukon, Canada

Drawn By: JDB	Scale: As Shown
Date: October, 1999	Figure No. 1



SCALE : 1:250,000

0 1 2 3 4 5 MILES

0 2 4 6 8 KILOMETRES

PROFESSIONAL GEOSCIENTIST
PROVINCE OF BRITISH COLUMBIA
D. Blanchflower

COLUMBIA GOLD MINES LTD.
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REGIONAL MAP

JRV PROPERTY
Whitehorse Mining District, Yukon, Canada

Drawn By: JDB	Scale: As Shown
Date. October, 1999	Figure No. 2

Physiography

The JRV claim group covers several ridges and valleys north and east of the peak of Mount Mye, one of a series of mountains comprising the Anvil Range. Topographic relief is moderate to locally high with elevations ranging from 1,310 m on valley floors to 1,980 m A.M.S.L. along the ridge crests; typical of heavily glaciated areas with broad U-shaped valleys separated by steep-sided ridge slopes. The upper portions of the valleys are rugged cirques and smaller cirques occur along the flanks of larger ridges. The various mineral showings are situated between elevations of 1,825 and 1,450 m A.M.S.L.

Bedrock exposures are limited to sharp ridges and steeper slopes. Valley floors are commonly covered by varied thicknesses of glacial till and outwash gravels. Small lakes and swamps occur in most valleys where drainages are restricted by pingoes and moraines. Rounded ridge crests and large areas of their slopes are covered by talus and frost-heaved rock and gravel.

Most of the subject claims are above treeline while sparse alpine spruce occurs on lower slopes with local dwarf birch and willow in wetter areas of the valley floors. Elsewhere, alpine mosses, grass and dwarf birch are the only vegetation. Permafrost is extensive throughout the property.

The climate is typical of the central Yukon alpine terrain with long cold winters (-20° to –50° C), moderate snow cover and short cool summers (10° to 25° C). The exploration season extends from late May through September.

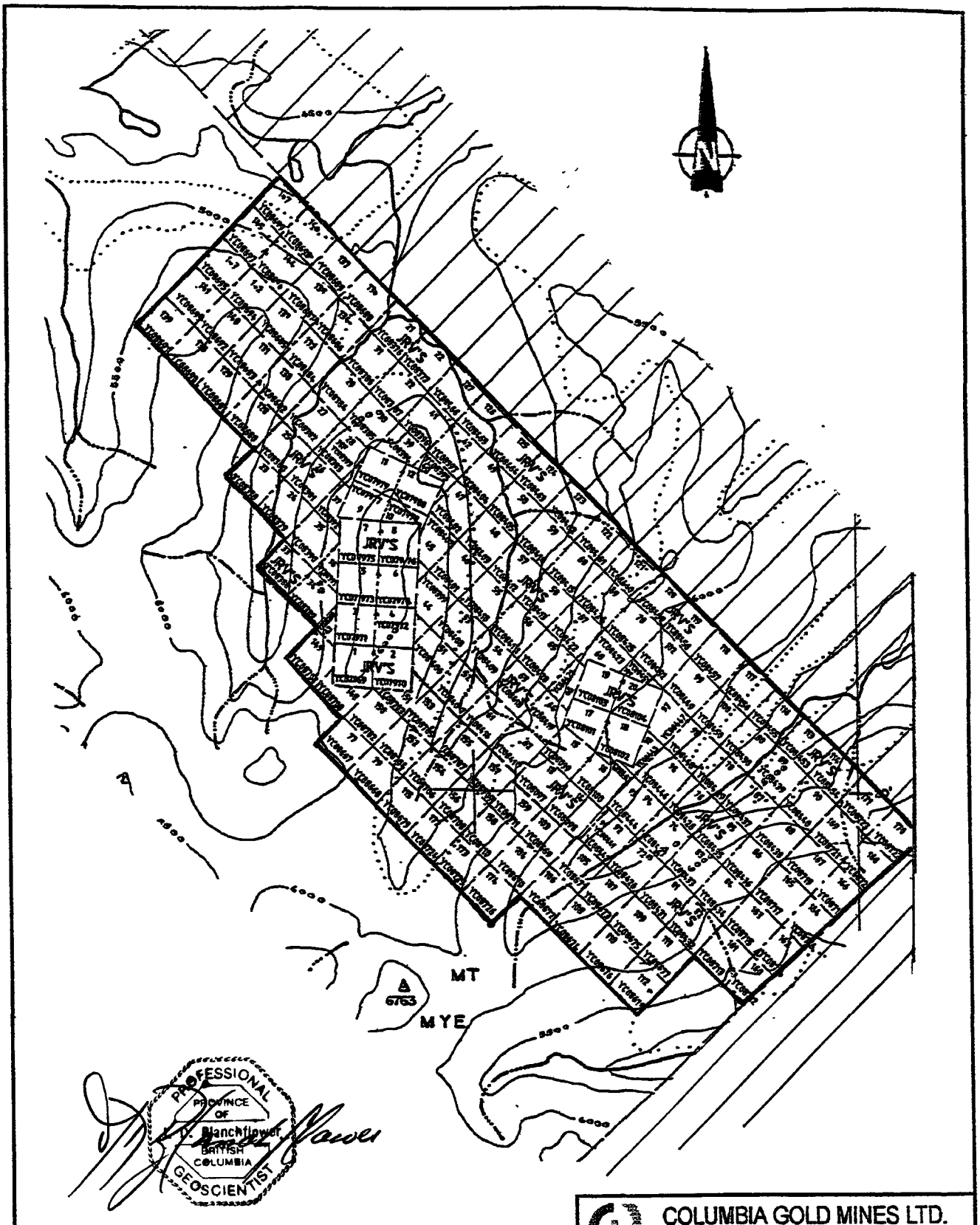
History

During the 1960's until the late 1970's the Anvil Range was extensively staked and explored after the discovery of the Faro, Swim, Grum and Vangorda lead-zinc-silver massive sulphide deposits which are hosted by Cambro-Ordovician metasedimentary sequences. However, this exploration work largely ignored precious metal-bearing epigenetic vein mineralization within mid-Cretaceous plutonic rocks of the Anvil Range.

In March, 1966 Action Exploration Ltd. staked the 'X' claims and Malta Mining Ltd. staked an adjoining 'FALCON' claim group within and near the subject property boundaries. Later that year Action conducted an airborne magnetometer and EM survey with follow-up geological mapping and soil sampling, and Falcon undertook an airborne magnetometer and EM survey. Kangaroo Exploration Ltd. (Cyprus) restaked the southern half of the 'X' claim group in September, 1971 and explored their property with geological mapping and soil geochemical sampling that year.

In April 1974, the 'FAT' claim was staked by Ridgemont Mining Corp. (Cyprus) along the eastern side of the present property, and they conducted a Turam survey that year. Much of the rest of the subject property area was re-staked as the 'WYNNE" claim group in March, 1975 by the Vangorda Project, a Welcome North Mines and Getty Mining joint venture. The joint venture explored their claim holdings with soil geochemical sampling, magnetometer and EM surveying in 1975; geological mapping, gravity and Turam surveying and two drill holes (474.3 m) in 1976; and additional magnetometer, EM and gravity surveying and three drill holes (284.7 m) in 1977 (Yukon Minfile, 1996). In September, 1977 Mackir Mining Ltd. staked the 'ROG' claim north of the Wynne claim group.

The 'RAZ 1-20' claim group, located near the current JRV'S 105 to 108 claims, was staked in 1975 by Welcome North Mines Ltd., the operator of the Vangorda Project, to cover a zone of mineralized float and high base metal soil geochemistry that had been previously explored by Kerr-Addison (1963), Anvil Mining Corp. (1965), Spartan Exploration Ltd. (1968-70), and Cyprus Explorations (1973). Rock samples reportedly returned significant lead, zinc, silver and gold values (Robertson and Wallis, 1989). The area is dominantly underlain by intrusive rocks but, due to the prevailing exploration attention, field work was directed to the adjacent metasedimentary rocks and largely ignored a large nearby quartz stockwork alteration, now known as the Kulan zone, which occurs to the northwest and upslope of the mineralized float area.



0 500 1000 1500 2000
metres

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MINERAL CLAIM MAP

JRV PROPERTY
Whitehorse Mining District, Yukon, Canada

Drawn By: JDB	Scale: As Shown
Date: October, 1999	Figure No. 3

A joint venture between Cyprus Anvil and Metallgesellschaft Canada Ltd. was formed in 1977 and a gravity survey was conducted that year in the vicinity of the subject property. In October, 1981, the joint venture staked the 'FOO' claims and in 1982 they explored their claim holdings with geological mapping and soil geochemical sampling.

In 1986, Doron Explorations Inc. acquired 40 mineral claims of the 'Cody Ridge' property which covered most of the subject claim area. A cursory prospecting and sampling program discovered three mineralized zones, including the 'Cirque' and 'Arsenopyrite' (now called 'Kulan') zones. Property-wide claim staking and rock geochemical sampling of the Cirque zone was undertaken in 1987, including a D6 bulldozer trenching program in the valley east of the Cirque zone. Selected grab samples from the Cirque zone reportedly returned silver values as high as 178.6 ounces per ton (Robertson and Wallis, 1989).

Exploration work in 1988 was funded by Lacana Mining Corporation (later Corona Corporation) with Doron Explorations being the project operator. The 1988 exploration program included: regional and detailed geological mapping, prospecting, claim post tagging, line-cutting (35 line-km), ground magnetometer and VLF-EM surveying, soil geochemical sampling (4 line-km near Cirque zone), hand trenching (19 blasted trenches in Cirque zone), and an extensive follow-up bulldozer trenching program (Cirque zone). Detailed field work concentrated on the Cirque zone preparing it for drill testing but, as a consequence, other identified property-wide targets were not fully evaluated. Due to an early snowfall none of the mineralized areas within the Cirque zone were drill tested and no further work, other than data compilation, was undertaken by the Lacana-Doron joint venture.

According to Yukon Minfile (1996), the Cirque zone showings within the subject property were re-staked in July, 1995 as the 'SHARI' claims but there is no record of any exploration work on these claims.

The writer conducted an examination of the JRV property on May 30th and 31st, 1998 accompanied by Mr. Wayne J. Roberts, P. Geo., an officer of Western Prospector Group Ltd. and Pacific Ridge Exploration Ltd., and Mr. Pete Risby, a principal in the Gullen-Risby Family Trust. The writer evaluated and sampled the known Cirque and Arseno (Kulan) zones, and two other mineral showings, called the 'Krist' and 'Creek', and any claim posts near traverse routes were examined and documented.

On July 17th, Messrs. Wayne J. Roberts, Pete Risby and two field assistants, all employed by Western Prospector Group Ltd., prospected and sampled those areas within the Cirque and Arseno (Kulan) zones that were previously snow-covered. . They collected 2 rock geochemical samples from the Cirque zone and thirteen rock and twenty-two 'B'- and 'C'-horizon soil geochemical samples from within the Arseno (Kulan) zone. In August, 1998 geologists of a major mining company conducted a field evaluation of the property during which time they collected twenty-nine rock geochemical samples and one soil geochemical sample. Results of the 1998 exploration work indicated that the Kulan (Arseno) zone had the potential for hosting significant gold and silver values associated with sizeable, near-surface galena, arsenopyrite and pyrite mineralization.

Geological Setting

Regional Geology

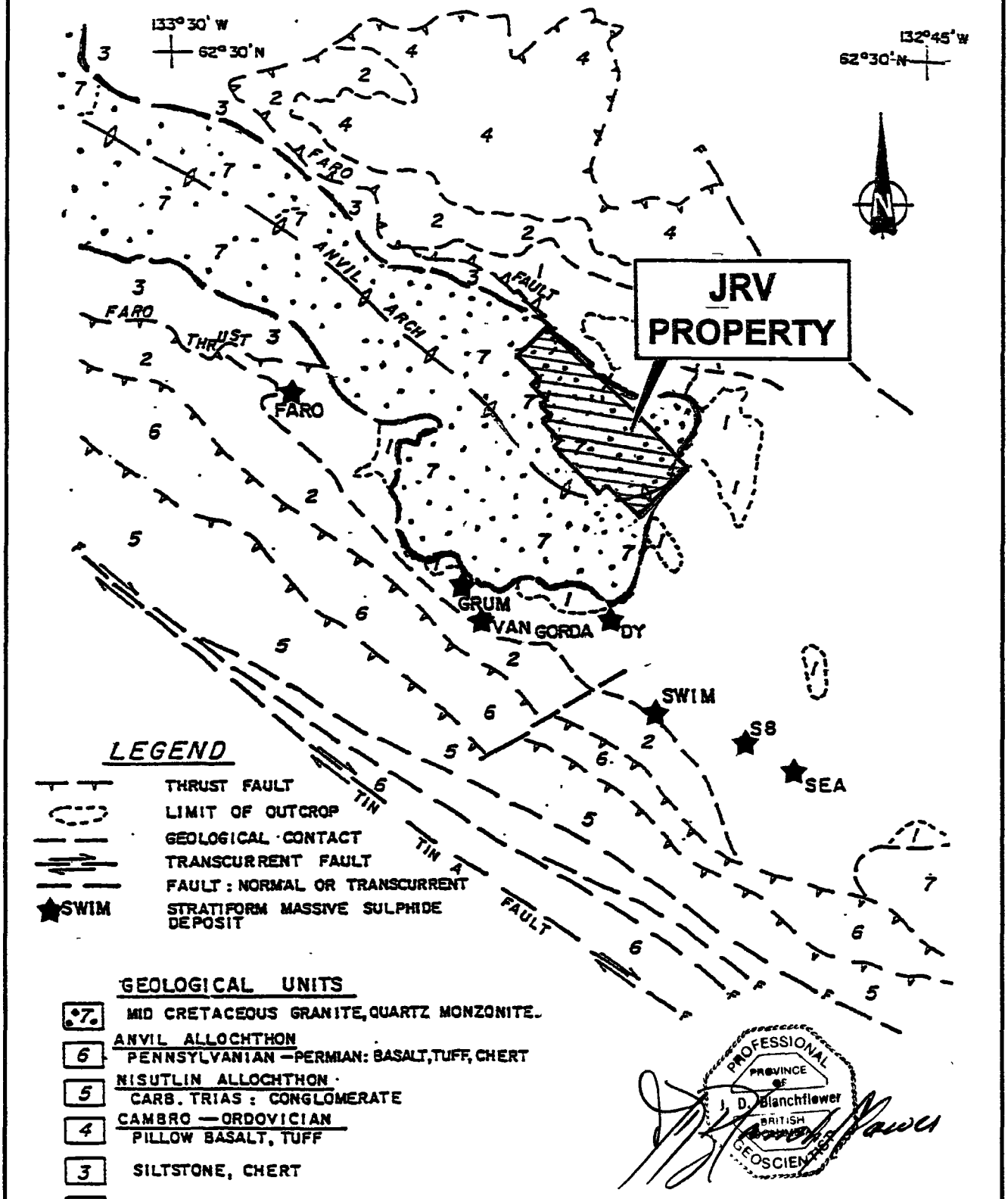
The JRV property is situated within the Anvil district on the southwestern margin of the Selwyn Basin lead-silver-zinc province. The Anvil district lies within the Tay River map-area (N.T.S. 105K) which was mapped by the Geological Survey of Canada in 1961, 1972 and more recently in the mid-1980's (Gordey and Irwin, 1987). Detailed regional mapping by geologists of Cyprus Anvil Mining Corporation (later Curragh Resources) was conducted over several years, and the results of this geological work were published in a series of papers by Jennings and Jilson (1986), Pigage and Anderson (1985), Mortensen and Jilson (1985), and Shanks *et al.* (1987).

The Anvil district is regionally underlain by allochthonous Paleozoic metasedimentary and lesser metavolcanic rocks of the Anvil Range that have been intruded by mid-Cretaceous (97 Ma) Anvil Batholith and minor quartz-feldspar porphyry dykes of Cretaceous to Tertiary age (Pigage, 1999). On a regional scale, the district lies within the Omineca Crystalline Belt, the easterly of two granitic and metamorphic belts which extend the length of the Canadian Cordillera. In the central Yukon, the Omineca Belt is a series of uplifts exposing polydeformed and metamorphosed Paleozoic sedimentary and volcanic rocks that are cored by mid-Cretaceous (95 to 100 Ma.) late to syn-kinematic intrusions, partly bounded by extensional faults (Jennings and Jilson, 1986; Pigage, 1999). The Anvil batholith is one of the larger granitic intrusions.

Roof pendants of the Lower Cambrian-age Mount Mye Formation (or Gull Lake Formation of Gordey and Irwin, 1987) crop out in the subject property, often capping ridge crests. This formation is the oldest stratigraphic sequence in the district and comprises non-calcareous schist and phyllite with lesser portions of carbonaceous phyllite, marble, calc-silicate schist and metabasalt. Locally, these sedimentary and lesser volcanic rocks have been intensely deformed and metamorphosed, and intruded by green hornblende diorite dykes which are in turn intruded by fine- to medium-grained peraluminous granite to porphyritic quartz monzonite stocks, apophyses and dykes of the Anvil batholith. Aplitic and tourmaline or garnet-bearing pegmatites are the youngest phase of the Anvil batholith while local quartz-feldspar porphyry dykes appear to be related to a later Cetaceous or Tertiary age intrusive event.

Two dominant sets of moderately to steeply dipping normal regional faulting at 060° and 160° appear to be related to extensional faulting during the intrusion of the Anvil batholith (Jennings and Jilson, 1986). In addition, other transcurrent faults may be parasitic structures related to movement along the Tintina Fault zone which passes along the southwestern edge of the Anvil district, approximately 20 kilometres southwest of the subject property. Mineralized zones within the property appear to be controlled by the two dominant structural sets and their conjugate fracture patterns that are spatially related to the intrusion of the Anvil batholith. These fault and fracture sets were probably repetitively reactivated during the late-stage mid-Cretaceous Anvil to Tertiary (Eocene) intrusive events.

The Anvil district is widely known for its large stratiform lead-zinc-silver-barite massive sulphide deposits that occur within a 150-metre thick section of graphitic phyllite at the facies change between the Lower Cambrian Mount Mye (Gull Lake) Formation and the Cambrian to Lower Ordovician calcareous phyllitic, calc-silicate and metabasaltic rocks of the Vangorda Formation (Gordey and Irwin, 1987). The Faro massive sulphide deposit was mined at up to 10,000 tonnes per day from 1969 to 1982 by Cyprus Anvil Mining Corporation. Since then, Curragh Resources Ltd. and lately Anvil Range Mining Corporation have mined the Faro and nearby Grum and Vangorda deposits, and recently investigated the feasibility of underground mining at the Dy and Swim deposits. Reported measured resources of the five principal massive sulphide deposits of the Anvil district (i.e. Faro, Grum, Vangorda, Dy and Swim) total 92 million tonnes grading 8.3 percent combined lead-zinc with 50 grams per tonne silver (Robertson and Wallis, 1989).



PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. D. Blanchflower
GEOSCIENTIST

COLUMBIA GOLD MINES LTD.
Vancouver, British Columbia, Canada

REGIONAL GEOLOGY MAP

JRV PROPERTY
Whitehorse Mining District, Yukon, Canada

Drawn By: JDB	Scale: As Shown
Date: October, 1999	Figure No. 4

1999 EXPLORATION PROGRAM

The 1999 exploration program was designed and directed to evaluate the recently-discovered precious metal-bearing quartz-sulphide veining within the Kulan (formerly 'Arseno' or 'Arsenopyrite') zone, and to confirm and assess coincident soil geochemical and geophysical anomalies documented by previous operators. The program included: prospecting, linecutting, geological mapping, soil and rock geochemical sampling, geophysical surveying, NQ2- and BQTK-core diamond drilling, analyses of drill core and geochemical samples, drill site reclamation work and program documentation. Pacific Ridge Exploration Ltd. financed and operated the 1999 exploration program in accordance with its option agreement.

Field personnel mobilization and camp construction commenced on June 30th, 1999, and the field exploration work was completed on September 13th, 1999 with the camp closure and demobilization of the field personnel. The field camp equipment (i.e. tents, stoves, etc.) were removed from the property and delivered for storage in Ross River; all full, partial and empty fuel barrels and propane bottles were removed from the property for credit or storage; and the diamond drill core was stored at the core logging facilities within the field camp site. The nine drill hole pads were reclaimed and the JT2000 diamond drill rig and its attendant equipment were removed from the property and demobilized to Smithers, B.C.

Pacific Ridge Exploration Ltd. employed various mineral exploration industry contractors to conduct most of the field work. These contractors and service providers were largely selected from Yukon-based companies. Office administration and project management were carried out by John S. Brock Limited of Vancouver, B.C. which has a contract with Pacific Ridge Exploration Ltd. to provide exploration and administration services. The following experienced and qualified field personnel were utilized during the 1999 exploration.

Geological/Prospecting Personnel

J. Douglas Blanchflower (Minorex Consulting Ltd.) – geologist and project supervisor; June 1 to September 30, 1999
Wayne J. Roberts, P. Geo. – geologist, prospector and project administrator; June 1 to September 30, 1999
Peter Risby - prospector; June 1 to September 10, 1999
Chris Sebert – geologist; August 8 to 15, 1999
George Johnny - prospector; August 20 to September 3, 1999

Soil Geochemical Sampling/Drill Core Processing Personnel

Brandie Roberts - sampler/splitter; June 28 to September 13, 1996

A Bell 206C helicopter owned by Trans North Helicopters Ltd. of Whitehorse, Y.T., based in Ross River, was contracted on an on-call basis during the field program to mobilize field personnel and equipment, deliver camp supplies, and move and demobilize the drill rig and support equipment.

The 1999 exploration program included:

a) preparation of topographic plans at scales of 1:10,000, 1:5,000 and 1:2,000;

b) constructing a 12-person seasonal tent camp;

c) establishing one metric survey control grid (totalling 19.6 line-km) over the Kulan zone;

d) prospecting within the Kulan and Risby zones and elsewhere within the JRV property;

e) detailed 1:5,000- and 1:10,000-scale geological mapping within and adjacent to the Kulan zone;

f) collecting and analyzing of 113 rock and 405 soil geochemical samples for gold (F.A./A.A) plus 31 elements using I.C.P. techniques;

g) conducting 20.4 line-kilometres of induced polarization surveying;

h) completing seven NQ2- and two BQTK-core diamond drill holes (totalling 994.55 m or 3,263 ft);

i) analyzing of 319 drill core samples for gold and silver;

j) check-assaying of 15 drill core samples for gold and silver;

k) subsequent collation, compilation and documentation of the field work results.

This report with its accompanying plans and data documents the results of the 1999 exploration program. A 'Statement of 1999 Exploration Expenditures' and recommendations for further exploration work also accompany this report. Mr. J. Douglas Blanchflower, a qualified and experienced consulting geologist employed by Minorex Consulting Ltd. of Delta, B.C., was contracted by Pacific Ridge Exploration Ltd. to supervise and manage the field work, conduct geological mapping, log diamond drill core, and prepare this report.

Camp Construction

A seasonal 12-person tent camp was constructed on the north side of Ace High (White) Creek, immediately west of the Kulan zone. The construction of the initial camp for geological, geochemical and geophysical surveying was carried out from July 2nd to 7th, and it was later expanded during the first week of August to accommodate the diamond drilling crew and cook/first aid attendant.

The completed field camp consisted of a core logging and splitting tent, kitchen-dining tent, office tent, first aid tent, dry/shower tent and two sleeping tents. All of the tents, except for the core logging tent, had plywood floors. The camp equipment was rented from either Coureur Des Bois Ltee. of Whitehorse, Y.T., or Minorex Consulting Ltd. of Delta, B.C. Upon its closure, the camp equipment was removed from the property, leaving six wood floors for a future field camp or disposal should reclamation be required.

Linecutting

Pacific Ridge Exploration Ltd. contracted Coureur Des Bois Ltee. of Whitehorse, Y.T. to establish a metric-based survey control grid over the Kulan zone. A total of 19.6 line-kilometres ("line-km") of survey control grid was cut, picketed and labelled, including 1.5 line-kilometres (0.93 line-miles) of base lines and 18.1 line-kilometres (6.99 line-miles) of grid lines. The base line was oriented at 000°-180° and the grid lines were oriented at 090°-270° (see Figures 6 to 26). All base and grid lines were cut to a width of 1 metre and the cut brush was cleared from the lines. The line-spacing of the grid lines is 100 metres apart, and all of the base lines and grid lines are marked at 50-metre intervals with cedar lath pickets and these pickets are labelled with their grid coordinates etched on aluminum tags that are stapled to the pickets. The pickets are well flagged with orange and blue flagging, as are the intervening cut lines.

The base and grid lines were measured by a two-person linecutting crew using a drag chain. The lines were oriented using a compass or by sight-picketing between visible stations, and they were slope-corrected using a clinometer. The writer and Ms Brandie Roberts subsequently surveyed various grid points using a hand held Garmin GPS 12 unit to correlate the control grid with local U.T.M. coordinates. A magnetic declination of 32° East was utilized for control grid surveying and linecutting.

The linecutting work required a total of 24 man-days by field personnel employed by Coureur Des Bois Ltee. This work was conducted by two 2-man linecutting crews from July 6th to 11th, 1999. The survey control grid has been plotted on various plans accompanying this report as Figures 6 to 26.

Prospecting

Fifty-one man-days of prospecting were undertaken on the property from early July to mid-September by qualified prospectors under the supervision of the project geologists. The prospecting team consisted of Wayne J. Roberts of Vancouver, B.C., Peter Risby of Penticton, B.C., and George and Eileen Johnnie of Ross River, Y.T. Approximately two-thirds of the total prospecting time was spent

investigating the Kulan and recently discovered Risby zones with the balance being spent prospecting reported mineral showings elsewhere within the JRV property. According to time records, Mr. Roberts spent a total of 9 man-days prospecting mainly the Kulan and Risby zones during July and August; Mr. Risby spent a total of 35 man-days prospecting property-wide mineral showings and the Kulan, Dyke, Bubble and Risby zones during early July to early September; and George and Eileen Johnnie spent 7 days together prospecting the Kulan and Risby zones from late August to early September. The rock geochemical samples that were collected by the prospectors have been tabulated in Appendix II of this report with those collected during the geological mapping work.

Geological Survey

Detailed geological mapping at a scale of 1:5000 was undertaken over and around the Kulan zone and geological mapping at a scale of 1:10000 was conducted to the east and south where survey control was limited to topographic and global positioning system ("G.P.S.") control. Mr. Chris Sebert, a qualified and experienced geologist, and the writer conducted the geological survey work over a 14-man day period during early July and mid-August. The geological mapping results are documented in the 'Discussion of Exploration Results' section, by accompanying Figures 5 and 26, and a synoptic geological report by C. Sebert within Appendix VI of this report.

Geochemical Surveys

Soil Geochemical Survey

Soil geochemical sampling was undertaken over the survey control grid and along two flagged lines, a 1,000-metre extension of grid line 10,100 North (from 11,000 East to 12,000 East) and along a flagged reconnaissance line along the Risby zone.

Ms. Roberts collected 'B'-horizon or, if unavailable, 'C'- or 'AB'-horizon soil geochemical samples using a mattock at 50-metre intervals along survey control grid lines. Each soil geochemical sample was properly documented on-site, recording its grid coordinates, depth of collection, composition, texture, colour, and local topographic features; and properly placed in Kraft soil sample bags labelled with the grid coordinates of each sample site. At the field camp, the samples were strung on wires, field dried and properly packed for later delivery to Northern Analytical Laboratories Ltd. in Whitehorse, Y.T. A total of 405 soil geochemical samples were collected and delivered to Northern Analytical Laboratories Ltd. where each sample was thoroughly dried, sieved and processed prior to analysis.

All of the soil geochemical samples were processed and analyzed for gold at Northern Analytical Laboratories Ltd. using established fire assay preparation and atomic absorption analytical procedures. After the samples were dried at 95° C they were sieved to obtain a -80 mesh fraction for analysis and a 15-gram subsample is fluxed and a silver inquart is added and mixed. These subsamples are fluxed in batches of 24 analyses with a natural standard and a blank. After cupellation the precious metal beads are transferred into new glassware, dissolved with aqua regia solution, and diluted to volume and mixed. The resulting solutions are analyzed on an atomic absorption spectrometer using a suitable standard set. Gold values are reported in parts per billion ("ppb") with a lower detection limit of 5 ppb.

A subsample of each prepared soil geochemical sample was delivered by Northern Analytical Laboratories Ltd. to International Plasma Laboratory Ltd. for 31-element Induced Plasma Coupled (I.C.P.) analysis using established analytical procedures. A 0.5 gram sub-sample was digested for 2 hours with an aqua regia mixture and, after cooling, the solution was diluted to standard volume. The resultant solution was then analyzed by a computer spectrometer (Inductively Coupled Plasma Spectrometer). The results for: silver (Ag), aluminum (Al), boron (B), barium (Ba), beryllium (Be), bismuth (Bi), calcium (Ca), cadmium (Cd), cobalt (Co), chrome (Cr), copper (Cu), iron (Fe), gallium (Ga), potassium (K), lithium (Li), magnesium (Mg), manganese (Mn), molybdenum (Mo), sodium (Na), nickel (Ni), phosphorus (P), lead (Pb), antimony (Sb), strontium (Sr), tin (Sn), tungsten (W), thallium (Th), titanium (Ti), vanadium (V), and zinc (Zn) are reported as parts per billion ("ppb"), parts per million ("ppm"), or percent ("%"). Gold-,

silver-, lead- and arsenic-in-soil geochemical values have been plotted at their respective sample locations on Figures 6 to 10 of this report and the analytical results accompany this report in Appendix V.

Rock Geochemical Survey

One hundred and thirteen rock geochemical samples were properly collected, bagged and labelled under the supervision of the field geologists. These samples were subsequently delivered to Northern Analytical Laboratories Ltd. in Whitehorse, Y.T. for processing and analysis. There, the rock geochemical samples were dried at 60° C, and crushed by a jaw crusher to minus 10 mesh. The crushed sample was subsequently split using a Jones Riffle to get a statistically-representative 200-gram subsample. The subsample was then pulverized by a ring pulverizer to 95 percent minus 100 mesh, rolled and bagged for analysis. The remaining sample reject from the Jones Riffle splitting was bagged and stored at the laboratories in Whitehorse, Y.T.

The rock geochemical pulps were analysed for their silver and gold contents. The analytical procedures for silver use a subsample which is weighed from the sample pulp for analysis. The subsamples are digested using a HNO_3 - $KClO_3$ mixture and when the reaction subsides HCl is added before it is placed on a hotplate to digest. After digestion is complete the flasks are cooled, diluted to volume and mixed. The resulting solutions are analyzed on an atomic absorption spectrometer using the appropriate standard sets. The analytical values for silver (Ag) values are reported in parts per million ("ppm"), and the upper and lower detection limits for this analytical procedure are 50.0 and 01 ppm respectively.

Gold fire assay-atomic absorption analyses were conducted on the rock geochemical sample pulps. The 15-gram subsamples were fluxed and a silver inquart was added and mixed. These subsamples were fluxed in batches with a natural standard and a blank. After cupellation the precious metal beads were transferred into new glassware, dissolved with aqua regia solution, and diluted to volume and mixed. The resulting solutions were analyzed on an atomic absorption spectrometer using a suitable standard set. Gold values are reported in parts per billion ("ppb") with upper and lower detection limits of 7,000 and 5 ppb respectively. The rock geochemical sample sites are shown on Figures 10, 26 and 27 of this report, and the rock geochemical sample descriptions and analytical results accompany this report in Appendix II and V respectively.

Geophysical Surveys

An induced polarization ("IP") survey was conducted over most of the Kulan zone survey control grid. Pacific Ridge Exploration Ltd. contracted the geophysical surveying to Lloyd Geophysics Inc. of Vancouver, B.C. which employed two experienced geophysical operators and two field assistants to carry out the field work. Each day the field geophysical results were plotted for interpretation. The geophysical surveying, including mobilization and demobilization, was conducted from July 15th to 30th.

Following the field work, the resultant geophysical data were collated, compiled and plotted by Mr. Frans Dziuba, an experienced and qualified geophysicist employed by Lloyd Geophysics Inc. The plan and pseudo-section plots of the induced polarization results accompany this report as Figures 11 to 18 and Appendix III contains the geophysical instrumentation specifications.

Induced Polarization Survey

A total of 20.4 line-km of induced polarization surveying was carried out from July 17th to 29th, 1999; covering the established survey control grid from grid lines 10000 North to 10300 North, totalling 19.4 line-km, and a 1,000-metre flagged extension line from 10100 North by 11000 East to 10100 North by 12000 East. The survey was undertaken to identify precious metal-bearing, quartz-sulphide, fracture filling mineralization within the Kulan and Risby zones worthy of immediate drill testing.

A time domain measuring system was used to carry out this survey; consisting of a Honda 6500 motor generator and a VIP 4000 transmitter manufactured by Iris Instruments Ltd., Orleans, France and a

six channel IP-6 receiver manufactured by BRGM Instruments, Orleans, France. The transmitter was operated with a cycle time of 8 seconds and the duty cycle ratio [(time on)/(time on + time off)] was 0.5 seconds, meaning the cycling sequence of the transmitter was 2 seconds current "on" and 2 seconds current "off" with consecutive pulses reversed in polarity. The microprocessor-controlled IP-6 receiver can measure up to 6 dipoles simultaneously with automatic calibration, gain setting, SP cancellation and fault diagnosis. To accommodate a wide range of geological conditions, the delay time, the window widths and, hence, the total integration time is programmable via the keyboard. Measurements are calculated automatically every 2 to 4 seconds from the averaged waveform which is accumulated in memory. The window widths of the IP-6 receiver can be programmed arithmetically or logarithmically. For this particular survey the instrument was programmed arithmetically into 10 equal window widths or channels, Ch_0, Ch_1, Ch_2, Ch_3, Ch_4, Ch_5, Ch_6, Ch_7, Ch_8, Ch_9. These may be recorded individually and summed up automatically to obtain the total chargeability. Similarly, the resistivity (ρ) in ohm-metres is also calculated automatically. The induced polarization survey was carried out with the current electrode west of the potential measuring dipole, and measurements were taken for x = 50 m and n = 1, 2, 3 and 4. The instrument parameters chosen for this survey were as follows:

Cycle Time (T_C)		=	8 seconds
Ratio	$\frac{\text{(Time On)}}{\text{(Time Off)}}$	=	1 : 1
Duty Cycle Ratio			
	$\frac{\text{(Time On)}}{\text{(Time On) + (Time Off)}}$	=	0.5
Delay Time (T_D)		=	120 milliseconds
Window Width (t_p)		=	90 milliseconds
Total Integration Time		=	900 milliseconds

Diamond Drilling

Major Diamond Drilling Ltd. (formerly J. T. Thomas Diamond Drilling Ltd.) of Smithers, B.C. was contracted to provide equipment and personnel capable of completing 1,200 metres of NQ2- and/or BQTK-core diamond drilling. The necessary equipment, including the drill rig, rods, core boxes and support equipment, were trucked from Smithers to a gravel pit near the Grum open-pit mine access road, approximately 10 kilometres north of Faro, where the drill and support equipment were then transported directly to the first drill site by a Bell 206C helicopter.

The diamond drilling campaign commenced on August 7th and was completed on September 10th, 1999. Seven NQ2- and two BQTK-core exploratory diamond drill holes, totalling 994.55 m or 3,263 ft., were completed during this period. The boreholes are numbered consecutively from '99-01' to '99-09'. A JT 2000 diamond drill rig, manufactured by Major Diamond Drilling Ltd., was during the drilling campaign. Field personnel employed by Coureur Des Bois Ltee. of Whitehorse, Y.T. were contracted to prepare, build and later dismantle the drill site platforms. The Bell 206C helicopter owned by Trans North Helicopters was utilized to move and service the drill rig, and transport the drill core to the field camp.

All of the diamond drill core was properly handled, processed, logged and sampled on the property. After the drill core had been delivered to the logging and sampling facility its footage markers were converted to metric measurements and each box was properly labelled with its respective hole number, box number and drilling length interval. The core was then logged in detail by the writer utilizing a 'matrix' coding log form, and the geological data was later inputted into a computerized database for documentation and computer-assisted drafting (CAD).

The identified sections of mineralization were split in half lengthways using a Longyear manual splitter and sampled by Ms. Roberts. The sampling interval varied in mineralized intercepts, usually less

than or equal to 2 metres long. All of the split core samples were labelled, bagged and delivered to Northern Analytical Laboratories Ltd. in Whitehorse, Y.T. for analysis. The remaining one-half of the split core was replaced in its appropriate core box and is neatly stacked near the field camp on the property.

A total of 319 drill core samples were delivered to Northern Analytical Laboratories Ltd. for silver and gold analyses. At the assay laboratory, the drill core samples were dried at 60° C, and crushed by a jaw crusher to minus 10 mesh. The crushed sample was subsequently split using a Jones Riffle to get a statistically-representative 200-gram subsample. The subsample was then pulverized by a ring pulverizer to 95 percent minus 100 mesh, rolled and bagged for analysis. The remaining sample reject from the Jones Riffle splitting was bagged and stored at the laboratories in Whitehorse, Y.T.

The analytical procedures for silver use a subsample which is weighed from the sample pulp for analysis. The subsamples are digested using a HNO_3 - $KClO_3$ mixture and when the reaction subsides HCl is added before it is placed on a hotplate to digest. After digestion is complete the flasks are cooled, diluted to volume and mixed. The resulting solutions are analyzed on an atomic absorption spectrometer using the appropriate standard sets. The analytical values for silver (Ag) values are reported in parts per million ("ppm"), and the upper and lower detection limits for this analytical procedure are 50.0 and 0.1 ppm respectively.

Gold fire assay-atomic absorption analyses were conducted on 15-gram subsamples of the drill core sample pulps. The subsamples were fluxed and a silver inquart was added and mixed. These subsamples were fluxed in batches with a natural standard and a blank. After cupellation the precious metal beads were transferred into new glassware, dissolved with aqua regia solution, and diluted to volume and mixed. The resulting solutions were analyzed on an atomic absorption spectrometer using a suitable standard set. Gold values are reported in parts per billion ("ppb") with upper and lower detection limits of 7,000 and 5 ppb respectively.

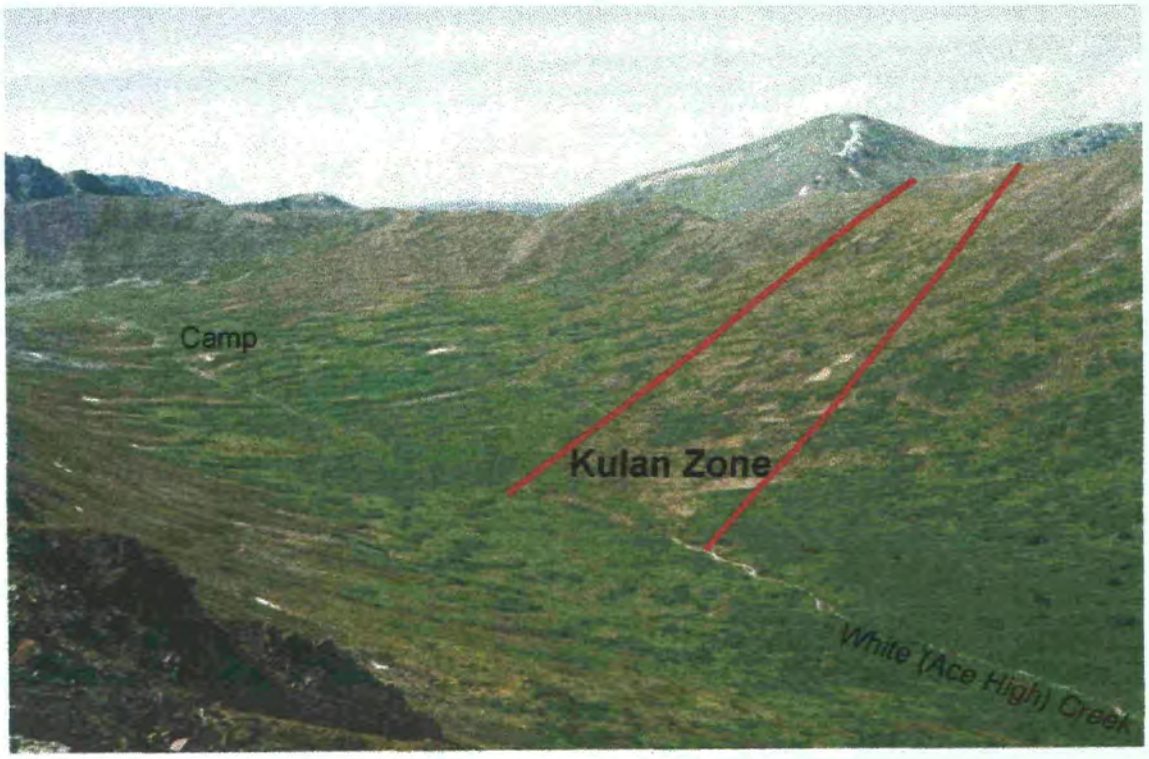
A total of 15 drill core sample pulps from drill holes 99-01, -02 and –03 were submitted to TSL (Min-En) Laboratories Ltd. in Vancouver, B.C. for check gold and silver analyses. The laboratory was instructed to utilize similar analytical procedures as those employed by Northern Analytical Laboratories so that the results could be correlated for accuracy. The analytical procedures utilized by TSL Laboratories Ltd. are documented on the TSL analytical certificates in Appendix V.

The collar locations of the diamond drill holes are plotted on accompanying Figures 5 to 9 and 26; Figures 19 to 25 are vertical sections documenting the lithologies, quartz-sulphide vein density and gold and silver values intersected by each of the nine drill holes; and Appendices IV and V contain the tabulated drill hole data and drill logs and analytical results respectively.

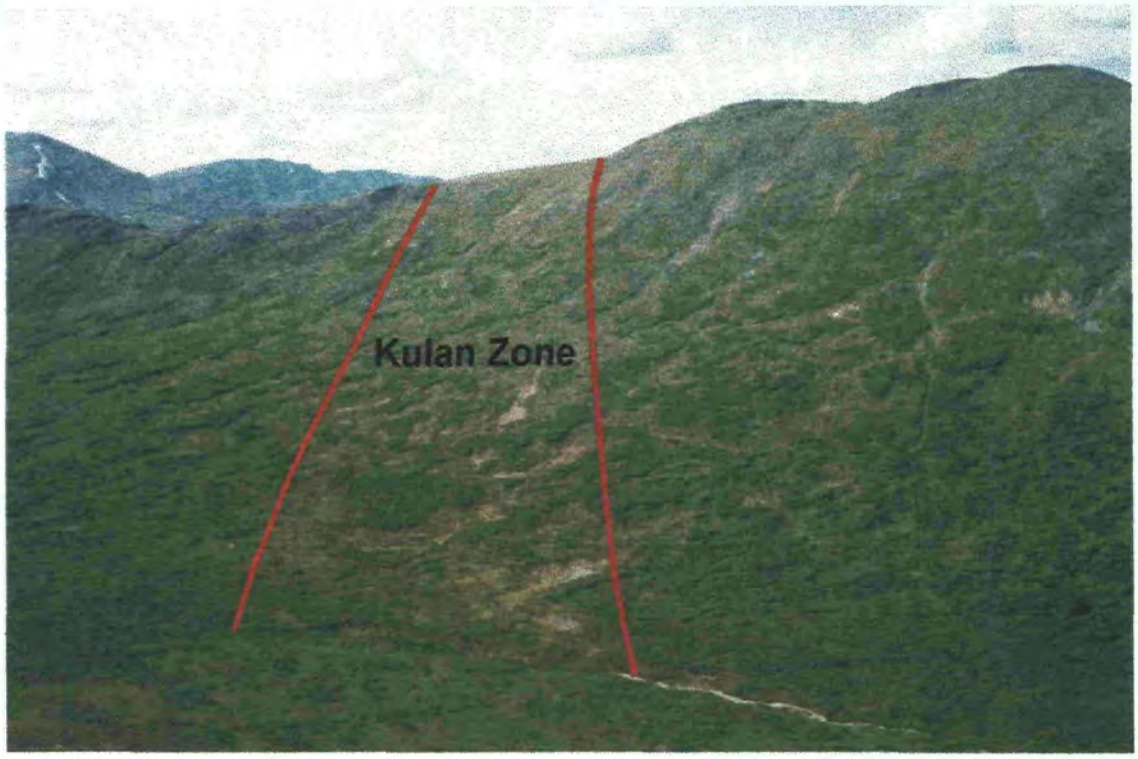
STATEMENT OF 1999 EXPLORATION EXPENDITURES

The following exploration expenditures were incurred by Pacific Ridge Exploration Ltd. on the JRV property during the period of June 1 to August 31, 1999.

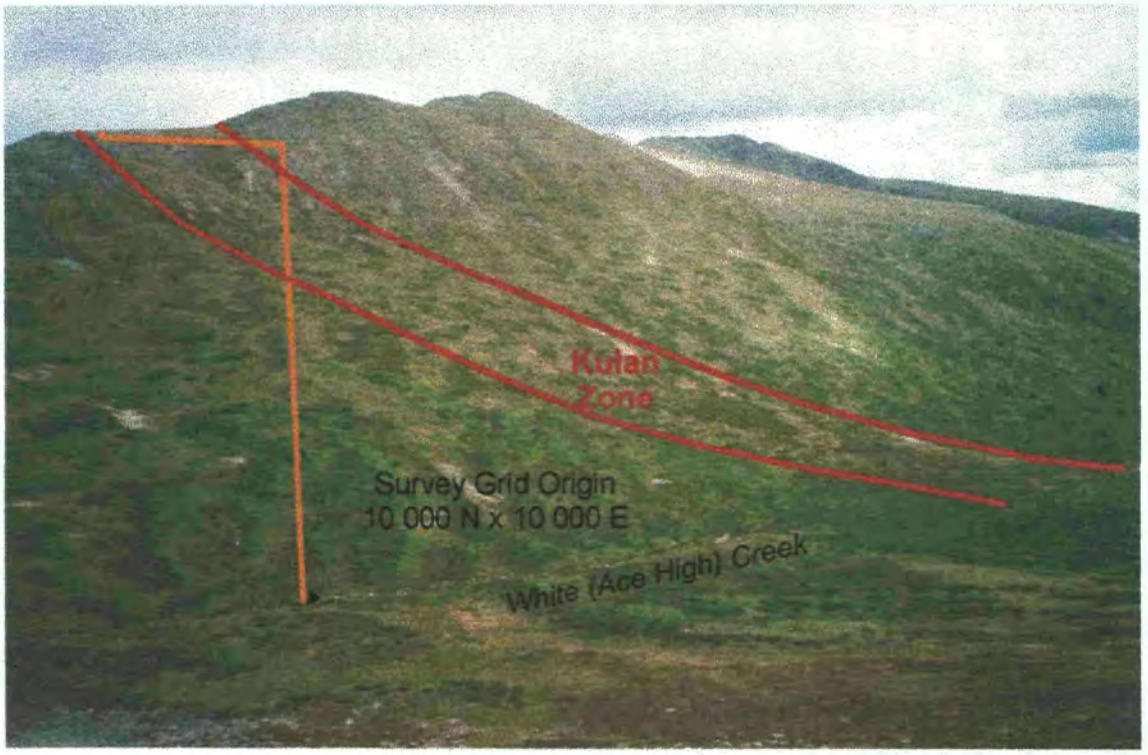
Exploration Category	Expenditure
Analysis - Geochemical	CDN $ 7,308.00
Analysis - Assays	2,021.25
Accommodation	17,697.84
Consulting - Geological	25,900.00
Consulting - Geotechnical	5,601.48
Drafting, Maps, Prints	1,540.34
Drilling	91,538.88
Drill Site Preparation	10,200.00
Expediting	438.96
Equipment Lease / Rentals	3,260.40
Equipment - Consumables	3,668.15
Fuel	911.59
Surveys - Geophysical	28,474.13
Surveys - Linecutting	9,550.00
Transportation - Airlines	1,145.99
Transportation - Helicopter	63,238.29
Transportation - Vehicle	5,780.98
Transportation - Freight	5,269.70
Miscellaneous - Indirect	208.15
TOTAL FIELD EXPLORATION EXPENDITURES	**CDN $ 283,752.13**



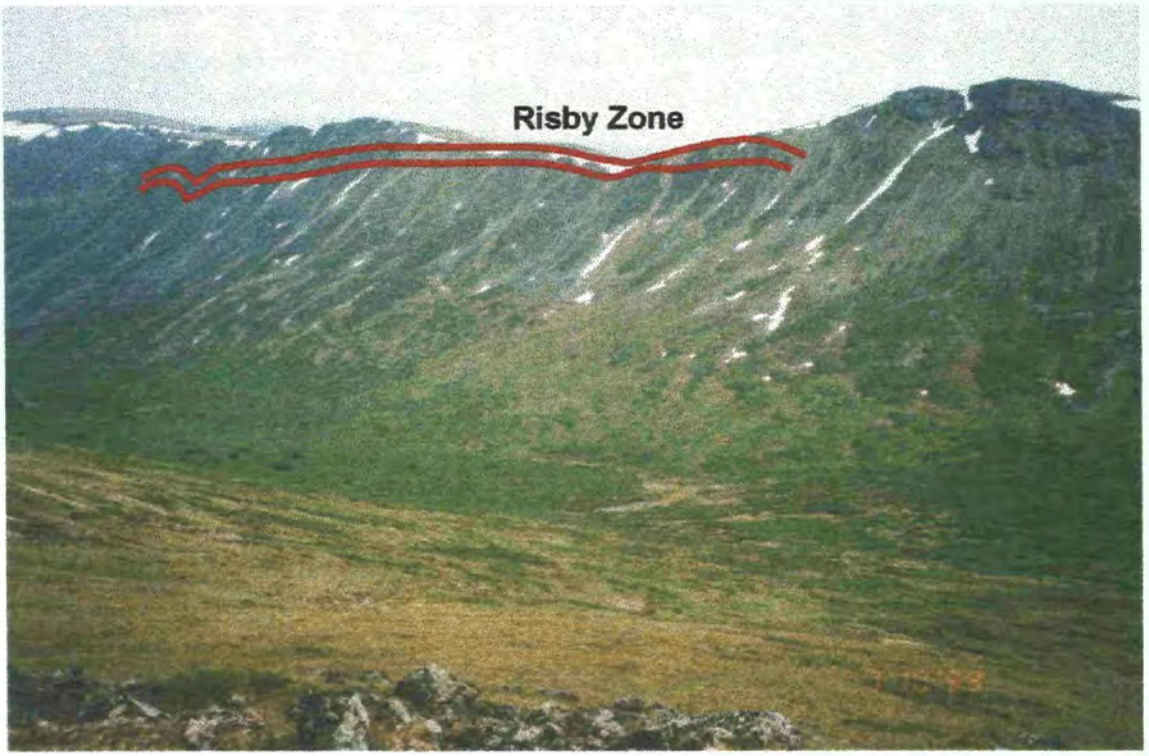
Photograph No. I: View of the Kulan Zone looking west-northwestward.



Photograph No. II: View of the Kulan Zone looking north-northwestward.



Photograph No. III: View of the Kulan Zone looking northward along survey control base line.



Photograph No. IV: View of the Risby Zone looking south-southeastward.

DISCUSSION OF EXPLORATION RESULTS

The 1999 prospecting and rock geochemical sampling work discovered precious metal-bearing quartz-sulphide vein mineralization within four zones, namely the Kulan, Risby, Dyke and Bubble zones, and along Ace High creek from the field camp downstream for over 3 kilometres. Soil geochemical sampling and induced polarization surveying within the Kulan zone identified several large coincident anomalies along the projected geological trend of the zone. These anomalies were tested by nine widely-spaced diamond drill holes along a one-kilometre strike length and four drill holes intersected significant quartz-sulphide veining but only geochemically-significant precious metal values were associated with the fracture-controlled mineralization. The following text summarizes the prospecting, geological, rock and soil geochemical, geophysical and diamond drilling results from the 1999 field work. The results have been plotted on Figures 5 to 28 of this report, and detailed rock geochemical descriptions, diamond drill logs and certificates of analysis have been appendicized.

I) PROSPECTING AND ROCK GEOCHEMICAL RESULTS

Prior to establishing the survey control grid, prospectors discovered significant precious metal-bearing quartz-sulphide and semi-massive sulphide vein mineralization in float boulders from the field camp east-northeasterly along a 3-kilometre length of Ace High Creek. Rock geochemical grab samples of mineralized float from several angular boulder fields within the Kulan zone, on the northern slopes of Ace High Creek, returned values ranging from 0.011 to 7.27 gpT gold and 3.6 to 607.0 gpT silver. This mineralization dominantly occurs as fracture-controlled quartz-sulphide vein mineralization associated with fractured and argillically-altered granite to granodiorite. The sulphide mineralogy of this float material is dominated by very fine- to fine-grained, fracture infilling sphalerite and galena with lesser pyrite and arsenopyrite genetically-associated with the core and/or selvages of sheeted quartz (± carbonate, orthoclase, tourmaline) veins from 1 mm to several centimetres wide and from less than 5 cm to more than a metre apart. The sulphide mineralogy is apparently vertically zoned with arsenopyrite and pyrite being dominant with sheeted quartz veins near the top of the northern ridge while sphalerite and galena contents become dominant in the sheeted vein float downslope towards Ace High Creek.

The most interesting rock geochemical grab samples were collected by prospectors from angular, limonitic float boulders along a 3-kilometre length of Ace High Creek. Two main types of mineralization were discovered and sampled, including sheeted quartz-sulphide vein material hosted by fractured and argillically-altered granite and brecciated and silicified semi-massive pyrite-sphalerite-galena (± arsenopyrite, chalcopyrite) mineralization. The sheeted quartz-sulphide vein mineralization is similar in appearance to that found in the lower-elevation boulder fields of the Kulan zone, except that there appears to be more very fine-grained arsenopyrite associated with the sphalerite-galena fracture infillings. The semi-massive sulphide mineralization was less well distributed but commonly occurred along upper portions of the Ace High drainage from the eastern side of the Kulan zone to the base line of the survey control grid. This type of mineralization was composed of pyrite, sphalerite, galena and lesser arsenopyrite and chalcopyrite infilling 1 to 15 cm fractures cutting fractured and silicified granite to granodiorite. Samples of the sheeted quartz-sulphide vein and semi-massive sulphide mineralization returned values ranging from trace to 15.43 gpT gold and 6.3 to 626.0 gpT silver. No economically-significant sulphide mineralization was discovered associated with any quartz veining cutting the various metasedimentary rock types.

Following his prospecting work along Ace High Creek, Mr. Risby prospected the southern slopes of this drainage for southerly extensions of the Kulan zone. He discovered sheeted quartz-sulphide vein mineralization in float boulders east of grid lines 10100 to 10400 North, and followed the mineralized float train upslope to the southern ridge crest where several east-northeasterly (070°) trending quartz-sulphide vein structures were discovered cutting fractured and limonitic granite. This mineral showing was called the 'Risby' zone. During July and August, Messrs. Roberts and Risby prospected the north-facing slopes of the Risby zone from the field camp to the eastern property boundary. They collected numerous grab and chip samples from several silicified structures trending either 050° to 070° and dipping –45° to –60° northward, subparallel to the dip slope, or orthogonal to Ace High Creek at 160° to 180° and steeply dipping, occupying young fault zones cutting the granitic country rocks and forming recessive swales.

Like the Kulan zone on the opposite side of Ace High Creek, the mineralization of the Risby zone appears to be vertically zoned with pyrite and arsenopyrite being the common sulphide minerals associated with the sheeted quartz veins along the ridge crest with increasing sphalerite and galena sulphide mineralization downslope towards the valley bottom. The distribution of the mineralization varies from very fine- to fine-grained, wispy colourations at the core or along the selvages of the quartz (± carbonate) at higher elevations to fracture infillings and disseminations with wider sheeted veins at lower elevations. Rock geochemical sample results for this zone vary depending upon the degree of brecciation, silicification and elevations, which in turn reflects the sulphide mineralogy, but generally they are quite encouraging. Gold values range from trace to a high of 7.41 gpT, and silver values range from trace to a high of 1,822.0 gpT.

Following the discovery of the Risby zone, prospecting was expanded northeasterly and easterly from the Kulan zone focusing on two brecciated and silicified gossan zones that are spatially-associated with late Cretaceous or Tertiary-age faulting and quartz-feldspar porphyry intrusives cutting the mid-Cretaceous granite stock. The 'Dyke' zone, centred at U.T.M. coordinates 6913000 North by 600500 East, is an area of strong easterly faulting which has cut a pre-existing, steeply dipping fault zone occupied by a quartz-feldspar porphyry dyke trending south-southeasterly. Rock geochemical grab samples of silicified and brecciated quartz-feldspar porphyry dyke and granitic float with dark grey, fracture-controlled, fine-grained sulphide mineralization returned precious metal values ranging from 0.07 to 1.68 gpT gold and 15.4 to 1,277.0 gpT silver.

The 'Bubble' zone, another area of gossanous quartz-feldspar porphyry dyking and fracture-filling quartz chalcedonic veining at U T.M. coordinates 6914000 North by 601000 East, was sampled by prospectors. This zone was so named because the epithermal-style silicification and high-level dyke material which often has vugs and miarolitic cavities. Dark grey, very fine-grained sulphide mineralization is locally associated with silicification of fault breccia zones commonly occupied by aphanitic to fine-grained quartz-feldspar porphyry dykes. Rock geochemical grab samples of dark grey, silicified dyke and granitic material from this zone returned only geochemically-significant gold (i.e. 5 to 65 ppb) and silver (0.6 to 36.8 gpT) values.

In summary, prospecting and rock geochemical sampling was responsible for confirming the trend of the Kulan zone prior to establishing the survey control grid, and for discovering the Risby zone which appears to be a series of fracture-controlled silicified and mineralized zones parallel and orthogonal to Ace High Creek. The rock geochemical sample sites with gold and silver analytical results have been plotted on Figure 10, and Appendix V contains all of the gold plus 31-element I.C.P. analytical results.

II) GEOLOGICAL RESULTS

Geological mapping surveys were undertaken by the writer in early July and by Mr. Chris Sebert, an experienced and qualified geological consultant, in early August. These surveys were conducted along the northern and southern ridges and slopes of Ace High Creek, and the results of this work have been plotted as Figure 5 of this report. Figure 4 shows the regional geological setting of the property.

Lithology

The upper Ace High Creek drainage is underlain by two major rock types: a fine-grained metasedimentary sequence, comprising non-calcareous schist and phyllite with lesser carbonaceous phyllite, marble, calc-silicate schist and metabasalt, belonging to the Lower Cambrian Gull Lake (Mount Mye) Formation (Gordey and Irwin, 1987); and fine- to medium-grained, muscovite-biotite granite with lesser granodiorite and quartz monzonite belonging to mid-Cretaceous Anvil batholith. These two rock types have undergone regional deformation and metamorphism, and have been intruded by a variety of fracture-controlled tourmaline- or garnet-bearing pegmatite, aplite and quartz-feldspar porphyry dykes. Aplitic and pegmatitic dykes are the youngest phase of the Anvil batholith while local quartz-feldspar porphyry dykes appear to be related to later Cretaceous- or Tertiary-age deformation and intrusive activity.

Lower Cambrian metasedimentary rocks cap the granitic intrusion as roof pendants along the ridges and upper slopes of Ace High Creek. Within the map area, the metasedimentary unit has been subdivided locally into a dark brown, well-foliated biotite-rich phyllite unit and a light to medium grey-green, bedded, metamorphosed calcareous siltstone, sandstone and mudstone unit. The calcareous metasedimentary rocks appear to underlie the phyllitic unit and grade upwards into phyllite with a several metre-wide transition zone of intercalated black and grey-green mudstone and siltstone beds. A layer of dark brown, limonitic, biotite-rich hornfels occurs within the metasedimentary units along their intrusive contacts with the underlying batholith and its higher level sills.

The metasedimentary rocks have been intruded by granitic rocks belonging to the mid-Cretaceous (97 Ma) Anvil batholith. Along the ridge crests north and south of Ace High Creek, several coeval granitic sills, up to 10 metres thick, intrude the metasedimentary units parallel to their apparent bedding. These sills often display a weak, indistinct mafic foliation paralleling their intrusive contact. Beyond a few metres of the batholith contact, the granitic rocks are light brown to grey in colour, massive, fine- to medium-grained, and composed of anhedral to subhedral feldspar, quartz, biotite, muscovite and minor opaques (i.e. apatite, magnetite). In fresh outcrop and drill core, the rocks appear to be granodioritic but, according to Pigage (1999), the batholith within the property boundaries is dominantly composed of biotite-muscovite granite with only local granodioritic and quartz monzonitic variations. These rocks are locally intruded by a variety of coeval and late-stage dykes varying from fine-grained, garnet-bearing aplite to coarse-grained, muscovite- and tourmaline-bearing pegmatite.

Structure

Steeply dipping fracture and joint sets within the map-area dominantly reflect the two moderately to steeply dipping regional normal fault orientations at 060° to 070° and 160° to 170° which appear to be related to extensional faulting during the emplacement of the mid-Cretaceous Anvil batholith (Jennings and Jilson, 1986). Other minor steeply dipping fracture and joint sets which are oriented west-northwesterly and north-northeasterly appear to reflect later Cretaceous- and/or Tertiary-age transcurrent movement along the nearby Tintina Fault that passes within 20 kilometres southwest of property.

Foliation and apparent bedding attitudes within the metasedimentary units commonly strike northwesterly and dip –10° to –30° southwestward; averaging –22° to –25° southwest. These attitudes are usually parallel to their intrusive contacts with the underlying batholithic rocks and associated higher level sills. Near their contacts, the granitic rocks also display a weak mafic foliation with a similar orientation to the intrusive contact and metasedimentary foliation attitudes. Such a relationship suggests that the emplacement of the Anvil batholith and associated apophyses was quite passive and deep.

The Anvil batholithic rocks tend to be ubiquitously well fractured within the map-area, reflecting the two dominant regional fault orientations. Within the Kulan zone the dominant fracture set is oriented 160° to 170° and dips vertically to –60° eastward, and most of the granitic rocks within this zone are moderately to well fractured by a series of similarly oriented en echelon faults. Within the Risby, Dyke and Bubble zones this fracture set is reflected by narrower, steeply dipping to vertical faults which appear topographically as recessive swales along the ridge crests. The regional east-northeasterly fracture set is undoubtedly reflected by the Ace High drainage which has many of the topographic features of being fault controlled. Subsidiary structures to this regional feature are most evident within the Risby zone where limonitic shear zones and open-space quartz (± sulphide) vein structures are commonly oriented east-northeasterly and dip –45° to –70° northward. Within the Kulan zone east-northeasterly fracturing is commonly infilled with quartz (± sulphide) veins (see later Soil Geochemical Results section).

It is the opinion of the project geologists that, besides controlling the emplacement of the Anvil batholith, regional south-southeasterly and east-northeasterly faulting has been repetitively reactivated providing conduits for post-intrusive dyking and silicification and later Cretaceous- and/or Tertiary-age silicification and mineralization.

Alteration

The Lower Cambrian metasedimentary country rocks have undergone a high degree of regional deformation and metamorphism. According to Pigage (1999), staurolite is a common accessory mineral in the gneisses and schists, indicating a relatively high metamorphic grade. It is interesting to note that, except for a relatively thin and local band of hornfels, there is little contact metamorphism within the metasedimentary units near intrusive contacts and the Anvil batholithic rocks along these contacts lack the hybridization and chill features commonly associated with intrusions of the Omineca Crystalline Belt. It is the opinion of Pigage (1999) that the Anvil batholith was probably emplaced at a depth exceeding 5 kilometres and regional deformation, perhaps related to Tertiary extensional movement along the Tintina Fault, has uplifted it to its present elevation.

The Anvil batholithic rocks are generally quite fresh to poorly altered, except adjacent to or within south-southeasterly and east-northeasterly fault zones. Nearing such fault zones the rocks become increasingly more altered, resulting in an apparent alteration zonation from fresh to propylitic, sericitic and, eventually, argillic alteration facies. Within the more intensely fractured and sheared zones, the granitic rocks are commonly leucocratic (i.e. mafic minerals altered to quartz and sericite), albititized and locally biotitized. This hydrothermal alteration is directly attributed to Cretaceous- and/or Tertiary-age silicification and mineralization since only occasional barren 'bull' quartz veins were observed in the metasedimentary and unaltered granitic rocks, and all of the significant sheeted quartz-sulphide vein mineralization occurs within sericitically- or, more commonly, argillically-altered granite or granodiorite.

The young quartz-feldspar porphyry dykes display chill features near their margins and they are usually sheared, silicified and limonitic in outcrop. It is difficult to ascertain whether these dykes have undergone any regional metamorphism but it is apparent that on a local scale they have been altered by high-level hydrothermal fluids which have overprinted much of their original compositions.

Mineralization

There appears to be at least two types of veining within the map-area, one type characteristically associated with mesothermal mineralization and the other type displaying features commonly associated with epithermal mineralization.

Most of the mineralization within the Kulan and Risby zones consists of mesothermal, fracture-controlled quartz-sulphide veins, stringers and infilled tectonic breccias hosted by sericitically- to argillically-altered granite. Individual quartz-sulphide veins vary from a few millimetres to more than 30 centimetres thick and, depending upon the density of fracturing, may be less than 5 centimetres to more than 2 metres apart within the mineralized zones. They have been described as 'sheeted' structures, rather than vein stockworks, since most of the quartz (± sulphide) veins occur subparallel in outcrop and drill core rather than cross-cutting. Quartz-sulphide vein stockworks do occur within the Kulan zone but they are very local features.

The sulphide content of the sheeted quartz veins is generally quite low, averaging less than one percent of the rock volume, but increases with elevation within the Kulan zone. Fine-grained pyrite, sphalerite, galena and lesser arsenopyrite, chalcopyrite and rare pyrrhotite are the common sulphide minerals associated with the mesozonal sheeted quartz veins; occurring either at the cores or along the selvages of veins as micro-fracture fillings. Near surface or within intensely fractured and oxidized zones, the sulphide minerals are oxidized to limonite, hematite, goethite, smithsonite and scordite. Semi-massive sulphide breccias were identified in float boulders along Ace High Creek and were intersected by drill holes 99-04 and –05 within the Kulan zone. These sulphide breccias are comprised of open-space filling, medium-to coarse-grained pyrite, sphalerite, arsenopyrite and minor disseminated galena, chalcopyrite and pyrrhotite that are surrounded and cut by fracture filling quartz and calcite. Based upon rock geochemical results, significant gold and silver values are genetically-associated with increased arsenopyrite- and galena-bearing vein mineralization.

The second type of epithermal-style veining overprints the base metal-bearing mineralization of the Kulan and Risby zones and is the dominant mineralization of the Dyke and Bubbles zones. This vein mineralization has distinct open-space filling textures with vugs, crustiform coarse-grained quartz-calcite banding, and cockade-textured quartz-calcite-rhodochrosite coating altered granite breccia fragments. Very fine- to fine-grained pyrite and sulphosalts are often associated with these high level, epithermal vein structures. Rhodochrosite often accompanies dark grey sulphide-rich epithermal veining and near shear structures the rhodochrosite oxidizes to black manganite, such as that observed in the creek banks at the western side of the Kulan zone along Ace High Creek. Low precious metal values are associated with younger epithermal vein mineralization at the Dyke and Bubble zones.

In summary, the granitic rocks within the map-area appear to have undergone at least two periods of localized post-intrusive hydrothermal alteration, silicification and mineralization. Within the Kulan and Risby zones, the first period is reflected by mesothermal-style alteration of the granitic host rocks with accompanying fracture-filling silicification and sheeted base and precious metal-bearing quartz vein mineralization controlled by south-southeasterly and east-northeasterly fault zones. The second period of epithermal-style open-space silicification and vein mineralization overprints the earlier mesothermal mineralization within the Kulan and Risby zones and appears to be controlled by tensional movement along pre-existing fault structures.

III) SOIL GEOCHEMICAL RESULTS

The soil geochemical sampling survey identified coincident gold-, silver-, lead- and arsenic-in-soil anomalies spatially-associated with a large induced polarization anomaly along the geological trend of the Kulan zone. It was determined from a review of the analytical results that silver, lead and, to a lesser extent, gold and arsenic were the most indicative pathfinder elements for defining the quartz-sulphide vein mineralization within the Kulan zone. The analytical results for these four elements have been plotted as Figures 6 to 9 of this report, and all analytical results accompany this report in Appendix V.

Gold-in-soil analytical results range from below detection limit (i.e. < 5 ppb) to 482 ppb which was returned from a sample collected at grid coordinates 11200 North by 9750 East, and these results have been contoured at greater than 10, 20 and 30 ppb. Anomalous (> 20 ppb) gold-in-soil geochemical values are distributed along a semi-continuous, 200- to 400-metre wide, arcuate, north-northwesterly trend from 10450 North by 10275 East to 11500 North by 9800 East; a distance of 1.2 kilometres (see Figure 6). It is interesting to note that several gold-in-soil anomalies occur midway along this trend which display distinct northeasterly to east-northeasterly splaying orthogonal to the trend of the Kulan zone. These splays may be reflecting subsurface quartz-sulphide vein mineralization controlled by the east-northeasterly fracturing related to inferred faulting along the Ace High Creek drainage. In addition to the Kulan zone trend, there are two single site gold-in-soil anomalies at 10000 North by 10750 East (62 ppb) and 10300 North by 11500 East (30 ppb); both situated near the limits of the survey control grid.

Silver-in-soil analytical results range from below detection limit (i.e. < 0.1 ppm) to two high values of 46.5 ppm that were returned from samples collected at grid coordinates 11100 North by 9750 East and 10800 North by 9950 East. The silver analytical results have been contoured at greater than 3, 5 and 10 ppm. Anomalous (>5 ppm) silver-in-soil geochemical values are distributed along a continuous, 200- to 500-metre wide, arcuate, north-northwesterly trend from 10350 North by 10550 East to 11500 North by 9750 East, a distance of 1.45 kilometres (see Figure 7). Perhaps more than the gold-in-soil geochemical anomalies, silver-in-soil anomalies also reflect quartz-sulphide vein mineralization controlled by north-northwesterly and east-northeasterly faulting and fracturing.

Lead-in-soil analytical results range from below detection limit (i.e. < 5 ppm) to 14,306 ppm that was returned from a sample collected at grid coordinates 11200 North by 9750 East. The lead analytical results have been contoured at greater than 500, 1,000 and 2,000 ppm. Anomalous lead-in-soil values (>1,000 ppm) are distributed along a semi-continuous, 200- to 375-metre wide, arcuate, north-northwesterly trend from 10350 North by 10350 East to 11500 North by 9800 East, a distance of 1.3 kilometres. As with the precious metal soil anomalies, anomalous lead-in-soil values reflect both north-northwesterly- and east-northeasterly-oriented quartz-sulphide vein mineralization within the Kulan zone.

The soil sampling survey also identified three other multi-site lead-in-soil anomalies situated east to northeast of the Kulan zone from 10600 to 11200 North by 10450 to 10900 East (see Figure 8). These three anomalies and two other single-site anomalies, situated immediately to the northwest, appear to be reflecting both subsidiary north-northwesterly and east-northeasterly fracturing and local quartz-sulphide veining (± galena, arsenopyrite) adjacent to the main Kulan zone.

Arsenic-in-soil analytical results range from below detection limit (i.e < 5 ppm) to 11,100 ppm which was returned from a sample collected at grid coordinates 11200 North by 9750 East. The arsenic analytical results have been contoured at greater than 300, 500 and 1,000 ppm. Anomalous arsenic-in-soil values (>500 ppm) are distributed along a semi-continuous, 200- to 700-metre wide, arcuate, north-northwesterly trend from 10350 North by 10375 East to 11500 North by 9800 East, a distance of 1.3 kilometres (see Figure 9). The distribution of the anomalous arsenic-in-soil values coincides well with both the precious metal and lead soil geochemical anomalies reflecting both north-northwesterly- and east-northeasterly-onented quartz-sulphide vein mineralization within the Kulan zone. Like the lead soil anomalies, there are local, subparallel arsenic soil anomalies to the east to northeast, reflecting both north-northwesterly and east-northeasterly fracturing and local quartz-sulphide (± galena, arsenopyrite) veining adjacent to the main Kulan zone.

It is important to note that anomalous soil trends for all four elements are open to the north-northwest and terminate abruptly at or very near Ace High Creek. Such as abrupt southern termination of coincident soil anomalies may be due to: deeper exotic overburden, fluvial erosion along Ace High Creek, a abrupt termination of the mineralization, or, more likely, a displacement of the vein mineralization by east-northeasterly strike-slip faulting along the Ace High Creek drainage. It is also interesting that the soil anomalies for all four elements display pronounced east-northeasterly splaying from grid coordinates 10600 to 10200 North, approximately 450 metres northwest of Ace High Creek, and not along Ace High Creek where north-northwesterly faulting along the Kulan zone was postulated to intersect an east-northeasterly fault structure along the Ace High Creek drainage.

IV) GEOPHYSICAL RESULTS

The induced polarization ("IP") survey extended from control grid lines 10000 to 11300 North. Grid lines 11400 and 11500 North were not surveyed due to poor electrode contact because these two lines cross a steep, talus-covered, north-facing slope. Plans of the filtered chargeability, resistivity and metal factor accompany this report as Figures 11, 12 and 13 respectively; pseudo-sections of the chargeability and resistivity accompany this report as Figures 14 to 18; and Appendix III contains the geophysical instrumentation specifications, according to Lloyd Geophysics Inc. (1999).

The results of the induced polarization survey identified a large filtered chargeability high (i.e. >25 msec), resistivity low (<500 ohm-m) and metal factor (>50) anomaly along and immediately east of the projected geological trend of the Kulan zone. Within the core of this anomaly, between grid coordinates 10700 to 10800 North by 10250 to 10375 East, chargeability measurements exceed 55 msec and resistivity readings are less than 300 ohm-m. This anomaly has a northerly trend from grid coordinates 10250 to 11050 North by 9900 to 10500 East, a strike length of 800 metres and width of 600 metres. The well-fractured and geochemically-anomalous area on the north ridge, between grid coordinates 10900 to 11200 North by 9800 to 9900 East, did not respond as well as expected with chargeability measurements of 15 to locally 25 msec; possibly due to the intensely fractured and deeply oxidized bedrock.

Several other chargeability anomalies were identified immediately east of the Kulan zone, coincident with anomalous lead- and arsenic-in-soil geochemical anomalies; along Ace High Creek; and immediately north and downslope of the Risby zone, between grid coordinates 10300 and 10400 North by 11000 to 11425 East (see Figures 11 to 13).

Based upon in-field interpretations of the induced polarization data, the linear, northerly trending chargeability highs and corresponding resistivity lows extending from gridlines 10500 to 10800 North at 10270 and 10375 East were selected for drill testing. Thus, drill holes 99-01, at grid coordinates 10600 North by 10400 East (270°/-45°) and 99-02, at grid coordinates 10700 North by 10300 East (270°/-45°),

were collared to test the central, most intense portion of the IP chargeability anomaly. The other anomalies peripheral to the large Kulan zone anomaly were not tested by follow-up drilling because they were interpreted to be in areas of local drainage and/or deep overburden or talus cover.

V) DIAMOND DRILLING RESULTS

The diamond drilling campaign was undertaken to evaluate the Kulan zone where coincident soil geochemical and geophysical anomalies had been identified in an area of little to no bedrock exposure. Drill testing over a strike length of 1.2 kilometres discovered widespread, fracture controlled, weak to locally strong quartz-pyrite (± sphalerite, and lesser galena, chalcopyrite, arsenopyrite, and/or pyrrhotite) sheeted veining and local sulphide vein breccias hosted by argillically-altered granite. However, precious metal values returned from drill core samples are not as significant as anticipated from the prior surface rock geochemical sampling. None of the arsenopyrite- and galena-rich, quartz-sulphide vein stockwork and semi-massive sulphide mineralization observed in float within the Kulan zone and along Ace High Creek were intersected by diamond drilling. The following is a summary table of the pertinent diamond drill hole data:

Drill Hole No.	Local Grid (m)		U.T.M. (m)		Elevation (m)	Length (m)	Azimuth (deg)	Dip (deg)
	Northing	Easting	Northing	Easting				
99-01	10600	10399	6912045.52	600404.17	1596.80	106.68	270	-45
99-02	10700	10299	6912142.38	600301.12	1635.00	106.68	270	-45
99-03	10900	10075	6912335.36	600071.05	1740.70	131.06	270	-45
99-04	10800	9984	6912232.60	599983.19	1728.20	118.26	270	-45
99-05	10700	10114	6912136.66	600116.21	1673.10	103.63	270	-45
99-06	10600	10200	6912039.37	600205.26	1641.20	85.34	270	-45
99-07	10501	10326	6911944.31	600334.26	1593.80	65.53	270	-45
99-08	11200	9876	6912629.08	599862.88	1859.30	152.40	270	-45
99-09	10400	10550	6911850.27	600561.27	1554.50	124.97	180	-45
Total Drilling						**994.55 m or 3,263 ft.**		

Drill holes 99-01 and 99-02 were collared to intersect the two northerly trending high chargeability linears at the core of the IP chargeability anomaly (discussed previously in the Geophysical Results section of this report). Drill hole 99-01 was collared at grid coordinates 10600 North by 10399 East, and drilled at an azimuth of 270° and inclination of –45°. This bore hole intersected three zones of weak (i.e. individual veins averaging 10 cm to 30 cm apart) to locally medium (i.e. individual veins averaging about 10 cm apart) sheeted quartz-sulphide veining hosted by argillically-altered granite and separated by fresh to very weakly altered granite. One 3-metre section of sheeted quartz-sulphide vein mineralization, at a hole length of 72.0 to 75.0 metres, returned values of 0.05 gpT gold and 9.1 gpT silver. It was estimated that the sulphide content of the mineralization intersected by this bore hole is less than one percent of rock volume; thus, there is no obvious explanation for the existence of a high chargeability linear (> 55 msec) that this drill hole was collared to intersect (see Figures 11, 16, 21 and 26).

Drill hole 99-02 was collared at grid coordinates 10700 North by 10299 East, and drilled at an azimuth of 270° and inclination of –45°. This bore hole intersected three zones of weak to locally medium sheeted quartz-sulphide veining hosted by argillically-altered granite and separated by fresh to propylitically-altered granite. Within the upper sheeted vein zone drilling intersected a fracture-controlled pyrite-sphalerite-galena breccia cut by later fracture-filling quartz veins, from a hole length of 20.18 to 21.00 metres, that but returned values of 8 ppb gold and 11.8 ppm silver. This drill hole also intersected two thicker quartz-sulphide veins within the lower sheeted vein zone which returned values of 64.0 gpT silver from the upper one and 48 ppb gold from the lower one However, like drill hole 99-01, there is no obvious explanation for the high chargeability linear (> 55 msec) that this drill hole was collared to intersect (see Figures 11, 16, 22 and 26).

After drill holes 99-01 and 99-02 failed to intersect sufficient sulphide mineralization to explain the anomalous IP chargeability results, further drilling was directed at evaluating the coincident gold-, silver-, lead- and arsenic-in-soil geochemical anomalies situated west of the centre of the geophysical anomaly but well within the geological trend of the Kulan zone. Thus, drill holes 99-03, -04 and –05 were targeted at coincident multi-element soil geochemical anomalies reflecting an apparent loci of north-northwesterly and east-northeasterly fracture-controlled vein mineralization.

Drill hole 99-03 was collared at grid coordinates 10900 North by 10075 East, and drilled at an azimuth of 270° and inclination of –45°. It intersected multiple zones of weak to locally strong (i.e. individual veins averaging about 5 cm apart) sheeted quartz-sulphide veining hosted by argillically-altered granite and separated by fresh to propylitically-altered granite. In the upper portion of the drill hole, a fault zone with quartz and fine-grained sulphide infilling was intersected at 11.60 m that returned values of 2.47 gpT gold and 35.4 gpT silver over 2 m, and at 43.7 m a silicified fault breccia zone with quartz and fine-grained sulphide was intersected that returned values of 6 to 45 ppb gold and 8.8 to 38.4 ppm silver over 4 metres. A quartz–pyrite-sphalerite-galena with lesser chalcopyrite and pyrrhotite vein stockwork zone was intersected from 101.0 to 107.55 m that returned values of 14 to 147 ppb gold and 0.8 to 71.6 ppm silver. This was the first time that a quartz-sulphide stockwork breccia had been discovered in bedrock, similar in appearance to some of the semi-massive quartz-sulphide mineralization observed along Ace High Creek, and its discovery indicated that soil geochemical results were more trustworthy exploration indicators of subsurface mineralization than the geophysical results (see Figures 24 and 26).

Drill hole 99-04 was collared at grid coordinates 10800 North by 9984 East, and drilled at an azimuth of 270° and inclination of –45°. It intersected multiple zones of trace (i.e. individual veins averaging more than 30 cm apart) to locally strong sheeted quartz-sulphide veining hosted by argillically-altered granite and separated by fresh to propylitically-altered granite. Two quartz-pyrite (± sphalerite, galena) breccias were intersected at hole lengths of 35.20 to 36.10 m and 73.30 to 74.98 m. The upper intercept is a quartz-pyrite-galena vein breccia which returned values of 1.10 gpT gold and 6.90 gpT silver over a sample length of 1.0 m. The lower intercept is semi-massive and locally massive pyrite-sphalerite-galena (± chalcopyrite, pyrrhotite) breccia cut by later crustiform quartz-calcite veining that returned values of 0.21 gpT gold and 52.3 gpT silver over 3.0 m. The drill hole intercept of semi-massive sulphide vein mineralization cut by typical epithermal quartz-calcite veining indicated that host rocks of the Kulan zone had undergone episodic fracturing and quartz ± sulphide veining after the emplacement of the Anvil batholith (see Figures 23 and 26).

Drill hole 99-05 was collared at grid coordinates 10700 North by 10114 East and drilled at an azimuth of 270° and inclination of –45°. This hole was drilled to test the strike extensions of the mineralization intersected in drill hole 99-04 and it intersected two zones of weak to strong sheeted quartz-sulphide veining from 17.8 to 23.77 m and a thick zone from 43.50 to 83.72 m. Within the deeper zone the drill hole intersected quartz-sulphide veining from 43.5 to 46.0 m that returned values of 1.81 gpT gold and 71.3 gpT silver over 1.0 m and a sulphide vein breccia cut by later quartz-sulphide veining that returned values of 0.03 gpT gold over 3.0 m. From 51.4 to 65.0 m, the drill hole intersected two intervals of sheared quartz-sulphide breccia, from 51.4 to 53.0 m, and a silicified section of semi-massive to massive sulphide vein mineralization from 58.4 to 65.0 m. The two intervals were separated by intensely fractured and silicified granite hosting strong to intense sheeted quartz-sulphide veins. Within the mineralized interval from 51.4 to 65 m, a true length of 9.8 m, the quartz-pyrite-sphalerite (± galena, chalcopyrite and minor pyrrhotite) mineralization returned values of 1.50 gpT gold and 26.8 gpT silver over 7 m. This intercept is the most significant sulphide occurrence of the drilling campaign, and it encouraged further drill testing south-southeasterly along the Kulan zone (see Figures 22 and 26).

Drill holes 99-06 and 99-07 were sited to test for 100-metre and 200-metre strike extensions of the quartz-sulphide breccia mineralization encountered in drill hole 99-05. Drill hole 99-06 was collared at grid coordinates 10600 North by 10200 East, and drilled at an azimuth of 270° and inclination of –45°. This bore hole intersected two zones of weak sheeted quartz-sulphide veining hosted by argillically-altered granite and separated by fresh to propylitically-altered granite, but all of the drill samples returned very low to insignificant precious metal values. Drill hole 99-07 was collared at grid coordinates 10501 North by 10326 East, and drilled at an azimuth of 270° and inclination of –45°. This drill hole failed to

intersect any significant quartz ± sulphide vein mineralization. Thus, the results from these two drill holes indicated that the vein mineralization was discontinuous south-southeastwardly from its intercepts in drill holes 99-03, -04 and –05 where the soil geochemical results reflected apparent fracturing and vein mineralization oriented at 160° and 070° (see Figures 21, 22 and 26).

Based upon the results of drill holes 99-06 and –07, further drilling was directed at evaluating the poorly exposed vein mineralization situated on the north ridge where 1998 prospecting samples from a shallow hand trench had returned values of 2.48 gpT gold and 149.2 gpT silver. Drill hole 99-08 was collared at grid coordinates 11200 North by 9876 East and drilled at an azimuth of 270° and inclination of –45°. This bore hole intersected finely-laminated Lower Cambrian metasedimentary rocks from the casing depth of 9.9 m to 24.38 m where it passed through the contact with the underlying mid-Cretaceous granite. Several intervals of weakly sheeted quartz-sulphide vein mineralization were encountered in the upper portion of this hole returning values averaging 0.02 to 0.03 gpT gold and 20 to 30 gpT silver over intervals of 4 to 16 m. The most significant intersection of quartz-sulphide vein mineralization was encountered from 90.10 to 108 9 m with a 70-centimetre quartz vein breccia from 108.2 to 108.9 m, the footwall contact of the Kulan zone. This interval returned values of 0.04 gpT gold and 87.7 gpT silver over 8.9 m, from 100.0 to 108.9 m. The interesting feature of this intercept was that the similar quartz-sulphide breccia material had been sampled on surface and the drilling results indicated that the breccia interval has a –50° to –55° eastward dip in contrast to other steeply-dipping fractures along the Kulan zone (see Figures 25 and 26). Following the completion of drill hole 99-08 on August 18th, the drilling campaign was halted pending analytical results from most of the drill core sampling.

The diamond drilling campaign resumed on September 4th with the collaring of drill hole 99-09 at grid coordinates 10400 North by 10550 East. This drill hole was sited to test for buried mineralization associated with the Ace High Creek fault system, and was drilled at 180° and inclined at –45°. This bore hole intersected three intervals of trace to weakly sheeted quartz-calcite (± tourmaline) veining with rare associated sulphide mineralization. One 1-centimetre wide quartz-orthoclase-pyrite-sphalerite-galena vein was sampled which returned values of 316 ppb gold and 25.9 ppm silver (see Figures 19 and 26).

In summary, the 1999 diamond drilling campaign confirmed that the coincident multi-element soil geochemical anomalies are reflecting fracture-controlled sheeted quartz-sulphide vein and vein breccia mineralization within the Kulan zone. However, diamond drilling did not intersect sufficient sulphide mineralization or other geological evidence to explain the high chargeability measurements at the core of the large northerly-trending coincident IP chargeability high and resistivity low anomaly.

Prospecting and rock geochemical results from sampling float boulder fields within the Kulan zone and along Ace High Creek show that significant precious metal values (i.e. 1 to over 15 gpT gold and 50 to 626 gpT silver) are genetically-associated with arsenopyrite- and galena-rich sheeted vein and vein breccia mineralization; however, none such mineralization was intersected by the nine widely-spaced diamond drill holes. Drilling intersected pyrite and sphalerite dominant sulphide mineralization with significantly lower attendant precious metal values. The most significant intervals of pyrite, sphalerite and galena vein mineralization were intersected by drill holes 99-04 and 99-05 which returned values of 0.21 gpT gold and 52.3 gpT silver over 3 m and 1.50 gpT gold and 26.8 gpT silver over 7 m respectively.

EXPLORATION POTENTIAL

The results of the 1999 exploration program indicate that the Risby zone has good exploration potential but considerably more evaluation work must be undertaken to assess its economic potential. Precious metal bearing quartz-sulphide vein mineralization within this zone occurs over an 800 by 300 m area with a vertical exposure of 200 metres. The mineralization is fracture-controlled by east-northeasterly and south-southeasterly faulting which has provided the conduits for both mesothermal and epithermal mineralizing fluids. Individual quartz-pyrite-sphalerite-galena-arsenopyrite veins range in thickness from a few millimetres to over 30 cm and occur as both sheeted and cross-cutting stockwork veinlets from less than 5 cm to over a metre apart. Individual zones of en echelon shearing, silicification and quartz-sulphide vein mineralization vary from one to several metres thick. Grab samples of the mineralized float material that were collected downslope of the zone returned precious metal values averaging 3.31 gpT gold and 426.9 gpT silver, and later grab samples of similar float material averaged 1.76 gpT gold and 302.3 gpT silver. Chip sample results over a 4-metre section of quartz-sulphide vein mineralization within a south-southeasterly shear breccia structure returned 2.12 gpT gold and 384.7 silver. In addition to significant rock geochemical results, there is a large open induced polarization chargeability anomaly at the southeastern corner of the 1999 survey control grid, downslope from the Risby zone. To assess the economic potential of the zone, a program of detailed prospecting, geological mapping, soil geochemical sampling (on the ridge crest) and reconnaissance diamond drilling is required.

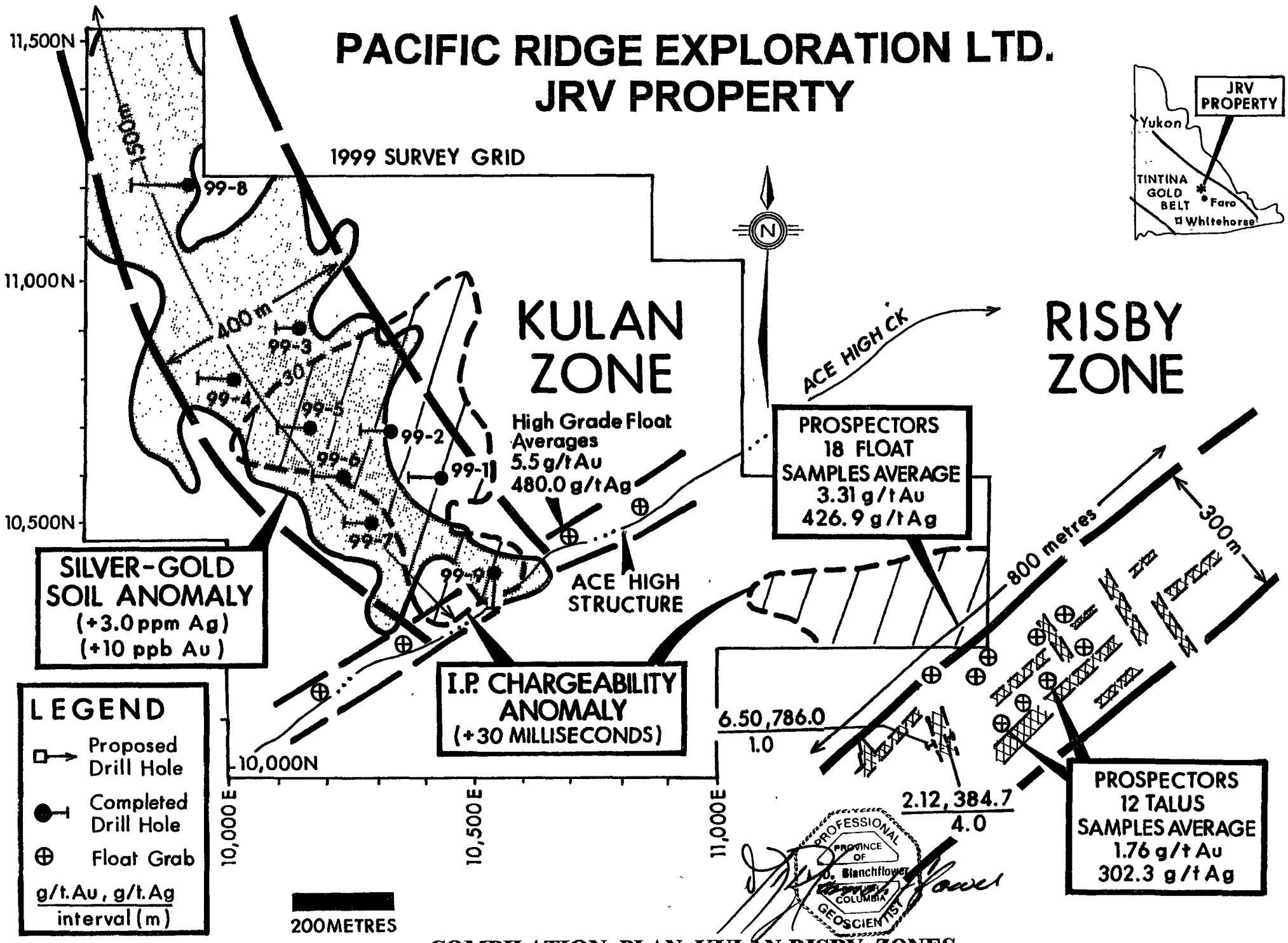
Nine widely-spaced diamond drill holes tested the soil geochemical and geophysical anomalies within the Kulan zone. Drilling defined a large zone of fracture-controlled, weak to locally strong sheeted quartz-sulphide vein mineralization hosting low attendant precious metal values. None of the drilling intersected the arsenopyrite- and galena-rich sheeted vein and vein breccia mineralization with significant gold and silver values that were discovered in float within the Kulan zone and along Ace High Creek. It appears that the exploration potential of the Kulan zone has been adequately tested until further work on the Risby zone can be compiled to focus further exploration. Reconnaissance prospecting and rock geochemical sampling on other mineral showings within the property boundaries did not discover sufficient precious metal-bearing mineralization to warrant further detailed work.

CONCLUSIONS

The upper Ace High Creek drainage is underlain by a fine-grained metasedimentary sequence belonging to the Lower Cambrian Gull Lake Formation (Gordey and Irwin, 1987) and fine- to medium-grained, muscovite-biotite granite with lesser granodiorite and quartz monzonite belonging to mid-Cretaceous Anvil batholith. The intrusive rocks are locally capped by roof pendants of the older metasedimentary sequence and occur as sills along the apparent metasedimentary bedding planes at higher elevations. The country rocks have undergone regional deformation and metamorphism, and have been intruded by a variety of fracture-controlled tourmaline- or garnet-bearing pegmatite, aplite and quartz-feldspar porphyry dykes. Aplitic and pegmatitic dykes are the youngest phase of the Anvil batholith while local quartz-feldspar porphyry dykes appear to be related to later Cretaceous- or Tertiary-age deformation and intrusive activity.

Steeply dipping fracture and joint sets within the upper Ace High Creek drainage reflect the two moderately to steeply dipping regional normal fault orientations at 060° to 070° and 160° to 170° which appear to be related to extensional faulting during the emplacement of the mid-Cretaceous Anvil batholith (Jennings and Jilson, 1986). Other minor steeply dipping fracture and joint sets which are oriented west-northwesterly and north-northeasterly appear to reflect later Cretaceous- and/or Tertiary-age transcurrent movement along the nearby Tintina Fault.

There appears to be at least two periods of localized post-intrusive hydrothermal alteration, silicification and sulphide mineralization. Firstly, mesothermal-style alteration of the granitic host rocks was accompanied by fracture-filling silicification and sheeted base and precious metal-bearing vein mineralization controlled by south-southeasterly and east-northeasterly fault zones. Later, epithermal-



COMPILATION PLAN KULAN-RISBY ZONES

FIGURE 27

style open-space silicification and vein mineralization overprinted the earlier mineralization within the Kulan and Risby zones, controlled by tensional movement along pre-existing fault structures that may be coeval with regional Tertiary-age extensional fault movement.

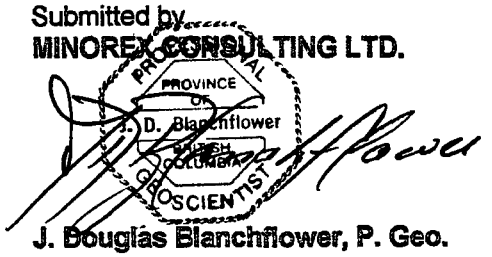
The earlier fracture-controlled quartz-sulphide veins and infilled tectonic breccias are hosted by sericitically- to argillically-altered granite. Individual quartz-sulphide veins vary from a few millimetres to more than 30 centimetres thick and may occur less than 5 centimetres to more than 2 metres apart within the mineralized zones. Fine-grained pyrite, sphalerite, galena and lesser arsenopyrite, chalcopyrite and rare pyrrhotite are the common sulphide minerals with significant gold and silver values being genetically-associated with arsenopyrite- and galena-rich mineralization. The later epithermal-style veining has distinct open-space quartz infilling textures and local very fine- to fine-grained pyrite and sulphosalts mineralization. Based upon recent sampling results only geochemically-significant precious metal values are associated with the youngest epithermal veining and mineralization at the Dyke and Bubble zones.

The soil geochemical sampling survey identified coincident gold-, silver-, lead- and arsenic-in-soil anomalies spatially-associated with a large induced polarization anomaly along the geological trend of the Kulan zone. The coincident anomalies form a continuous, north-northwesterly arcuate trend, measuring 1,200 to 1,450 metres long by 200 to 500 metres wide, from 10350 North by 10550 East to 11500 North by 9750 East. This trend is open to the north-northwest and terminates abruptly at or very near Ace High Creek, indicating a possible displacement of the vein mineralization by east-northeasterly strike-slip faulting along the Ace High Creek drainage.

Prospecting and rock geochemical results from sampling float boulder fields within the Kulan zone and along Ace High Creek show that significant precious metal values (i.e. 1 to over 15 gpT gold and 50 to 626 gpT silver) are genetically-associated with arsenopyrite- and galena-rich sheeted vein and vein breccia mineralization; however, none such mineralization was intersected by the nine widely-spaced diamond drill holes. The diamond drilling, totalling 994.55m, intersected dominantly pyrite and sphalerite vein mineralization with significantly lower attendant precious metal values. The most significant intervals of pyrite, sphalerite and galena vein mineralization were intersected by drill holes 99-04 and 99-05 which returned values of 0.21 gpT gold and 52.3 gpT silver over 3 m and 1.50 gpT gold and 26.8 gpT silver over 7 m respectively. This drilling did not intersect sufficient sulphide mineralization or other geological evidence to explain the high chargeability measurements at the core of the large northerly-trending coincident IP chargeability high and resistivity low anomaly.

It appears that the exploration potential of the Kulan zone has been adequately tested at the present time, and reconnaissance prospecting and rock geochemical sampling on other mineral showings within the property boundaries did not discover sufficient precious metal-bearing mineralization to warrant further detailed work. In contrast, the Risby zone has good exploration potential but considerably more exploration must be undertaken. Precious metal bearing quartz-sulphide vein mineralization occurs over an 800- by 300-metre area, spatially-associated with east-northeasterly and south-southeasterly faulting. Grab samples of mineralized float material averaged 1.76 to 3.31 gpT gold and 302.3 to 426.9 gpT silver, and preliminary chip samples returned values ranging up to 6.5 gpT gold and 786.0 gpT silver across 1 metre and 2.12 gpT gold and 384.7 gpT silver across 4 metres. A program of detailed prospecting, geological mapping, soil and rock geochemical sampling and reconnaissance diamond drilling is recommended to evaluate the economic potential of the Risby zone at an estimated cost of CAN $300,000.00.

Submitted by,
MINOREX CONSULTING LTD.



J. Douglas Blanchflower, P. Geo.
Consulting Geologist

STATEMENT OF QUALIFICATIONS

I, J. DOUGLAS BLANCHFLOWER, of the Municipality of Delta, Province of British Columbia, DO HEREBY CERTIFY THAT:

1) I am a Consulting Geologist with a business office at 11967 - 83A Avenue, Delta, British Columbia, V4C 2K2; and President of Minorex Consulting Ltd.

2) I am a graduate of Economic Geology with a Bachelor of Science, Honours Geology degree from the University of British Columbia in 1971.

3) I am a Registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia (No. 19086).

4) I am a Fellow of the Geological Association of Canada (No. F0046).

5) I have practised my profession as a geologist for the past twenty-seven years.

   Pre-Graduate field experience in Geology, Geochemistry and Geophysics (1966 to 1970).

   Three years as Geologist with the B. C. Ministry of Energy, Mines and Petroleum Resources (1970 to 1972).

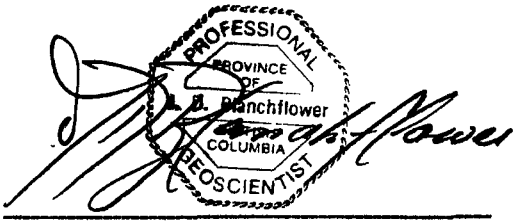
   Seven years as Exploration Geologist with Canadian Superior Exploration Limited (1972 to 1979).

   Three years as Exploration Geologist with Sulpetro Minerals Limited (1979 to 1982).

   Seventeen years as Consulting Geologist and President of Minorex Consulting Ltd. (1982 to 1999).

6) I own no direct, indirect or contingent interest in the subject claims, nor shares in or securities of **PACIFIC RIDGE EXPLORATION LTD.**

7) I supervised the 1999 exploration program on the subject property, conducted detailed geological mapping and logged the diamond drill core during the period of June 30 to September 13, 1999. I also prepared this report which summarizes the results of the 1999 exploration program and contains recommendations for further exploration work.



J. Douglas Blanchflower, P. Geo.
Consulting Geologist

Dated at Delta, British Columbia, Canada this 22nd day of November, 1999

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Paper Clip								
Binder Clip								
Plastic Protector								
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Special Instructions:

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APPENDIX I

Mining Claim Data

JRV PROPERTY MINERAL CLAIM DATA

Claim Name	NTS	Record Number	Record Date	Expiry Date	Registered Owner	Mineral Claim Operator
JRV's 1	105K06	YC 07969	Jul. 25 / 98	JUL 25/2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 2	105K06	YC 07970	Jul. 25 / 98	JUL 25 /2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 3	105K06	YC 07971	Jul. 25 / 98	Jul. 25 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 4	105K06	YC 07972	Jul. 25 / 98	Jul. 25 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 5	105K06	YC 07973	Jul. 25 / 98	Jul. 25 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 6	105K06	YC 07974	Jul. 25 / 98	Jul. 25 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 7	105K06	YC 07975	Jul. 25 / 98	Jul. 25 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 8	105K06	YC 07976	Jul. 25 / 98	Jul. 25 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 9	105K06	YC 07977	Jul. 25 / 98	Jul. 25 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 10	105K06	YC 07978	Jul. 25 / 98	Jul. 25 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 11	105K06	YC 07979	Jul. 25 / 98	Jul. 25 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 12	105K06	YC 07980	Jul. 25 / 98	Jul. 25 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 13	105K06	YC 08097	Aug. 20 / 98	Aug. 20 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 14	105K06	YC 08098	Aug. 20 / 98	Aug. 20 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 15	105K06	YC 08099	Aug. 20 / 98	Aug. 20 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 16	105K06	YC 08100	Aug. 20 / 98	Aug. 20 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 17	105K06	YC 08101	Aug. 20 / 98	Aug. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 18	105K06	YC 08102	Aug. 20 / 98	Aug. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 19	105K06	YC 08103	Aug. 20 / 98	Aug. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 20	105K06	YC 08104	Aug. 20 / 98	Aug. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
V's 21	105K06	YC 08376	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
.V's 22	105K06	YC 08377	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
RV's 23	105K06	YC 08378	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 24	105K06	YC 08379	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 25	105K06	YC 08380	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 26	105K06	YC 08381	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
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JRV's 29	105K06	YC 08384	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 30	105K06	YC 08385	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
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JRV's 32	105K06	YC 08387	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 33	105K06	YC 08388	Oct. 31 / 97	Oct. 31 / 99	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 34	105K06	YC 08389	Oct. 31 / 97	Oct. 31 / 99	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 35	105K06	YC 08390	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 36	105K06	YC 08391	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 37	105K06	YC 08392	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 38	105K06	YC 08393	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 39	105K06	YC 08394	Oct. 31 / 98	Oct. 31 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 40	105K06	YC 08395	Oct. 31 / 98	Oct. 31 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 41	105K06	YC 08396	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 42	105K06	YC 08397	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 43	105K06	YC 08398	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 44	105K06	YC 08399	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 45	105K06	YC 08400	Oct. 31 / 98	Oct. 31 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
RV's 46	105K06	YC 08401	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
.V's 47	105K06	YC 08402	Oct. 31 / 98	Oct. 31 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
'RV's 48	105K06	YC 08403	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
RV's 49	105K06	YC 08404	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 50	105K06	YC 08405	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 51	105K06	YC 08406	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 52	105K06	YC 08407	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 53	105K06	YC 08408	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.

JRV PROPERTY MINERAL CLAIM DATA

Claim Name	NTS	Record Number	Record Date	Expiry Date	Registered Owner	Mineral Claim Operator
JRV's 54	105K06	YC 08409	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 55	105K06	YC 08410	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 56	105K06	YC 08411	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 57	105K06	YC 08412	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 58	105K06	YC 08413	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 59	105K06	YC 08414	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 60	105K06	YC 08415	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 61	105K06	YC 08416	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 62	105K06	YC 08417	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 63	105K06	YC 08418	Oct. 31 / 98	Oct. 31 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 64	105K06	YC 08419	Oct. 31 / 98	Oct. 31 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 65	105K06	YC 08420	Oct. 31 / 98	Oct. 31 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 66	105K06	YC 08421	Oct. 31 / 98	Oct. 31 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 67	105K06	YC 08422	Oct. 31 / 98	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 68	105K06	YC 08423	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 69	105K06	YC 08424	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 70	105K06	YC 08425	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 72	105K06	YC 08426	Oct. 31 / 97	Oct. 31 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 74	105K06	YC 08427	Oct. 31 / 97	OCT 31/2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
V's 76	105K06	YC 08428	Oct. 31 / 97	Oct. 31 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
RV's 77	105K06	YC 08667	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 78	105K06	YC 08429	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 79	105K06	YC 08668	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 80	105K06	YC 08430	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 81	105K06	YC 08431	Oct. 31 / 97	Oct. 31 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 82	105K06	YC 08432	Oct. 31 / 97	Oct. 31 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 83	105K06	YC 08433	Oct. 31 / 97	Oct. 31 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 84	105K06	YC 08434	Oct. 31 / 97	Oct. 31 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 85	105K06	YC 08435	Oct. 31 / 97	Oct. 31 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 86	105K06	YC 08436	Oct. 31 / 97	Oct. 31 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 87	105K06	YC 08437	Oct. 31 / 97	Oct. 31 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 88	105K06	YC 08438	Oct. 31 / 97	Oct. 31 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 89	105K06	YC 08439	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 90	105K06	YC 08440	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 91	105K06	YC 08441	Oct. 31 / 97	Oct. 31 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 92	105K06	YC 08442	Oct. 31 / 97	Oct. 31 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 93	105K06	YC 08443	Oct. 31 / 97	Oct. 31 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 94	105K06	YC 08444	Oct. 31 / 97	Oct. 31 / 2004	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 95	105K06	YC 08445	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 96	105K06	YC 08446	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
RV's 97	105K06	YC 08447	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
(V's 98	105K06	YC 08448	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
IRV's 99	105K06	YC 08449	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
V's 100	105K06	YC 08450	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 101	105K06	YC 08451	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 102	105K06	YC 08452	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 103	105K06	YC 08669	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.

JRV PROPERTY MINERAL CLAIM DATA

aim Name	NTS	Record Number	Record Date	Expiry Date	Registered Owner	Mineral Claim Operator
JRV's 104	105K06	YC 08670	Apr. 20 / 98	Apr. 20 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 105	105K06	YC 08671	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 106	105K06	YC 08672	Apr. 20 / 98	Apr. 20 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 107	105K06	YC 08673	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 108	105K06	YC 08674	Apr. 20 / 98	Apr. 20 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 109	105K06	YC 08675	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 110	105K06	YC 08676	Apr. 20 / 98	Apr. 20 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 111	105K06	YC 08677	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 112	105K06	YC 08678	Apr. 20 / 98	Apr. 20 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 113	105K06	YC 08453	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 114	105K06	YC 08454	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 115	105K06	YC 08679	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 116	105K06	YC 08455	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 117	105K06	YC 08456	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 118	105K06	YC 08457	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 119	105K06	YC 08458	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 120	105K06	YC 08459	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 121	105K06	YC 08460	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 122	105K06	YC 08461	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
"s 123	105K06	YC 08462	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
<V's 124	105K06	YC 08463	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
?V's 125	105K06	YC 08464	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 126	105K06	YC 08465	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 127	105K06	YC 08466	Oct. 31 / 97	Oct. 31 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 128	105K06	YC 08680	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 129	105K06	YC 08681	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 130	105K06	YC 08682	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 131	105K06	YC 08683	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 132	105K06	YC 08684	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 133	105K06	YC 08685	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 134	105K06	YC 08686	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 135	105K06	YC 08687	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 136	105K06	YC 08688	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 137	105K06	YC 08689	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 138	105K06	YC 08690	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 139	105K06	YC 08691	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 140	105K06	YC 08692	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 141	105K06	YC 08693	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 142	105K06	YC 08694	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 143	105K06	YC 08695	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 144	105K06	YC 08696	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 145	105K06	YC 08697	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 146	105K06	YC 08698	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
V's 147	105K06	YC 08699	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
.V's 148	105K06	YC 08700	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
"RV's 149	105K06	YC 08701	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
..RV's 150	105K06	YC 08702	Apr. 20 / 98	Apr. 20 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 151	105K06	YC 08703	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 152	105K06	YC 08704	Apr. 20 / 98	Apr. 20 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 153	105K06	YC 08705	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 154	105K06	YC 08706	Apr. 20 / 98	Apr. 20 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.

JRV PROPERTY MINERAL CLAIM DATA

Claim Name	NTS	Record Number	Record Date	Expiry Date	Registered Owner	Mineral Claim Operator
JRV's 155	105K06	YC 08707	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 156	105K06	YC 08708	Apr. 20 / 98	Apr. 20 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 157	105K06	YC 08709	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 158	105K06	YC 08710	Apr. 20 / 98	Apr. 20 / 2001	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 159	105K06	YC 08711	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 160	105K06	YC 08712	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 161	105K06	YC 08713	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 162	105K06	YC 08714	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 163	105K06	YC 08715	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 164	105K06	YC 08716	Apr. 20 / 98	Apr. 20/2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 165	105K06	YC 08717	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 166	105K06	YC 08718	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 167	105K06	YC 08719	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 168	105K06	YC 08720	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 169	105K06	YC 08721	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 170	105K06	YC 08722	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 171	105K06	YC 08723	Apr. 20 / 98	Apr. 20 / 2002	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 172	105K06	YC 08724	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 173	105K06	YC 08725	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.
JRV's 174	105K06	YC 08726	Apr. 20 / 98	Apr. 20 / 2000	Western Prospector Group Ltd.	Pacific Ridge Exploration Ltd.

Total Number of Mineral Claims: 171

APPENDIX II

Rock Geochemical Sampling Results

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ROCK SAMPLE DESCRIPTIONS

Sampler ROBERTS/RISBY

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
24751	Kulan Zone Float	Fall/98	grabs	P.R.	grabs of sulphide rich mineralization, Risby favourites	1.54	99.0
24752	Kulan Zone Float	Fall/98	grabs	P.R.	WR favourites of Risby grabs qtz/chal f.g. pyrite, higher Pb/Zn than Risby favourites	7.27	515.0
24756	Central Kulan Zone	Jun/99	grabs	WR	yellow wea., qtz/chal. veining in granite 10m wide zone, grabs with 5% qtz.	0.011	3.6
24757	" "	Jun/99	grabs	w.r.	feld. por. dyke + qtz-chal. veining in granite, grabs of mineralization	0.086	19.7
24758	Kulan Zone upstream	Jun/99	grabs	w.r.	float of + 10cm qtz/py/Aspy. vein high Pb.	0.983	50.0
24759	" "	"	"	w.r.	granite stockwork, qtz/chal. veinlets, Tr. py + Aspy.	0.009	47.0
24767	Kulan Zone Top of Ridge	Jun/99		P.R.	Top of Ridge, Dyke Zone. grabs of Pb-S rich qtz vein along west edge of dyke.	0.58	127.0
24768	" "	"		"	Dyke Zone, grabs of qtz/Aspy rich mineralization along E. side of dyke.	0.21	54.3

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ROCK SAMPLE DESCRIPTIONS

Sampler ROBERTS / RISBY

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
24769	Kulon Zone Dyke area	Jun/99	grabs	P.P.	E. side, dk grey qtz, 2-3% Aspy <1% Pbs	0.17	149.3
24770	" "	"	"	P.R.	W. side, grabs of galena rich qtz vein	0.17	912.0
24771	" "	"	"	P.R.	E. side, dk. grey qtz, 1-2% dissd Aspy + Pyrite.	0.07	15.4
24772	" "	"	"	P.R.	300 m below ridge E. side, grabs of Vuggy qtz, diss.d Aspy., Frags of dyke.	0.75	50.0
24773	" "	"	"	P.R.	Lower elevation of dyke zone, 20cm vein grabs, banded qtz vein, 10% Zn, 5% Pbs, 5% Py, 2-4% Aspy	1.68	53.8
24774	Kulon Zone Boulder Field	"	"	P.R.	Massive dk. grey qtz with coarse gr. Pyrite (20% Py.)	0.03	27.3
24775	" "	"	"	P.R.	Blk. qtz breccia, Frags of intr., coarse grained Pbs; 15% Pbs, <1% f.gr. Py.	0.14	525.0
24776	Kulon Zone Ace High Clk.	"	"	P.R.	30 m upstream of boulder field., Massive coarse gr. Py, Pbs (HS²) @ 2% Pbs, 50% Py.	0.07	86.6
24777	" "	"	"	P.R.	S. side of Clk., qtz/ZnS qtz vein, at 20% ZnS, No Pbs, No Py.	0.07	172.6
24778	" "	"	"	P.R.	Massive f.gr. Py, coarse Pbs, Band of HS² + Pbs <2cm. (HS²) +50% Py.	0.07	27.8

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ROCK SAMPLE DESCRIPTIONS Sampler ROBERTS/ASBY

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
24779	Flood Ace high Cr. Ridge, Kulan Zone	June 199	grabs	P.R	Flood / 10 cm vein / qtz / Aspy / ZnS Est 10-15% ZnS.	1.27	29.0
24780	" " " " "	"	"	P.R	dark grey - blk qtz vein with diss'd Aspy (<5%) 8-10% PbS, 5-10% Py.	0.21	165.0
24781	" " " " "	"	"	P.R	qtz vein breccia with < 1cm rounded frags of white qtz/chal and granite	—	8.2
24782	"	"	"	P.R	grabs / blk qtz-chal vein breccia, with 25% / < 1cm frags / granite, < 5% fine diss'd py.	0.17	87.4
24783	" "	"	"	P.R.	blk f.gr. qtz with irreg. bands < 2 cm / coarse gr. galena, ~ 15% PbS	0.07	554.0
24784	Upper Ace high elc. Kulan Zone	"	"	W.R	10 cm vein / white qtz/chal with 8-5% ZnS < 2% Py.	3.39	850.0
24785	" " Kulan Zone	"	"	W.R	10 cm blk qtz breccia vein, frags / chal + f.gr. pyrite, diss'd bands of 5-7% PbS.	6.27	72.2
24786	Kulan Zone Lower Gossan	"	"	W.R.	grabs / blk qtz/chal with < 1 cm frags / rounded granite (explosive breccia) < 5% diss'd Py	0.10	9.9
24787	" "	"	"	W.R.	blk qtz explosive breccia, rounded granite frags. < 5% diss'd py.	0.03	12.1
24788	" "	"	"	W.R.	blk qtz breccia fine diss'd Py, PbS 1-2% PbS, 5% Py.	0.14	12.0

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ROCK SAMPLE DESCRIPTIONS Sampler ROBERTS / RISBY

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
24789	Ace High clk Kulan Zone Heli prd.	June/89	grabs	w.r.	0.5m black d qtz/clast high Aspy (30%) <2% ZnS, <5% Py. (H.G. Aspy.)	0.69	32.4
24790	" "	"	"	w.r.	60 cm vein d qtz (Aspy. Curbite) est 25% Aspy.	10.97	16.1
24791	Lower Ace high clk.	"	"	w.r.	20 cm qtz breccia with <5% PbS 2-6% Py 4-6% Aspy, wea.+ vuggy.	0.14	24.3
24792	" " "	"	"	w.r.	yellow wea., granite breccia with 15-20% ZnS, <5% Py.	0.10	170.8
24793	" " "	"	"	w.r.	Blk qtz breccia vein 1-2% dessid PbS 2-3% Py. <2% ZnS	0.10	49.2
24794	Nib Ace high clk.	"	"	w.r.	yellow altered granite, stockworks of <.3cm qtz veins with minor f.gr. Aspy/Py.	0.03	6.3
24795	" " "	"	"	w.r.	altered granite with <1cm qtz Py/Aspy veinlets, low Py/Aspy (1%)	—	—

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ROCK SAMPLE DESCRIPTIONS Sampler RISBY

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
289001	Risby Zone	July/99	grab	P.R.	Grab sample of altered granite w/ f.g. arsenopyrite, 5% Mn hosted by qz vn	4.73	835.0
289002	Risby Zone	July/99	grab	P.R.	Grab sample of altered granite w/ ±10cm galena-sphalerite bands in qz vn	5.74	360.0
289003	Risby Zone	July/99	grab	P.R.	Grab sample of 2-m wide qz vein w/ arsenopyrite-galena along selvages	5.11	174.7
289004	Risby Zone	July/99	grab	P.R.	Grab sample of qz-ca stockwork in granite w/ v.f.g. sulphides (as.?)	2.43	76.0
289005	Risby Zone	July/99	grab	P.R.	Grab sample of vuggy qz-ca vein w/ f.g. as-gl mineralization.	4.25	1822.0
289006	Risby Zone	July/99	grab	P.R.	Grab sample of qz-ca vein w/ f.g. arsenopyrite (no galena).	2.02	384.0
289007	Risby Zone	July/99	grab	P.R.	Grab sample of banded qz-ca vein w/ arsenopyrite, scorodite.	1.37	157.8
289008	Axe High Crk (Kulax Zone)	July 7/99	grab	P.R.	Grab sample of qz-ca breccia w/ f.g. pyrite, arsenopyrite? galena.	0.69	112.6
289009	Axe High Crk (Kulax Zone)	July 7/99	grab	P.R.	Grab sample of vuggy, brecciated qz-ca vein w/ f.g. pyrite, arsenopy.	0.14	17.7
289010	Axe High Crk (Kulax Zone)	July 7/99	grab	P.R.	Grab sample of qz vein material w/ f.g. pyrite, arsenopyrite.	3.33	690.0

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ROCK SAMPLE DESCRIPTIONS Sampler RISBY

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
289011	Ace High Crk (Kulan Zone)	July 7/99	grab	P.R	Grab sample of 1m. boulder w/ qz vein and semi-massive gl ± sp	0.27	607.0
289012	"	July 7/99	grab	P.R	Grab sample of boulder w/ intrusive breccia and sp-gl dissemination	0.07	113.3
289013	"	July 7/99	grab	P.R.	Grab of semi-massive c.g. arsenopy > w/ f.g. cp-gl-sp in siliceous granite	13.5	626.0
289014	"	July 7/99	grab	P.R.	Grab of intrusive breccia w/ f.g. galena and sphalerite.	0.53	100.5
289015	"	July 7/99	grab	P.R.	Grab of silicified granite w/ qz veins and f.g. cp-gl-sp	1.30	297.0
289016	"	July 7/99	grab	P.R.	Grab of massive arsenopyrite w/ disseminated gl-sp in granite.	2.33	72.6
289017	Ace High Crk (Kulan Zone)	July 7/99	grab	P.R.	Grab of vuggy qz-ca vein material w/ arsenopyrite, sp, gl ± scorodite	3.36	42.9
289018	Risby Zone	July 10/99	grab	P.R.	Grab of silicific granite w/ ≤ 10cm qz-ca vein stockwork	0.03	<1.0
289019	Risby Zone	July 10/99	grab	P.R	Grab of argillic granite w/ qz-ca vein stockwork and dk. grey sulphide	7.41	459.0
289020	Risby Zone	July 10/99	grab	P.R.	Grab of argillic granite w/ jarosite on joints and qz-ca-sx veining.	0.03	1.5

JRV **PROJECT** Page_____

ROCK SAMPLE DESCRIPTIONS Sampler ROBERTS

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
289021	Risby Zone GPS #73		1.0		Boulder in Talus, qtz sheeting in granite <3% Aspy.	0.005	2.2
289022	Risby Zone GPS #73		grabs		grabs off 30 boulders in talus fan Iron stained altered qtz sheeted granite, <2% Aspy.	0.005	3.6
289023	Risby Zone GPS #73		grabs		Talus grabs of manganese rich quartz-chalcedony veins	0.020	7.6
289024	Risby Zone GPS #73		grabs		altered granite talus, granite contains qtz stockwork (80% veins) and 5-7% Aspy	0.091	14.6
289025	Risby Zone GPS #74		grabs 0-0.25m		rubble zone, 0.25m qtz-chalcedony vein, west side of porphyry dyke	0.024	10.2
289026	Risby Zone GPS #76		grabs		Talus grabs, altered granite, Jarosite coating qtz-chalcedony stockwork (10-15%) no sulphides	0.906	50.5
289027	Risby Zone GPS #76		grabs		Grabs of white qtz-chalcedony veining in granite, +80% qtz - 8-10% Arsenopyrite	3.004	276.0
289028	Risby Zone GPS #77		0-0.3m		chip across qtz-chalcedony arsenopyrite vein, 5-8% fine gr. arsenopyrite	1.281	4.9
289029	Risby Zone GPS #79		grabs		talus grabs, altered granite, low qtz Jarosite coating high.	0.013	2.8
289030	Risby Zone GPS #81		0-30m		- altered granite, <10% qtz stockwork.	0.015	1.6

JRV **PROJECT** Page_____

ROCK SAMPLE DESCRIPTIONS Sampler ROBERTS

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
289031	Rusby Zone GPS # 82		0-0.5m		quartz stockwork zone in altered granite, trends 030° dips 80° N, no sulphides	0.006	1.5
289032	Rusby Zone GPS #84		0-2.0m		altered granite (sericite/jarosite stain) weak stockwork, <5% qtz, no sulphides	0.047	1.3
289033	Rusby Zone GPS # 84		grabs		grabs of altered granite talus, 20-30% qtz stockwork	0.011	2.1
289034	Rusby Zone GPS # 85		0-1.0m		quartz stockwork in altered granite 10-15% quartz	0.009	1.4
289035	Rusby Zone GPS #86		0-15.0m		chip across altered granite, low stockwork 10-15% quartz, no sulphides, fractures @ 050°+170°	0.016	2.1
289036	Rusby Zone GPS. #88		0-2.0m		qtz stockwork zone in altered granite veins @ 050°/80°N and 170°/vertical.	0.005	1.0
289037	Rusby Zone GPS # 89		0-8.0m		qtz-chalcedony stockwork in altered granite, veins @ 050° and 170°	0.005	2.5
289038	Rusby Zone		0-2.0m		quartz-stockwork, no sulphides	0.005	0.8
289039	Rusby Zone		0-6.0m		-quartz sheetens @ 045/80°N in altered granite, veins < 4.0 cm.	0.007	3.2
289040	Rusby Zone GPS #90		0-5.0m		-qtz stockwork in altered granite zone at 050°/70°N	0.005	0.9

JRV **PROJECT** Page_____

ROCK SAMPLE DESCRIPTIONS Sampler ROBERTS/RISBY

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
289041	Risby Zone GPS # 90		grabs		grabs of quartz - chalcedony vein manganese stain <5% fine grained arsenopyrite	0.012	4.5
289042	Risby Zone GPS # 91		grabs		grab of veined granite, est 25-30% qtz no sulphides	0.007	1.7
289043	Risby Zone GPS # 92		0-20m		altered granite, low stockwork several narrow <1m vuggy chalcedonic zones @ 040°	0.005	2.6
289044	Risby Zone GPS # 93		0-3.0m		quartz arsenopyrite veining on east side of porphyry dyke	1.970	117.4
289045	Risby Zone		0-1.0m		quartz - arsenopyrite fault breccia, on east side of dyke.	2.568	1186.0
289046	Risby Zone		0-1.0m		quartz - arsenopyrite vein, W. side of porphyry dyke, est 5-8% aspy.	6.495	786.0
289047	Risby Zone		0-8.0m		sheeted qtz zone in altered granite zone at 040°/60°N. No sulphides	0.017	7.4
289048	Bubble Zone		grabs		quartz - hematite breccia, vuggy, breccia totally oxidized	0.005	8.1
289049	Bubble Zone		grabs		Hematite cemented granite breccia	0.006	2.5
289050	Bubble Zone		grabs		Vuggy siliceous breccia large euhedral grains of galena, and sphalerite, minor arsenopyrite	0.026	175.4

JRV **PROJECT** Page_____

ROCK SAMPLE DESCRIPTIONS Sampler RISBY

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
289051	Bubble Zone		grabs		advanced argillic altered, porous, orange-brown feldspar porphyry dyke	0.005	36.8
289052	Bubble Zone		grabs		as above, altered to white.	0.005	4.8
289053	Bubble Zone		grabs		dark grey silicified feldspar porphyry dyke with blebs of fine gr. pyrite + blue mineral.	0.005	9.3
289054	Risby Zone		grabs		siliceous breccia, < 2% fine grained pyrite < 1% arsenopyrite	0.006	3.2
289055	Risby Zone		grabs		brecciated and silicified granite no visible sulphides	0.007	0.5
289056	Risby Zone		grabs		black wea., manganese coated brecciated + silicified granite, 30% qtz.	0.167	5.4
289057	Risby Zone		grabs		brecciated + silicified granite Mn stain, sheeted < 1cm qtz veins with Aspy, ZnS	0.760	44.7
289058	Risby Zone		grabs		Black Mn stained, feldspar porphyry fine grained diss'd py, Aspy + blue silver mineral?	0.221	0.6
289059	Risby Zone		grabs		silicified granite, stockwork qtz veinlets < .5cm, with fine gr-Py, Aspy	1.727	23.7
289060	Risby Zone		grabs		~ 10 cm qtz vein, banded, ~ 8-10% Aspy < 3% fgr-pyrite.	6.690	478.0

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ROCK SAMPLE DESCRIPTIONS Sampler Risby / Sebert

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
289061	Risby Zone		grabs		20cm quartz vein, 20-30% Aspy, 5% Pbs 3% ZnS, < 1% cpy	1.805	94.5
289062	Risby Zone		grabs		10cm quartz vein 5-8% ZnS, 1-2% cpy trace Pbs, Aspy, Py.	1.453	92.6
289063	Risby Zone		grabs		10cm quartz vein, 20-25% Aspy 10% ZnS	2.604	103.9
289064	Risby Zone		grabs		10cm vuggy quartz vein, 6-8% Aspy 1% ZnS	5.690	2730.0
289065	Risby Zone		grabs		dark grey siliceous breccia with fragments of granite and sulphides, fine diss'd py, Aspy, Pbs.	0.045	50.8
289069	Bubble Zone		0-25m		altered granite and feldspar porphyry dyke high FeOx, minor <1cm qtz veinlets	0.005	2.3
289070	Bubble Zone		0-2m.		feldspar porphyry and granite, no quartz FeOx coatings, Trace pyrite.	0.005	0.6
289071	Bubble Zone		0-25m		- altered granite, no quartz	0.005	4.6
289072	Bubble Zone		0-25m		Brecciated and silicified granite no qtz stockwork	0.005	5.0

PROJECT Page_____

ROCK SAMPLE DESCRIPTIONS Sampler Sebert

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
289073	Bubble Zone		0-3 m.		high FeOx stained qtz. feld porphyry dyke, brecciated, no qtz veins, no sulphides	0.005	5.7
289074	Bubble Zone		0-3 m		slightly altered and brecciated granite	0.005	12.7
289075	Bubble Zone		0-2 m		ferricrete gossan, granite fragments major fault zone	0.005	3.9
289076	Bubble Zone		0-2 m		- feldspar porphyry cutting granite, 10-15% qtz veinlets < 1cm, no sulphides	0.005	6.4
289077	Rishy Zone		0-2 m		- quartz-chalcedony vein stockwork in granite, trends 050°	0.70	94.3
289078	Rishy Zone		0-2 m		- altered granite in footwall of vein stockwork zone (sample 289077)	0.10	9.9

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ROCK SAMPLE DESCRIPTIONS Sampler RISBY

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
289001	Risby Zone	July/99	grab	P.R.	Grab sample of altered granite w/ f.g. arsenopyrite & Mn hosted by qz vn	4.73	835.0
289002	Risby Zone	July/99	grab	P.R.	Grab sample of altered granite w/ 1-10cm galena-sphalerite bands in qz vn	5.74	360.0
289003	Risby Zone	July/99	grab	P.R.	Grab sample of 2-m wide qz vein w/ arsenopyrite-galena along selvages	5.11	174.7
289004	Risby Zone	July/99	grab	P.R.	Grab sample of qz-ca stockwork in granite w/ v.f.g. sulphides (as.?)	2.43	76.0
289005	Risby Zone	July/99	grab	P.R.	Grab sample of vuggy qz-ca vein w/ f.g. as-gl mineralization.	4.25	1822.0
289006	Risby Zone	July/99	grab	P.R.	Grab sample of qz-ca vein w/ f.g. arsenopyrite (no galena).	2.02	384.0
289007	Risby Zone	July/99	grab	P.R.	Grab sample of banded qz-ca vein w/ arsenopyrite, scorodite.	1.37	157.8
289008	Ace High Crk (Kulan Zone)	July 7/99	grab	P.R.	Grab sample of qz-ca breccia w/ f.g. pyrite, arsenopyrite? galena.	0.69	112.6
289009	Ace High Crk (Kulan Zone)	July 7/99	grab	P.R.	Grab sample of vuggy, brecciated qz-ca vein w/ f.g. pyrite, arsenopy.	0.14	17.7
289010	Ace High Crk (Kulan Zone)	July 7/99	grab	P.R.	Grab sample of qz vein material w/ f.g. pyrite, arsenopyrite.	3.33	690.0

PROJECT Page_____

ROCK SAMPLE DESCRIPTIONS Sampler RISBY

Assay No.	Area	Date	Sample Width (m)		Sample Description	Au (g/T)	Ag (g/T)
289011	Ace High Crk (Kulan Zone)	July 7/99	grab	P.R	Grab sample of 1m. boulder w/ qz vein and semi-massive gl ± sp	0.27	607.0
289012	"	July 7/99	grab	P.R	Grab sample of boulder w/ intrusive breccia and sp-gl dissemination	0.07	113.3
289013	"	July 7/99	grab	P.R.	Grab of semi-massive c.g. arsenopy > w/ f.g. cp-gl-sp in siliceous granite	13.5	626.0
289014	"	July 7/99	grab	P.R.	Grab of intrusive breccia w/ f.g. galena and sphalerite.	0.53	100.5
289015	"	July 7/99	grab	P.R.	Grab of silicified granite w/ qz veins and f.g. cp-gl-sp	1.30	297.0
289016	"	July 7/99	grab	P.R.	Grab of massive arsenopyrite w/ disseminated gl-sp in granite.	2.33	72.6
289017	Ace High Crk (Kulan Zone)	July 7/99	grab	P.R.	Grab of vuggy qz-ca vein material w/ arsenopyrite, sp, gl ± scorodite	3.36	42.9
289018	Risby Zone	July 10/99	grab	P.R.	Grab of silicified granite w/ ≤ 10cm qz-ca vein stockwork	0.03	<1.0
289019	Risby Zone	July 10/99	grab	P.R	Grab of argillic granite w/ qz-ca vein stockwork and dk. grey sulphide	7.41	459.0
289020	Risby Zone	July 10/99	grab	P.R.	Grab of argillic granite w/ jarosite on joints and qz-ca-sx veining.	0.03	1.5

APPENDIX III

Geophysical Instrumentation Data

Lloyd Geophysics Inc., 1999

INSTRUMENT SPECIFICATIONS

The equipment used to carry out this survey was a time domain measuring system consisting of a Honda 6500 motor generator and a VIP 4000 transmitter manufactured by Iris Instruments Ltd., Orleans, France and a six channel IP-6 receiver manufactured by BRGM Instruments, Orleans, France.

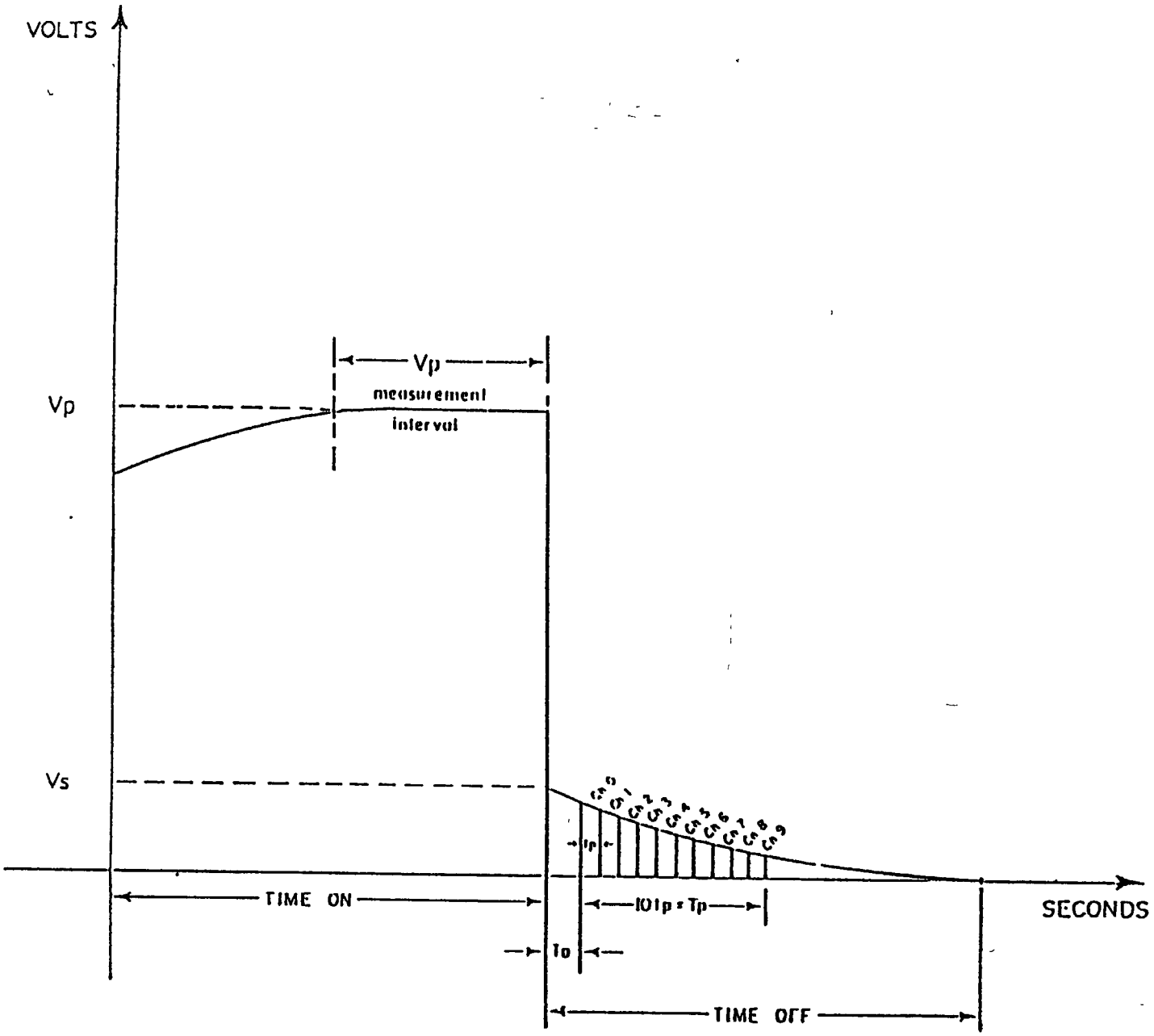
The transmitter was operated with a cycle time of 8 seconds and the duty cycle ratio [(time on)/(time on + time off)] was 0.5 seconds. This means the cycling sequence of the transmitter was 2 seconds current "on" and 2 seconds current "off" with consecutive pulses reversed in polarity.

The IP-6 receiver can measure up to 6 dipoles simultaneously. It is microprocessor controlled featuring automatic calibration, gain setting, SP cancellation and fault diagnosis. To accommodate a wide range of geological conditions, the delay time, the window widths and hence the total integration time is programmable via the keyboard. Measurements are calculated automatically every 2 to 4 seconds from the averaged waveform which is accumulated in memory.

The window widths of the IP-6 receiver can be programmed arithmetically or logarithmically. For this particular survey the instrument was programmed arithmetically into 10 equal window widths or channels, Ch_0, Ch_1, Ch_2, Ch_3, Ch_4, Ch_5, Ch_6, Ch_7, Ch_8, Ch_9. These may be recorded individually and summed up automatically to obtain the total chargeability. Similarly, the resistivity (p) in ohm-metres is also calculated automatically.

The instrument parameters chosen for this survey were as follows:

Cycle Time (T_C)		=	8 seconds
Ratio	$\frac{\text{(Time On)}}{\text{(Time Off)}}$	=	1 : 1
Duty Cycle Ratio			
	$\frac{\text{(Time On)}}{\text{(Time On) + (Time Off)}}$	=	0.5
Delay Time (T_D)		=	120 milliseconds
Window Width (t_p)		=	90 milliseconds
Total Integration Time		=	900 milliseconds



BRGM IP-6 RECEIVER PARAMETERS

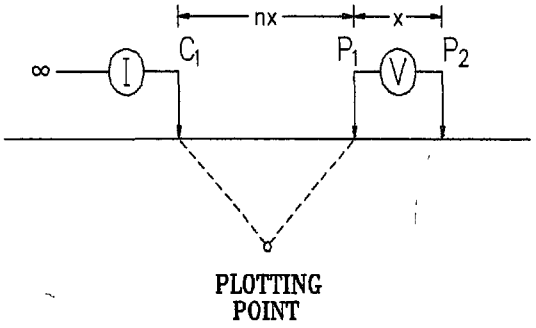
Lloyd Geophysics

SURVEY SPECIFICATIONS

The configuration of the pole-dipole array used for the survey is shown below:

EAST WEST

POLE-DIPOLE ARRAY



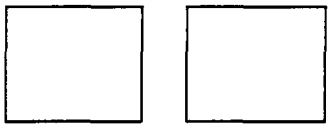
X = 50 m n = 1,2,3,4

The dipole length (x) is the distance between P1 and P2 and mainly determines the sensitivity of the array. The electrode separation (nx) is the distance between C1 and P1 and mainly determines the depth of penetration of the array.

The Induced Polarization survey was carried out with the current electrode, C1, west of the potential measuring dipole P_1P_2. Here the survey lines were 100 metres apart and measurements were taken for x=50 m and n=1,2,3 and 4.

Document Separator

Start Stop



Levels

	1	2	3	4	5	6	7	8
Binder								
Folder								
Staple								
Paper Clip								
Binder Clip								
Plastic Protector								
Elastic Bands								
TABS								
OTHER_____								

Special Instructions:

Behind 4th Blue sheet.

APPENDIX IV

Diamond Drill Geological Logs

Diamond Drill Holes 99-01 to 99-09

APPENDIX IV
JRV PROPERTY
1999 Diamond Drilling Data

Drill Hole No.	Grid Northing (m)	Grid Easting (m)	U.T.M. Northing (m)	U.T.M. Easting (m)	Elevation (m)	Length (m)	Azimuth	U.T.M. Azimuth	Dip
99-01	10600	10399	6912045.52	600404.17	1596.80	106.68	270	268.45	-45
99-02	10700	10299	6912142 38	600301.12	1635.00	106.68	270	268.45	-45
99-03	10900	10075	6912335.36	600071.05	1740.70	131.06	270	268.45	-45
99-04	10800	9984	6912232.60	599983.19	1728.20	118.26	270	268.45	-45
99-05	10700	10114	6912136.66	600116.21	1673.10	103.63	270	268 45	-45
99-06	10600	10200	6912039.37	600205.26	1641.20	85.34	270	268.45	-45
99-07	10501	10326	6911944.31	600334.26	1593.80	65.53	270	268.45	-45
99-08	11200	9876	6912629.08	599862.88	1859.30	152.40	270	268.45	-45
99-09	10400	10550	6911850.27	600561.27	1554.50	124.97	180	178.45	-45
Total Drilling Metreage						**994.55**	or	**3,263** ft	

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Lithology

DDH No.	From (m)	To (m)	Pr Lith	Sec Lith	Vein Int	Shear Angle	From	To	Fol	Pr Alt	Sec Alt	Qs	Qz	Qc	Ms	Ep	Cl	Cb	Tm	Mn	Li	Min Type	Min Int	Py	Sp	Gl	Cp	As	Po
99-01	0.00	6.10	CASG	OVBN																									
99-01	6.10	6.40	GRAN							FR											M								
99-01	6.40	6.80	PEGM	DYKE						FR																			
99-01	6.80	10.67	GRAN							FR											M								
99-01	10.67	25.00	GRAN			45	14.00	17.00		FR					W		W												
99-01	25.00	26.80	SHER	GRAN	T	45	25.00	26.80		SE			T		M	W	M					3	2	W					
99-01	26.80	29.00	GRAN							FR											M								
99-01	29.00	29.10	SHER	GRAN		45	29.00	29.10		FR					M	W	M												
99-01	29.10	35.40	GRAN		W					AR			W									3	2	W	W	W		T	
99-01	35.40	47.50	GRAN		T	45	45.72	46.50		FR			T		W	T	W					3	2	T					
99-01	47.50	48.30	APLT	DYKE		35				FR																			
99-01	48.30	67.80	GRAN		T					FR			T																
99-01	67.80	67.95	FAUL	GRAN		45	67.80	67.95		AR					M	W	M												
99-01	67.95	68.79	GRAN		W					AR			W									3	2	T					
99-01	68.79	69.05	GRAN							PR						W	W												
99-01	69.05	69.72	GRAN		W					SE			W		W		W					3	2	T					
99-01	69.72	70.15	SHER	GRAN		45	69.72	70.15		FR																			
99-01	70.15	82.90	GRAN	SMSX	M					SE	AR	M	M		M		M					3	4	M	W	W			
99-01	82.90	83.40	SHER	GRAN		45	82.90	83.40		FR																			
99-01	83.40	88.00	GRAN		T					SE	FR		T		W		W					3	2	W					
99-01	88.00	94.60	GRAN		T	45	88.00	90.00		PR			T		W	W	M					3	2	W	T	T			
99-01	94.60	94.75	FAUL	GRAN		45	94.60	94.75		PR																			
99-01	94.75	96.90	GRAN		M	45	96.45	96.55		AR			M		M	W	M					3	2	M	W	W			
99-01	96.90	97.25	GRAN							FR																			
99-01	97.25	106.68	GRAN		T	45	98.40	98.60		SE	AR		T		W		W					3	2	T	T				

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No. 99- 01
Logged By: JDB
Date: Aug. 05/99

Location Sketch — N

Grid Northing (m):	10600
Grid Easting(m):	10399
Elevation (m):	1596.80
Total Length (m):	106.68
Casing Depth (m):	6.10
Reduction Depth (m):	
Collar Core Size (m):	BQTK

Date Started:	Aug. 6/99
Date Completed:	Aug. 8/99
Logged By:	JDB
Date Logged:	Aug. 9/99
Data Entry:	
Entry Date:	
Casing (In/Out):	Out

Survey	Depth	Azimuth	Dip
	0.00	270	-90°

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alt. Int.	Alteration Facies Typ.	Alt. Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Si			Structure Veining Qz	Py	Asp
	0.00	6.10	CASG																		
	6.10	10.67	GRDR	OXID	Li		limonitic gran. adamellite w/									45%	1-2 mm				
							with 4 cm pegmatite dike @ 6.4 - 6.8 m at 20° to														
							good fresh CA with no veining or Si														
	10.67	25.0	GRDR				Fresh biotitic granodiorite w/ local 10-20 mm silicified														
							selvage at M.C. & Ab. alteration 45° to core; local minor QFP.														
							17.0, 20.73 and 23.0 m. Occasional more leucocratic														
							sections as 30° dyke-like bodies. No Qz-Si veining.														
	25.0	26.80					Moderately-weak altered (Ms. Ep. Cl) granodiorite w/														
							chalky, lt orange PF in local zone. 45° to core.														
							- 1 to 10 cm sections of pulverized granodiorite gouge.														
							- local 45° to core Qz-Cb < 3 mm veinlets perpendicular														
							to 45° to core														
							- local ≤ 5 mm fracture filling by veinlets w/ Qz-Cb gangue														
							assoc'd w/ silicification														
							- Cl-alt'd fw. contact @ 20° to 7 mm by vein @ 26.0 m - 50° to														

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 01
Logged By: JDB
Date: Aug. 9/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Si			Structure Veining Qz	Py	Asp
	26.80	29.0		Fresh granodiorite w/ local 1-2 mm qz-py-sp veinlets along 45° fractures.																	
	29.0	29.1		Shear zone - 45° w/ granodiorite gouge.																	
	29.1	35.4		Argillic-altered (PP > Ms, No Mafics) granodiorite w/ 2mm to 10 cm wide qz-py-sp-ql fracture filling veinlets @ 45° & 70° shear @ 35.4 m. - 10 cm wide vein @ 30.70, 31.4, 32.0 - 34.7 m															
	35.4	67.80		Fresh granodiorite w/ local 5cm Ms-Ep-Cl-Ab altered zones as selvages around qz-ca-cl veining ± 1mm wide and 6/m >< - No Sx - shearing at 45.72 - 46.5 @ 40-55°. - aplitic dykes @ 41.5 - 49.3 m @ 35°, ~3cm wide each - 53.0 - 53.5 - 45° shear zone w/ Ms-Ab-Clay. - 64.0 - 64.4 m - two 3 mm wide qz-py-sp vns w/ 10 cm alt° selvages - no/ work/ sampling															
	67.80	67.95		Fault 45°																	
	67.95	68.79		Argillic granodiorite w/ 3 mm qz-py sx vns @ 68 m.															-35°		

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 01
Logged By: JDB
Date: Aug. 9/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Si			Structure Veining Qz	Py	Asp
	68.79	69.05			Sheared, poorly-altered (+Cl, Ep) granodiorite w/ No Qz vns @ ~45° to shearing.																
	69.05	69.72			Sericitic granodiorite w/ 20% 5mm Qz-py-sx veins @ 69.35 m. - 20° to.																
	69.72	70.15			Shear zone @ 45° to in fresh granodiorite																
	70.15	77.10			Sericitic to argillic altered granodiorite w/ 30°-45° to Qz-py-sp-gl+as veining; fracturing @ 45° to - Qz-sx breccia zones @ 73.5 - 73.95, 74.17 - 74.32 and 74.55 - 74.80 m. w/ semi-massive py-sp-gl+as in vuggy Qz-cc shear infilling 74.80 - 77.10 - sericitic granodiorite w/ Qz-py(+sp) fracture filling veins 10 - 20 cm ± @ 40-45° to.													
	77.10	88.00			Sericitic (Pf → No) and fresh granodiorite w/ occasional Qz-py(+sp) veins @ 45° to. - 45° to shearing @ 77.90 - 78.1 and 80.00 - 80.25 w/ sp-cc-Qz alteration - shearing @ 82.90 - 83.40 @ 45° to.													

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 01
Logged By: JDS
Date: Aug. 9/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	88.0	94.60			Wk-shear	section of	alteration									fine-grained			sericitic		
					shear adjacent	to fault	splays	between	45°	shearing											
					- faulting	@ 88.00	- 90.00,	92.00	- 92.30	and	93.80	- 94.30m.									
					- altered	seations	have	2-3%	(+5%	at	times)										
					Veins	@ 30°	& 45°		-												
					- quartz	veins	&														
											89.00	- 90.00									
											91.20	- 92.20									
											93.00	- 94.00									
					- vein	+	is	4%	qtz		green										
	94.0	94.25			45°	to															
	94.75	96.90			Abundant	-	altered														
					Veins	-	10				@ 45°										
					- shear	@	95.45	-	95.55		@ 45°										
	96.90	97.25			Fault																
	97.25	106.68			Sericitic																
					Veins	10-30			@ 10°	&	45°										
					- 98.4	- 98.6	45°	shearing													
					- 100.9	- 101.0	90°	qtz	-												
					- 101.1	- 45°	shear														
	106.48				EOH																

Drill Hole No. 99-01

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Lithology

DDH No.	From (m)	To (m)	Pr Lith	Sec Lith	Vein Int	Shear Angle	From	To	Fol	Pr Alt	Sec Alt	Qs	Qz	Qc	Ms	Ep	Cl	Cb	Tm	Mn	Li	Min Type	Min Int	Py	Sp	Gl	Cp	As	Po
99-02	0.00	7.93	CASG	OVBN																									
99-02	7.93	20.18	GRAN		W	45	9.50	10.00		SE			W		W		W			W	M	3	2	W	T	T			
99-02	20.18	21.00	BRSX	SMSX	S					AR		S	S		M		M				M	5	4	M	W	W		T	
99-02	21.00	23.90	GRAN		W					SE			W		W		W			W	M	3	2	W	T	T			
99-02	23.90	24.99	FAUL	GRAN		60	23.90	24.99		AR												3	2	T					
99-02	24.99	33.63	GRAN			45	26.40	26.80		FR	PR				W		W												
99-02	33.63	34.12	PEGM	DYKE						FR																			
99-02	34.12	36.30	GRAN							FR	PR				W		W												
99-02	36.30	37.00	PEGM	DYKE						FR																			
99-02	37.00	38.95	GRAN							FR	PR				W		W												
99-02	38.95	39.50	FAUL	GRAN		25	38.95	39.50		PR						W	W												
99-02	39.50	39.80	PEGM	DYKE						FR																			
99-02	39.80	40.05	FAUL	GRAN		45	39.80	40.05		PR						W	W												
99-02	40.05	47.55	GRAN			45	44.00	46.00		FR	PR				T	W	W												
99-02	47.55	49.68	GRAN		W					AR			W		W							3	2	W	T	T			
99-02	49.68	50.00	GRAN		S					AR		S	S	M	M		W					3	4	M	W	W		T	
99-02	50.00	50.50	GRAN		M					AR			M		M		W					3	3	M	W	W			
99-02	50.50	60.50	GRAN		W					SE			W		W		W					3	2	W	T	T			
99-02	60.50	60.80	GRAN							FR																			
99-02	60.80	61.30	GRAN		W					SE			W		W		W					3	2	W	T	T			
99-02	61.30	61.50	FAUL	GRAN		45	61.30	61.50		SE					W		W												
99-02	61.50	69.61	GRAN			45	63.50	65.70		FR	SE		W		W	W	W												
99-02	69.61	72.00	FAUL	GRAN		45	69.61	72.00		SE					M		M												
99-02	72.00	74.25	GRAN		W					SE			W		W		W					3	2	W	T	T			
99-02	74.25	74.70	QZVN	GRAN	M					AR			M		M	W	W					3	4	M	W	W		T	
99-02	74.70	84.40	GRAN		M					AR			M		M	W	W					3	2	W	T	T			
99-02	84.40	85.00	QZVN	GRAN	M					AR			M		M	W	W					3	4	M	W	W		T	
99-02	85.00	90.50	GRAN		M					AR			M		M	W	W					3	2	W	T	T			
99-02	90.50	91.50	GRAN		W					AR			W		M	W	W					3	2	W	T	T			
99-02	91.50	94.00	GRAN		W					SE			W		M		W					3	2	W	T	T			
99-02	94.00	94.10	FAUL	GRAN		30	94.00	94.10		SE																			
99-02	94.10	106.68	GRAN		T					FR	SE		T		W	T	W					3	1	T					

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No. 99- 02
Logged By: JDB
Date: Aug. 10/99

Location Sketch — N

Grid Northing (m):	10700
Grid Easting(m):	10299
Elevation (m):	1635.00
Total Length (m):	106.68
Casing Depth (m):	7.93
Reduction Depth (m):	
Collar Core Size (m):	BQTK

Date Started:	Aug 8/99
Date Completed:	Aug 9/99
Logged By:	JDB
Date Logged:	Aug. 10/99
Data Entry:	
Entry Date:	
Casing (In/Out):	Out

Survey	Depth	Azimuth	Dip
	0.00	270	-45

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alt. Int.	Alteration Facies Typ.	Alt. Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Si			Structure Veining Qz	Py	Asp
	0.00	7.93	OVB																		
	7.93	20.18	FLOW	QVD	Lt brown/orange		Se	ilicified (w													
					well r																
					- sub ll																
					1-3 mm																
					4.5°/																
					- inf/wvd																
					- PD →																
	20.18	21.00	BRX		Sulphide																
					10% Q-FDK																
					- subangular																
					- vuggy																
					- well																
	21.00	23.90			Same																
	23.90	24.99	FAULT		Ground																

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 02
Logged By: JDB
Date: Aug 12/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	24.99	33.62	HWDK		Fresh diorite to (Hbl. rich diorite																
					Mafic-rich Hbl.		25.5-	29 m.													
					-very poorly defined (fine		-low	qtz. eff.); well													
					-45° shearing		w/	some 2 mm													
	33.63	34.12	PEGM		Mafic		e.g.	Pf-Qz-Mu			n/a	@	15°-	20%	-						
	34.12	36.30	HWDK		Same as		24.9	-33.62			-	biotitic				diorite	-		w/		
					40-45°		fract	10 cm													
	36.30	37.00	FELS		Same as		33.6	-34.12			-					Pf	Qz				
	37.00	38.95	HWDK		Same as		34.1	-36.30			-	fresh				biotitic	Qz		w/ 45°	60%	fract
	38.95	39.5	FAULT		Fault/shear		-	25°			w/	60-70°									
	39.5	39.8	PEGM		C.g		Pf-Qz-Mu				dyke	w/	Qz-Py			1 cm	selvage		- 15°		
	39.8	40.05	FAULT		45°																

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 02
Logged By: TDS
Date: Aug. 12, 1999

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	40.05	47.55	GDDR		Fresh weakly porphyritic						Ms, Sl, Ep	Granodiorite				w/	phenocrysts		@	45°	
					Plag		44° - 46°														
					47.32 - 47.55 - Mass of Py but Bi-rich																
					local leucocratic						aplitic	veins -									
					qz - ol - ep		2%														
	47.55	49.68	QFDR		Argillic-alt'd (Pf -> Ms,						No mafics)	Granodiorite				w/	Qz	±	Py, Sp, Gl, Asp		
					veins		40° - 45°		< 10		- 5%			4%							
					Qz veining		47.55 - 48.5		5%		Qz			49%	- 49.68						
	49.68	50.0	QFDR		Qz - Py, Gl, Sp, As						brecciated	veins		w/	Vugs	-	45°		foliation		w/ Py
	50.0	50.5	QDDR		Argillic granodiorite						w/	45°		qz-Py	veins	50.4	- 50.5		- 45°		
	50.5	60.5	QDDR		Sericitic granodiorite						w/	Pf -> Ms		but	Bi	locally	or Ms				
					< 1 cm		qz-Py		veins		20-50			< 45°		-	relict		and	± Py	Asp
	60.5	60.8	FDDR		Fresh		granodiorite				-										
	60.8	61.3	QDDR		Silicified				50.9 - 60.5												
	61.3	61.5	FAULT		Fault		~ 45°														

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 02
Logged By: JDB
Date: Aug 12/99

P S	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	61.50	69.61	GRDR		Fresh to locally alt'd (argillic - PF → Ms, fuchs																
					w/ yellow serpentinis (Ep?) where PF → Ms, Ep, Cl																
					- local 45° X alteration @ 63.5, 65.3, 65.7 m.																
	69.61	72.00	FAULT		Fault/shear 20m - 45° X w/ chloritized GD → mod. alt'n (ms, ep) - No qz																
	72.00	74.25	GRDR		Ms-alt'd granodiorite w/ < 5mm to 2cm qz-ser (py, sp, ±gal) vgs veins																
					70° - 80° X / 1m → < 1% 2cm qz veinlets w/ py, sp, gal 72.5 → 74.25 m.																
					- fault @ 45° X 10cm qz.																
	74.25	74.70	95% QX		Qz - Py - Sp veins - 30° X																
	74.70	84.40	GRDR		Argillic alt'd granodiorite w/ qz - py - sp (±gal) veining 5% 1cm qz																
					veins 1 to 45° X ; fault - 10cm qz. 40° X. PF → ms, py, sp																
	84.40	85.00	QzVN		DK gray Qz - fg. Sx vein w/ Pyrite & Chalcopyrite - 30° X																
	85.00	90.5	GRDR		Same as 74.70 - 84.40 m.																
	90.5	91.5	FDDR		Argillic alt'd granodiorite w/ 2 - 10cm qz - py - sp - gal veins																
					veining ≤ 10cm @ < 30° X - brecciation 150cm @ 90.85 - 90.9 m.																
	91.5	94.0	GRDR		Silicified - alt'd granodiorite w/ 5mm qz - sx veins - 20																
					porphyritic, silicified buff zone alteration																
	94.0	94.10	FAUL		30° X Fault - 20cm																
	94.10	106.68	GRDR		Sil - sheared, fresh to weakly ms - alt'd GD - weak shearing																
					Pervasive Hem @ 94.8 - 94.9 (30° X) 98.3 - 98.7 (30° X) 100.5 - 100.6 (45° X)																
					102.0 - 102.6 (60° X) 103.4 - 104.5 (60° X) 105 - 106.1 (40° X)																
					- local Ms alt'n zones shears - rare qz - py vns 45° X																

106.68
END OF HOLE

Drill Hole No. 99-02

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Lithology

DDH No.	From (m)	To (m)	Pr Lith	Sec Lith	Vein Int	Shear Angle	From	To	Fol	Pr Alt	Sec Alt	Qs	Qz	Qc	Ms	Ep	Cl	Cb	Tm	Mn	Li	Min Type	Min Int	Py	Sp	Gl	Cp	As	Po
99-03	0.00	7.93	CASG	OVBN																									
99-03	7.93	11.60	GRAN							AR					M	W	W				M	3	1	T					
99-03	11.60	11.80	FAUL	GRAN	W	30	11.60	11.80		AR			W		M	W	W					3	1	W					
99-03	11.80	14.50	GRAN							AR					M	W	W				M	3	1	T					
99-03	14.50	17.00	FAUL	GRAN		30	14.50	17.00		AR																			
99-03	17.00	18.30	GRAN		M					SE			M		M	W	W					3	1	T					
99-03	18.30	20.80	QZPF	DYKE						SE					W	T	T												
99-03	20.80	24.60	GRAN		W					SE	AR		W		W	T	T				W	3	1	T					
99-03	24.60	24.80	FAUL	GRAN		60	24.60	24.80		SE					W	T	T												
99-03	24.80	30.48	GRAN		M					AR			M		M	W	W					3	2	W	T	T			
99-03	30.48	30.85	FAUL	GRAN		30	30.48	30.85		AR					M	W	W				M								
99-03	30.85	32.05	GRAN							FR			T		T														
99-03	32.05	33.00	FAUL	GRAN		40	32.05	33.00		PR						W	W												
99-03	33.00	33.53	GRAN							FR			T		T														
99-03	33.53	33.75	SHER	GRAN		20	33.53	33.75		FR						W	W												
99-03	33.75	36.00	GRAN							FR			T		T														
99-03	36.00	43.70	GRAN		W	45	36.00	43.70		AR			W		M	W	W					3	1	W					
99-03	43.70	44.40	BRSX	QZVN	S					AR		S	S		M	M	M					3	4	W	W	T			
99-03	44.40	46.75	GRAN		M					AR			M		M	W	W					3	2	M	W	W			
99-03	46.75	47.70	GRAN		S					AR		S	S		M	W	W					3	4	M	W	W	T		
99-03	47.70	56.50	GRAN		M					AR		S	M		M	W	W					3	3	M	W	W	T		
99-03	56.50	57.90	GRAN		S					AR		M	S		M	W	W					3	3	M	W	W		T	
99-03	57.90	59.90	GRAN		W					AR		W	W		M	W	W					3	1	W	T	T			
99-03	59.90	60.20	FAUL	GRAN		45	57.90	59.90		PR						M	M												
99-03	60.20	61.50	GRAN		W					AR		W	W		M	W	W					3	1	W	T	T			
99-03	61.50	61.90	FAUL	GRAN		45	61.50	61.90		AR					M	W	W												
99-03	61.90	62.10	GRAN		W					AR		W	W		M	W	W					3	1	W	T	T			
99-03	62.10	62.40	FAUL	GRAN		45	62.10	62.40		AR																			
99-03	62.40	64.30	GRAN		T					AR			T		M	W	W					3	1	T					
99-03	64.30	70.00	GRAN		M					AR		M	M		M	W	W					3	2	M	W	W		T	
99-03	70.00	78.00	GRAN		M					SE	AR		M		M	W	W					3	2	M	W	W			
99-03	78.00	78.64	GRAN		S					AR		W	S		M	W	W					3	3	M	W	W		T	
99-03	78.64	80.20	GRAN		M					SE	AR		M		M	W	W					3	2	M	W	W			
99-03	80.20	80.85	PEGM	DYKE						FR																			
99-03	80.85	86.00	GRAN		M					SE	AR		M		M	W	W					3	2	M	W	W			
99-03	86.00	87.35	FAUL	GRAN		45	86.00	87.35		PR						M	M												
99-03	87.35	92.23	GRAN		W					AR			W		M	W	W					3	1	W					

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Lithology

DDH No.	From (m)	To (m)	Pr Lith	Sec Lith	Vein Int	Shear Angle	From	To	Fol	Pr Alt	Sec Alt	Qs	Qz	Qc	Ms	Ep	Cl	Cb	Tm	Mn	Li	Min Type	Min Int	Py	Sp	Gl	Cp	As	Po
99-03	92.23	92.80	GRAN		S					AR		M	S		M	W	W			W		3	4	M	M	M	T		
99-03	92.80	93.48	GRAN		M					AR		M	M		M	W	W					3	2	M	W	W			
99-03	93.48	94.00	GRAN		S					AR		M	S		M	W	W			W		3	4	M	M	M	T		
99-03	94.00	101.00	GRAN		W					AR			W		M	W	W					3	2	W	W	W			
99-03	101.00	107.55	BRSX	QZVN	S					AR		S	S		M	W	W					3	4	M	W	W	T	T	
99-03	107.55	117.50	GRAN		W					FR	PR		W			T	T					3	1	T					
99-03	117.50	117.58	FAUL	GRAN		60	117.50	117.58		PR						M	M												
99-03	117.58	123.93	GRAN			60	119.50	120.00		FR						T	T												
99-03	123.93	124.80	FAUL	GRAN		60	123.93	124.80		AR			T		M	W	W					3	1	T					
99-03	124.80	126.19	GRAN		T					AR			T		M	W	W					3	1	T					
99-03	126.19	130.15	GRAN	DYKE	T					PO			T		M	W	W					3	1	T					
99-03	130.15	131.06	GRAN		T					AR			T		M	W	W					3	1	T					

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No. 99-03
Logged By: JDS
Date: Aug 11/99

Location Sketch

Grid Northing (m):	10900
Grid Easting(m):	10075
Elevation (m):	1740.70
Total Length (m):	
Casing Depth (m):	7.93 m.
Reduction Depth (m):	
Collar Core Size (m):	NQ2

Date Started:	Aug 10/99
Date Completed:	Aug. 11/99
Logged By:	JDS
Date Logged:	Aug 11/99
Data Entry:	
Entry Date:	
Casing (In/Out):	Out

Survey	Depth	Azimuth	Dip
	0.0m	170	-70°

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alt. Int.	Alt. Typ.	Alt. Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Sil			Structure Veining Qz	Py	Asp
	0.0	7.93	OVB		Casing	in	overburden														
	7.93	11.60	?DYKE		Yellow-orange, grain																
					45°/30°		flat														
					-Pl	→	Li + kaol				3%	5-10%	±								
	11.60	11.80	FAULT		Fault		Gouge				Qz-Py	5%	blue	grey							
							Rubble, angular														
	11.80	11.50	?DYKE		Same		as		7.93 - 11.60		m - 45°	30°	X-fault								
					-Li		moderate				fault										
	11.50	17.00	FAULT		Dk	grey	-green		Shear/		Fault		2 zone		w/						
					Bi		along		30° - 60°		shear		surface		No						
	17.00	18.30	?DYKE		Same		as		Py-Mo-Bi		Bi										
					Qz	5%	Aphanitic														
					Li		Kaol		Fractures		± 5%										
	18.30	20.80	DYKE		Same		as				Qz-Py										
					but		fizzy				contact										
					-Py		Qz				5%										
	20.80	21.60	ANDS		Same		as														
					-Li		Kaol				3-10%										

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 03
Logged By: JRB
Date: Aug 13/99

PS	Interval		Rock	Zone	Mod	Mod	Alteration Facies				Mineralization					Alt. Mineralogy			Structure Veining		
	From (m)	To (m)	Code		1	2	Typ.	Int.	Typ.	Int.	As	Py	Pb	Zn	Oth.	Si			Qz	Py	Asp
	24.60	41.83	FWLT	CHLO	FG	M															
	24.60	41.83	FWLT	CHLO	FG	M															
					M-C	X	10 - 30														
					M	C						5 - 10				35	45	20			
					M	C															
	50.45	52.05	FWLT		C	FG															
	49.82	52.05	FWLT		FG	M	5 - 15														
					M-FG	QZ	40%	2 - 3°		35°											
	32.05	33.00	FWLT		FG	M	20%	10°		45°											
	33.00	33.55	FWDK		SCH	M	25	30	35	32	05										
	33.55	33.75	SILSTN	R	SHL	M	100%	20°		20°											
	33.75	36.00	FWDK		SCH	M	15	30	35	32	.05										
	36.00	41.90	FWDK	QTZ V	FG	M	1 - 2	M	FG	M	NS								± 1		
					FG	SX	VN				50										
					SHEAR		36.0	36	20	45°	5	5.5	37.10	(20°)		39.7			45°		
					INCR	SILIC	SV-A	VN	42°	47°	20° - 30°										
					M		40 - 42														
	42.10	44.40			SIL	INCR															
					QTZ	PY	5 - 10														
	44.40	44.75			SIL	INCR															
					VNS	(C)	20°	5 - 15°													

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Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 03
Logged By: JDA
Date: Aug. 14/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	46.75	47.70																			
	47.70	56.50																			
	56.50	57.90																			
	57.90	59.20																			
	59.40	60.20																			
	60.20	61.50																			
	61.50	61.90																			
	61.90	62.10																			
	62.10	62.40																			
	62.40	64.00																			
	129.0	70.00																			

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 03
Logged By: JDF
Date: Aug. 14/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	70.00	78.0	ARDP		Yellow-orange		silicified		argillic		variable										
					w/ +10 m wide		gz-py (±sph)		veins		2 cm to					50 cm			40°-50°		
					-local		stringers of		bx filling		matrix, to					massive w/					
	78.00	78.64	AD		Silicified		argillic		moderate		w/ 1 to					5 cm			gz-py		
					veins		< 5 cm		> 40°												
	78.64	83.2	ARDK		Silicified		fg		70.00 - 78.00												
	80.2	80.8±	PEGM		Pegmatitic		- like dyke		w/ no		mineralization										
	80.8±	86.00	GD		Silicified		to		70.00 - 78.00												
	86.00	87.5±	FAUL		Epi-clastic		granodiorite		gouge		intense					by			shear		
					w/ no		qz or		sx -		propylitic					alteration					
	87.5±	92.23	AD		Pervasive		yellow		argillic		-altered		granodiorite			with			Pervasive		
					45° ± 10°		x ± 10 cm		>		minor		qz-py			veins			≤ 2 cm		
					Planar		and		vein		life		10-40 cm			>					
	92.23	92.80	AD		Silicified		argillic		granodiorite		with		< 1cm - 6 cm								
					qz-py-sp-gl		(± tr		gp)		veining		< 1cm			>			45° (35°-45°)		
					- Mn		along		planes		45°.										
	92.80	93.48	GD		Silicified		granodiorite		(and		argillic		alt'n)			w/			green chlorite		
					zone (py > Mt),		1 cm		qz-py-sp		veins @		25°			45°					
					± 15 cm		>														
	93.48	94.00	GD		Silicified		fg		92.23 - 92.80 m.		w/		mn		along	45°			fracture.		
					qz-py-sp (±gl)		veining		in		1 cm		>			40°					

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JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 03
Logged By: J.R.V.
Date: Aug 1999

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	94.00	101.00	CO		Vol. brec.	qz-carb-py	fg	py													
					pod. mrk	fg sulf.	vein	5	- 40° cm. pc												
					qz	- kf-alt vein		@	qtz	56 (70%)											
					vuggy	qz	vein		4 - 8%	@	39.0 m										
					qz	- py - sp - qz	vein		3 - 8%	fine											
	101.00	107.5	5		Qz - sx	stockwork	zone		w/	intr	vol										
					vuggy	voids	sm		sulphide	x	cut										
					qz	- py - sp - qz	(1	2	3	?);	FG										
					@	102.00 - 105.15 m.			no	sx	cut										
					vein	w/	single														
					vuggy	qz	vein														
	107	114.00			Vuggy	qz	stockwork														
					vuggy		100%		45°	=	60°	- 70%	qz	sx							
					Shearing	@	112.05 -		112.15	m	(40°	x	1)								
					~ 30 cm pc																
					115.68 -	116.38 -	fg	sulf	qz	xenos	of										
	117.50	117.58	FAULT		Fault -	60° -	65°		w/	brec	and	Ep-	Chl								

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99-03
Logged By: TDS
Date: Aug. 14/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	117.58	123.95	GD		Fresh	granodiorite (bi-hb mafics) w/										45° ± 60°			-65% fract'd		
					- fault/shear zone @		119.50	- 120.00 m	- 60° ± 10/45° sl.												
					and	120.5 - 121.30 (45° ±) and					122.85 - 123.00 m					(60° ±)					
	123.93	124.80	FAUL		Fault zone - 60°-65° ± w/ argillic-alt'd granodiorite																
					124.5 - 124.80 - local 1mm qz-py veinlets.																
	124.80	126.14	GD		Argillic-alt'd granodiorite w/ yellow-orange ghost mafics -																
					- there hairline qz-py fracture veinlets @ 124.9m.																
	126.14	130.15	MONZ.		Medium-grain, Hbl-qtz quartz monzonite with no obvious																
					primary mafics																
					- 15% diffusive contact from 126.0 - 126.40 m w/ local 1-3mm																
					qz py vein along contact																
					- qz-kf-py-sp-fg. 5%		1 - 1.5 cm wide vein				126.4 - 126.9 m sub ll										
					to 5% ±; qz-ms-ep (cl) veining 30° ± 5cm ± 1cm wide																
					126.9 - 128.5 m 65-70° ± shearing @ 127.8 - 130.0 m.																
	130.15	131.06			Argillic granodiorite w/ 2mm py vn's 45° ± 60° ± 30 cm ±																
					- shearing 130.5 - 130.7 (65-0° ±)																
	131.06				E.O.H.																

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Lithology

DDH No.	From (m)	To (m)	Pr Lith	Sec Lith	Vein Int	Shear Angle	From	To	Fol	Pr Alt	Sec Alt	Qs	Qz	Qc	Ms	Ep	Cl	Cb	Tm	Mn	Li	Min Type	Min Int	Py	Sp	Gl	Cp	As	Po
99-04	0.00	9.14	CASG	OVBN																									
99-04	9.14	14.05	GRAN							SE					W	W	W			M	S								
99-04	14.05	14.30	SHER	GRAN		45	14.05	14.30		SE																			
99-04	14.30	14.80	GRAN							SE					W	W	W			M	S								
99-04	14.80	20.90	GRAN		M					AR			M		M	W	W				M	3	2	M	W	W		T	
99-04	20.90	23.60	GRAN		M					AR			M		M	W	W				W	3	2	M	W	W		T	
99-04	23.60	23.77	FAUL	GRAN		25	23.60	23.77		PR					W	M	M												
99-04	23.77	24.80	GRAN							PR					W	M	M												
99-04	24.80	25.00	FAUL	GRAN		60	24.80	25.00		AR																			
99-04	25.00	28.64	GRAN		M					AR			M		M	W	W					3	2	M	W	T		T	
99-04	28.64	29.64	FAUL	GRAN		45	28.64	29.64		PR					T	W	W												
99-04	29.64	32.00	GRAN		T	40	31.30	32.00		FR	PR		T		W	W	W												
99-04	32.00	35.20	GRAN		M					AR			M		M	W	W					3	2	M	W	T			
99-04	35.20	36.10	QZVN	GRAN	S					AR		S	S		M	W	W					3	4	M	M	M	T	T	
99-04	36.10	39.35	GRAN		M					AR			M		M	W	W					3	2	M	W	T			
99-04	39.35	39.95	GRAN	SHER		70	39.35	39.95		PR						M	M												
99-04	39.95	40.30	GRAN		M					AR			M		M	W	W					3	2	M	W	T			
99-04	40.30	43.92	GRAN		T					PR	SE		T		W	M	M					3	1	T					
99-04	43.92	47.60	GRAN	SHER		45	43.92	47.60		FR	SE		T		W	M	M												
99-04	47.60	49.80	GRAN		M					AR			M		M	W	W					3	2	W					
99-04	49.80	50.15	GRAN							PR						M	M												
99-04	50.15	52.40	GRAN		M	45	51.95	52.05		AR			M		M	W	W					3	2	M	W				
99-04	52.40	54.05	GRAN							FR																			
99-04	54.05	54.25	FAUL	GRAN		60	54.05	54.25		AR																			
99-04	54.25	58.20	GRAN		T					AR	SE		T		M	M	M					3	1	T					
99-04	58.20	69.35	GRAN	SHER	W	75	60.00	68.50		FR	PR				W	W	W					3	1	W	T				
99-04	69.35	73.30	GRAN		M	70	71.90	72.20		AR		M	M		M	W	W					3	3	M	W	T		T	
99-04	73.30	74.15	MSSX		S					AR		S	S		W	W	W					3	5	S	M	M	T	T	
99-04	74.15	74.65	GRAN		M	70	71.90	72.20		AR		M	M		M	W	W					3	3	M	W	T		T	
99-04	74.65	74.98	MSSX		S					AR		S	S		W	W	W					3	5	S	M	M	T		T
99-04	74.98	82.00	GRAN		M	70	71.90	72.20		AR		M	M		M	W	W					3	3	M	W	T		T	
99-04	82.00	82.10	FAUL	GRAN		65	82.00	82.10		AR																			
99-04	82.10	118.26	GRAN		T	50	82.10	99.50		FR	SE		T			T	W					3	1	T					

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No. 99- 04
Logged By: JDS
Date: Aug 1st/99

Location Sketch

Grid Northing (m):	10800
Grid Easting(m):	9984
Elevation (m):	1728.20
Total Length (m):	1184.6 (3801)
Casing Depth (m):	9.14 m
Reduction Depth (m):	
Collar Core Size (m):	NQ2

Date Started:	Aug. 11/99
Date Completed:	Aug 13/99
Logged By:	JDS
Date Logged:	Aug. 15/99
Data Entry:	
Entry Date:	
Casing (In/Out):	Out

Survey	Depth	Azimuth	Dip
	0.00	270	-45

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alt. Int.	Alt. Typ.	Alt. Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Si			Structure Veining Qz	Py	Asp
	0.00	9.14	OVB.		Casing / overburden																
	9.14	14.80	GD	OXID	Limonitic (w/ Mn Oxide and Goethite) sericitized granodiorite																
					w/ Py -> MS (intensity 3) but absence of Py in 116 phenocrysts																
					- well fractured < 10 cm x < 50-70° to dominant fracture set @ 45° to downhole																
					- Anastomosing fracture sets replaced by Li - No obvious Qz veining																
					- shear zone 14.05 - 14.30 m w/ Ox becoming more aff^a (bi. kb -> mu. mx) w/ depth																
	14.80	20.90	GD	OXID	Lt. orange grey argillic alt^d granodiorite to well fractured																
					< 5 cm x < 60-70° to Li along fracture surfaces																
					- Qz -5% (Py, Sl. ± minor galena) veining 15°-25° to < 10 cm x																
					- Py replaced by Li locally w/ Kb, Sl -5% (as ?) remaining w/ Qz.																
	20.90	23.6			Same as 14.80-20.90 but below axis to level (minor Li along joints), most Qz-5% veins < 10 cm wide @ 15-25° to core axis																
					- Sulf. Qz-ca-py-sp 1 cm vein 21.50 - 22 m.																
	23.6	23.77	FAULT		Fault zone w/ Ep-Ch (± M.) alt^d granodiorite to ± no Qz veining																
					- 25° to core axis above shear.																

PACIFIC RIDGE EXPLORATION LTD.
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Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 04
Logged By: [illegible]
Date: [illegible]

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	23.77	24.80	QD	Poorly altered (Sf-Ms) intrusive?, B.-Hb, fresh) grano																	
	24.80	25.00	FAUL	Fault/shear - 55-65°∠ - poorly altered gouge																	
	25.00	28.64	QD	Argillically (±sericitic) altered granodiorite w/ qz - 5% (py, sp ± trace galena)																	
				5-30 cm wide 40-50°∠ ≤ 1 cm wide; moderately well fol.																	
	28.64	29.64	FAUL	Poorly altered (Ep. Cl ± Ms) granodiorite with gouge 45°-60°∠																	
	29.64	32.00	QD	Fresh, propylitic and argillic - alt'd granodiorite - variably w/ shear																	
				degree of shearing:																	
				- Shearing 30.4-31.0 (40-50°∠) and 31.30-32.0 (40°-50°∠)																	
				- only one 45°∠ qz-f.g. sx vein/vlet @ 30.90 m 45°∠																	
	32.00	35.20	QD	Argillically alt'd (Sf-Ms No Maf.'s) granodiorite w/ qz ± f.g. sx																	
				veining < 10-30 cm @ 45°∠ < 1 cm wide (usually 2-4 mm)																	
				- local 10 cm section of silicified qz w/ visible mafics (Hb.)																	
				- fractured @ 45°∠ ~ 30 cm > 3 cm thick Qz-Py-Sp-Cp (± As, Cp) vein @ ~5∠ w/ vuggy voids																	
	35.20	36.10	QZVN																		
				in centre and banded w/ py → f.g. sx → ∠ towards margins																	
	36.10	39.35	Same as	32.00-35.20 - becoming less alt'd (more Hb, B.) w/ abund.																	
				- 5 mm qz-py-fg. sx vein 25°∠ @ 38.4 m																	
	39.35	39.95	QD	Sheared Ep-Cl alt'd granodiorite - shearing @ 70-80°∠																	
	39.95	40.30	QD	Same as 36.10-39.35 - shearing @ 45°∠																	
	40.30	43.92	QD	Alt'd mafic ± 30 cm section of propylitic silicified alt'd qd																	
				+ well sheared 40-50°∠ ; 1 cm qz-py-f.g. sx @ 42.7 m - 20-25°∠																	

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 04
Logged By: JDS
Date: Aug 16/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	43.92	47.60	QD	Fresh qz-eye	diorite-	weak	sericite	< 60 cm >	< 45-50°	& w/	shears										
				alteration	intersects	Zones @	44.80-	45.10 (45°)	& 45.40	-45.60 (45°)											
				and	46.35 -	47.10 (50°)	local	qz	veining	&	shears	45°	to								
				core of	shear	zones	40°	shear	f.w.	control											
	47.60	49.80	QD	Argillic	alt^d	granodiorite	(yellow	qtz	w/	1/8	Fe	1/4	-	1 - 2 mm	qz	±	5%				
				veining	45°	5 - 40	cm >	<	w/	local	sericitic	Mn	5%								
				alteration	pervasive	fine	grained														
	49.80	50.15		Ep-Qz	altered	sheared	qd	w/	no	qz	veining										
	50.15	52.40		Same as	47.60 -	49.80	w/	45°	shearing	@	5%	95	52	95%							
			-	± 10 cm	seams	w/	unaltered	or	secondary	qtz	1/8	±	B.								
			-	qz - Sx	veining	~ 2 - 3 mm	wide	sub //	and	40° -	50°	&	± 10	cm	wide						
	52.40	54.05	QD	Fresh,	pervasively	fractured	granodiorite														
	54.05	54.25	FAULT	60°	clay																
	54.25	58.20	QD	Orange,	argillic	<->	sericitic	qtz	granodiorite,	well	sheared	w/	ep-ol								
				alt^d	granodiorite	shear	zone	56.00	- 56.60	only	rare	1-2	cm	qz	veins						
			-	25%	qtz -	pl -	qz	(1 cm	wide)	54.90 -	55.10	m									
	58.20	69.35	QD	Alternating	sections	of	fresh	qz	granodiorite	and	silicified	&	sericitic								
				granodiorite	&	pervasively	60	45° -	70°	shearing	&	10 cm	wide	qtz	veins)						
			-	shearing	@	60.00	61.00,	62.50	64.00	65.50	68.30	- 68.50									
			-	local	25° -	35°	1 mm	- 1 cm	wide	qz	± py	veining	in	altered	&	sheared	zones				
			-	fractured	10 -	40 cm	45° -	60°	&												

V9 @ 27.85
in 92-py-fr. sp vn - 30°∠

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Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 04
Logged By: JDS
Date: Aug 16/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	69.35	73.30	QD		Arg. alt'd		altered	granodiorite	w/	≤ 1cm	qz-py-sp(?gl,as)	veins									
					90° - 45°∠		10 - 30 cm	(moderate	density	w/	depth										
					- shear zone		71.9 - 72.2	@ 60°∠	w/	10 cm	gouge zone	and									
					secondary		Bi-Kf	for	30 cm	@	72.3 m.										
	73.30	74.15	MSSX		Massive		Py-Sp-GL-As		w/	crustiform	veins	qz-rock	core								
					- same		sections	look like	Po	in	v.f.	gr.	groundmass								
					- 70°∠	few	contact	- very	sharp	and	70°∠	hi-ca	contact.								
					- black	fg.	sulphosalts	, lot of	As	in	this	section									
					- orange-	pink	garnet	w/	qz	maybe	Kf	or	Mx	silicified							
	74.15	74.65	QD		Same	as	69.35 -	73.30	m	w/	35 - 45°∠	qz -	sx	veining							
	74.65	74.98	MSSX		Similar	to	MSSX	73.30 -	74.15	w/	less	As									
					- 45°	hi-ca	contact	@	35°∠	lo-ca	contact										
	74.98	82.00	QD		Similar	to	69.35 -	73.30	m.	w/	qz-py-sp	±gl	as	veining	2mm - 1cm						
					wide	30°-45°∠	sericitic	⇐	argillic		granodiorite	w/	sericitic	local	silicification						
					- shearing	@	77.5 -	78.1 m.	-	45°∠											
	82.00	82.10	FAULT		60 - 70°∠	shear	zone														
	82.10	118.26	QD		Very	chl.	altered	fresh	⇐	sericitic	granodiorite	w/	minor								
					similar	to	section	m	of	local	zones										
					- occasional	1-2	mm	qz-py	veining	@	35°-40°	>>	1m	∠							
					- shear	zones	@	50° - 55°∠	from	82.10 -	99.5	m.	≈ 1m	∠	, poorly						
					fault	@	below	99.5	m.												

118.26
E.O.H.

Drill Hole No. 99-04

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Lithology

DDH No.	From (m)	To (m)	Pr Lith	Sec Lith	Vein Int	Shear Angle	From	To	Fol	Pr Alt	Sec Alt	Qs	Qz	Qc	Ms	Ep	Cl	Cb	Tm	Mn	Li	Min Type	Min Int	Py	Sp	Gl	Cp	As	Po
99-05	0.00	12.19	CASG	OVBN																									
99-05	12.19	17.68	GRAN	SHER		45	12.19	17.68		SE	AR				M	M	W				S								
99-05	17.68	17.80	FAUL	GRAN		55	17.68	17.80		AR					M	W	W												
99-05	17.80	23.77	GRAN		M					AR			M		M	W	W					3	2	M	W				
99-05	23.77	24.35	QZVN	GRAN	S					AR		S	S		M	W	W					3	5	M	W	W		T	
99-05	24.35	43.50	GRAN		S					AR		M	S		M	W	W					3	3	M	M	T			
99-05	43.50	46.00	QZVN	GRAN	S					AR		S	S		M	W	W					3	5	M	M	T			
99-05	46.00	51.40	GRAN		S					AR			S		M	W	W					3	4	M	M	T			
99-05	51.40	53.00	BRSX	QZVN	S					AR		S	S		M	W	W					3	5	M	M	T			
99-05	53.00	58.40	GRAN	BRSX	S					AR		S	S		M	W	W					3	5	M	M	W		T	T
99-05	58.40	65.00	MSSX		S					AR		S	S	M	M	W	W					3	5	S	M	M		W	W
99-05	65.00	83.72	GRAN		M					AR			M		M	W	W					3	2	M	W	W		T	
99-05	83.72	84.90	FAUL	GRAN	W	30	83.72	84.90		AR			W		M	W	W					3	1	W	T	T			
99-05	84.90	103.63	GRAN		T	45	87.00	97.85		FR	SE		T		T	W	W					3	1	T					

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No. 99- 05
Logged By: JDS
Date: Aug 17/99

Location Sketch — 4 N

Grid Northing (m):	10700
Grid Easting(m):	1011+
Elevation (m):	1673.10
Total Length (m):	185.63m
Casing Depth (m):	12.17m
Reduction Depth (m):	
Collar Core Size (m):	NQ2

Date Started:	Aug 13/99
Date Completed:	Aug 14/99
Logged By:	JDS
Date Logged:	Aug 17/99
Data Entry:	
Entry Date:	
Casing (In/Out):	Out

Survey	Depth	Azimuth	Dip
	0.00	270	-90

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Int.	Typ.	Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Si			Structure Veining Qz	Py	Asp
	0.00	12.19	CASN	Casing / overburden																	
	12.19	17.68	QD	weak chloritic sericitic (minor)			visible qz veinlets to 20% of core														
				fracturing	1-2%	≤ 10 cm x															
				- shearing 12.5 - 13.3 (60°X), 14.1 - 14.5 (60°X), 15.7 - 16.3 (60°X)																	
				17.2 - 17.68 (60°X)																	
				- moderate grade alteration w/ depth, no obvious qz ±5% veining																	
	17.68	17.80		50° - 60°X shear zone																	
	17.80	23.77		Argillic - chloritic granodiorite w/ 60°X qz veining at 20° - 60°X															qz - py - sp		
				veins ≤ 10 cm x ≤ 1 cm (2mm - 1cm wide)																	
				- qz veins and silicified fracturing 20.3 - 21.7m - variable fault ≤ 1 cm																	
	23.77	24.35	BZVN	Qtz - pl - sp - gl ± cp as vein w/ open cavities - 60°X but conformable																	
				and 20°X also conformable																	
	24.35	43.50	QD	Argillic - altered granodiorite w/ 2mm - 10cm qz - pl - sp - 20°, 45°, 75°																	
				≤ 10 cm (40 cm x decreasing to ≤ 5 cm w/ depth)																	
				- not very much gl or as w/ qz - py - sp veining																	
				- qz veinlets, pervasive, pl, not as well 400 - 500°; 10 - 50 mm wide																	
				- fx becomes more silicified w/ depth w/ RF → hole wall																	
				moderate RF → crumbly / rubbly broken																	

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 05
Logged By: TCS
Date: Aug 11, 99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	43.50	46.0	QzVN		Sil. zone = qtz-ser-py alteration																
					with 1-3% py as fine grains & stringers																
					& 1-2% py as fine grains & stringers																
					& 1-2% py as fine grains & stringers																
					& 1-2% py as fine grains & stringers																
	46.00	51.20	QP		Argillic-altered qz-sericite-py veinlets w/ 20°-45°																
					qtz veins ≤ 1.0cm																
					20 cm qz-kf-sx veining 99.50.1 kf - 1-5%																
					local ep alt - qz-py veining & minor fx																
	51.20	53.0	SxBx		Well silicified zone with 1cm-2cm altered																
					& fragmental qz-py-sp-gal matrix																
					25% fragments of 1-5mm																
					ex altered to subangular w/ infilling																
	53.0	58.4	QDSt		Brecciated qz veining & alteration - local																
					w/ 2 sets - 80cm qz-py-sp-gal as veining																
					subparallel, 20° & 45° fractures ≤ 2cm (2 0.0x																
	58.4	61.4	MSSt		Siliceous Sericitic w/ intense qz-py-sp-gal																
					and pressure sulphide, pyrite dissem. stringers (>60%py)														61.0-63.5m.		
					veinlets, and blebs of sericite ms. w/ 1-2%						4-5%										

Drill Hole No. 99-05

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 05
Logged By: J.R.S
Date: Aug. 18/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alt. Int.	Typ.	Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Si			Structure Veining Qz	Py	Asp
	65.00	83.72		Argillic - weak to mod grained mafic w/ 20° and 45° qz - py - sp ± gal vn																	
				~~65.8 - 55.~~ gn x																	
				- 67.3 - 67.4 - 35 45° ± qz - cc - py - sp w/ chl & 50% of 5%															45°	±	
				- pervasive chl alteration 45° ± 70° x > 30 cm =<																	
				- 67.4 - 67.6 and 75.6 - 75.7 - 45° ± qz - py ± cc - gal ± as - cm																	
				- chloritic veining																	
				- K-feld porphyritic alteration w/ 2 to 3% 1-2 mm subhed Pl phen from 72.5 to 77.0 m w/ 5 to 10% qtz eyes																	
				- qz - py ± cc veining throughout, moderate to 2.5% ± 10 cm wide																	
				- sericitic bleaching & alteration 82.4 - 83.0 m. w/ 45° bedding																	
83.72	82.40		Shear zone w/ 50% qz - cc veining Hematitic fracturing 10 cm wide) cm x 8																40°		
				none sericitic w/ a 8 cm qz (minor py) vein cut by shear w/ 1 cm fault gouge @ 30° to core axis																	
				Weak chl alteration (fracture controlled) pervasive sericitic w/ 1% disseminated py																	
84.90	103.63		- mod chl alteration 45° ± 1 cm < 87.0 - 87.9, 92.0 92													35	97.	30 - 45°			
				- sericitic alteration in shear 30 cm's ± 60° to core axis																	
				- pervasive qz - py - sp (± fracture) veining 5% (qz 3%, py 2%)																	
				98.3 m (1.5 cm, 40°) chl alt 98.4 (60°) - mod to strong sericitic alt																	
				- 1 cm qz - cc - sp - py veining @ 10 to 30°																	
				- fault gouge, broken core, 10 cm 12 ± 1.5 6 ± cm.																	
103.63			EOH.																		

Drill Hole No. 99-05

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Lithology

DDH No.	From (m)	To (m)	Pr Lith	Sec Lith	Vein Int	Shear Angle	From	To	Fol	Pr Alt	Sec Alt	Qs	Qz	Qc	Ms	Ep	Cl	Cb	Tm	Mn	Li	Min Type	Min Int	Py	Sp	Gl	Cp	As	Po
99-06	0.00	6.71	CASG	OVBN																									
99-06	6.71	18.20	GRAN							AR			M		M	W	W	M			S								
99-06	18.20	18.40	PEGM	DYKE						FR																			
99-06	18.40	21.20	GRAN							AR			M		M	W	W	M			M								
99-06	21.20	21.34	SHER	GRAN		60	21.20	21.34		SE					M	W	W												
99-06	21.34	24.20	GRAN							AR			M		M	W	W	M			W								
99-06	24.20	24.90	SHER	GRAN		50	24.20	24.90		SE					M	W	W												
99-06	24.90	27.70	GRAN							SE	AR				M	W	W												
99-06	27.70	28.42	SHER	GRAN		50	27.70	28.42		SE	PR				M	W	M												
99-06	28.42	29.70	GRAN							PR					W	W	M												
99-06	29.70	31.50	GRAN							SE	AR		T		M	W	W												
99-06	31.50	31.60	SHER	GRAN	W	60	31.50	31.60		SE			W		M	W	W					3	1	T					
99-06	31.60	38.00	GRAN		M					AR		M	M		M	W	W					3	2	W	T	T			
99-06	38.00	38.05	PEGM	DYKE						FR																			
99-06	38.05	39.62	GRAN		M					AR		M	M		M	W	W					3	2	W	T	T			
99-06	39.62	40.70	SHER	GRAN		60	39.62	40.70		PR						M	M												
99-06	40.70	44.25	GRAN		W					AR			W		M	W	W			W		3	1	W	T	T			
99-06	44.25	44.50	SHER	GRAN		45	44.25	44.50		AR					M	W	W												
99-06	44.50	45.50	GRAN							PR					W	M	M												
99-06	45.50	49.00	GRAN		T					AR			T		M	W	W					3	1	T	T				
99-06	49.00	49.50	SHER	GRAN		45	49.00	49.50		AR					M	W	W												
99-06	49.50	56.70	GRAN		T					AR			T		M	W	W					3	1	T	T				
99-06	56.70	56.80	SHER	GRAN		60	56.70	56.80		AR					M	W	W												
99-06	56.80	65.90	GRAN		W					SE	AR		W		M	W	W					3	1	W	W	T			
99-06	65.90	66.45	FAUL	GRAN		60	65.90	66.45		SE					W	T	W												
99-06	66.45	85.34	GRAN							FR	SE		T		W	T	W												

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No. 99-
Logged By: JDB
Date: Aug. 18/99

Location Sketch

Grid Northing (m):	10600
Grid Easting(m):	10200
Elevation (m):	1641.20
Total Length (m):	85.34
Casing Depth (m):	6.71
Reduction Depth (m):	
Collar Core Size (m):	NQ2

Date Started:	Aug 14/99
Date Completed:	Aug. 15/99
Logged By:	JDB
Date Logged:	Aug. 18/99
Data Entry:	
Entry Date:	
Casing (In/Out):	Out

Survey	Depth	Azimuth	Dip
	0.00	270°	-45°

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Si			Structure Veining Qz	Py	Asp
OXP	0.00	6.71	CASN	Casing / Overburden																	
	6.71	18.20	GRAN	Aug. Hbl. Bio. granite - altered granite w/ qz (<10 %) veins, sulf. to 2-3% ≤ 10 cm wide																	
				often the qz (+ ca) veins have oxidized wallrock & vuggy cavities associated w/ them																	
				- fairly well fractured 60-70° ≤ 200 cm c.a.																	
				- qz-sx (li) veining at ~ to Li coated fractures 55°-70° ≤ 10 mm wide																	
	18.20	18.40	FRAM	Qz-Ep-Mu-To dyke @ 5° to core axis 1/2 of core.																	
	18.40	21.20	GRAN	Same as 6.71 - 18.20 m.																	
V	21.20	21.34	SHEAR	Shear zone @ 60°																	
	21.34	24.20	GRAN	Aphidic - altered granite w/ qz (<10 %) veins 2-5% 10-20 cm wide																	
	24.20	24.90	SHEAR	Shear zone - 45°-60° w/ aphidic granite veining																	
	24.90	27.70	GRAN	Mod/l-sheared aphidic-altered granite w/ obvious qz-sx veining																	
	27.70	28.42	SHEAR	Shear zone w/ aphidic → sp-altered granite																	
	28.42	29.70	BRXN	Prox/fx - altered gran. F.w/F.w. mafics and 10 cm. 6% chlorite																	
				30° to c.a. footwall																	
	29.70	31.50	GRAN	Same as 24.90-27.70 m - aphidic altered granite w/ trace <5% veining																	

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 06
Logged By: JRS
Date: Aug 18/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	31.50	31.60	SHEAR		Shear zone w/ qz-sx vns in gouge 60°∠																
	31.60	39.62	GRAN		Silicified, mag, Mic-altered granite w/ 25°, 45°, 60°∠ qz-sx																
					(pre-sx) ± qz as veining ≤ 10cm ∠																
					- fracturing @ 60-70°∠ ~ 10 cm ∠																
					- 5 cm pegmatitic dike - 30°∠ cutting aphanitic granite																
					@ 38.0 m w/ To along dike margins																
					- qz ± sx veining ~ 20-30°∠ near bottom of intrusive																
	39.62	40.70	SHEAR		Shear zone w/ ep-cl → mafic altered granite sand sized.																
	40.70	44.25	GRAN		Aphanitic altered granite w/ qz-fg sx veining 20-25°∠																
					Alum 43.0 - 44.60 w/ Mn along sheared surfaces																
	44.25	44.50	SHEAR		45°∠ ↓ w sx & qz zone																
	44.50	45.50	GRAN		Ep-Cl ± Ms altered and well sheared phanitic w/ mc qz																
					ah sx veining - shearing @ 45°-60°∠																
	45.50	49.0	GRAN		Aphanitic-altered granite w/ anastomosing sub // to 10°∠ < 1cm																
					qz veins (no sx) and one qz-py(±cp) vein @ 45°∠ @ 47.0 m ~3mm wide																
	49.0	49.5			45°∠ shear zone																
	49.5	56.7			Same as 45.5-49.0																
	56.7	56.8			60°∠ shear zone																
	56.8	65.9			Silicified ± aphanitic altered granite w/ increased local																
					qz-sx veining 10-30 cm. apart @ 20-30°∠																

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 06
Logged By: JDB
Date: Aug 15/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alt. Int.	Alt. Typ.	Alt. Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Si			Structure Veining Qz	Py	Asp
	56.8	65.7			-20 cm		section of		30% qz-py-sp-gl		vein	no	@	594	-60.	1m					
					and sub //		10m		qz-w minor py		sp	@	64.0		-64.	6m					
					-local		mineralized		bx. content - probably							sericitic			and flow		
					bx →		65.4m		there is		mineralized		bx	of	varying	alteration			fragments		
					bx/chert veinlets.																
					- 60° shearing		64.9 - 65.1m.														
	65.9	66.45	FAULT		60° gouge		zone														
	66.45	85.34	IRON		Fresh to		poorly		altered (sp.gl)		granite		w/	local		chlorite			@	70.2 - 70.4	
					(60°)		70.8 - 71.2 (45°)														
				-	poorly -		moderately		fractured		20°		and	60°		w/ epidote			stained		
					Rust		surfaces														
				-	No		Sx veining		but		occasional		(2	1m	x)	qz-cp-sp-gl			veining	25°	
					30°																
				-	Ox		no-sp-gl		shear		fabric		in	core		at	84.6m.		- 20°		
	85.34				E.O.H.																

Drill Hole No. 99-06

APPENDIx IV

JRV PROPERTY

1999 Diamond Drill Hole Lithology

DDH No.	From (m)	To (m)	Pr Lith	Sec Lith	Vein Int	Shear Angle	From	To	Fol	Pr Alt	Sec Alt	Qs	Qz	Qc	Ms	Ep	Cl	Cb	Tm	Mn	Li	Min Type	Min Int	Py	Sp	Gl	Cp	As	Po
99-07	0.00	6.10	CASG	OVBN																									
99-07	6.10	10.90	GRAN							SE					M	T	W				S								
99-07	10.90	14.25	GRAN							FR						T	T				M								
99-07	14.25	14.35	SHER	GRAN		60	14.25	14.35		FR						T	T												
99-07	14.35	15.33	GRAN							AR					M	W	W				W								
99-07	15.33	17.80	GRAN							FR						T	T												
99-07	17.80	19.00	FAUL	GRAN		60	17.80	19.00		FR						T	T												
99-07	19.00	25.20	GRAN							FR						T	T				W								
99-07	25.20	26.60	GRAN							AR					M	W	W				W								
99-07	26.60	27.10	FAUL	GRAN		60	26.60	27.10		AR					M	W	M												
99-07	27.10	28.50	GRAN							FR						T	W												
99-07	28.50	29.00	FAUL	GRAN		60	28.50	29.00		SE					M	W	W												
99-07	29.00	32.30	GRAN							FR						T	T												
99-07	32.30	32.50	FAUL	GRAN		25	32.30	32.50		FR						T	T												
99-07	32.50	33.80	GRAN							FR						T	T												
99-07	33.80	34 30	FAUL	GRAN		60	33.80	34 30		FR					T	T	T												
99-07	34.30	41.40	GRAN							FR			T			T	T												
99-07	41.40	41.80	SHER	GRAN		60	41.40	41.80		SE						W	W												
99-07	41.80	49.10	GRAN							FR						T	T												
99-07	49.10	49.40	FAUL	GRAN		60	49.10	49.40		FR						T	T												
99-07	49.40	50.45	GRAN							FR						T	T												
99-07	50.45	50.85	QZVN	GRAN						FR		S	S						M										
99-07	50.85	55.40	GRAN							FR						T	T												
99-07	55.40	55.60	FAUL	GRAN		45	55.40	55.60		FR						T	T												
99-07	55 60	57.80	GRAN							FR						T	T												
99-07	57.80	58.10	FAUL	GRAN	50		57.80	58.10		FR						T	T												
99-07	58.10	65.53	GRAN							FR						W	W												

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No. 99- 07
Logged By: JDS
Date: Aug. 13/99

Location Sketch — N

Grid Northing (m):	10501
Grid Easting(m):	10326
Elevation (m):	1545.80
Total Length (m):	65.53 (215')
Casing Depth (m):	6.10
Reduction Depth (m):	
Collar Core Size (m):	NQ2

Date Started:	Aug. 15/99
Date Completed:	Aug 16/99
Logged By:	JDS
Date Logged:	Aug. 18/99
Data Entry:	
Entry Date:	
Casing (In/Out):	Out.

Survey	Depth	Azimuth	Dip
	0.00	270	-70°

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alt. Int.	Alt. Typ.	Alt. Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Sl			Structure Veining Qz	Py	Asp
	0.00	6.10	OVBN		Casing / overburden																
	6.10	10.9	GRAN	OXID	Pk brown-orange weathered and sheared S.M.G. fine grained (Pk-p																
					Ms, NE) intense 60°-70° fract's < 5 cm ea																
				↓	- No obvious qz-sx veining but li alt'n 60° fractures																
	10.4	14.25	GRAN		Fresh, unaltered Bi-mu granite with li alt'n 30°																
					fractures, poorly fractured 60° > 100 cm ea																
	14.25	14.35	GRAN		60° shear zone																
	14.35	15.33	GRAN		Arg. alt'n - altered granite - no qz or sx veining																
				-	minor li alt'n joints 60° @ 10 cm ea																
	15.33	17.80	GRAN		Fresh bi-mu granite - poorly fract'd - 50°														>10 cm ea		
	17.80	19.00	FAULT		60° fault																
	19.00	25.20	GRAN		Fresh bi-mu granite - local 50-60° fract's w/ li alt'n joints																
				-	secondary bi 21.9-25.20 m of shear																
	25.20	26.60	GRAN		Arg. alt'n altered granite - well fract'd 45°-60° @ 5 cm ea																
				-	fault gouge last 10 cm of interval																

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 07
Logged By: JDB
Date: Aug 19/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	26.60	27.10	FAULT		60°X fault - phyllic, ep-al silicified altered granite																
	27.10	28.50	GRAN		Fresh to minor ep-al altered granite - No qz or sx veining																
	28.50	29.00	FAULT		60°X fault w/ silicified-altered granite gouge																
	29.00	32.3	GRAN		Fresh, unaltered granite w/ local 60°X shearing @ 60°X																
					- no qz or sx veining																
	32.30	32.50	FAULT		25°X fault w/ unaltered granite gouge																
	32.50	33.80	GRAN		Fresh granite - same as above																
	33.80	34.30	FAULT		60°X fault w/ unaltered fault gouge																
	34.30	41.40	GRAN		Fresh, unaltered bi-mv granite - 55-60°X joints - No qz sx																
					- becomes more leucocratic w/ two 40°X 1-10 cm qz veins @ 64																
					41.40m																
	41.40	41.80	SHEAR		60°X shear zone w/ silicified altered fault in lower half																
	41.80	49.10	GRAN		Fresh, unaltered bi-mv granite - No qz sx veining																
					- local 60°X shear < 1m																
	49.10	49.40	FAULT		60°X fault w/ unaltered granite gouge																
	49.40	50.45	GRAN		Fresh unaltered granite																
	50.45	50.85	QZVN		Qz vein w/ brecciated silicified and chloritized granite fragments																
					and criterion 1 cm qz-kf-fo veining @ 45°X																
					- local 5mm Gl x/l in qz-kf vein																
					- To veining a/o unaltered																
	50.85	55.40	GRAN		Fresh unaltered granite w/ 60°X jointing & 30 cm																

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 07
Logged By: JDS
Date: Aug. 1999

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si			Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	55.40	55.60	FAULT		45° fault w/ unaltered granite gouge																
	55.60	57.80	GRAN		Unaltered bi-mu granite - no qz or 5% veining																
	57.80	58.10	FAULT		50° fault w/ unaltered granite sand/gouge																
	58.10	65.53	GRAN		Unaltered, fresh bi-mu granite w/ only local 45°																
					bi or ep-cl fracture filling veinlets - ~30° & >1mm ea.																
				-	No qz - 5% veining																
				-	local 45° shear						~ 1mm ea										
	65.53				E.O.H.																

Drill Hole No. 99-07

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Lithology

DDH No.	From (m)	To (m)	Pr Lith	Sec Lith	Vein Int	Shear Angle	From	To	Fol	Pr Alt	Sec Alt	Qs	Qz	Qc	Ms	Ep	Cl	Cb	Tm	Mn	Li	Min Type	Min Int	Py	Sp	Gl	Cp	As	Po
99-08	0.00	7.32	CASG	OVBN																									
99-08	7.32	9.90	MSED						20												M								
99-08	9.90	24.38	MSED						30												S								
99-08	24.38	27.20	GRAN		W					AR			W		M	W	W				M	3	1	W	T	T			
99-08	27.20	29.50	GRAN		T					AR			T		M	W	W				M	3	1	T					
99-08	29.50	33.00	GRAN		W					AR			W		M	W	W				M	3	1	W	T	T			
99-08	33.00	34.00	QZVN	GRAN						AR			S								M								
99-08	34.00	35.80	GRAN		W					AR			W		M	W	W				M	3	1	W	T	T			
99-08	35.80	37.90	GRAN		T					AR			T		M	W	W				M	3	1	T					
99-08	37.90	43.90	GRAN		W					AR			W		M	W	W				M	3	1	W	T	T			
99-08	43.90	51.25	GRAN		T					AR			T		M	W	W				M	3	1	T					
99-08	51.25	54.65	GRAN		T					AR			M		M	W	W				M	3	1	T	T				
99-08	54.65	55.30	GRAN							AR					M	W	W												
99-08	55.30	57.91	GRAN		W					AR			M		M	W	W				M	3	1	W	T				
99-08	57.91	59.50	GRAN							AR					M	W	W												
99-08	59.50	61.10	GRAN		M					AR			M		M	W	W				W	3	2	M	T	T			
99-08	61.10	62.00	GRAN							AR					M	W	W												
99-08	62.00	62.30	FAUL	GRAN		55	62.00	62.30		AR					M	W	W												
99-08	62.30	66.00	GRAN		T					AR			M		M	W	W				W	3	1	T	T				
99-08	66.00	66.75	FAUL	GRAN		65	66.00	66.75		AR					M	W	W												
99-08	66.75	69.55	GRAN	SHER		70	66.75	69.55		SE					W	W	M												
99-08	69.55	69.76	FAUL	GRAN		60	69.55	69.76		SE					W	W	M												
99-08	69.76	73.00	GRAN							FR	PR					W	W	W											
99-08	73.00	75.10	FAUL	GRAN		45	73.00	75.10		SE					W	W	W												
99-08	75.10	77.00	GRAN							AR					M	W	W				W								
99-08	77.00	88.39	GRAN							SE			T		M	W	W				W								
99-08	88.39	90.10	SHER	GRAN		30	88.39	90.10		AR					M	W	W				M								
99-08	90.10	108.20	GRAN		M					AR		M	M		M	W	W	W			M	3	4	M	W	W		T	
99-08	108.20	108.90	QZBX	GRAN	S					AR		S	S		M	W	W	W			S	3	5	M	M	W		T	
99-08	108.90	111.56	GRAN							SE	FR				W	T	T				W								
99-08	111.56	116.00	GRAN		W					AR			W		M	W	W		W		M								
99-08	116.00	119.75	GRAN							FR			T			T	T		W		T								
99-08	119.75	120.10	PEGM	DYKE						FR																			
99-08	120.10	121.92	GRAN							FR						T	T												
99-08	121.92	122.20	GRAN		T					AR			T		M	W	W				T	3	1	T					
99-08	122.20	152.40	GRAN							FR	SE				T	W	W				T								

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No. 99-08
Logged By: JDB
Date: Aug 19/99

Location Sketch

Grid Northing (m):	11200	Date Started:	Aug. 16/99
Grid Easting(m):	9876	Date Completed:	Aug 18/99
Elevation (m):	1859.30	Logged By:	JDB
Total Length (m):	152.40 (500')	Date Logged:	Aug. 19/99
Casing Depth (m):	7.32 m.	Data Entry:	
Reduction Depth (m):		Entry Date:	
Collar Core Size (m):	NQ2	Casing (In/Out):	Out

Survey	Depth	Azimuth	Dip
	0.00	270°	-45°

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Si			Structure Veining Qz	Py	Asp
	0.00	7.32		Casing / Overburden																	
	7.32	9.90	META	Metasedimentary Rx - calc-silicate skarn w/ 1-2% py, py																	
				and lt. green garnet.																	
				- poorly foliated ~ 10 cm							60°X				- No qz-sx veining						
	9.90	24.38	META	Metasedimentary rx - sillimanite-bi-qz schist w/																	
				25°-30° X bedding and local calc-silicate layers																	
				- becomes progressively more sheared + biotite along bdy																	
				- Li along foliation planes w/ bi + py.																	
				- quite limonitic 21.00 - 24.38 m.																	
	24.38			Metsed - intensive argillic w/ 45°X shearing																	
	24.38	27.20		Argillic-altered oxidized bi-py granite w/ sub II → 45°X																	
				qz-5x veining - quite bleached and oxidized																	
				- 5x smoky py + sub hedral lt. brown sphalerite in veinlets																	
				lt. green 5x oxide. + 1x wisps lt yellow fg sphalerite w/ qz																	
	27.20	29.00		Orange argillic granite w/ occasional bi along 45°X foliation																	
				buff w/ qz-5x veining																	
				- well sheared 1-5 cm @ 45°X w/ argillic bi foliation.																	

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 08
Logged By: JDB
Date: Aug 19/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	29.50	33.00	ARAN		Orange to lt grey, argillic-altered and partially oxidized granite																
					w/ 1-2 cm qz-py ± sp fracture filling veins ~10 cm ea																
					40°-45°X Li-Hematite fracture surfaces @ 30-45°X ~5 cm ea																
	33.00	34.00	QZVN		Oxidized white qz vein w/ fractures & vugs coated w/ Li																
					- 30°X fracturing w/ Li on surfaces																
	34.00	35.80	ARAN		Same as 29.50-33.00 m. w/ 30°-45° qz-sx veining →																
					Li ± Ta																
	35.80	37.9	ARAN		Orange, argillic granite w/ 20°X fract's & no qz-sx veining																
					like 27.2-29.50 m.																
					- sub ll, 45° and 60°X fracturing w/ Li ± Hematite on surfaces																
	37.9	43.9			Lt-med grey-yellow oxidized along fractures and argillic																
					granite w/ 35-40°X qz-sx veining ± 10 cm ea																
					- veins are 2-3 mm wide and sx ± oxidized to Li ± Ta																
					- 43.5-43.9 m a 5°-10°X qz-py-sp sheeted fillings veins																
					w/ Li sheeted gouge																
	43.90	51.25			Orange-yellow argillic granite w/ moderately bi ± wallrock																
					No qz sx veining; sheeting @ 30-45°X ~10 cm ea																
					- 45°X sheet 45.6-45.72 m., 50.3-50.5 @ 45°X																
					- bi → he w/ sec. matrix bi as band 0.5 cm ea @ 40°X & undulating																
					- orange-red alteration gradational change to																
					weathering mineralized granite.																

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 08
Logged By: JDB
Date: Aug. 9/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Py	Pb	Zn	Oth.	Alt. Mineralogy Si			Structure Veining Qz	Py	Asp
	51.25	54.65	GRAN		Lt grey-orange argillic altered bi-mu granite w/ 25°-30° fracturing																
					variably w/ qz-Li ≤ 10 cm vc and/or local 20% shearing w/																
					vitreous silicic veining (affected by veining)																
	54.65	55.30	GRAN		Orange-yellow argillic granite - no obvious qz-sx veining																
					- local 55-60° fracturing w/ Li coating																
	55.30	57.91	GRAN		Lt. grey argillic granite w/ 45°-50° qz-sx veining ≤ 10 cm vc																
					- 57.8 - 57.91 - qz-py-sp vein 45°																
	57.91	59.5			Same as 54.65-55.30m.																
	59.5	61.1			Lt. grey, argillic altered granite w/ qz-py-sp-gl veining																
					30° and 45° ≤ 5 cm vc																
	61.1	62°			Same as 57.91-59.5m.																
	62.0	62.3			50-60° fault zone w/ orange altered granite gouge																
	62.3	66.0			Orange-red argillic granite w/ occasional 3 mm qz																
					veining @ 60° & well fractured @ 45° ≤ 10 mm c																
					- Li 5' H/G along fracture planes																
	66.0	66.75			- 50°-70° shear/fault zone w/ silicific granite																
	66.75	69.55			Intense silicific shear w/ granite w/ shearing @ 45° and																
					70°.																
					- becomes progressively less altered → fault zone																
	69.55	69.70			60° fault zone.																

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 08
Logged By: JDB
Date: Aug 4/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	69.6	73.0	GRAN		Poorly altered to fresh						granite w/ 45-50% joints, fine and										
					ca long fractures						< 10 cm >.										
	73.0	75.1	FAULT		Intensely sheared silicified granite w/ limonitic-kaolinitic																
					gouge - 45°-50%																
	75.10	77.0	GRAN		Lt. grey-brown aplitic-altered granite w/ 20°-25° & Li, Al.																
					fractures ~ 30 cm >.																
	77.0	88.39	GRAN		well-sheared, fresh to locally silicified granite w/ occasional																
					50°-60° & qz-kf- to veins																
				-	shearing 40°-50° & 1 cm > w/ 5 cm quartz zones and																
					local silicified alteration																
				-	rare qz-Li fractures 60° &																
	88.39	90.10	SHEAR		Shear/fault zone w/ progressively more active granite																
					as flags of gouge down hole																
				-	shearing is mainly 25°-30° & w/ Li-Fe along shear																
					planes																

Drill Hole No. 99-08

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 08
Logged By: JDS
Date: Aug 1999

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	90.1	108.2	ARAN		Limonitic, argillic(v) - altered bi-mica granite w/ 2.5-5% qz-py-sp ± gl, cp, as veining <10 to 20 cm or <1/2 cm wide (wk/se) - area of veins are 5 mm - >1 cm wide as rock comp of qz ± 5% or py-sp veins																
					- local zones of increased pervasive silicification without sharp boundaries.																
					- still quite oxidized - both host rks & veins																
	108.2	108.9	ARBX		Dk grey qz-sx brecciated w/ rounded (milled) argillized granitic in v.f.g qz-sx matrix, quite limonitic w/ yellow saprolite (?) in Qz veining - 60° to c.a. = bedding																
	108.9	111.56	ARAN		Shear schistic granitic w/ flesh, fault slice																
					- clay gouge 109.73 - 109.95																
					- shearing 60° ± 1m >< c.a. 30° to c.a. con fract/shear fab																
	111.56	116°	ARAN		Hematitic grey to altered to argillic grade (wk mafics) w/																
					local 1-2 mm qz-py veining 45° ± ~50 cm ><																
					- poorly fract'd c.a. 45° w/ 5-10% ~10 cm ><																
	116.°	119.75			Lt. grey, fresh bi-mica granitic w/ local bi or Qz veining, 1-5%																

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 08
Logged By: JDE
Date: Aug. 1999

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	119.75	120.10	PEGM		Pegmatitic dyke w/ 3% f.g. sheared contact; 2.5% fw inclusions																
	120.10	121.92	GRAN		Fresh, poorly fractured granite																
	121.92	122.2	GRAN		Aplitic granite w/ two 1cm qz-py veins @ 45°																
	122.2	152.40	GRAN		Fresh to locally silicified bi-ano granite																
				-	fault zones at: 125.6 - 126.0 (30°)																
											129.55 - 129.75 (35°)										
											133.50 - 134.0 (30°) w/ qz-fl veins										
											143.40 - 143.6 (45°) - 5mm py vn @ 145.35 @ 45°										
											149.35 - 150.5 - 20° - 30° w/ L. shear fractures										
				-	generally very fresh w/ minor silicification around above shears																
				-	Li alaria fractures right to bottom of hole																
				-	No significant mineralization																
	152.40				E.O.H.																

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Lithology

DDH No.	From (m)	To (m)	Pr Lith	Sec Lith	Vein Int	Shear Angle	From	To	Fol	Pr Alt	Sec Alt	Qs	Qz	Qc	Ms	Ep	Cl	Cb	Tm	Mn	Li	Min Type	Min Int	Py	Sp	Gl	Cp	As	Po
99-09	0.00	13.72	CASG	OVBN																									
99-09	13.72	15.00	GRAN							FR	SE		W		W	W	W												
99-09	15.00	15.50	GRAN		W					SE			W		M	W	M					3	2	W	T	T			
99-09	15.50	23.38	GRAN							FR			W		W		T												
99-09	23.38	25.91	GRAN							SE			W		W	T	W		W										
99-09	25.91	26.21	GRAN							FR																			
99-09	26.21	27.85	GRAN							SE			W		W		W												
99-09	27.85	30.00	GRAN							FR	PR					W	W												
99-09	30.00	30.60	GRAN		T					SE			W									3	1	T					
99-09	30.60	37.64	GRAN							FR	PR				W	W	W												
99-09	37.64	40.54	GRAN		W					SE			W		W	W	W					3	1	T					
99-09	40.54	47.55	GRAN							FR			W		W	W	W												
99-09	47.55	48.43	GRAN		W					SE			W		W	W	W					3	1	W	T				
99-09	48.43	51.12	GRAN							FR					W	W	W												
99-09	51.12	51.90	GRAN		W					AR			W		M	W	W					3	2	W	T				
99-09	51.90	53.10	GRAN							FR			W		W														
99-09	53.10	53.66	SHER	GRAN		30	53.10	53.66		FR	AR				W		W												
99-09	53.66	56.90	GRAN							FR			W		W	W	W												
99-09	56.90	61.95	GRAN							SE			W		W	W	W												
99-09	61.95	65.40	GRAN							FR			T			W	W	T	T										
99-09	65.40	66.00	SHER	GRAN	T	55	65.40	66.00		SE			T		W	W	W					3	1	T					
99-09	66.00	68.58	GRAN							FR																			
99-09	68.58	68.88	SHER	GRAN		45	68.58	68.88		SE					M	W	W												
99-09	68.88	81.35	GRAN		W					SE			W		M	W	M					3	1	W	T	T			
99-09	81.35	86.15	GRAN							FR	SE				T	T	T												
99-09	86.15	105.65	GRAN							FR			W		W	T	T												
99-09	105.65	107.50	GRAN		T					SE			T			W	W					3	1	T	T				
99-09	107.50	107.80	SHER	GRAN		45	107.50	107.80		FR																			
99-09	107.80	124.97	GRAN							FR			T			T	T												

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No. 99- 04
Logged By: JDB
Date: Sep 10/99

Location Sketch

Grid Northing (m):	10400
Grid Easting(m):	10550
Elevation (m):	1554.50
Total Length (m):	124.41
Casing Depth (m):	13.72
Reduction Depth (m):	
Collar Core Size (m):	NQ

Date Started:	Sep. 7/99
Date Completed:	Sep. 10/99
Logged By:	JDB
Date Logged:	Sep. 10/99
Data Entry:	Sep. 20/99
Entry Date:	
Casing (In/Out):	Out

Survey	Depth	Azimuth	Dip
NO	60	140	-45

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	0.00	13.71	CASG		Overburden																
	13.71	15.00	GRAN		Variably altered		Fresh	±	Sericitic		Bi-mu granite w/ local										
					sericitic		alteration		selvages	(~7-10cm)		around	35-								
					45°		qz	±	mns. epithermal		veining	2-3	mm	wide					>1m	><	
					- granite		is	fresh	-	med. grey	w/	white	pl	ns	left.						
	15.00	15.50	GRAN		Sericitic		granite	w/	45°	1cm	wide	qz-py-sp	±	mineral							
					@ 15.5	m	Epithermal	alteration	on	footwall		vein.									
	15.50	73.35	GRAN		Fresh		granite	w/	local	qz	±	mineral	alteration		around						
					5-10	cm	wide	≈	1m	±	1-2	mm	qz	-py	stockwork	veining					
					veins																
	73.35	125.91	GRAN		Sericitic		altered	granite.	Large	alteration		zone									
					7cm	qz	-to	vein	@	24.60	m	@	15°								
				-	local	2	cm,	40°													
					10	cm	of	hw	of	qz-to	vein										
				-	local	2-4	mm	qz	±	to	veining	~20	cm	±	in	section	25°-45°				

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 09
Logged By: JDB
Date: Sep. 10/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si			Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	25.91	26.21	GRAN	N	Fresh	granite.															
	26.21	27.35	GRAN	N	Sericitic	granite	w/	20°	fracture	fill.	qz-ka	-fe	veining								
					27.1	to	27.6	m	~	4	cm	apart.									
	27.85	30.01	GRAN	N	Variably	altered	fresh	to	ep-ab	altered	granite	w/	135-45°								
					joining	10-20	cm	>.													
	30.00	30.64	GRAN	N	Sericitic	granite	alteration	envelope	around	1	cm	qz-py									
					vein	@	30.40	m	45°	w/	intense	ep-ab	alteration	around							
					vein.																
	30.64	37.69	GRAN	N	Variably	altered	fresh	to	sericitic	granite	w/	ms-ep-ab									
					alteration	envelopes	(N5-10	cm	wide)	about	2-4	m									
					qz-ca-ep-ab	fracture	filling	veins	30-45°	~30-50											
					cm	>.															
				-	local	55-60°	shearing	between	35.66	35.97											
					w/	ms-ep	alteration.														
	37.69	40.04	GRAN	N	Sericitic	granite	w/	45°	qz+ep-ab	+py	veining	~30	cm	>.							
				-	10	cm	shear	zone	@	39.01	m	~45°									

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 09
Logged By: JDB
Date: Sep 10/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	40.5	47.5	GRAN		Fresh		granite w/ local qz-ep-al alteration ex.												vn/vnlts		
					~5cm	wide	alteration					4±%	qz-ep			veins.					
				–	local		20° ∠ 45°		joint			<10	→	1m	><	w/	ep-al				
					along	fracture	filling		surface												
				–	local		1cm	→	30cm		biotite		spots.								
	47.5	48.4	GRAN		Sericitic		granite		w/		60%		shear		zone (10cm wide) on						
					h.w.		f.w.	side	of		intervel.										
				–	1cm		py-sp-qz		vein		@ 60° ∠		@ 47.3 m		w/ qz-ep-al						
					veining		throughout		section.												
	48.4	51.12	GRAN		Fresh		granite		w/ local		1cm		qz-ep-al		alteration						
					around		1-2mm		qz-cp		veins		@ 40-50° ∠		10-30cm		><				
	51.12	51.90	GRAN		Argillic		altered		granite		w/	1cm	qz-py-sp		45° ∠		veins				
					@ 51.50		m														
	51.90	53.10	GRAN		Fresh		granite		w/		local	(<10cm	><)	qz-cp	veins	at	90°	to			
					sp/py	veins															
				–	jointing	@	45° ∠		<10cm		apart										

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 09
Logged By: JDB
Date: Sep 10/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	53.10	53.66	SHER		Shear		zone @ ~30° X w/														
	53.66	54.96	GRAN		Fresh		granite w/ 1-2 cm wide qz-ep-ol														
					Se/vages		± 10 cm wide @ 45° X														
	56.90	61.95	GRAN		Se.		granite w/ 20-25% qz-ep-ol (± fg sy)														
					veinlets		1-3 mm wide					< 10 cm/m			→ / m.						
					- local		qz-ep veining					20%									
					- 5 cm		qz-ep-ol vein @ ~7.90 m. @ 60° X														
	61.95	65.42	GRAN		Fresh		granite w/ 15-25% qz-ep ± fg, ep-ol fracture														
					fine		veinlets ± 30 cm/m														
					- 30%		ioniferous ~50 cm/m														
	65.42	66.00	SHER		Shear		zone ~55° X w/ semi-sulfide granite gouge qz-py-ep veining @ 65° to m.														
	66.00	68.58	GRAN		Fresh		granite w/ 45° X ionizing ~1/m														
	68.58	68.83	SHER		Shear		zone 45° X w/ semi-sulfide granite gouge														

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 09
Logged By: JDS
Date: Sept 11/99

PS	Interval From (m)	Interval To (m)	Rock Code	Zone	Mod 1	Mod 2	Alteration Facies Typ.	Alteration Facies Int.	Alteration Facies Typ.	Alteration Facies Int.	Mineralization As	Mineralization Py	Mineralization Pb	Mineralization Zn	Mineralization Oth.	Alt. Mineralogy Si	Alt. Mineralogy	Alt. Mineralogy	Structure Veining Qz	Structure Veining Py	Structure Veining Asp
	68.85	81.35	GRAN		Sericitic	chloritic	w/ 1-5%		2cm		qz-kf-py-gl					veining	from				
					72.40 - 72.90m - sample																
				–	Chloritic	(sub-mj)	< 15cm	x @	35-45°												
				–	local	qz-py	fracture	filling	veins		@	70.65	m	(60°)							
					qz-py-ca;																
					py	30 m	(3.0%)	- 20cm	qz-py	and	5%	(45°)									
	81.35	86.15	GRAN		Fresh	to	sericitic	granite	w/	15%	shear	zones	5-10cm								
					wide	veins	200cm -	1m x													
				–	no	significant	qz-kf	veining	except	a	1cm	quartz	fracture								
					fracture	veins @	84.27 m	- 60°.													
	86.15	105.65	GRAN		Fresh	granite	- poorly	fractured	20°E	30°	< 1m										
				–	local	qz-mt	± epidote	alteration	envelopes		45°	60°									
					< 10cm -> 50cm x			No	significant	veining.											
	105.65	107.50	GRAN		Sericitic	granite	w/	45°-55°	shear	zone	and	w/	(10cm)								
					and	fine															
				–	brecciated	qz-mg-ep-cl	same	w/	alteration	@	106.2	106.35	m								
					w/	qz-py-sb	veining	@	60°	to	core.										

PACIFIC RIDGE EXPLORATION LTD.
JRV PROJECT - 1999
Whitehorse Mining District
Yukon Territory, Canada

GEOLOGIC DRILL LOG

Drill Hole No.99 - 09
Logged By: JDE
Date: Sep 11/99

PS	Interval		Rock	Zone	Mod	Mod	Alteration Facies				Mineralization					Alt. Mineralogy			Structure Veining		
	From (m)	To (m)	Code		1	2	Typ.	Int.	Typ.	Int.	As	Py	Pb	Zn	Oth.	Si			Qz	Py	Asp
	107.50	107.50	SHER		Shear		zone	45%	w/	fresh	granite	gouge.									
	107.50	124.97	CHAN		Fresh,		poorly	fractured	(>1/m	<	25-45%	=	60%)								
					granite		w/	local	qz-ep-ab		alteration		envelopes								
					but		no	significant	veining												
					- local		5-10%		qz-ca		veining	(~2	mm	wide)	but						
					no	sulphides															
	124.97				E.O.H.																

Drill Hole No. 99-09

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Assay Results

Drill Hole No.	From (m)	To (m)	Interval (m)	Sample No.	Gold (ppb)	Silver (ppm)
99-01	29.00	30.00	1.00	289101	6	3.0
99-01	30.00	31.00	1.00	289102	16	6.4
99-01	31.00	32.00	1.00	289103	8	4.6
99-01	32.00	33.00	1.00	289104	7	9.5
99-01	33.00	34.00	1.00	289105	-5	0.6
99-01	34.00	35.00	1.00	289106	20	1.5
99-01	35.00	36.00	1.00	289107	-5	-0.1
99-01	68.00	69.00	1.00	289108	-5	0.3
99-01	69.00	70.00	1.00	289109	-5	1.3
99-01	70.00	71.00	1.00	289110	-5	1.1
99-01	71.00	72.00	1.00	289111	-5	0.4
99-01	72.00	73.00	1.00	289112	76	2.6
99-01	73.00	74.00	1.00	289113	51	17.3
99-01	74.00	75.00	1.00	289114	24	7.4
99-01	75.00	76.00	1.00	289115	-5	0.5
99-01	76.00	77.00	1.00	289116	-5	0.6
99-01	95.00	96.00	1.00	289117	5	2.6
99-01	96.00	97.00	1.00	289118	5	1.6
99-01	97.00	98.00	1.00	289119	-5	0.1
99-01	98.00	99.00	1.00	289120	-5	1.2
99-01	99.00	100.00	1.00	289121	-5	2.7
99-01	100.00	101.00	1.00	289122	10	6.2
99-01	101.00	102.00	1.00	289123	-5	2.3
99-01	102.00	103.00	1.00	289124	-5	5.6
99-01	103.00	104.00	1.00	289125	-5	1.1
99-01	104.00	105.00	1.00	289126	-5	0.7
99-01	105.00	106.00	1.00	289127	-5	0.5
99-01	106.00	106.68	0.68	289128	-5	0.7
99-02	7.93	10.00	2.07	289129	-5	0.9
99-02	10.00	12.00	2.00	289130	-5	0.9
99-02	12.00	14.00	2.00	289131	-5	0.6
99-02	14.00	16.00	2.00	289132	-5	2.4
99-02	16.00	18.00	2.00	289133	-5	0.7
99-02	18.00	20.00	2.00	289134	-5	1.8
99-02	20.00	22.00	2.00	289135	8	11.8
99-02	22.00	24.00	2.00	289136	-5	0.2
99-02	48.00	49.00	1.00	289137	6	2.4
99-02	49.00	50.00	1.00	289138	5	1.7
99-02	50.00	51.00	1.00	289139	5	1.5
99-02	51.00	53.00	2.00	289140	8	2.6
99-02	53.00	55.00	2.00	289141	-5	0.4
99-02	55.00	57.00	2.00	289142	-5	0.2
99-02	57.00	59.00	2.00	289143	-5	1.2
99-02	59.00	61.00	2.00	289144	-5	0.3
99-02	71.00	72.00	1.00	289145	-5	1.3
99-02	72.00	73.00	1.00	289146	5	5.9
99-02	73.00	74.00	1.00	289147	-5	5.1

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Assay Results

Drill Hole No.	From (m)	To (m)	Interval (m)	Sample No.	Gold (ppb)	Silver (ppm)
99-02	74.00	75.00	1.00	289148	9	64.0
99-02	75.00	77.00	2.00	289149	-5	1.6
99-02	77 00	79.00	2.00	289150	-5	0.9
99-02	79.00	81.00	2.00	289151	-5	1.2
99-02	81.00	83.00	2.00	289152	-5	1.6
99-02	83.00	84.00	1.00	289153	-5	1.9
99-02	84.00	85.00	1.00	289154	48	1.7
99-02	85.00	87.00	2.00	289155	-5	0.6
99-02	87.00	89.00	2.00	289156	-5	1.7
99-02	89.00	90.50	1.50	289157	-5	4 8
99-02	90.50	91.00	0.50	289158	14	14.2
99-02	91.00	92.00	1.00	289159	-5	4.6
99-02	92.00	94.00	2.00	289160	-5	0.6
99-03	7.93	10.00	2.07	289161	-5	1.4
99-03	10.00	12.00	2.00	289162	2470	35.4
99-03	12.00	14.00	2.00	289163	-5	1.0
99-03	14.00	16.00	2.00	289164	5	0.5
99-03	16.00	18.00	2.00	289165	-5	1.2
99-03	18.00	20.00	2.00	289166	-5	4.9
99-03	20.00	22.00	2.00	289167	-5	0.3
99-03	22.00	24.00	2.00	289168	13	0.3
99-03	24.00	26.00	2.00	289169	-5	0.4
99-03	26.00	28.00	2.00	289170	9	1.7
99-03	28.00	30.00	2.00	289171	-5	0.9
99-03	30.00	32.00	2.00	289172	-5	0.4
99-03	32.00	34.00	2.00	289173	-5	0.1
99-03	34.00	36.00	2.00	289174	-5	0.1
99-03	36.00	38.00	2.00	289175	5	2.0
99-03	38.00	40.00	2.00	289176	-5	0.7
99-03	40.00	42.00	2.00	289177	-5	0.3
99-03	42.00	43.00	1.00	289178	5	1.0
99-03	43.00	44.00	1.00	289179	5	5.1
99-03	44.00	45.00	1.00	289180	45	8.8
99-03	45.00	46.00	1.00	289181	33	12.6
99-03	46.00	47.00	1.00	289182	6	29.0
99-03	47.00	48.00	1.00	289183	42	38.4
99-03	48.00	50.00	2.00	289184	-5	9.4
99-03	50.00	52.00	2.00	289185	13	5.5
99-03	52.00	54.00	2.00	289186	-5	0.5
99-03	54.00	56.00	2.00	289187	7	0.1
99-03	56.00	57.00	1.00	289188	-5	12.2
99-03	57.00	58.00	1.00	289189	22	72.3
99-03	58.00	59.00	1.00	289190	-5	1.9
99-03	59.00	60.00	1.00	289191	-5	0.1
99-03	60.00	62.00	2.00	289192	-5	-0.1
99-03	62.00	64.00	2.00	289193	-5	0.1
99-03	64.00	65.00	1.00	289194	5	1.0

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Assay Results

Drill Hole No.	From (m)	To (m)	Interval (m)	Sample No.	Gold (ppb)	Silver (ppm)
99-03	65.00	66.00	1.00	289195	-5	0.3
99-03	66.00	68.00	2.00	289196	5	1.3
99-03	68.00	70.00	2.00	289197	-5	1.9
99-03	70.00	72.00	2.00	289198	-5	0.7
99-03	72.00	74.00	2.00	289199	-5	0.1
99-03	74.00	76.00	2.00	289200	-5	-0.1
99-03	76.00	78.00	2.00	289201	-5	1.9
99-03	78.00	78.50	0.50	289202	-5	0.8
99-03	78.50	79.00	0.50	289203	-5	0.6
99-03	79.00	80.00	1.00	289204	-5	0.1
99-03	80.00	82.00	2.00	289205	-5	0.2
99-03	82.00	84.00	2.00	289206	-5	1.5
99-03	84.00	86.00	2.00	289207	-5	1.1
99-03	86.00	88.00	2.00	289208	-5	0.8
99-03	88.00	90.00	2.00	289209	-5	1.7
99-03	90.00	92.00	2.00	289210	-5	0.2
99-03	92.00	93.00	1.00	289211	147	71.6
99-03	93.00	94.00	1.00	289212	18	4.1
99-03	94.00	95.00	1.00	289213	-5	0.4
99-03	95.00	97.00	2.00	289214	85	32.9
99-03	97.00	99.00	2.00	289215	25	2.3
99-03	99.00	101.00	2.00	289216	-5	6.9
99-03	101.00	102.00	1.00	289217	36	6.0
99-03	102.00	103.00	1.00	289218	22	1.8
99-03	103.00	104.00	1.00	289219	30	7.3
99-03	104.00	105 00	1.00	289220	31	5.6
99-03	105.00	106.00	1.00	289221	20	3.7
99-03	106.00	107.00	1.00	289222	132	0.8
99-03	107.00	108.00	1.00	289223	14	1.4
99-03	108.00	110.00	2.00	289224	-5	1.3
99-03	110.00	112.00	2.00	289225	-5	0.4
99-03	112.00	114.00	2.00	289226	-5	0.4
99-03	114.00	116.00	2.00	289227	-5	0.6
99-03	116.00	117.50	1.50	289228	-5	0.3
99-03	124.00	126.00	2.00	289229	-5	0.3
99-03	126.00	128.00	2.00	289230	6	2.4
99-03	128.00	130.00	2.00	289231	-5	0.8
99-03	130.00	131.06	1.06	289232	-5	0.2
99-04	9.14	12.00	2.86	289233	-5	0.3
99-04	12.00	14.00	2.00	289234	-5	0.3
99-04	14.00	16.00	2.00	289235	-5	0.3
99-04	16.00	18.00	2.00	289236	11	0.5
99-04	18.00	20.00	2.00	289237	-5	0.3
99-04	20.00	22.00	2.00	289238	-5	0.5
99-04	22.00	23.00	1.00	289239	20	0.8
99-04	23.00	24.00	1.00	289240	-5	-0.1
99-04	24.00	26.00	2.00	289241	6	0.3

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Assay Results

Drill Hole No.	From (m)	To (m)	Interval (m)	Sample No.	Gold (ppb)	Silver (ppm)
99-04	26.00	27.00	1.00	289242	-5	0.2
99-04	27.00	28.00	1.00	289243	12	0.5
99-04	28.00	29.00	1.00	289244	-5	0.2
99-04	29.00	30.00	1.00	289245	-5	-0.1
99-04	30.00	32.00	2.00	289246	-5	0.1
99-04	32.00	34.00	2.00	289247	-5	0.4
99-04	34.00	35.00	1.00	289248	-5	0.4
99-04	35.00	36.00	1.00	289249	1103	6.9
99-04	36.00	38.00	2.00	289250	-5	0.5
99-04	38.00	40.00	2.00	289251	-5	1.0
99-04	40.00	42.00	2.00	289252	-5	0.1
99-04	42.00	44.00	2.00	289253	-5	1.4
99-04	44.00	46.00	2.00	289254	-5	-0.1
99-04	46.00	48.00	2.00	289255	-5	0.4
99-04	48.00	50.00	2.00	289256	-5	0.2
99-04	50.00	52.00	2.00	289257	13	2.2
99-04	52.00	54.00	2.00	289258	-5	-0.1
99-04	54.00	56.00	2.00	289259	-5	1.6
99-04	56.00	58.00	2.00	289260	-5	1.4
99-04	58.00	60.00	2.00	289261	-5	0.5
99-04	60.00	62.00	2.00	289262	-5	0.5
99-04	62.00	64.00	2.00	289263	-5	0.1
99-04	64.00	66.00	2.00	289264	-5	0.2
99-04	66.00	68.00	2.00	289265	-5	0.1
99-04	68.00	70.00	2.00	289266	-5	-0.1
99-04	70.00	71.00	1.00	289267	-5	0.4
99-04	71.00	72.00	1.00	289268	23	2.0
99-04	72.00	72.50	0.50	289269	-5	0.3
99-04	72.50	73.30	0.80	289270	77	2.8
99-04	73.30	74.15	0.85	289271	330	78.6
99-04	74.15	75.00	0.85	289272	221	75.6
99-04	75.00	76 00	1.00	289273	-5	0.8
99-04	76.00	78.00	2.00	289274	5	0.2
99-04	78.00	80.00	2.00	289275	-5	0.5
99-04	80.00	82.00	2.00	289276	5	1.2
99-05	12.19	14.00	1.81	289277	-5	1.7
99-05	14.00	16.00	2.00	289278	-5	0.1
99-05	16.00	18.00	2.00	289279	-5	0.2
99-05	18.00	18.50	0.50	289280	-5	0.9
99-05	18.50	19.00	0.50	289281	8	11.1
99-05	19.00	20.00	1.00	289282	-5	1.2
99-05	20.00	22.00	2.00	289283	-5	0.6
99-05	22.00	23.50	1.50	289284	-5	1.4
99-05	23.50	24.00	0.50	289285	11	21.9
99-05	24.00	24.50	0.50	289286	35	12.1
99-05	24.50	26.00	1.50	289287	-5	4.6
99-05	26.00	28 00	2.00	289288	-5	1.3

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Assay Results

Drill Hole No.	From (m)	To (m)	Interval (m)	Sample No.	Gold (ppb)	Silver (ppm)
99-05	28.00	29 00	1.00	289289	-5	1.1
99-05	29.00	30.00	1.00	289290	-5	0.8
99-05	30.00	32.00	2.00	289291	-5	0.4
99-05	32.00	34.00	2.00	289292	-5	0.4
99-05	34.00	36.00	2.00	289293	-5	4.7
99-05	36.00	38.00	2.00	289294	6	3.5
99-05	38.00	40.00	2.00	289295	-5	1.4
99-05	40.00	42 00	2.00	289296	-5	3.7
99-05	42.00	43.00	1.00	289297	-5	2.6
99-05	43.00	43.50	0.50	289298	6	8.4
99-05	43.50	44.00	0.50	289299	8	19.7
99-05	44.00	44.50	0.50	289300	5	13.5
99-05	44.50	45.00	0.50	289301	-5	3.6
99-05	45.00	45.50	0.50	289302	11	11.4
99-05	45.50	46.00	0.50	289303	1814	71.3
99-05	46.00	47.00	1.00	289304	16	10.2
99-05	47.00	48.00	1.00	289305	17	12.9
99-05	48.00	49.00	1.00	289306	-5	8.9
99-05	49.00	50.00	1.00	289307	5	11.2
99-05	50.00	51.00	1.00	289308	5	3.1
99-05	51.00	52.00	1.00	289309	26	11.3
99-05	52.00	53.00	1.00	289310	39	31.1
99-05	53.00	54.00	1.00	289311	25	7.7
99-05	54.00	55.00	1.00	289312	5	3.2
99-05	55 00	56.00	1.00	289313	11	6.6
99-05	56.00	57.00	1.00	289314	-5	2.4
99-05	57.00	58.00	1.00	289315	10	7.1
99-05	58.00	58.50	0.50	289316	67	32.1
99-05	58.50	59.00	0.50	289317	41	31.7
99-05	59.00	59.50	0.50	289318	24	25.7
99-05	59.50	60.00	0.50	289319	57	67.4
99-05	60.00	60.50	0.50	289320	78	24.6
99-05	60.50	61.00	0.50	289321	70	36.3
99-05	61.00	61.50	0.50	289322	51	70.4
99-05	61.50	62.00	0.50	289323	63	23.4
99-05	62.00	62.50	0.50	289324	164	69.3
99-05	62.50	63.00	0.50	289325	33	11.7
99-05	63.00	63.50	0.50	289326	70	6.7
99-05	63.50	64.00	0.50	289327	39	3.3
99-05	64.00	64.50	0.50	289328	174	16.5
99-05	64.50	65.00	0.50	289329	480	73.5
99-05	65.00	66.00	1.00	289330	89	4.6
99-05	66.00	67.00	1.00	289331	-5	2.4
99-05	67.00	68.00	1.00	289332	11	5.0
99-05	68.00	69.00	1.00	289333	-5	5.0
99-05	69.00	70.00	1.00	289334	-5	2.5
99-05	70.00	71.00	1.00	289335	-5	0.4

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Assay Results

Drill Hole No.	From (m)	To (m)	Interval (m)	Sample No.	Gold (ppb)	Silver (ppm)
99-05	71.00	72.00	1.00	289336	-5	0.5
99-05	72.00	74.00	2.00	289337	9	2.5
99-05	74.00	76.00	2.00	289338	7	7.4
99-05	76.00	78.00	2.00	289339	-5	3.2
99-05	78.00	80.00	2.00	289340	-5	0.7
99-05	80.00	82.00	2.00	289341	-5	3.0
99-05	82.00	83.72	1.72	289342	6	1.1
99-06	6.71	8.00	1.29	289343	-5	0.2
99-06	8.00	10.00	2.00	289344	-5	0.2
99-06	10.00	12.00	2.00	289345	-5	0.1
99-06	12.00	14.00	2.00	289346	-5	0.3
99-06	14.00	16.00	2.00	289347	-5	-0.1
99-06	16.00	18.00	2.00	289348	-5	0.2
99-06	18.00	20.00	2.00	289349	-5	-0.1
99-06	20.00	22.00	2.00	289350	-5	-0.1
99-06	22.00	24.00	2.00	289351	-5	-0.1
99-06	24.00	26.00	2.00	289352	-5	-0.1
99-06	26.00	28.00	2.00	289353	-5	0.3
99-06	28.00	30.00	2.00	289354	-5	-0.1
99-06	30.00	32.00	2.00	289355	-5	0.5
99-06	32.00	34.00	2.00	289356	6	2.1
99-06	34.00	36.00	2.00	289357	-5	1.5
99-06	36.00	38.00	2.00	289358	-5	2.1
99-06	38.00	40.00	2.00	289359	-5	0.9
99-06	40.00	42.00	2.00	289360	-5	0.7
99-06	42.00	44.00	2.00	289361	-5	2.3
99-06	44.00	46.00	2.00	289362	-5	-0.1
99-06	46.00	48.00	2.00	289363	-5	0.3
99-06	48.00	50.00	2.00	289364	-5	0.3
99-06	50.00	52.00	2.00	289365	-5	0.2
99-06	52.00	54.00	2.00	289366	-5	0.3
99-06	54.00	56.00	2.00	289367	-5	0.1
99-06	56.00	58.00	2.00	289368	-5	0.3
99-06	58.00	60.00	2.00	289369	-5	2.9
99-06	60.00	62.00	2.00	289370	-5	1.3
99-06	62.00	64.00	2.00	289371	6	0.3
99-06	64.00	66.00	2.00	289372	-5	-0.1
99-07	6.10	9.14	3.04	289373	-5	0.2
99-07	9.14	10.12	0.98	289374	-5	0.7
99-08	24.38	26.00	1.62	289375	47	48.9
99-08	26.00	28.00	2.00	289376	43	37.6
99-08	28.00	30.00	2.00	289377	45	12.9
99-08	30.00	32.00	2.00	289378	14	7.2
99-08	32.00	34.00	2.00	289379	22	17.2
99-08	34.00	36.00	2.00	289380	23	5.1
99-08	36.00	38.00	2.00	289381	-5	0.8
99-08	38.00	40.00	2.00	289382	61	47.7

APPENDIX IV

JRV PROPERTY

1999 Diamond Drill Hole Assay Results

Drill Hole No.	From (m)	To (m)	Interval (m)	Sample No.	Gold (ppb)	Silver (ppm)
99-08	40.00	42.00	2.00	289383	8	2.4
99-08	42.00	44.00	2.00	289384	10	5.2
99-08	44.00	46.00	2.00	289385	-5	0.4
99-08	46.00	48.00	2.00	289386	-5	0.5
99-08	48.00	50.00	2.00	289387	-5	0.2
99-08	50.00	52.00	2.00	289388	-5	1.7
99-08	52.00	54.00	2.00	289389	-5	3.8
99-08	54.00	56.00	2.00	289390	5	4.6
99-08	56.00	58.00	2.00	289391	30	37.6
99-08	58.00	60.00	2.00	289392	-5	5.8
99-08	60.00	62.00	2.00	289393	37	46.9
99-08	62.00	64.00	2.00	289394	12	17.9
99-08	64.00	66.00	2.00	289395	5	2.9
99-08	66.00	68.00	2.00	289396	-5	0.2
99-08	68.00	70.00	2.00	289397	-5	0.1
99-08	70.00	72.00	2.00	289398	-5	0.1
99-08	72.00	74.00	2.00	289399	-5	-0.1
99-08	74.00	76.00	2.00	289400	-5	0.2
99-08	76.00	78.00	2.00	289401	12	0.6
99-08	78.00	80.00	2.00	289402	-5	0.1
99-08	80.00	82.00	2.00	289403	-5	0.1
99-08	82.00	84.00	2.00	289404	-5	0.2
99-08	84.00	86.00	2.00	289405	-5	0.2
99-08	86.00	88.00	2.00	289406	-5	0.4
99-08	88.00	90.00	2.00	289407	-5	-0.1
99-08	90.00	92.00	2.00	289408	-5	0.4
99-08	92.00	94.00	2.00	289409	9	4.3
99-08	94.00	96.00	2.00	289410	-5	6.4
99-08	96.00	98.00	2.00	289411	18	1.9
99-08	98.00	100.00	2.00	289412	7	2.5
99-08	100.00	102.00	2.00	289413	19	36.0
99-08	102.00	104.00	2.00	289414	45	246.0
99-08	104.00	106.00	2.00	289415	24	7.2
99-08	106.00	108.00	2.00	289416	11	22.7
99-08	108.00	108 90	0.90	289417	79	78.2
99-08	108.90	110.00	1.10	289418	-5	7.2
99-09	72.40	72.90	0.50	289419	316	25.9

APPENDIX V

Certificates of Analysis

Northern Analytical Laboratories Ltd. and TSL Labs Ltd.

ROCK SAMPLES

Northern Analytical Laboratories ltd.

105 Copper Road
Whitehorse, Yukon
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E-mail: NAL@hypertech.yk.ca

09/07/99

Certificate of Analysis

of pages (not including this page): 2

Pacific Ridge Exploration

WO# 05675

Certified by _____
John Reeve (Senior Chemist)

Date Received: 30/06/99

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
r	57	rock	Crush to -10 mesh; riffle split 200g; pulverize to -100 mesh

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Au	ppb	Gold	G: FA/AAS	15g FA / aqua regia	5	7000
Ag	ppm	Silver	G: AAS (BC)	aqua regia	0.1	50.0
Au	g/mt	Gold	A: FA/AAS	1AT FA / aqua regia	0.03	13.5
Ag	g/mt	Silver	A: AAS (BC)	aqua regia	1.0	10000

AAS = atomic absorption spectrophotometry
FA = fire assay
BC = background correction applied

1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

Northern Analytical Laboratories ltd.

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Pacific Ridge Exploration WO# 05675

Certified by

	Sample #	Au ppb	Ag ppm	Au g/mt	Ag g/mt
r	24551	<5	0.2		
r	24552	<5	0.1		
r	24553	<5	<0.1		
r	24554	95	0.8		
r	24555	<5	0.3		
r	24556	520	1.1		
r	24557	<5	0.1		
r	24558	198	1.8		
r	24559	17	0.3		
r	24560	<5	0.3		
r	24561	<5	0.1		
r	24562	<5	<0.1		
r	24751			1.54	99.0
r	24752			7.27	515.0
r	24753	28	2.6		
r	24754	12	1.5		
r	24755	9	0.5		
r	24756	11	3.6		
r	24757	86	19.7		
r	24758	983	>50.0		
r	24759	9	47.0		
r	24760	203	2.4		
r	24761	10	0.2		
r	24762	8	0.1		
r	24763	10	<0.1		
r	24764	<5	<0.1		
r	24765	<5	0.1		
r	24766	10	0.1		
r	24767			0.58	1277.0
r	24768			0.21	54.3

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Pacific Ridge Exploration WO# 05675

Certified by

	Sample #	Au ppb	Ag ppm	Au g/mt	Ag g/mt
r	24769			0.17	149.3
r	24770			0.17	912.0
r	24771			0.07	15.4
r	24772			0.75	50.0
r	24773			1.68	53.8
r	24774			0.03	27.3
r	24775			0.14	525.0
r	24776			0.07	86.6
r	24777			0.07	172.6
r	24778			0.07	27.8
r	24779			1.27	29.0
r	24780			0.21	165.0
r	24781			<0.03	8.2
r	24782			0.17	37.4
r	24783			0.07	554.0
r	24784			3.39	850.0
r	24785			0.27	72.2
r	24786			0.10	9.9
r	24787			0.03	12.1
r	24788			0.14	12.0
r	24789			0.69	32.4
r	24790			10.97	16.1
r	24791			0.14	24.3
r	24792			0.10	170.8
r	24793			0.10	49.2
r	24794			0.03	6.3
r	24795			<0.03	<1.0

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04/08/99

Certificate of Analysis

of pages (not including this page): 1

Pacific Ridge

WO# 05705a

Certified by _____
John Reeve (Senior Chemist)

Date Received: 30/07/99

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
p	2	pulp	No further preparation

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Ag	g/mt	Silver	A: AAS (BC)	aqua regia	1.0	10000

AAS = atomic absorption spectrophotometry BC = background correction applied

1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

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Pacific Ridge WO# 05705a

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	Sample #	Ag g/mt
p	25012	159.4
p	25013	86.2

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04/08/99

Certificate of Analysis

of pages (not including this page): 1

Pacific Ridge

WO# 05707

Certified by _____
John Reeve (Senior Chemist)

Date Received: 28/07/99

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
r	27	rock	Crush to -10 mesh; riffle split 200g; pulverize to -100 mesh

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Au	ppb	Gold	G: FA/AAS	15g FA / aqua regia	5	7000
Ag	ppm	Silver	G: AAS (BC)	aqua regia	0.1	50.0
Ag	g/mt	Silver	A: AAS (BC)	aqua regia	1.0	10000

AAS = atomic absorption spectrophotometry
FA = fire assay
BC = background correction applied

1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

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Pacific Ridge WO# 05707

Certified by

	Sample #	Au ppb	Ag ppm	Ag g/mt
r	289021	<5	2.2	
r	289022	<5	3.6	
r	289023	20	7.6	
r	289024	91	14.6	
r	289025	24	10.2	
r	289026	906	>50.0	50.5
r	289027	3004	>50.0	276.0
r	289028	1281	4.9	
r	289029	13	2.8	
r	289030	15	1.6	
r	289031	6	1.5	
r	289032	47	1.3	
r	289033	11	2.1	
r	289034	9	1.4	
r	289035	16	2.1	
r	289036	<5	1.0	
r	289037	<5	2.5	
r	289038	<5	0.8	
r	289039	7	3.2	
r	289040	5	0.9	
r	289041	12	4.5	
r	289042	7	1.7	
r	289043	<5	2.6	
r	289044	1970	>50.0	117.4
r	289045	2568	>50.0	1186.0
r	289046	6495	>50.0	786.0
r	289047	17	7.4	

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20/08/99

Certificate of Analysis

# of pages (not including this page): 5

Pacific Ridge

WO# 05727

Certified by _____
John Reeve (Senior Chemist)

Date Received: 17/08/99

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
dc	132	drill core	Crush to -10 mesh; riffle split 200g; pulverize to -100 mesh

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Au	ppb	Gold	G: FA/AAS	15g FA / aqua regia	5	7000
Ag	ppm	Silver	G: AAS (BC)	aqua regia	0.1	50.0

AAS = atomic absorption spectrophotometry
FA = fire assay
BC = background correction applied

1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

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Pacific Ridge WO# 05727

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	Sample #	Au ppb	Ag ppm
dc	289101	6	3.0
dc	289102	16	6.4
dc	289103	8	4.6
dc	289104	7	9.5
dc	289105	<5	0.6
dc	289106	20	1.5
dc	289107	<5	<0.1
dc	289108	<5	0.3
dc	289109	<5	1.3
dc	289110	<5	1.1
dc	289111	<5	0.4
dc	289112	76	2.6
dc	289113	51	17.3
dc	289114	24	7.4
dc	289115	<5	0.5
dc	289116	<5	0.6
dc	289117	5	2.6
dc	289118	5	1.6
dc	289119	<5	0.1
dc	289120	<5	1.2
dc	289121	<5	2.7
dc	289122	10	6.2
dc	289123	<5	2.3
dc	289124	<5	5.6
dc	289125	<5	1.1
dc	289126	<5	0.7
dc	289127	<5	0.5
dc	289128	<5	0.7
dc	289129	<5	0.9
dc	289130	<5	0.9

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	Sample #	Au ppb	Ag ppm
dc	289131	<5	0.6
dc	289132	<5	2.4
dc	289133	<5	0.7
dc	289134	<5	1.8
dc	289135	8	11.8
dc	289136	<5	0.2
dc	289137	6	2.4
dc	289138	5	1.7
dc	289139	5	1.5
dc	289140	8	2.6
dc	289141	<5	0.4
dc	289142	<5	0.2
dc	289143	<5	1.2
dc	289144	<5	0.3
dc	289145	<5	1.3
dc	289146	5	5.9
dc	289147	<5	5.1
dc	289148	9	>50.0
dc	289149	<5	1.6
dc	289150	<5	0.9
dc	289151	<5	1.2
dc	289152	<5	1.6
dc	289153	<5	1.9
dc	289154	48	1.7
dc	289155	<5	0.6
dc	289156	<5	1.7
dc	289157	<5	4.8
dc	289158	14	14.2
dc	289159	<5	4.6
dc	289160	<5	0.6

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	Sample #	Au ppb	Ag ppm
dc	289161	<5	1.4
dc	289162	2470	35.4
dc	289163	<5	1.0
dc	289164	5	0.5
dc	289165	<5	1.2
dc	289166	<5	4.9
dc	289167	<5	0.3
dc	289168	13	0.3
dc	289169	<5	0.4
dc	289170	9	1.7
dc	289171	<5	0.9
dc	289172	<5	0.4
dc	289173	<5	0.1
dc	289174	<5	0.1
dc	289175	5	2.0
dc	289176	<5	0.7
dc	289177	<5	0.3
dc	289178	5	1.0
dc	289179	5	5.1
dc	289180	45	8.8
dc	289181	33	12.6
dc	289182	6	29.0
dc	289183	42	38.4
dc	289184	<5	9.4
dc	289185	13	5.5
dc	289186	<5	0.5
dc	289187	7	0.1
dc	289188	<5	12.2
dc	289189	22	>50.0
dc	289190	<5	1.9

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	Sample #	Au ppb	Ag ppm
dc	289191	<5	0.1
dc	289192	<5	<0.1
dc	289193	<5	0.1
dc	289194	5	1.0
dc	289195	<5	0.3
dc	289196	5	1.3
dc	289197	<5	1.9
dc	289198	<5	0.7
dc	289199	<5	0.1
dc	289200	<5	<0.1
dc	289201	<5	1.9
dc	289202	<5	0.8
dc	289203	<5	0.6
dc	289204	<5	0.1
dc	289205	<5	0.2
dc	289206	<5	1.5
dc	289207	<5	1.1
dc	289208	<5	0.8
dc	289209	<5	1.7
dc	289210	<5	0.2
dc	289211	147	>50.0
dc	289212	18	4.1
dc	289213	<5	0.4
dc	289214	85	32.9
dc	289215	25	2.3
dc	289216	<5	6.9
dc	289217	36	6.0
dc	289218	22	1.8
dc	289219	30	7.3
dc	289220	31	5.6

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	Sample #	Au ppb	Ag ppm
dc	289221	20	3.7
dc	289222	132	0.8
dc	289223	14	1.4
dc	289224	<5	1.3
dc	289225	<5	0.4
dc	289226	<5	0.4
dc	289227	<5	0.6
dc	289228	<5	0.3
dc	289229	<5	0.3
dc	289230	6	2.4
dc	289231	<5	0.8
dc	289232	<5	0.2

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26/08/99

Certificate of Analysis

of pages (not including this page): 1

Pacific Ridge

WO# 05727a

Certified by _____
John Reeve (Senior Chemist)

Date Received: 20/08/99

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
p	3	pulp	No further preparation

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Ag	g/mt	Silver	A: AAS (BC)	aqua regia	1.0	10000

AAS = atomic absorption spectrophotometry BC = background correction applied

1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

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	Sample #	Ag g/mt
p	289148	64.0
p	289189	72.3
p	289211	71.6

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Pacific Ridge WO#05705a

Certified by _____

	Sample #	Ag g/mt
p	25012	159.4
p	25013	86.2

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30/08/99

Certificate of Analysis

of pages (not including this page): 8

Pacific Ridge

WO# 05731

Certified by _____
John Reeve (Senior Chemist)

Date Received: 0.0040404

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
r	29	rock	Crush to -10 mesh; riffle split 200g; pulverize to -100 mesh
dc	186	drill core	Crush to -10 mesh; riffle split 200g; pulverize to -100 mesh

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Au	ppb	Gold	G: FA/AAS	15g FA / aqua regia	5	7000
Ag	ppm	Silver	G: AAS (BC)	aqua regia	0.1	50.0
Au grav	g/mt	Gold	A: FA/Gravimetric	1AT FA	0.5	#
Ag	g/mt	Silver	A: AAS (BC)	aqua regia	1.0	10000

AAS = atomic absorption spectrophotometry
FA = fire assay
BC = background correction applied

No reporting limit.

1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

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Pacific Ridge WO# 05731

Certified by J. L R

	Sample #	Au ppb	Ag ppm	Au grav g/mt	Ag g/mt
dc	289233	<5	0.3		
dc	289234	<5	0.3		
dc	289235	<5	0.3		
dc	289236	11	0.5		
dc	289237	<5	0.3		
dc	289238	<5	0.5		
dc	289239	20	0.8		
dc	289240	<5	<0.1		
dc	289241	6	0.3		
dc	289242	<5	0.2		
dc	289243	12	0.5		
dc	289244	<5	0.2		
dc	289245	<5	<0.1		
dc	289246	<5	0.1		
dc	289247	<5	0.4		
dc	289248	<5	0.4		
dc	289249	1103	6.9		
dc	289250	<5	0.5		
dc	289251	<5	1.0		
dc	289252	<5	0.1		
dc	289253	<5	1.4		
dc	289254	<5	<0.1		
dc	289255	<5	0.4		
dc	289256	<5	0.2		
dc	289257	13	2.2		
dc	289258	<5	<0.1		
dc	289259	<5	1.6		
dc	289260	<5	1.4		
dc	289261	<5	0.5		
dc	289262	<5	0.5		

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	Sample #	Au ppb	Ag ppm	Au grav g/mt	Ag g/mt
dc	289263	<5	0.1		
dc	289264	<5	0.2		
dc	289265	<5	0.1		
dc	289266	<5	<0.1		
dc	289267	<5	0.4		
dc	289268	23	2.0		
dc	289269	<5	0.3		
dc	289270	77	2.8		
dc	289271	330	>50.0		78.6
dc	289272	221	>50.0		75.6
dc	289273	<5	0.8		
dc	289274	5	0.2		
dc	289275	<5	0.5		
dc	289276	5	1.2		
dc	289277	<5	1.7		
dc	289278	<5	0.1		
dc	289279	<5	0.2		
dc	289280	<5	0.9		
dc	289281	8	11.1		
dc	289282	<5	1.2		
dc	289283	<5	0.6		
dc	289284	<5	1.4		
dc	289285	11	21.9		
dc	289286	35	12.1		
dc	289287	<5	4.6		
dc	289288	<5	1.3		
dc	289289	<5	1.1		
dc	289290	<5	0.8		
dc	289291	<5	0.4		
dc	289292	<5	0.4		

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	Sample #	Au ppb	Ag ppm	Au grav g/mt	Ag g/mt
dc	289293	<5	4.7		
dc	289294	6	3.5		
dc	289295	<5	1.4		
dc	289296	<5	3.7		
dc	289297	<5	2.6		
dc	289298	6	8.4		
dc	289299	8	19.7		
dc	289300	5	13.5		
dc	289301	<5	3.6		
dc	289302	11	11.4		
dc	289303	1814	>50.0		71.3
dc	289304	16	10.2		
dc	289305	17	12.9		
dc	289306	<5	8.9		
dc	289307	5	11.2		
dc	289308	5	3.1		
dc	289309	26	11.3		
dc	289310	39	31.1		
dc	289311	25	7.7		
dc	289312	5	3.2		
dc	289313	11	6.6		
dc	289314	<5	2.4		
dc	289315	10	7.1		
dc	289316	67	32.1		
dc	289317	41	31.7		
dc	289318	24	25.7		
dc	289319	57	>50.0		67.4
dc	289320	78	24.6		
dc	289321	70	36.3		
dc	289322	51	>50.0		70.4

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	Sample #	Au ppb	Ag ppm	Au grav g/mt	Ag g/mt
dc	289323	63	23.4		
dc	289324	164	>50.0		69.3
dc	289325	33	11.7		
dc	289326	70	6.7		
dc	289327	39	3.3		
dc	289328	174	16.5		
dc	289329	480	>50.0		73.5
dc	289330	89	4.6		
dc	289331	<5	2.4		
dc	289332	11	5.0		
dc	289333	<5	5.0		
dc	289334	<5	2.5		
dc	289335	<5	0.4		
dc	289336	<5	0.5		
dc	289337	9	2.5		
dc	289338	7	7.4		
dc	289339	<5	3.2		
dc	289340	<5	0.7		
dc	289341	<5	3.0		
dc	289342	6	1.1		
dc	289343	<5	0.2		
dc	289344	<5	0.2		
dc	289345	<5	0.1		
dc	289346	<5	0.3		
dc	289347	<5	<0.1		
dc	289348	<5	0.2		
dc	289349	<5	<0.1		
dc	289350	<5	<0.1		
dc	289351	<5	<0.1		
dc	289352	<5	<0.1		

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	Sample #	Au ppb	Ag ppm	Au grav g/mt	Ag g/mt
dc	289353	<5	0.3		
dc	289354	<5	<0.1		
dc	289355	<5	0.5		
dc	289356	6	2.1		
dc	289357	<5	1.5		
dc	289358	<5	2.1		
dc	289359	<5	0.9		
dc	289360	<5	0.7		
dc	289361	<5	2.3		
dc	289362	<5	<0.1		
dc	289363	<5	0.3		
dc	289364	<5	0.3		
dc	289365	<5	0.2		
dc	289366	<5	0.3		
dc	289367	<5	0.1		
dc	289368	<5	0.3		
dc	289369	<5	2.9		
dc	289370	<5	1.3		
dc	289371	6	0.3		
dc	289372	<5	<0.1		
dc	289373	<5	0.2		
dc	289374	<5	0.7		
dc	289375	47	48.9		
dc	289376	43	37.6		
dc	289377	45	12.9		
dc	289378	14	7.2		
dc	289379	22	17.2		
dc	289380	23	5.1		
dc	289381	<5	0.8		
dc	289382	61	47.7		

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	Sample #	Au ppb	Ag ppm	Au grav g/mt	Ag g/mt
dc	289383	8	2.4		
dc	289384	10	5.2		
dc	289385	<5	0.4		
dc	289386	<5	0.5		
dc	289387	<5	0.2		
dc	289388	<5	1.7		
dc	289389	<5	3.8		
dc	289390	5	4.6		
dc	289391	30	37.6		
dc	289392	<5	5.8		
dc	289393	37	46.9		
dc	289394	12	17.9		
dc	289395	5	2.9		
dc	289396	<5	0.2		
dc	289397	<5	0.1		
dc	289398	<5	0.1		
dc	289399	<5	<0.1		
dc	289400	<5	0.2		
dc	289401	12	0.6		
dc	289402	<5	0.1		
dc	289403	<5	0.1		
dc	289404	<5	0.2		
dc	289405	<5	0.2		
dc	289406	<5	0.4		
dc	289407	<5	<0.1		
dc	289408	<5	0.4		
dc	289409	9	4.3		
dc	289410	<5	6.4		
dc	289411	18	1.9		
dc	289412	7	2.5		

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	Sample #	Au ppb	Ag ppm	Au grav g/mt	Ag g/mt
dc	289413	19	36.0		
dc	289414	45	>50.0		246.0
dc	289415	24	7.2		
dc	289416	11	22.7		
dc	289417	79	>50.0		78.2
dc	289418	<5	7.2		
r	289048	<5	8.1		
r	289049	6	2.5		
r	289050	26	>50.0		175.4
r	289051	<5	36.8		
r	289052	<5	4.8		
r	289053	<5	9.3		
r	289054	6	3.2		
r	289055	7	0.5		
r	289056	167	5.4		
r	289057	760	44.7		
r	289058	221	0.6		
r	289059	1727	23.7		
r	289060	>7000	>50.0	6.69	478.0
r	289061	1805	>50.0		94.5
r	289062	1453	>50.0		92.6
r	289063	2604	>50.0		103.9
r	289064	5980	>50.0	5.69	2730.0
r	289065	45	>50.0		50.8
r	289066	15	6.9		
r	289067	5	3.5		
r	289068	5	1.7		
r	289069	<5	2.3		
r	289070	<5	0.6		
r	289071	<5	4.6		

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Certified by

	Sample #	Au ppb	Ag ppm	Au grav g/mt	Ag g/mt
r	289072	<5	5.0		
r	289073	<5	5.7		
r	289074	<5	12.7		
r	289075	<5	3.9		
r	289076	<5	6.4		

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9V-0298-PA1

Company: **Pacific Ridge Exploration Ltd.**
Project: Check Assays
Attn: Wayne Roberts

Aug-27-99

We *hereby certify* the following assay of 15 pulp samples submitted Aug-24-99 by Northern Analytical Lab.

Sample Name	Au g/tonne	Au g/tonne	Ag g/tonne	Ag g/tonne
289106	0.03		2.3	2.1
289108	0.01		0.4	
289109	0.01		1.6	
289114	0.03		8.8	
289122	0.02		6.0	
289135	0.02		11.2	
289138	0.02		1.3	
289148	0.02		64.0	
289154	0.06	0.05	2.1	
289158	0.02		17.5	17.3
289162	2.25	2.21	33.8	
289183	0.04		36.4	
289189	0.03		72.0	
289211	0.16		72.4	
289222	0.16		1.2	

Certified by _____

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8282 Sherbrooke St.
Vancouver, B.C.
V5X 4R6
Tel: (604) 327-3436 Fax: (604) 327-3423

TSL Assayers Saskatoon
#2 - 302 East 48th Street
Saskatoon, Saskatchewan
S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

TSL Assayers Swastika
1 Cameron Ave.
Swastika, Ontario
P0K 1T0
Tel: (705) 642-3244 Fax: (705) 642-3300

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23/07/99

Certificate of Analysis

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Pacific Ridge - JRV

WO# 05684

Certified by _____
John Reeve (Senior Chemist)

Date Received: 15/07/99

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
r	20	rock	Crush to -10 mesh; riffle split 200g; pulverize to -100 mesh
s	154	soil	Screen -80 mesh

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Au	ppb	Gold	G: FA/AAS	15g FA / aqua regia	5	7000
Au	g/mt	Gold	A: FA/AAS	30g FA / aqua regia	0.01	13.5
Au grav	g/mt	Gold	A: FA/Gravimetric	1AT FA	0.5	#
Ag	g/mt	Silver	A: AAS (BC)	aqua regia	1.0	10000

AAS = atomic absorption spectrophotometry
FA = fire assay
BC = background correction applied

No reporting limit.

1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

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28/09/99

Certificate of Analysis

of pages (not including this page): 1

Pacific Ridge

WO# 00008

Certified by _____
John Reeve (Senior Chemist)

Date Received: 13/09/99

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
r	1	rock	Crush to -10 mesh; riffle split 200g; pulverize to -100 mesh

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Au	ppb	Gold	G: FA/AAS	15g FA / aqua regia	5	7000
Ag	ppm	Silver	G: AAS (BC)	aqua regia	0.1	50.0

AAS = atomic absorption spectrophotometry
FA = fire assay
BC = background correction applied

1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

Northern
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105 Copper Road
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28/09/99 Certificate of Analysis

Pacific Ridge WO# 00008

Certified by

	Sample #	Au ppb	Ag ppm
r	289419	316	25.9

SOIL SAMPLES

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23/07/99 Certificate of Analysis

Pacific Ridge - JRV WO# 05684

Certified by

	Sample #		Au ppb	Au g/mt	Ag g/mt	Au grav g/mt
r	289001			4.73	835.0	
r	289002			5.74	360.0	
r	289003			5.11	174.7	
r	289004			2.43	76.0	
r	289005			4.25	1822.0	
r	289006			2.02	384.0	
r	289007			1.37	157.8	
r	289008			0.69	112.6	
r	289009			0.14	17.7	
r	289010			3.33	690.0	
r	289011			0.27	607.0	
r	289012			0.07	113.3	
r	289013			>13.50	626.0	15.43
r	289014			0.53	100.5	
r	289015			1.30	297.0	
r	289016			2.33	72.6	
r	289017			3.36	42.9	
r	289018			0.03	<1.0	
r	289019			7.41	459.0	7.20
r	289020			0.03	1.5	
s	10000N	10050E	5			
s	10000N	10100E	<5			
s	10000N	10150E	<5			
s	10000N	10200E	<5			
s	10000N	10250E	<5			
s	10000N	10300E	<5			
s	10000N	10350E	94			
s	10000N	10400E	<5			
s	10000N	10450E	<5			
s	10000N	10500E	<5			

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Pacific Ridge - JRV

WO# 05684

Certified by

	Sample #		Au ppb	Au g/mt	Ag g/mt	Au grav g/mt
s	10000N	10550E	<5			
s	10000N	10600E	<5			
s	10000N	10650E	6			
s	10000N	10700E	7			
s	10000N	10750E	62			
s	10000N	10800E	6			
s	10000N	10850E	<5			
s	10000N	10900E	5			
s	10000N	10950E	5			
s	10000N	11000E	5			
s	10100N	10050E	7			
s	10100N	10100E	5			
s	10100N	10150E	7			
s	10100N	10200E	<5			
s	10100N	10250E	5			
s	10100N	10300E	<5			
s	10100N	10350E	6			
s	10100N	10400E	<5			
s	10100N	10450E	<5			
s	10100N	10500E	6			
s	10100N	10550E	<5			
s	10100N	10600E	7			
s	10100N	10650E	5			
s	10100N	10700E	<5			
s	10100N	10750E	<5			
s	10100N	10800E	<5			
s	10100N	10850E	6			
s	10100N	10900E	5			
s	10100N	10950E	<5			
s	10100N	11000E	<5			

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Sample #			Au ppb	Au g/mt	Ag g/mt	Au grav g/mt
s	10200N	10050E	<5			
s	10200N	10100E	<5			
s	10200N	10150E	<5			
s	10200N	10200E	<5			
s	10200N	10250E	<5			
s	10200N	10300E	<5			
s	10200N	10350E	<5			
s	10200N	10400E	5			
s	10200N	10450E	<5			
s	10200N	10500E	<5			
s	10200N	10550E	<5			
s	10200N	10600E	<5			
s	10200N	10650E	<5			
s	10200N	10700E	<5			
s	10200N	10750E	5			
s	10200N	10800E	<5			
s	10200N	10850E	6			
s	10200N	10900E	<5			
s	10200N	10950E	<5			
s	10200N	11000E	5			
s	10300N	10050E	<5			
s	10300N	10100E	6			
s	10300N	10150E	<5			
s	10300N	10200E	<5			
s	10300N	10250E	5			
s	10300N	10300E	7			
s	10300N	10350E	<5			
s	10300N	10400E	5			
s	10300N	10450E	<5			
s	10300N	10500E	<5			

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	Sample #		Au ppb	Au g/mt	Ag g/mt	Au grav g/mt
s	10300N	10550E	<5			
s	10300N	10600E	8			
s	10300N	10650E	<5			
s	10300N	10700E	<5			
s	10300N	10750E	<5			
s	10300N	10800E	<5			
s	10300N	10850E	<5			
s	10300N	10900E	<5			
s	10300N	10950E	6			
s	10300N	11000E	7			
s	10300N	11050E	<5			
s	10300N	11100E	<5			
s	10300N	11150E	<5			
s	10300N	11200E	<5			
s	10300N	11250E	<5			
s	10300N	11300E	<5			
s	10300N	11350E	<5			
s	10300N	11400E	<5			
s	10300N	11450E	6			
s	10300N	11500E	30			
s	10400N	10050E	7			
s	10400N	10100E	<5			
s	10400N	10150E	<5			
s	10400N	10200E	<5			
s	10400N	10250E	<5			
s	10400N	10300E	6			
s	10400N	10350E	31			
s	10400N	10400E	6			
s	10400N	10450E	<5			
s	10400N	10500E	10			

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Sample #			Au ppb	Au g/mt	Ag g/mt	Au grav g/mt
s	10400N	10550E	7			
s	10400N	10600E	<5			
s	10400N	10650E	5			
s	10400N	10700E	5			
s	10400N	10800E	<5			
s	10400N	10850E	22			
s	10400N	10900E	<5			
s	10400N	10950E	<5			
s	10400N	11000E	8			
s	10400N	11050E	6			
s	10400N	11100E	<5			
s	10400N	11150E	<5			
s	10400N	11200E	<5			
s	10400N	11250E	5			
s	10400N	11300E	<5			
s	10400N	11350E	<5			
s	10400N	11400E	<5			
s	10400N	11450E	7			
s	10400N	11500E	6			
s	10500N	9700E	<5			
s	10500N	9750E	5			
s	10500N	9800E	16			
s	10500N	9850E	8			
s	10500N	9900E	<5			
s	10500N	9950E	5			
s	10500N	10000E	7			
s	10500N	10050E	<5			
s	10500N	10100E	<5			
s	10500N	10150E	7			
s	10500N	10200E	48			

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	Sample #		Au ppb	Au g/mt	Ag g/mt	Au grav g/mt
s	10500N	10250E	41			
s	10500N	10300E	<5			
s	10500N	10350E	9			
s	10500N	10400E	12			
s	10500N	10450E	22			
s	10500N	10500E	7			
s	10500N	10550E	5			
s	10500N	10600E	7			
s	10500N	10650E	7			
s	10500N	10700E	5			
s	10500N	10750E	<5			
s	10500N	10800E	7			
s	10500N	10850E	<5			
s	10500N	10900E	5			
s	10500N	10950E	5			
s	10500N	11100E	6			
s	10500N	11150E	5			
s	10500N	11200E	<5			
s	10500N	11250E	<5			
s	10500N	11300E	7			
s	10500N	11350E	<5			
s	10500N	11400E	8			
s	10500N	11450E	8			
s	10500N	11500E	5			

CERTIFICATF F ANALYSIS
iPL 99G0625

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Fax (604) 879-7808

Northern Analytical Laboratories — **154 Samples** — Out: Jul 23, 1999 In: Jul 23, 1999 [062520:05:44:99072399]

Project : W.O. 05684
Shipper : Norm Smith
Shipment: PO#: 054598
Analysis:
ICP(AqR)30

Comment: PACIFIC RIDGE

CODE	AMOUNT	TYPE	PREPARATION DESCRIPTION	PULP	REJECT
B311	154	Pulp	Pulp received as it is, no sample prep.	12M/Dis	00M/Dis

NS=No Sample Rep=Replicate M=Month Dis=Discard

Document Distribution

1 Northern Analytical Laboratories
105 Copper Road
Whitehorse
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Canada
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Ph:867/668-4968
Fx:867/668-4890
Em:NAL@hypertech.yk.ca

Analytical Summary

##	Code	Method	Units	Description	Element	Limit Low	Limit High
01	0721	ICP	ppm	Ag ICP	Silver	0.1	100.0
02	0711	ICP	ppm	Cu ICP	Copper	1	20000
03	0714	ICP	ppm	Pb ICP	Lead	2	20000
04	0730	ICP	ppm	Zn ICP	Zinc	1	20000
05	0703	ICP	ppm	As ICP	Arsenic	5	10000
06	0702	ICP	ppm	Sb ICP	Antimony	5	1000
07	0732	ICP	ppm	Hg ICP	Mercury	3	10000
08	0717	ICP	ppm	Mo ICP	Molydenum	1	1000
09	0747	ICP	ppm	Tl ICP (Incomplete Digestion)	Thallium	10	1000
10	0705	ICP	ppm	Bi ICP	Bismuth	2	10000
11	0707	ICP	ppm	Cd ICP	Cadmium	0.1	100.0
12	0710	ICP	ppm	Co ICP	Cobalt	1	10000
13	0718	ICP	ppm	Ni ICP	Nickel	1	10000
14	0704	ICP	ppm	Ba ICP (Incomplete Digestion)	Barium	2	10000
15	0727	ICP	ppm	W ICP (Incomplete Digestion)	Tungsten	5	1000
16	0709	ICP	ppm	Cr ICP (Incomplete Digestion)	Chromium	1	10000
17	0729	ICP	ppm	V ICP	Vanadium	2	10000
18	0716	ICP	ppm	Mn ICP	Manganese	1	10000
19	0713	ICP	ppm	La ICP (Incomplete Digestion)	Lanthanum	2	10000
20	0723	ICP	ppm	Sr ICP (Incomplete Digestion)	Strontium	1	10000
21	0731	ICP	ppm	Zr ICP	Zirconium	1	10000
22	0736	ICP	ppm	Sc ICP	Scandium	1	10000
23	0726	ICP	%	Ti ICP (Incomplete Digestion)	Titanium	0.01	1.00
24	0701	ICP	%	Al ICP (Incomplete Digestion)	Aluminum	0.01	10.00
25	0708	ICP	%	Ca ICP (Incomplete Digestion)	Calcium	0.01	10.00
26	0712	ICP	%	Fe ICP	Iron	0.01	10.00
27	0715	ICP	%	Mg ICP (Incomplete Digestion)	Magnesium	0.01	10.00
28	0720	ICP	%	K ICP (Incomplete Digestion)	Potassium	0.01	10.00
29	0722	ICP	%	Na ICP (Incomplete Digestion)	Sodium	0.01	5.00
30	0719	ICP	%	P ICP	Phosphorus	0.01	5.00

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* Our liability is limited solely to the analytical cost of these analyses

BC Certified Assayer: David Chiu

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CERTIFICATE OF ANALYSIS
iPL 99G0625

Client : Northern Analytical Laboratories — **154 Samples** — Out: Jul 23, 1999 — Page 1 of 4
Project: W.O. 05684 — 154=Pulp — [062520:05:44:99072399] — In : Jul 23, 1999 — Section 1 of 2

Sample Name	Type	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm
10000N - 10050E	Pulp	0.3	32	42	189	71	<5	<3	2	<10	<2	2.8	14	46	172	<5	37	70	460	15
10000N - 10100E	Pulp	0.2	31	18	68	29	<5	<3	1	<10	<2	3.2	7	17	65	<5	14	46	147	6
10000N - 10150E	Pulp	1.7	38	39	96	48	<5	<3	1	<10	<2	2.9	8	20	91	<5	17	35	267	7
10000N - 10200E	Pulp	<0.1	40	13	44	15	<5	<3	1	<10	<2	3.0	5	7	37	<5	8	52	116	5
10000N - 10250E	Pulp	<0.1	31	10	35	11	<5	<3	1	<10	<2	1.4	9	8	60	<5	7	40	676	3
10000N - 10300E	Pulp	3.4	46	56	150	107	<5	<3	2	<10	<2	1.5	9	31	101	<5	26	64	438	12
10000N - 10350E	Pulp	2.0	52	41	190	125	<5	<3	7	<10	<2	2.4	8	28	158	<5	38	85	630	16
10000N - 10400E	Pulp	1.5	57	47	211	122	<5	<3	8	<10	<2	1.9	19	36	234	<5	42	99	1176	17
10000N - 10450E	Pulp	0.7	42	24	177	65	<5	<3	3	<10	<2	2.7	11	38	176	<5	38	74	367	13
10000N - 10500E	Pulp	0.8	66	32	271	74	<5	<3	5	<10	<2	2.5	18	55	230	<5	51	114	752	16
10000N - 10550E	Pulp	2.0	55	43	203	87	<5	<3	3	<10	<2	1.8	10	41	157	<5	32	67	873	15
10000N - 10600E	Pulp	1.5	51	36	220	82	<5	<3	4	<10	<2	1.5	11	38	140	<5	30	73	706	17
10000N - 10650E	Pulp	2.8	41	64	301	139	<5	<3	5	<10	<2	<0.1	12	42	129	10	28	75	2322	25
10000N - 10700E	Pulp	2.2	51	69	359	148	<5	<3	3	<10	<2	<0.1	17	59	133	<5	25	54	2965	27
10000N - 10750E	Pulp	2.6	76	118	419	114	<5	<3	9	<10	<2	<0.1	20	74	164	5	24	69	4422	24
10000N - 10800E	Pulp	2.0	124	56	518	102	<5	<3	11	<10	<2	7.7	29	97	215	<5	46	133	1186	18
10000N - 10850E	Pulp	0.9	102	47	428	96	<5	<3	8	<10	<2	5.8	31	97	241	<5	55	121	1046	25
10000N - 10900E	Pulp	1.0	113	36	314	97	<5	<3	7	<10	<2	4.9	20	77	223	18	50	125	680	21
10000N - 10950E	Pulp	2.1	96	52	383	77	<5	<3	12	<10	<2	6.3	26	84	214	<5	42	145	1846	16
10000N - 11000E	Pulp	2.1	105	70	337	98	<5	<3	9	<10	<2	5.8	23	68	206	<5	45	121	967	14
10100N - 10050E	Pulp	2.9	28	63	211	129	<5	<3	1	<10	<2	<0.1	10	28	122	8	23	50	1634	20
10100N - 10100E	Pulp	2.2	21	37	173	96	<5	<3	1	<10	<2	<0.1	7	22	161	<5	20	43	952	13
10100N - 10150E	Pulp	1.1	32	42	239	73	<5	<3	2	<10	<2	2.6	19	48	205	<5	35	74	761	22
10100N - 10200E	Pulp	0.6	22	34	153	71	<5	<3	1	<10	<2	1.5	8	23	119	<5	25	56	521	15
10100N - 10250E	Pulp	1.4	31	36	135	92	<5	<3	1	<10	<2	0.8	10	28	142	8	26	60	849	17
10100N - 10300E	Pulp	2.5	26	32	183	86	<5	<3	3	<10	<2	2.9	9	29	137	8	38	66	472	16
10100N - 10350E	Pulp	1.4	28	42	199	122	<5	<3	2	<10	<2	1.5	11	26	177	<5	32	63	942	14
10100N - 10400E	Pulp	1.0	48	28	167	69	<5	<3	4	<10	<2	2.9	11	39	219	10	36	74	597	12
10100N - 10450E	Pulp	0.9	77	36	278	67	<5	<3	10	<10	<2	3.9	18	58	278	<5	53	134	759	17
10100N - 10500E	Pulp	1.4	32	23	88	51	<5	<3	1	<10	<2	3.2	7	21	62	<5	17	45	287	15
10100N - 10550E	Pulp	1.4	30	28	136	61	<5	<3	4	<10	<2	2.1	8	27	140	<5	22	62	470	12
10100N - 10600E	Pulp	1.9	50	38	95	60	<5	<3	3	<10	<2	2.0	5	16	97	<5	14	33	735	11
10100N - 10650E	Pulp	2.5	39	47	217	123	<5	<3	3	<10	<2	0.3	9	27	96	<5	24	68	1291	22
10100N - 10700E	Pulp	1.8	31	36	188	80	<5	<3	3	<10	<2	<0.1	8	25	87	<5	17	45	1161	14
10100N - 10750E	Pulp	1.2	34	23	138	54	<5	<3	3	<10	<2	1.4	7	24	93	7	18	55	450	9
10100N - 10800E	Pulp	1.8	75	44	327	102	<5	<3	8	<10	<2	4.0	17	64	194	22	45	109	756	20
10100N - 10850E	Pulp	2.8	84	87	403	148	<5	<3	8	<10	<2	<0.1	20	67	153	11	32	83	2486	22
10100N - 10900E	Pulp	2.1	84	52	290	86	<5	<3	10	<10	<2	3.5	16	58	173	6	41	122	766	18
10100N - 10950E	Pulp	1.6	54	38	187	65	<5	<3	6	<10	<2	1.7	10	35	137	10	26	81	752	16
Minimum Detection		0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2
Maximum Detection		100.0	20000	20000	20000	10000	1000	10000	1000	1000	10000	100.0	10000	10000	10000	1000	10000	10000	10000	10000
Method		ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

---=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No Sample

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CERTIFICATE OF ANALYSIS
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Client : Northern Analytical Laboratories
Project: W.O. 05684

154 Samples
154=Pulp

[062520:05:44:99072399]

Out: Jul 23, 1999
In : Jul 23, 1999

Sample Name	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
10000N - 10050E	19	1	5	0.11	2.23	0.21	3.60	0.57	0.35	0.02	0.07
10000N - 10100E	12	<1	1	0.04	1.16	0.12	1.80	0.20	0.08	0.03	0.08
10000N - 10150E	13	<1	1	0.03	1.48	0.13	1.65	0.25	0.08	0.03	0.10
10000N - 10200E	15	1	1	0.07	0.73	0.24	1.64	0.13	0.05	0.04	0.09
10000N - 10250E	10	<1	<1	0.04	0.62	0.08	1.42	0.09	0.04	0.04	0.05
10000N - 10300E	15	1	2	0.06	2.06	0.16	3.01	0.43	0.13	0.03	0.08
10000N - 10350E	19	<1	2	0.02	2.70	0.11	3.98	0.57	0.15	0.02	0.12
10000N - 10400E	28	1	5	0.09	2.39	0.34	4.58	0.73	0.32	0.03	0.08
10000N - 10450E	23	<1	3	0.05	2.10	0.40	3.64	0.55	0.19	0.03	0.08
10000N - 10500E	48	1	6	0.08	2.81	0.79	4.35	0.85	0.27	0.05	0.07
10000N - 10550E	79	2	3	0.04	2.12	2.08	3.05	0.56	0.15	0.05	0.09
10000N - 10600E	58	2	3	0.05	2.23	1.17	3.21	0.52	0.21	0.05	0.08
10000N - 10650E	64	2	3	0.04	2.36	1.13	3.43	0.55	0.22	0.05	0.07
10000N - 10700E	74	2	3	0.04	2.51	1.50	3.44	0.50	0.20	0.06	0.09
10000N - 10750E	53	2	3	0.02	2.06	1.17	3.77	0.44	0.19	0.03	0.09
10000N - 10800E	75	2	6	0.06	3.21	1.19	5.02	0.73	0.38	0.06	0.08
10000N - 10850E	115	3	6	0.10	3.83	1.58	5.32	0.96	0.38	0.09	0.08
10000N - 10900E	75	2	6	0.08	3.09	1.12	5.00	0.82	0.35	0.05	0.10
10000N - 10950E	55	3	5	0.08	2.23	0.62	4.97	0.70	0.45	0.04	0.10
10000N - 11000E	62	1	5	0.08	2.79	1.15	5.22	0.83	0.43	0.04	0.09
10100N - 10050E	26	<1	1	0.03	1.78	0.32	2.91	0.37	0.24	0.02	0.11
10100N - 10100E	29	<1	2	0.04	1.85	0.37	2.25	0.34	0.13	0.03	0.08
10100N - 10150E	28	1	6	0.13	2.31	0.38	3.88	0.58	0.41	0.03	0.08
10100N - 10200E	14	<1	2	0.05	1.86	0.10	2.65	0.35	0.17	0.03	0.06
10100N - 10250E	15	<1	3	0.07	2.25	0.15	2.80	0.39	0.26	0.04	0.08
10100N - 10300E	18	<1	2	0.03	2.52	0.15	3.41	0.54	0.13	0.02	0.10
10100N - 10350E	24	<1	3	0.07	2.23	0.33	3.25	0.49	0.25	0.03	0.08
10100N - 10400E	30	<1	3	0.06	2.10	0.49	2.74	0.57	0.16	0.03	0.09
10100N - 10450E	50	1	6	0.08	2.75	0.72	4.69	0.80	0.34	0.04	0.09
10100N - 10500E	29	2	2	0.04	1.18	0.72	1.62	0.23	0.06	0.04	0.08
10100N - 10550E	42	1	2	0.03	1.62	0.91	2.41	0.33	0.08	0.04	0.09
10100N - 10600E	51	2	1	0.03	1.14	1.79	1.47	0.20	0.08	0.03	0.10
10100N - 10650E	35	2	3	0.05	2.00	0.85	2.77	0.42	0.23	0.04	0.09
10100N - 10700E	48	2	1	0.03	1.44	1.47	2.19	0.28	0.11	0.04	0.08
10100N - 10750E	39	1	1	0.04	1.33	1.14	2.04	0.28	0.08	0.04	0.09
10100N - 10800E	65	2	5	0.08	3.06	1.02	4.63	0.74	0.39	0.05	0.08
10100N - 10850E	54	1	4	0.05	2.10	0.53	4.49	0.52	0.33	0.04	0.10
10100N - 10900E	42	1	4	0.06	2.51	0.59	4.53	0.68	0.27	0.03	0.08
10100N - 10950E	40	1	2	0.04	1.70	0.63	3.29	0.44	0.17	0.04	0.09
Minimum Detection	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum Detection	10000	10000	10000	1.00	10.00	10.00	10.00	10.00	10.00	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

——=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No Sample

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CERTIFICATE OF ANALYSIS
iPL 9[illegible]0625

Client : Northern Analytical Laboratories
Project: W.O. 05684

154 Samples
154=Pulp

[062520:05:44:99072399]

Out: Jul 23, 1999
In : Jul 23, 1999

Sample Name	Type	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm
10100N - 11000E	Pulp	4.1	65	65	236	82	<5	<3	8	<10	<2	1.5	12	35	107	6	23	73	873	11
10200N - 10050E	Pulp	1.6	19	47	273	115	<5	<3	<1	<10	<2	1.9	9	24	179	<5	30	55	574	15
10200N - 10100E	Pulp	1.2	16	70	215	123	<5	<3	1	<10	<2	1.7	9	19	135	<5	30	57	394	17
10200N - 10150E	Pulp	1.3	7	26	96	60	<5	<3	<1	<10	<2	2.8	3	12	72	<5	12	32	161	7
10200N - 10200E	Pulp	0.2	9	7	29	39	<5	<3	<1	<10	<2	1.4	1	4	30	<5	2	22	52	5
10200N - 10250E	Pulp	0.7	33	43	216	75	<5	<3	3	<10	<2	2.6	20	38	193	<5	36	68	888	14
10200N - 10300E	Pulp	0.9	38	47	259	87	<5	<3	4	<10	<2	3.1	21	53	226	10	38	72	926	17
10200N - 10350E	Pulp	0.9	46	52	303	87	<5	<3	2	<10	<2	<0.1	27	74	362	6	37	71	5752	16
10200N - 10400E	Pulp	0.8	27	45	216	73	<5	<3	2	<10	<2	<0.1	23	43	183	<5	34	64	1792	13
10200N - 10450E	Pulp	0.1	13	6	83	26	<5	<3	1	<10	<2	<0.1	3	18	77	<5	7	17	1488	4
10200N - 10500E	Pulp	<0.1	9	<2	29	17	<5	<3	<1	<10	<2	0.9	2	3	24	<5	2	18	159	3
10200N - 10550E	Pulp	0.2	11	3	28	11	<5	<3	<1	<10	<2	0.7	2	1	29	<5	2	21	203	3
10200N - 10600E	Pulp	0.2	10	2	22	18	<5	<3	<1	<10	<2	1.4	3	4	24	6	2	28	101	4
10200N - 10650E	Pulp	1.5	12	31	84	47	<5	<3	<1	<10	<2	1 2	3	6	78	<5	9	18	396	8
10200N - 10700E	Pulp	2.0	11	30	80	82	<5	<3	1	<10	<2	2.3	4	10	70	<5	14	41	429	10
10200N - 10750E	Pulp	0.6	20	142	352	186	<5	<3	1	<10	<2	<0.1	12	24	121	11	24	50	2147	28
10200N - 10800E	Pulp	0.2	22	55	146	105	<5	<3	6	<10	<2	<0.1	7	16	108	<5	16	58	1220	10
10200N - 10850E	Pulp	2.0	66	60	290	146	<5	<3	10	<10	<2	2.0	14	44	150	9	38	101	1116	20
10200N - 10900E	Pulp	1 9	78	53	313	90	<5	<3	10	<10	<2	4.1	22	63	207	14	41	123	1835	15
10200N - 10950E	Pulp	3.0	58	56	218	81	<5	3	6	<10	<2	1.5	10	35	124	<5	24	83	851	13
10200N - 11000E	Pulp	1.9	43	23	111	40	<5	<3	4	<10	<2	4.4	6	22	59	7	12	36	404	6
10300N - 10050E	Pulp	0.9	10	42	126	85	<5	<3	<1	<10	<2	2.2	5	8	64	<5	11	32	463	8
10300N - 10100E	Pulp	1.0	26	56	232	297	<5	<3	1	<10	<2	<0.1	7	13	99	<5	16	32	3946	12
10300N - 10150E	Pulp	3.7	10	52	203	148	<5	<3	<1	<10	<2	1.0	5	15	92	<5	25	42	403	16
10300N - 10200E	Pulp	1.1	4	16	118	42	<5	<3	1	<10	<2	1.9	2	6	52	<5	8	34	265	7
10300N - 10250E	Pulp	2.9	38	90	509	175	<5	<3	<1	<10	<2	3.6	5	17	106	<5	25	33	1648	18
10300N - 10300E	Pulp	3.2	29	89	272	129	<5	<3	<1	<10	<2	<0.1	6	10	66	<5	22	48	993	12
10300N - 10350E	Pulp	1.3	29	60	299	109	<5	<3	1	<10	<2	2.2	14	32	225	<5	35	65	916	15
10300N - 10400E	Pulp	1.0	31	58	438	112	<5	<3	2	<10	<2	4.3	12	34	181	<5	34	69	749	17
10300N - 10450E	Pulp	0.5	17	28	219	62	<5	<3	1	<10	<2	0.3	7	17	74	<5	17	41	929	10
10300N - 10500E	Pulp	0.8	19	103	404	102	<5	<3	2	<10	<2	<0.1	15	17	119	7	18	41	3751	11
10300N - 10550E	Pulp	1.4	19	115	404	86	<5	<3	<1	<10	<2	0.4	8	23	232	<5	25	43	1501	19
10300N - 10600E	Pulp	1.2	16	65	257	87	<5	<3	<1	<10	<2	1.4	6	13	118	6	19	37	380	15
10300N - 10650E	Pulp	0.7	22	63	494	87	<5	<3	<1	<10	<2	1.8	5	16	94	6	16	32	269	15
10300N - 10700E	Pulp	1.8	58	99	385	134	<5	<3	3	<10	<2	3.3	13	18	106	<5	18	38	445	22
10300N - 10750E	Pulp	1.5	23	80	720	101	<5	<3	2	<10	<2	2.4	7	20	130	<5	22	43	455	15
10300N - 10800E	Pulp	0.8	17	27	64	49	<5	<3	1	<10	<2	2.2	5	9	53	<5	7	38	392	8
10300N - 10850E	Pulp	0.9	28	11	42	31	<5	<3	1	<10	<2	1.3	2	5	31	<5	5	22	127	5
10300N - 10900E	Pulp	2.8	39	28	144	62	<5	<3	4	<10	<2	1.1	6	19	102	5	18	63	606	11
Minimum Detection		0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2
Maximum Detection		100.0	20000	20000	20000	10000	1000	10000	1000	1000	10000	100.0	10000	10000	10000	1000	10000	10000	10000	10000
Method		ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

——=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No Sample

INTERNATIONAL PLASMA LABORATORY LTD

CERTIFICATE OF ANALYSIS
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Client : Northern Analytical Laboratories
Project: W.O. 05684

154 Samples
154=Pulp

[062520:05:44:99072399]

Out: Jul 23, 1999
In : Jul 23, 1999

Sample Name	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
10100N - 11000E	23	1	2	0.04	1.58	0.26	3.52	0.37	0.22	0.03	0.07
10200N - 10050E	29	<1	3	0.06	2.18	0.45	3.01	0.49	0.20	0.02	0.07
10200N - 10100E	15	1	4	0.08	2.08	0.22	2.90	0.51	0.25	0.02	0.06
10200N - 10150E	11	<1	1	0.03	1.21	0.12	1.58	0.19	0.08	0.03	0.07
10200N - 10200E	12	<1	<1	0.03	0.63	0.18	0.87	0.06	0.02	0.03	0.08
10200N - 10250E	28	1	6	0.12	1.98	0.38	3.71	0.57	0.45	0.03	0.08
10200N - 10300E	34	1	6	0.12	2.33	0.45	3.89	0.63	0.41	0.03	0.08
10200N - 10350E	36	1	5	0.10	2.43	0.43	4.94	0.63	0.31	0.02	0.08
10200N - 10400E	24	1	5	0.12	1.99	0.48	3.55	0.56	0.36	0.02	0.08
10200N - 10450E	18	1	1	0.03	0.72	0.31	0.73	0.14	0.03	0.03	0.08
10200N - 10500E	15	1	<1	0.03	0.55	0.40	0.64	0.05	0.02	0.04	0.07
10200N - 10550E	20	1	<1	0.03	0.39	0.58	0.67	0.06	0.02	0.04	0.10
10200N - 10600E	18	2	<1	0.04	0.66	0.49	0.86	0.05	0.02	0.04	0.07
10200N - 10650E	30	1	1	0.02	1.07	0.78	1.10	0.18	0.07	0.04	0.09
10200N - 10700E	22	1	<1	0.02	1.15	0.50	1.82	0.21	0.05	0.03	0.15
10200N - 10750E	15	1	4	0.07	1.91	0.35	3.66	0.52	0.25	0.02	0.06
10200N - 10800E	28	1	1	0.03	1.36	0.87	2.49	0.26	0.10	0.03	0.09
10200N - 10850E	40	1	3	0.04	2.52	0.57	4.22	0.58	0.17	0.03	0.11
10200N - 10900E	52	1	5	0.08	2.36	0.80	4.88	0.71	0.45	0.04	0.10
10200N - 10950E	32	1	2	0.03	1.94	0.55	3.24	0.40	0.14	0.03	0.11
10200N - 11000E	20	1	1	0.02	0.79	0.52	1.67	0.17	0.08	0.03	0.08
10300N - 10050E	16	<1	1	0.03	0.85	0.20	1.55	0.17	0.08	0.03	0.05
10300N - 10100E	28	<1	1	0.02	1.25	0.29	2.08	0.24	0.10	0.03	0.11
10300N - 10150E	13	<1	1	0.03	1.92	0.15	2.33	0.37	0.13	0.02	0.08
10300N - 10200E	17	<1	<1	0.02	0.77	0.18	1.16	0.09	0.05	0.03	0.08
10300N - 10250E	30	<1	1	0.03	1.85	0.31	1.99	0.32	0.12	0.02	0.11
10300N - 10300E	15	<1	1	0.05	1.41	0.22	2.28	0.24	0.13	0.03	0.11
10300N - 10350E	22	<1	5	0.09	2.36	0.24	3.36	0.57	0.21	0.02	0.07
10300N - 10400E	16	1	4	0.07	2.28	0.15	5.19	0.53	0.19	0.02	0.06
10300N - 10450E	12	<1	2	0.05	1.45	0.11	2.15	0.27	0.10	0.02	0.06
10300N - 10500E	18	<1	2	0.05	1.41	0.17	2.72	0.32	0.26	0.02	0.08
10300N - 10550E	16	1	4	0.06	1.88	0.39	2.34	0.45	0.11	0.02	0.07
10300N - 10600E	21	1	2	0.05	1.65	0.49	2.15	0.37	0.14	0.03	0.10
10300N - 10650E	28	1	1	0.04	1.60	0.71	2.02	0.32	0.11	0.03	0.08
10300N - 10700E	32	2	2	0.02	1.73	0.72	4.05	0.20	0.05	0.03	0.15
10300N - 10750E	33	1	2	0.03	1.93	0.83	2.58	0.38	0.12	0.03	0.11
10300N - 10800E	17	2	1	0.04	1.22	0.33	1.50	0.13	0.04	0.04	0.06
10300N - 10850E	12	1	<1	0.03	0.79	0.20	0.87	0.09	0.03	0.04	0.05
10300N - 10900E	24	1	1	0.02	1.50	0.52	2.43	0.30	0.09	0.03	0.10
Minimum Detection	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum Detection	10000	10000	10000	1.00	10.00	10.00	10.00	10.00	10.00	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

——=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No Sample

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CERTIFICATE OF ANALYSIS
iPL 9[illegible]0625

Client : Northern Analytical Laboratories
Project: W.O. 05684

154 Samples
154=Pulp

[062520:05:44:99072399]

Out: Jul 23, 1999
In : Jul 23, 1999

Sample Name	Type	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm
10300N - 10950E	Pulp	1.9	46	50	192	69	<5	<3	6	<10	<2	2.1	10	34	88	<5	20	66	542	10
10300N - 11000E	Pulp	3.5	42	64	182	93	<5	<3	5	<10	<2	0.4	14	33	86	5	19	49	1297	8
10300N - 11050E	Pulp	3.8	52	112	311	119	5	<3	5	<10	<2	2.7	19	55	163	12	38	80	1149	16
10300N - 11100E	Pulp	1.8	20	33	114	67	<5	<3	1	<10	<2	1.2	9	18	61	<5	13	40	571	10
10300N - 11150E	Pulp	1.2	7	23	88	35	<5	<3	<1	<10	<2	1.9	3	6	35	6	6	26	193	7
10300N - 11200E	Pulp	2.2	16	159	207	208	<5	<3	<1	<10	<2	1.0	5	14	54	<5	13	32	1005	20
10300N - 11250E	Pulp	3.3	12	265	149	144	<5	<3	<1	<10	<2	<0.1	3	6	72	<5	8	23	828	14
10300N - 11300E	Pulp	0.4	7	56	65	48	<5	<3	1	<10	<2	1.2	4	8	43	<5	7	30	581	9
10300N - 11350E	Pulp	1.0	14	87	92	89	<5	<3	<1	<10	<2	<0.1	3	4	72	<5	6	19	1253	11
10300N - 11400E	Pulp	0.7	4	21	44	35	<5	<3	<1	<10	<2	<0.1	3	1	22	<5	2	25	784	7
10300N - 11450E	Pulp	0.7	14	66	109	109	<5	<3	1	<10	<2	<0.1	7	13	72	<5	12	28	1996	18
10300N - 11500E	Pulp	0.9	12	81	140	136	<5	<3	<1	<10	<2	<0.1	6	6	50	6	5	16	2830	25
10400N - 10050E	Pulp	2.8	18	333	211	424	<5	<3	1	<10	<2	0.1	6	12	87	7	13	38	927	10
10400N - 10100E	Pulp	3.9	45	95	308	183	<5	<3	<1	<10	<2	2.2	4	11	63	<5	17	29	761	11
10400N - 10150E	Pulp	1.6	20	49	361	98	<5	<3	<1	<10	<2	0.9	5	13	77	<5	19	44	608	16
10400N - 10200E	Pulp	1.4	26	91	326	200	<5	<3	<1	<10	<2	<0.1	5	11	69	<5	15	30	1433	14
10400N - 10250E	Pulp	2.3	11	14	76	62	<5	<3	<1	<10	<2	<0.1	3	4	36	<5	11	19	856	5
10400N - 10300E	Pulp	1.8	21	165	220	167	<5	<3	<1	<10	<2	0.9	5	9	47	<5	9	28	805	9
10400N - 10350E	Pulp	6.9	36	1705	237	544	10	<3	1	<10	<2	1.7	4	5	63	<5	11	30	572	10
10400N - 10400E	Pulp	1.4	24	250	483	619	<5	<3	<1	<10	<2	1.6	9	13	101	<5	26	55	1658	14
10400N - 10450E	Pulp	1.7	29	265	283	206	<5	<3	1	<10	<2	0.7	7	8	69	<5	15	42	968	12
10400N - 10500E	Pulp	5.6	19	125	374	134	<5	<3	<1	<10	<2	3.2	5	12	68	<5	20	42	186	16
10400N - 10550E	Pulp	6.2	38	306	453	239	<5	3	1	<10	<2	2.8	6	15	68	<5	21	42	574	15
10400N - 10600E	Pulp	3.5	36	127	363	111	<5	<3	<1	<10	<2	1.5	5	10	69	<5	18	34	698	17
10400N - 10650E	Pulp	3.5	32	202	442	169	<5	<3	<1	<10	<2	2.9	8	14	85	<5	24	44	403	19
10400N - 10700E	Pulp	0.2	16	166	250	162	<5	<3	1	<10	<2	0.2	9	14	82	<5	13	31	1014	26
10400N - 10800E	Pulp	0.7	11	69	304	80	<5	<3	<1	<10	<2	1.7	6	14	113	6	18	41	359	13
10400N - 10850E	Pulp	0.9	18	94	277	110	<5	<3	1	<10	<2	1.5	7	18	121	6	20	45	622	18
10400N - 10900E	Pulp	2.0	40	46	269	95	<5	<3	6	<10	<2	1.3	13	35	131	8	31	92	1064	14
10400N - 10950E	Pulp	1.0	31	49	157	61	<5	<3	5	<10	<2	1.3	8	19	110	<5	22	72	637	8
10400N - 11000E	Pulp	4.3	68	108	347	143	5	<3	6	<10	<2	0.9	31	72	170	9	36	71	2908	15
10400N - 11050E	Pulp	5.2	48	90	275	109	<5	<3	3	<10	<2	2.2	14	39	113	<5	33	65	898	13
10400N - 11100E	Pulp	2.3	13	22	72	36	<5	<3	1	<10	<2	2.5	4	11	52	<5	9	32	219	5
10400N - 11150E	Pulp	0.4	8	48	129	34	<5	<3	<1	<10	<2	0.9	4	6	36	<5	6	23	698	7
10400N - 11200E	Pulp	3.8	10	55	151	64	<5	<3	<1	<10	<2	1.7	2	9	51	<5	6	16	198	9
10400N - 11250E	Pulp	1.8	9	213	222	128	<5	<3	1	<10	<2	2.1	2	7	62	5	5	24	606	12
10400N - 11300E	Pulp	1.6	9	91	154	75	<5	<3	1	<10	<2	0.1	2	3	44	<5	5	20	1245	10
10400N - 11350E	Pulp	0.7	7	55	90	71	<5	<3	<1	<10	<2	0.1	3	6	42	5	4	17	1052	10
10400N - 11400E	Pulp	1.7	10	28	56	45	<5	<3	<1	<10	<2	1.0	3	5	32	<5	5	21	425	10
Minimum Detection		0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2
Maximum Detection		100.0	20000	20000	20000	10000	1000	10000	1000	1000	10000	100.0	10000	10000	10000	1000	10000	10000	10000	10000
Method		ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

——=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No Sample

INTERNATIONAL PLASMA LABORATORY LTD

CERTIFICATE OF ANALYSIS
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Client : Northern Analytical Laboratories
Project: W.O. 05684

154 Samples
154=Pulp

[062520:05:44:99072399]

Out: Jul 23, 1999
In : Jul 23, 1999

Sample Name	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
10300N - 10950E	20	1	2	0.03	1.45	0.35	3.20	0.30	0.12	0.03	0.08
10300N - 11000E	18	1	2	0.03	1.57	0.29	3.29	0.30	0.11	0.02	0.07
10300N - 11050E	30	1	5	0.06	2.28	0.63	5.12	0.63	0.21	0.02	0.08
10300N - 11100E	19	<1	1	0.03	1.19	0.36	2.93	0.23	0.12	0.03	0.06
10300N - 11150E	10	<1	<1	0.02	0.72	0.11	1.30	0.12	0.05	0.03	0.06
10300N - 11200E	16	<1	<1	0.02	1.33	0.22	1.90	0.19	0.08	0.03	0.08
10300N - 11250E	17	<1	<1	0.01	0.94	0.19	2.05	0.15	0.09	0.03	0.06
10300N - 11300E	8	<1	<1	0.02	0.64	0.07	1.42	0.10	0.06	0.03	0.05
10300N - 11350E	12	<1	<1	0.01	0.88	0.10	1.52	0.10	0.06	0.03	0.06
10300N - 11400E	8	<1	<1	0.03	0.40	0.11	1.09	0.06	0.04	0.03	0.05
10300N - 11450E	13	1	1	0.02	1.12	0.15	2.19	0.21	0.15	0.02	0.09
10300N - 11500E	20	<1	1	0.01	0.78	0.13	2.60	0.15	0.17	0.02	0.09
10400N - 10050E	16	<1	1	0.02	1.19	0.18	2.36	0.19	0.08	0.02	0.11
10400N - 10100E	17	<1	1	0.02	1.20	0.18	1.71	0.21	0.10	0.03	0.09
10400N - 10150E	16	<1	1	0.04	1.43	0.16	2.04	0.29	0.12	0.03	0.08
10400N - 10200E	13	<1	1	0.03	1.59	0.12	2.24	0.25	0.15	0.02	0.08
10400N - 10250E	7	<1	<1	0.02	0.87	0.06	1.03	0.11	0.06	0.03	0.07
10400N - 10300E	8	<1	1	0.03	1.09	0.09	2.62	0.15	0.12	0.02	0.07
10400N - 10350E	12	<1	1	0.02	1.13	0.04	3.09	0.17	0.17	0.02	0.08
10400N - 10400E	6	1	4	0.11	1.83	0.02	5.80	0.37	0.46	0.02	0.07
10400N - 10450E	7	<1	2	0.07	1.23	0.05	3.08	0.23	0.22	0.02	0.06
10400N - 10500E	7	1	2	0.06	1.65	0.08	3.56	0.31	0.21	0.02	0.06
10400N - 10550E	7	1	2	0.05	1.73	0.05	4.82	0.30	0.22	0.02	0.07
10400N - 10600E	9	<1	1	0.03	1.70	0.10	2.26	0.29	0.13	0.02	0.08
10400N - 10650E	9	1	4	0.06	1.85	0.11	3.15	0.36	0.23	0.02	0.07
10400N - 10700E	9	2	3	0.08	1.11	0.30	2.33	0.32	0.29	0.02	0.09
10400N - 10800E	18	1	2	0.04	1.47	0.38	2.24	0.33	0.10	0.02	0.07
10400N - 10850E	16	1	2	0.04	1.79	0.36	2.75	0.40	0.18	0.02	0.08
10400N - 10900E	37	1	3	0.04	1.89	0.56	3.81	0.53	0.16	0.02	0.07
10400N - 10950E	22	<1	1	0.03	1.14	0.22	2.82	0.33	0.17	0.03	0.07
10400N - 11000E	33	1	5	0.06	2.17	0.50	5.76	0.59	0.40	0.02	0.08
10400N - 11050E	25	1	3	0.04	1.94	0.58	4.65	0.52	0.28	0.02	0.09
10400N - 11100E	15	<1	1	0.02	0.86	0.28	1.70	0.18	0.06	0.03	0.06
10400N - 11150E	11	<1	<1	0.02	0.81	0.14	1.29	0.12	0.06	0.03	0.08
10400N - 11200E	12	<1	<1	0.01	1.09	0.14	1.03	0.12	0.05	0.03	0.08
10400N - 11250E	16	<1	<1	0.01	0.68	0.19	1.87	0.11	0.07	0.02	0.10
10400N - 11300E	9	<1	<1	0.01	0.70	0.11	1.39	0.09	0.06	0.02	0.07
10400N - 11350E	9	<1	<1	0.01	0.70	0.11	1.38	0.10	0.07	0.02	0.07
10400N - 11400E	8	<1	<1	0.01	0.79	0.09	1.13	0.08	0.05	0.02	0.09
Minimum Detection	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum Detection	10000	10000	10000	1.00	10.00	10.00	10.00	10.00	10.00	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

——=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No Sample

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CERTIFICATE OF ANALYSIS

iPL 9[illegible]0625

Client : Northern Analytical Laboratories
Project: W.O. 05684

154 Samples
154=Pulp

[062520:05:44:99072399]

Out: Jul 23, 1999
In : Jul 23, 1999

Sample Name	Type	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm
10400N - 11450E	Pulp	1.1	42	86	107	129	<5	<3	2	<10	<2	<0.1	5	22	62	<5	10	23	1404	17
10400N - 11500E	Pulp	1.2	11	103	157	127	<5	<3	1	<10	<2	<0.1	5	9	45	7	6	18	3507	23
10500N - 9700E	Pulp	0.8	50	80	240	137	<5	<3	1	<10	<2	2.9	22	52	191	<5	45	67	964	16
10500N - 9750E	Pulp	2.3	16	62	63	100	<5	<3	<1	<10	<2	3.0	5	11	51	<5	9	45	352	7
10500N - 9800E	Pulp	4.0	34	279	265	517	<5	<3	1	<10	<2	1.0	10	28	173	<5	29	54	1112	18
10500N - 9850E	Pulp	3.6	27	127	160	201	<5	<3	1	<10	<2	0.9	7	18	129	<5	22	54	541	12
10500N - 9900E	Pulp	1.8	15	76	108	97	<5	<3	<1	<10	<2	2.3	5	12	80	<5	11	31	512	6
10500N - 9950E	Pulp	1.0	19	211	278	268	<5	<3	<1	<10	<2	<0.1	10	19	111	<5	19	40	1315	16
10500N - 10000E	Pulp	1.3	21	292	248	281	<5	<3	1	<10	<2	<0.1	7	15	92	5	18	45	1185	13
10500N - 10050E	Pulp	0.7	15	66	53	67	<5	<3	<1	<10	<2	<0.1	2	5	38	<5	4	14	761	3
10500N - 10100E	Pulp	1.2	24	141	59	62	<5	<3	<1	<10	<2	1.6	4	5	30	5	5	31	214	4
10500N - 10150E	Pulp	1.9	15	356	155	164	<5	<3	<1	<10	<2	2.3	3	7	61	<5	8	27	490	8
10500N - 10200E	Pulp	11.0	51	3298	302	1126	18	<3	<1	<10	<2	0.9	5	14	85	<5	11	26	1169	15
10500N - 10250E	Pulp	5.3	48	2034	313	642	9	<3	<1	<10	<2	0.8	8	18	114	9	17	43	1540	15
10500N - 10300E	Pulp	3.5	33	385	241	229	<5	<3	<1	<10	<2	0.9	6	11	130	<5	13	43	1012	11
10500N - 10350E	Pulp	4.8	38	693	222	195	<5	<3	2	<10	<2	<0.1	6	9	41	<5	12	31	2271	10
10500N - 10400E	Pulp	9.7	61	1165	363	386	<5	<3	1	<10	<2	3.3	5	17	77	13	22	44	332	15
10500N - 10450E	Pulp	1.9	30	1566	409	253	<5	<3	1	<10	<2	1.9	4	11	66	6	15	36	351	14
10500N - 10500E	Pulp	1.0	19	318	391	195	<5	<3	2	<10	<2	<0.1	12	14	79	8	20	43	2211	13
10500N - 10550E	Pulp	0.1	2	20	181	18	<5	<3	<1	<10	<2	2.7	2	4	18	<5	2	25	60	3
10500N - 10600E	Pulp	2.9	36	126	1183	264	<5	<3	1	<10	<2	4.4	5	16	73	5	16	47	760	28
10500N - 10650E	Pulp	1.3	33	108	8434	362	<5	<3	<1	<10	4	2.0	19	76	917	21	16	23	4.1%	35
10500N - 10700E	Pulp	1.7	19	84	1154	109	<5	<3	<1	<10	<2	4.1	5	17	168	<5	20	36	1014	22
10500N - 10750E	Pulp	0.4	12	45	495	60	<5	<3	1	<10	<2	3.0	5	11	95	<5	14	33	333	12
10500N - 10800E	Pulp	1.6	23	82	965	114	<5	<3	<1	<10	<2	1.3	5	16	203	<5	20	38	1606	18
10500N - 10850E	Pulp	0.8	13	47	552	64	<5	<3	1	<10	<2	2.9	3	13	107	<5	15	28	257	13
10500N - 10900E	Pulp	1.0	24	109	597	109	<5	<3	1	<10	<2	0.4	13	30	150	9	26	52	2107	18
10500N - 10950E	Pulp	1.3	18	52	160	54	<5	<3	1	<10	<2	2.4	6	11	112	<5	11	26	467	8
10500N - 11100E	Pulp	2.2	54	73	276	103	<5	<3	3	<10	<2	2.6	23	49	141	5	36	69	1374	17
10500N - 11150E	Pulp	1.4	13	54	208	44	<5	<3	<1	<10	<2	2.8	5	11	36	6	10	25	220	10
10500N - 11200E	Pulp	1.8	11	31	206	39	<5	<3	<1	<10	<2	3.0	4	8	43	<5	9	35	141	8
10500N - 11250E	Pulp	0.1	3	17	135	25	<5	<3	<1	<10	<2	2.0	2	3	23	<5	4	21	86	4
10500N - 10300E (11300E?)	Pulp	1.2	14	180	347	138	<5	<3	<1	<10	<2	1.1	6	16	70	8	14	37	727	20
10500N - 10350E (11350E?)	Pulp	0.5	2	18	35	13	<5	<3	<1	<10	<2	1.1	2	1	9	<5	2	24	108	3
10500N - 10400E (11400E?)	Pulp	1.8	13	130	179	163	<5	<3	<1	<10	<2	<0.1	3	9	59	7	10	23	1163	25
10500N - 10450E (11450E?)	Pulp	0.6	9	100	140	105	<5	<3	<1	<10	<2	<0.1	6	8	54	<5	9	27	2734	16
10500N - 10500E (11500E?)	Pulp	0.3	9	71	108	94	<5	<3	<1	<10	<2	<0.1	4	6	55	<5	6	18	2285	19
Minimum Detection		0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2
Maximum Detection		100.0	20000	20000	20000	10000	1000	10000	1000	1000	10000	100.0	10000	10000	10000	1000	10000	10000	10000	10000
Method		ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

—=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No Sample

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CERTIFICATE OF ANALYSIS
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Client : Northern Analytical Laboratories
Project: W.O. 05684

154 Samples
154=Pulp

[062520:05:44:99072399]

Out: Jul 23, 1999
In : Jul 23, 1999

Sample Name	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
10400N - 11450E	13	1	1	0.01	1.08	0.07	2.16	0.16	0.10	0.02	0.08
10400N - 11500E	11	1	1	0.01	0.83	0.07	2.35	0.13	0.15	0.02	0.08
10500N - 9700E	31	1	6	0.08	2.60	0.45	4.85	0.79	0.39	0.02	0.05
10500N - 9750E	13	<1	1	0.04	0.76	0.20	1.85	0.13	0.07	0.03	0.08
10500N - 9800E	15	1	2	0.03	2.14	0.15	3.81	0.40	0.17	0.02	0.11
10500N - 9850E	15	<1	1	0.02	1.77	0.18	2.83	0.29	0.09	0.02	0.08
10500N - 9900E	10	<1	1	0.02	0.98	0.08	1.80	0.17	0.09	0.03	0.06
10500N - 9950E	12	<1	2	0.05	1.49	0.17	3.05	0.37	0.22	0.01	0.07
10500N - 10000E	11	<1	1	0.02	1.58	0.11	3.04	0.27	0.14	0.01	0.08
10500N - 10050E	5	<1	<1	0.01	0.55	0.04	0.83	0.06	0.04	0.02	0.04
10500N - 10100E	10	<1	<1	0.03	0.39	0.14	1.17	0.08	0.03	0.03	0.06
10500N - 10150E	10	<1	<1	0.02	0.77	0.08	1.65	0.12	0.08	0.02	0.07
10500N - 10200E	18	<1	1	0.01	1.32	0.06	3.50	0.17	0.25	0.02	0.10
10500N - 10250E	15	1	2	0.03	1.62	0.05	4.27	0.26	0.26	0.02	0.09
10500N - 10300E	13	1	1	0.05	1.12	0.05	4.17	0.18	0.22	0.02	0.08
10500N - 10350E	10	1	1	0.02	1.21	0.06	2.62	0.16	0.10	0.03	0.07
10500N - 10400E	14	1	2	0.03	1.70	0.08	3.72	0.28	0.18	0.02	0.10
10500N - 10450E	12	<1	1	0.02	1.40	0.15	2.61	0.23	0.09	0.02	0.10
10500N - 10500E	8	<1	2	0.05	1.45	0.08	2.78	0.32	0.18	0.02	0.07
10500N - 10550E	11	1	<1	0.04	0.58	0.18	0.78	0.03	0.02	0.03	0.06
10500N - 10600E	17	<1	1	0.03	1.57	0.24	3.87	0.21	0.07	0.02	0.10
10500N - 10650E	40	<1	1	0.02	1.57	0.45	6.03	0.18	0.07	0.02	0.10
10500N - 10700E	19	<1	2	0.03	1.99	0.25	1.91	0.30	0.08	0.03	0.08
10500N - 10750E	15	<1	1	0.04	1.40	0.20	1.54	0.26	0.08	0.03	0.07
10500N - 10800E	38	<1	1	0.02	1.87	0.47	2.03	0.31	0.07	0.02	0.12
10500N - 10850E	20	<1	1	0.03	1.46	0.29	1.44	0.27	0.08	0.03	0.08
10500N - 10900E	21	1	4	0.09	1.80	0.39	3.17	0.44	0.27	0.02	0.08
10500N - 10950E	17	1	1	0.02	1.39	0.26	1.50	0.20	0.07	0.03	0.07
10500N - 11100E	21	1	5	0.06	2.09	0.41	5.56	0.56	0.21	0.01	0.07
10500N - 11150E	14	1	1	0.02	0.84	0.20	1.18	0.12	0.04	0.03	0.09
10500N - 11200E	21	1	1	0.03	1.07	0.29	1.25	0.12	0.03	0.03	0.12
10500N - 11250E	9	<1	<1	0.02	0.72	0.12	0.83	0.08	0.03	0.03	0.06
10500N - 10300E (11300E?)	15	<1	1	0.02	1.18	0.21	2.51	0.24	0.11	0.02	0.09
10500N - 10350E (11350E?)	7	<1	<1	0.03	0.50	0.11	0.74	0.04	0.02	0.04	0.05
10500N - 10400E (11400E?)	15	<1	1	0.01	1.18	0.14	2.39	0.19	0.13	0.02	0.08
10500N - 10450E (11450E?)	9	<1	1	0.02	0.91	0.07	2.16	0.17	0.12	0.02	0.06
10500N - 10500E (11500E?)	11	<1	<1	0.01	1.00	0.08	2.04	0.13	0.11	0.02	0.07
Minimum Detection	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum Detection	10000	10000	10000	1.00	10.00	10.00	10.00	10.00	10.00	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

——=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No Sample

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E-mail: NAL@hypertech.yk.ca

26/07/99

Certificate of Analysis

of pages (not including this page): 2

Pacific Ridge - JRV

WO# 05690

Certified by _____
John Reeve (Senior Chemist)

Date Received: 20/07/99

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
r	39	rock	Crush to -10 mesh; riffle split 200g; pulverize to -100 mesh

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Au	ppb	Gold	G: FA/AAS	15g FA / aqua regia	5	7000
Ag	ppm	Silver	G: AAS (BC)	aqua regia	0.1	50.0
Au	g/mt	Gold	A: FA/AAS	30g FA / aqua regia	0.01	13.5
Ag	g/mt	Silver	A: AAS (BC)	aqua regia	1.0	10000

AAS = atomic absorption spectrophotometry
FA = fire assay
BC = background correction applied

1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

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Pacific Ridge - JRV

WO# 05690

Certified by

	Sample #	Au ppb	Ag ppm	Au g/mt	Ag g/mt
r	24563			0.48	3470.0
r	24564	9	7.2		
r	24565	9	22.6		
r	24566	5	0.9		
r	24567	<5	1.9		
r	24568	7	0.3		
r	24569	19	1.5		
r	24570	298	35.5		
r	24571	7	2.3		
r	24572	181	0.8		
r	24573	5	0.3		
r	24574	6	0.1		
r	24575	5	0.2		
r	24576	<5	<0.1		
r	24577	7	0.1		
r	24578	9	<0.1		
r	24579	<5	<0.1		
r	24580	<5	0.1		
r	24581	279	22.1		
r	24582	10	0.1		
r	24583	<5	<0.1		
r	24584	<5	<0.1		
r	24585	<5	0.1		
r	24586	<5	<0.1		
r	24587	34	0.4		
r	24588	75	6.0		
r	24589	48	1.5		
r	24590	12	0.1		
r	25001	<5	<0.1		
r	25002	22	<0.1		

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Pacific Ridge - JRV WO# 05690

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	Sample #	Au ppb	Ag ppm	Au g/mt	Ag g/mt
r	25003	11	<0.1		
r	25004	<5	<0.1		
r	25005	7	<0.1		
r	25006	27	<0.1		
r	25007	6	<0.1		
r	25008	6	<0.1		
r	25009	48	<0.1		
r	25010	<5	<0.1		
r	25011	<5	<0.1		

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29/07/99

Certificate of Analysis

of pages (not including this page): 8

Pacific Ridge - JRV

WO# 05698

Certified by _____
John Reeve (Senior Chemist)

Date Received: 26/07/99

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
s	209	soil	Screen -80 mesh
s40	12	soil	Screen -80 mesh, -40 mesh for FA (insufficient -80 mesh)

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Au	ppb	Gold	G: FA/AAS	15g FA / aqua regia	5	7000

AAS = atomic absorption spectrophotometry
FA = fire assay

1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

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29/07/99 Certificate of Analysis

Pacific Ridge - JRV WO# 05698

Certified by

	Sample #		Au ppb
s	10600N	9700E	<5
s	10600N	9750E	5
s	10600N	9800E	<5
s	10600N	9850E	5
s	10600N	9900E	13
s	10600N	9950E	7
s	10600N	10000E	17
s	10600N	10050E	13
s	10600N	10100E	18
s	10600N	10150E	34
s	10600N	10200E	20
s	10600N	10250E	24
s	10600N	10300E	11
s	10600N	10350E	<5
s	10600N	10400E	7
s	10600N	10450E	7
s	10600N	10500E	8
s	10600N	10550E	<5
s	10600N	10600E	<5
s	10600N	10650E	<5
s	10600N	10700E	5
s	10600N	10750E	7
s	10600N	10800E	<5
s	10600N	10850E	5
s	10600N	10900E	<5
s	10600N	10950E	<5
s	10600N	11050E	<5
s	10600N	11100E	<5
s	10600N	11150E	<5
s	10600N	11200E	<5

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Pacific Ridge - JRV

WO# 05698

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	Sample #		Au ppb
s	10600N	11325E	7
s	10600N	11400E	7
s	10600N	11450E	5
s	10600N	11500E	<5
s	10700N	9700E	8
s	10700N	9750E	<5
s	10700N	9800E	13
s	10700N	9850E	21
s	10700N	9900E	<5
s	10700N	9950E	5
s	10700N	10000E	11
s	10700N	10050E	26
s	10700N	10100E	14
s	10700N	10150E	10
s	10700N	10200E	34
s	10700N	10250E	28
s	10700N	10300E	<5
s	10700N	10350E	<5
s	10700N	10400E	7
s	10700N	10450E	<5
s	10700N	10500E	<5
s	10700N	10550E	5
s	10700N	10600E	6
s	10700N	10650E	10
s	10700N	10700E	<5
s	10700N	10750E	<5
s	10700N	10800E	6
s	10700N	10850E	<5
s	10700N	10900E	<5
s	10700N	10950E	<5

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Certified by

	Sample #		Au ppb
s	10700N	11000E	<5
s	10800N	9700E	<5
s	10800N	9750E	<5
s	10800N	9800E	5
s	10800N	9850E	5
s	10800N	9900E	9
s	10800N	9950E	37
s	10800N	10000E	15
s	10800N	10050E	24
s	10800N	10100E	9
s	10800N	10150E	14
s	10800N	10200E	8
s	10800N	10250E	10
s	10800N	10300E	11
s	10800N	10350E	<5
s	10800N	10400E	<5
s	10800N	10450E	<5
s	10800N	10500E	<5
s	10800N	10550E	<5
s	10800N	10600E	<5
s	10800N	10650E	<5
s	10800N	10700E	<5
s	10800N	10750E	<5
s	10800N	10800E	7
s	10800N	10850E	5
s	10800N	10900E	7
s	10800N	10950E	<5
s	10800N	11000E	<5
s	10900N	9700E	<5
s	10900N	9750E	5

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Sample #			Au ppb
s	10900N	9800E	6
s	10900N	9850E	22
s	10900N	9900E	10
s	10900N	9950E	7
s	10900N	10000E	14
s	10900N	10050E	49
s	10900N	10100E	36
s	10900N	10150E	9
s	10900N	10200E	11
s	10900N	10250E	12
s	10900N	10300E	<5
s	10900N	10350E	10
s	10900N	10400E	<5
s	10900N	10450E	<5
s	10900N	10500E	<5
s	10900N	10550E	8
s	10900N	10600E	5
s	10900N	10650E	9
s	10900N	10700E	9
s	10900N	10750E	27
s	10900N	10800E	<5
s	10900N	10850E	8
s	10900N	10900E	<5
s	10900N	10950E	<5
s	10900N	11000E	<5
s	11000N	9700E	<5
s	11000N	9750E	<5
s	11000N	9800E	<5
s	11000N	9850E	6
s	11000N	9900E	6

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Sample #			Au ppb
s	11000N	9950E	7
s	11000N	10000E	51
s	11000N	10050E	7
s	11000N	10100E	19
s	11000N	10150E	10
s	11000N	10200E	8
s	11000N	10250E	<5
s	11000N	10300E	8
s	11000N	10350E	8
s	11000N	10400E	<5
s	11000N	10450E	<5
s	11000N	10500E	9
s	11000N	10550E	39
s	11000N	10600E	8
s	11000N	10650E	<5
s	11000N	10700E	7
s	11000N	10750E	5
s	11000N	10800E	<5
s	11000N	10850E	<5
s	11000N	10900E	<5
s	11000N	10950E	<5
s	11000N	11000E	<5
s	11100N	9700E	<5
s	11100N	9750E	49
s	11100N	9800E	37
s	11100N	9850E	<5
s	11100N	9900E	<5
s	11100N	9950E	<5
s	11100N	10000E	48
s40	11100N	10050E	17

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Sample #			Au ppb
s	11100N	10100E	13
s	11100N	10150E	<5
s	11100N	10200E	32
s	11100N	10250E	<5
s	11100N	10300E	<5
s	11100N	10350E	<5
s	11100N	10400E	<5
s	11100N	10450E	5
s	11100N	10500E	<5
s	11100N	10550E	<5
s	11100N	10600E	5
s	11100N	10650E	<5
s	11100N	10700E	5
s	11100N	10750E	7
s	11100N	10800E	5
s	11200N	9750E	482
s40	11200N	9800E	22
s40	11200N	9850E	41
s	11200N	9900E	12
s	11200N	10000E	<5
s	11200N	10050E	13
s	11200N	10100E	7
s	11200N	10150E	<5
s	11200N	10200E	<5
s	11200N	10250E	<5
s	11200N	10300E	7
s	11200N	10350E	8
s	11200N	10400E	<5
s	11200N	10450E	<5
s	11200N	10500E	<5

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Pacific Ridge - JRV

WO# 05698

Certified by

	Sample #		Au ppb
s	11200N	10550E	10
s	11200N	10600E	<5
s	11200N	10650E	<5
s	11200N	10700E	<5
s	11200N	10750E	5
s	11200N	10800E	<5
s	11300N	9700E	8
s	11300N	9750E	16
s	11300N	9800E	15
s	11300N	9850E	12
s	11300N	9900E	11
s	11400N	9700E	57
s40	11400N	9750E	<5
s40	11400N	9800E	5
s40	11400N	9850E	22
s40	11400N	9900E	28
s	11500N	9700E	<5
s	11500N	9750E	31
s	11500N	9800E	10
s	11500N	9850E	34
s	11500N	9900E	23
s	11050N	9800E	6
s	11150N	9800E	13
s	11250N	9800E	<5
s	11350N	9800E	56
s	11450N	9800E	29
s	10050N	10000E	6
s	10100N	10000E	<5
s	10150N	10000E	5
s40	10250N	10000E	<5

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Pacific Ridge - JRV WO# 05698

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Sample #			Au ppb
s40	10350N	10000E	<5
s	10450N	10000E	6
s	10550N	10000E	5
s	10650N	10000E	<5
s40	10750N	10000E	7
s40	10850N	10000E	111
s40	10950N	10000E	5
s	10000N	10000E	<5
s	10200N	10000E	<5
s	10300N	10000E	<5
s	10400N	10000E	<5

CERTIFICATE OF ANALYSIS
iPL 99-0646

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2036 Columbia St
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Canada V5Y 3E1
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Fax (604) 879-7898

Northern Analytical Laboratories — **221 Samples** — Out: Jul 29, 1999 In: Jul 27, 1999 [064612:38:49:99072999]

Project : W.O. 05698
Shipper : Norm Smith
Shipment: PO#: 054600
Analysis:
ICP(AqR)30

Comment: PACIFIC RIDGE

Document Distribution

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1	2	1	1	0
DL	**3D**	**EM**	**BT**	**BL**
0	0	0	0	0

CODE	AMOUNT	TYPE	PREPARATION DESCRIPTION	PULP	REJECT
B311	221	Pulp	Pulp received as it is, no sample prep.	12M/Dis	00M/Dis

NS=No Sample Rep=Replicate M=Month Dis=Discard

Analytical Summary

##	Code	Method	Units	Description	Element	Limit Low	Limit High
01	0721	ICP	ppm	Ag ICP	Silver	0.1	99.9
02	0711	ICP	ppm	Cu ICP	Copper	1	20000
03	0714	ICP	ppm	Pb ICP	Lead	2	20000
04	0730	ICP	ppm	Zn ICP	Zinc	1	20000
05	0703	ICP	ppm	As ICP	Arsenic	5	9999
06	0702	ICP	ppm	Sb ICP	Antimony	5	999
07	0732	ICP	ppm	Hg ICP	Mercury	3	9999
08	0717	ICP	ppm	Mo ICP	Molydenum	1	999
09	0747	ICP	ppm	Tl ICP (Incomplete Digestion)	Thallium	10	999
10	0705	ICP	ppm	Bi ICP	Bismuth	2	9999
11	0707	ICP	ppm	Cd ICP	Cadmium	0.1	99.9
12	0710	ICP	ppm	Co ICP	Cobalt	1	9999
13	0718	ICP	ppm	Ni ICP	Nickel	1	9999
14	0704	ICP	ppm	Ba ICP (Incomplete Digestion)	Barium	2	9999
15	0727	ICP	ppm	W ICP (Incomplete Digestion)	Tungsten	5	999
16	0709	ICP	ppm	Cr ICP (Incomplete Digestion)	Chromium	1	9999
17	0729	ICP	ppm	V ICP	Vanadium	2	9999
18	0716	ICP	ppm	Mn ICP	Manganese	1	9999
19	0713	ICP	ppm	La ICP (Incomplete Digestion)	Lanthanum	2	9999
20	0723	ICP	ppm	Sr ICP (Incomplete Digestion)	Strontium	1	9999
21	0731	ICP	ppm	Zr ICP	Zirconium	1	9999
22	0736	ICP	ppm	Sc ICP	Scandium	1	9999
23	0726	ICP	%	Ti ICP (Incomplete Digestion)	Titanium	0.01	1.00
24	0701	ICP	%	Al ICP (Incomplete Digestion)	Aluminum	0.01	9.99
25	0708	ICP	%	Ca ICP (Incomplete Digestion)	Calcium	0.01	9.99
26	0712	ICP	%	Fe ICP	Iron	0.01	9.99
27	0715	ICP	%	Mg ICP (Incomplete Digestion)	Magnesium	0.01	9.99
28	0720	ICP	%	K ICP (Incomplete Digestion)	Potassium	0.01	9.99
29	0722	ICP	%	Na ICP (Incomplete Digestion)	Sodium	0.01	5.00
30	0719	ICP	%	P ICP	Phosphorus	0.01	5.00

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DL=Download 3D=3½ Disk EM=E-Mail BT=BBS Type BL=BBS(1=Yes 0=No) ID=C030901

* Our liability is limited solely to the analytical cost of these analyses

BC Certified Assayer: David Chiu

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CERTIFICATE OF ANALYSIS
iPL 99-0646

Client : Northern Analytical Laboratories
Project: W.O. 05698

221 Samples
221=Pulp

[064612:38:49:99072999]

Out: Jul 29, 1999
In : Jul 27, 1999

Sample Name	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
10600N - 9700E P	0.2	22	37	65	52	<	<	2	<	<	1.7	13	14	52	7	12	54	459	5	10	1	1	0.07	0.78	0.10	2.32	0.14	0.11	0.02	0.05
10600N - 9750E P	1.8	28	152	178	173	<	<	4	<	<	2.6	9	22	129	<	18	45	853	11	25	1	1	0.03	1.25	0.31	2.71	0.24	0.15	0.02	0.08
10600N - 9800E P	1.2	11	27	44	47	<	<	2	<	<	1.6	5	6	46	5	6	44	440	4	9	1	<	0.04	0.57	0.09	1.42	0.08	0.04	0.03	0.04
10600N - 9850E P	0.9	11	54	70	75	<	<	1	<	<	2.3	4	7	75	<	9	39	452	7	13	<	<	0.03	0.73	0.14	1.54	0.14	0.07	0.03	0.07
10600N - 9900E P	3.7	19	148	164	332	<	<	1	<	<	<	6	11	81	<	14	45	1478	13	16	<	1	0.03	1.25	0.14	2.52	0.21	0.14	0.03	0.09
10600N - 9950E P	1.3	21	344	172	411	<	<	1	<	<	<	5	15	128	<	12	42	1333	17	19	<	<	0.02	1.16	0.11	2.65	0.15	0.14	0.02	0.08
10600N - 10000E P	1.9	37	882	274	541	6	<	1	<	<	2.2	7	14	104	<	16	35	452	23	15	1	3	0.05	1.54	0.11	3.29	0.37	0.35	0.02	0.07
10600N - 10050E P	3.3	50	2094	305	784	12	<	2	<	<	3.1	8	21	205	6	24	58	499	18	27	1	1	0.03	1.86	0.11	4.29	0.36	0.29	0.02	0.10
10600N - 10100E P	2.7	67	1550	283	873	15	<	1	<	<	4.6	7	19	142	16	19	53	538	17	25	1	2	0.03	1.73	0.06	5.77	0.28	0.28	0.02	0.09
10600N - 10150E P	9.4	29	2340	191	1138	17	<	<	<	<	1.1	5	7	79	8	8	20	665	14	17	1	1	0.01	0.96	0.05	3.23	0.14	0.31	0.02	0.09
10600N - 10200E P	4.4	56	2302	208	524	10	<	1	<	<	2.4	4	10	87	6	9	26	218	20	33	<	1	0.02	1.20	0.08	3.25	0.20	0.30	0.01	0.10
10600N - 10250E P	7.7	46	1814	284	367	7	<	2	<	<	2.3	6	16	83	<	19	45	554	17	17	1	2	0.04	1.17	0.05	4.18	0.27	0.25	0.02	0.09
10600N - 10300E P	4.1	44	2292	267	487	7	<	3	<	<	2.8	5	14	88	10	15	36	331	18	21	1	1	0.02	1.21	0.06	3.54	0.24	0.27	0.02	0.08
10600N - 10350E P	1.3	27	800	169	163	<	<	<	<	<	0.7	4	7	77	<	12	29	615	10	10	<	<	0.02	0.97	0.07	2.15	0.13	0.12	0.03	0.10
10600N - 10400E P	1.4	30	1437	452	282	<	<	2	<	<	3.7	6	14	134	6	20	61	504	18	15	1	2	0.04	1.52	0.12	4.24	0.24	0.15	0.02	0.06
10600N - 10450E P	1.2	28	380	357	210	<	<	3	<	<	1.7	8	17	76	<	21	48	908	15	13	1	1	0.03	1.64	0.12	2.73	0.26	0.12	0.03	0.08
10600N - 10500E P	1.9	28	428	462	233	<	<	2	<	<	1.2	9	17	74	<	16	37	962	21	9	1	2	0.04	1.64	0.10	2.73	0.31	0.22	0.02	0.07
10600N - 10550E P	1.6	13	41	208	63	<	<	1	<	<	3.2	5	8	24	5	9	50	210	8	13	1	1	0.05	0.79	0.19	1.53	0.10	0.03	0.04	0.07
10600N - 10600E P	0.7	9	38	104	58	<	<	1	<	<	1.1	3	5	35	<	5	19	400	5	12	1	<	0.02	0.73	0.16	0.85	0.06	0.04	0.04	0.07
10600N - 10650E P	0.5	16	187	593	168	<	<	2	<	<	1.5	5	14	80	6	15	36	420	17	12	1	1	0.02	1.55	0.14	2.10	0.22	0.11	0.02	0.09
10600N - 10700E P	2.0	34	512	518	298	<	<	3	<	<	<	6	16	102	8	13	29	2211	21	21	1	1	0.02	1.32	0.37	2.47	0.25	0.12	0.02	0.10
10600N - 10750E P	1.8	15	598	487	334	<	<	1	<	<	1.7	4	13	98	7	10	29	850	21	16	<	1	0.02	1.24	0.26	2.76	0.24	0.13	0.02	0.10
10600N - 10800E P	2.0	20	272	430	155	<	<	1	<	<	1.8	4	8	116	<	12	27	1014	11	20	<	<	0.01	1.60	0.25	1.61	0.18	0.11	0.04	0.11
10600N - 10850E P	1.5	26	149	506	124	<	<	2	<	<	4.2	9	19	193	<	24	45	390	17	20	1	2	0.03	2.46	0.24	1.98	0.38	0.12	0.04	0.09
10600N - 10900E P	1.4	8	24	193	43	<	<	1	<	<	2.0	3	6	44	5	5	22	201	7	13	<	<	0.03	0.62	0.20	0.86	0.10	0.03	0.05	0.07
10600N - 10950E P	1.7	25	91	497	116	<	<	2	<	<	2.9	3	10	110	<	11	24	803	17	18	<	1	0.02	1.43	0.25	1.42	0.16	0.06	0.05	0.10
10600N - 11050E P	0.9	17	71	540	94	<	<	2	<	<	1.6	8	15	122	<	21	50	544	14	24	1	2	0.05	1.62	0.34	2.58	0.36	0.11	0.03	0.07
10600N - 11100E P	1.2	18	53	257	70	<	<	1	<	<	1.3	7	24	102	<	25	44	497	14	24	1	3	0.05	1.69	0.62	2.45	0.40	0.12	0.02	0.07
10600N - 11150E P	<	9	2	46	17	<	<	<	<	<	1.0	3	4	17	9	3	23	371	4	14	1	<	0.04	0.59	0.29	1.02	0.06	0.02	0.04	0.09
10600N - 11200E P	1.4	14	27	404	44	<	<	2	<	<	3.0	4	8	53	5	8	25	1550	7	12	1	1	0.01	0.86	0.17	0.99	0.09	0.05	0.03	0.11
10600N - 11325E P	1.7	15	122	214	148	5	<	1	<	<	<	5	10	58	6	8	19	2454	29	17	1	1	0.01	0.95	0.20	2.40	0.17	0.15	0.02	0.09
10600N - 11400E P	1.7	13	115	228	139	<	<	1	<	<	<	5	10	50	<	6	17	3281	26	15	1	<	0.01	0.87	0.11	2.29	0.14	0.14	0.02	0.08
10600N - 11450E P	1.2	13	88	156	115	<	<	2	<	<	<	5	10	62	5	9	24	2035	26	16	1	1	0.01	1.12	0.15	2.46	0.19	0.14	0.02	0.08
10600N - 11500E P	0.8	16	97	531	79	<	<	1	<	<	2.5	8	21	106	7	19	40	805	20	17	1	2	0.04	1.49	0.32	2.23	0.34	0.12	0.02	0.08
10700N - 9700E P	2.5	25	291	275	390	<	<	3	<	<	<	11	19	124	<	22	52	1854	21	13	1	2	0.05	1.73	0.14	3.27	0.34	0.30	0.02	0.08
10700N - 9750E P	2.0	21	245	220	382	<	<	2	<	<	0.4	8	17	103	11	21	54	1222	18	12	1	1	0.04	1.70	0.11	3.19	0.29	0.20	0.02	0.07
10700N - 9800E P	3.8	19	222	206	556	5	<	1	<	<	0.7	5	16	96	<	18	42	959	16	22	1	<	0.02	1.37	0.20	2.83	0.21	0.15	0.02	0.09
10700N - 9850E P	45.7	16	756	223	1052	25	<	1	<	<	1.1	3	13	98	5	9	22	838	18	40	<	1	0.02	1.04	0.16	3.19	0.16	0.32	0.02	0.08
10700N - 9900E P	0.7	8	75	74	164	<	<	1	<	<	1.9	3	4	50	8	5	21	514	11	18	<	<	0.01	0.70	0.12	1.65	0.09	0.09	0.03	0.08
Min Limit	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*	99.9	20000	20000	20000	9999	999	9999	999	999	9999	99.9	9999	9999	9999	999	9999	9999	9999	9999	9999	9999	9999	1.00	9.99	9.99	9.99	9.99	9.99	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

—=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No SampleP=Pulp

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CERTIFICATE OF ANALYSIS
iPL 99-0646

Client : Northern Analytical Laboratories
Project: W.O. 05698

221 Samples
221=Pulp

[064612:38:49:99072999]

Out: Jul 29, 1999
In : Jul 27, 1999

Sample Name	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
10700N - 9950E P	2.3	18	517	131	271	<	<	2	<	<	3.0	3	8	75	<	10	34	233	17	14	<	<	0.02	0.97	0.07	1.81	0.10	0.13	0.01	0.06
10700N - 10000E P	3.7	35	1117	306	458	5	<	1	<	<	1.9	8	16	110	16	20	43	864	21	16	1	1	0.03	1.77	0.10	3.47	0.32	0.27	0.02	0.09
10700N - 10050E P	9.0	21	1960	158	1057	20	<	<	<	<	1.3	4	11	87	5	8	22	555	14	18	<	<	0.01	1.07	0.06	3.25	0.13	0.29	0.02	0.10
10700N - 10100E P	4.7	41	2018	357	556	10	<	1	<	<	2.8	8	21	144	5	21	44	653	25	22	1	2	0.02	1.87	0.10	3.82	0.36	0.28	0.02	0.07
10700N - 10150E P	2.0	26	695	170	218	<	<	2	<	<	2.4	5	14	102	<	13	50	216	13	17	<	<	0.02	1.26	0.10	2.66	0.18	0.13	0.03	0.07
10700N - 10200E P	1.3	33	763	257	203	<	<	3	<	<	3.1	8	15	119	9	22	57	366	16	15	1	1	0.02	1.80	0.10	3.24	0.29	0.14	0.02	0.07
10700N - 10250E P	19.2	35	2760	196	327	10	<	2	<	<	2.5	6	14	66	<	15	56	201	13	16	1	1	0.03	1.26	0.13	3.08	0.18	0.16	0.03	0.09
10700N - 10300E P	1.8	11	214	56	47	<	<	2	<	<	1.6	2	3	37	<	4	9	72	5	9	1	<	0.01	0.98	0.08	0.50	0.04	0.03	0.04	0.06
10700N - 10350E P	<	14	268	100	92	<	<	2	<	<	2.4	3	7	51	<	9	30	346	8	8	<	<	0.02	0.78	0.05	1.45	0.08	0.06	0.02	0.05
10700N - 10400E P	4.4	31	2157	322	210	7	<	1	<	<	2.4	5	12	68	7	14	40	201	20	12	1	1	0.03	1.14	0.11	2.32	0.21	0.11	0.02	0.06
10700N - 10450E P	1.8	24	430	384	118	<	<	2	<	<	2.5	4	14	100	<	17	47	494	17	15	1	1	0.03	1.31	0.14	2.56	0.21	0.10	0.02	0.07
10700N - 10500E P	0.3	24	348	614	252	<	<	<	<	<	1.3	7	19	157	<	21	47	2316	24	18	1	1	0.04	1.72	0.18	3.57	0.34	0.18	0.02	0.06
10700N - 10550E P	0.4	22	394	555	476	<	<	2	<	<	<	9	15	114	<	19	49	2708	17	17	1	1	0.03	1.42	0.18	4.32	0.26	0.15	0.02	0.09
10700N - 10600E P	1.4	17	658	491	338	<	<	1	<	<	1.6	5	13	91	16	11	33	784	24	18	1	1	0.02	1.42	0.28	2.91	0.25	0 16	0.02	0.10
10700N - 10650E P	2.6	19	782	545	367	5	<	2	<	<	1.7	5	13	81	7	10	31	1012	24	17	1	1	0.02	1.25	0.23	3.12	0.22	0.20	0.02	0.11
10700N - 10700E P	3.9	22	216	380	181	<	<	<	<	<	1.0	5	7	68	<	11	46	525	30	22	1	1	0.03	1.22	0.32	2.05	0.15	0.07	0.04	0.08
10700N - 10750E P	1.1	14	223	179	106	<	<	2	<	<	1.7	4	7	37	7	5	41	650	11	15	1	<	0.03	0.67	0.24	1.53	0.07	0.05	0.04	0.09
10700N - 10800E P	3.0	19	65	275	100	<	<	1	<	<	3.3	4	9	60	<	12	40	122	10	16	1	1	0.03	1.22	0.23	1.61	0.15	0.06	0.03	0.10
10700N - 10850E P	1.3	19	163	588	119	<	<	1	<	<	3.5	5	13	108	<	13	37	364	19	15	<	1	0.03	1.58	0.21	1.90	0.23	0.10	0.03	0.07
10700N - 10900E P	2.6	22	121	587	164	<	<	1	<	<	1.9	6	15	131	<	21	48	277	14	21	<	1	0.03	1.99	0.24	2.50	0.35	0.19	0.02	0.06
10700N - 10950E P	0.3	17	83	311	95	<	<	2	<	<	2.0	7	18	114	13	18	39	318	15	18	1	2	0.04	1.34	0.22	2.01	0.32	0.13	0.03	0.05
10700N - 11000E P	0.3	17	108	460	127	<	<	3	<	<	2.0	7	18	186	8	23	46	475	17	20	1	1	0.02	2.17	0.23	2.29	0.38	0.11	0.02	0.08
10800N - 9700E P	<	37	54	145	72	<	<	1	<	<	3.0	21	42	99	<	36	67	749	11	8	1	4	0.08	2.04	0.08	4.90	0.46	0.37	0.02	0.08
10800N - 9750E P	0.6	21	139	117	134	<	<	4	<	<	<	10	21	170	6	25	79	1702	19	12	1	1	0.05	1.46	0.09	3.19	0.20	0.13	0.02	0.08
10800N - 9800E P	6.5	63	1568	272	85	<	<	2	<	6	2.1	5	8	25	<	7	57	171	17	31	<	<	0.03	0.67	0.08	2.86	0.07	0.10	0.02	0.07
10800N - 9850E P	2.5	18	191	145	233	<	<	3	<	<	0.5	7	17	110	<	25	60	1092	18	19	<	1	0.03	1.67	0.17	3.07	0.32	0.12	0.02	0.09
10800N - 9900E P	4.0	15	677	263	607	7	<	2	<	<	2.7	3	12	71	<	10	23	222	22	20	1	<	0.01	1.18	0.07	4.05	0.15	0.32	0.02	0.12
10800N - 9950E P	46.5	28	3754	380	1499	52	<	1	<	<	3.4	3	12	91	<	6	24	159	18	27	1	1	0.02	1.08	0.06	4.12	0.14	0.36	0.03	0.09
10800N - 10000E P	9.9	27	1458	140	898	20	<	1	<	<	0.4	8	20	127	<	13	25	1113	9	25	1	<	0.01	0.98	0.09	3.45	0.12	0.27	0.02	0.11
10800N - 10050E P	2.3	32	683	499	490	<	<	1	<	<	2.1	5	10	63	<	8	23	723	26	21	1	1	0.01	1.44	0.22	3.27	0.24	0.24	0.02	0.10
10800N - 10100E P	6.3	27	1549	364	643	10	<	2	<	<	1.9	4	11	99	11	9	21	488	26	35	1	1	0.01	0.98	0.15	3.24	0.15	0.32	0.02	0.09
10800N - 10150E P	5.3	21	766	216	443	9	<	1	<	<	1.2	6	15	104	24	16	38	567	17	21	<	1	0.03	1.21	0.12	2.71	0.22	0.24	0.03	0.07
10800N - 10200E P	<	20	209	220	204	<	<	3	<	<	1.3	6	19	118	23	21	55	673	18	18	1	1	0.04	1.58	0.18	2.83	0.32	0.16	0.02	0.07
10800N - 10250E P	1.2	36	490	370	294	<	<	2	<	<	<	14	23	134	20	23	56	2043	22	16	1	2	0.05	1.98	0.15	3.50	0.41	0.26	0.02	0.08
10800N - 10300E P	3.0	24	810	193	445	5	<	3	<	<	1.8	8	17	100	45	17	43	610	16	21	1	2	0.04	1.14	0.19	2.73	0.25	0.19	0.03	0.08
10800N - 10350E P	0.5	9	139	48	94	<	<	1	<	<	1.8	4	8	38	5	5	29	202	6	13	1	1	0.03	0.35	0.17	1.00	0.08	0.05	0.04	0.06
10800N - 10400E P	0.7	20	246	217	128	<	<	3	<	<	1.7	7	11	77	8	18	44	462	15	10	1	1	0.02	1.38	0.10	2.48	0.25	0.10	0.02	0.06
10800N - 10450E P	<	11	184	119	76	<	<	1	<	<	1.1	5	8	53	<	8	28	951	9	9	1	<	0.02	0.72	0.09	1.38	0.11	0.06	0.03	0.06
10800N - 10500E P	0.7	19	262	293	125	<	<	2	<	<	2.2	5	15	86	9	18	40	285	16	13	1	1	0.03	1.39	0.15	2.14	0.31	0.11	0.02	0.08
Min Limit	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*	99.9	20000	20000	20000	9999	999	9999	999	999	9999	99.9	9999	9999	9999	999	9999	9999	9999	9999	9999	9999	9999	1.00	9.99	9.99	9.99	9.99	9.99	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

——=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No SampleP=Pulp

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CERTIFICATE OF ANALYSIS
iPL 99-0646

Client : Northern Analytical Laboratories
Project: W.O. 05698

221 Samples
221=Pulp

[064612:38:49:99072999]

Out: Jul 29, 1999
In : Jul 27, 1999

Sample Name	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
10800N - 10550E P	0.6	18	465	540	262	<	<	1	<	<	1.6	5	13	77	10	10	32	883	22	11	1	1	0.02	1.29	0.17	2.81	0.25	0.18	0.02	0.08
10800N - 10600E P	1.8	19	265	565	130	<	<	2	<	<	2.5	3	11	48	6	8	27	605	20	22	<	1	0.02	0.91	0.40	1.60	0.13	0.07	0.03	0.07
10800N - 10650E P	1.2	13	609	503	383	<	<	1	<	<	2.0	3	6	81	<	8	26	676	16	19	<	<	0.01	0.72	0.23	2.45	0.11	0.15	0.01	0.08
10800N - 10700E P	0.8	14	258	296	166	<	<	1	<	<	3.6	3	9	77	<	10	28	356	11	12	1	<	0.01	0.90	0.11	1.90	0.12	0.10	0.02	0.08
10800N - 10750E P	0.1	8	34	107	24	<	<	<	<	<	2.3	4	3	15	<	4	40	95	6	12	<	<	0.05	0.61	0.21	1.16	0.06	0.03	0.04	0.07
10800N - 10800E P	1.9	15	587	450	245	<	<	2	<	<	1.6	5	13	67	11	14	38	587	23	15	1	1	0.02	1.43	0.24	2.57	0.25	0.14	0.02	0.08
10800N - 10850E P	1.4	20	115	366	94	<	<	1	<	<	1.7	6	13	65	5	15	47	239	24	17	1	1	0.04	1.41	0.23	2.06	0.24	0.09	0.04	0.07
10800N - 10900E P	0.5	25	639	771	287	<	<	1	<	<	0.9	8	12	78	13	12	36	1713	27	12	<	2	0.03	1.45	0.18	3.12	0.29	0.23	0.01	0.08
10800N - 10950E P	<	11	93	244	89	<	<	1	<	<	2.7	4	13	66	<	10	24	230	12	11	1	1	0.03	0.97	0.15	1.49	0.22	0.08	0.03	0.05
10800N - 11000E P	1.0	26	246	788	256	<	<	1	<	<	3.0	7	22	181	5	24	48	450	22	21	1	2	0.02	2.51	0.25	3.27	0.43	0.19	0.02	0.08
10900N - 9700E P	0.2	18	55	78	85	<	<	3	<	<	1.9	8	18	93	<	22	64	352	13	12	2	2	0.06	0.95	0.12	2.68	0.20	0.09	0.01	0.08
10900N - 9750E P	0.9	18	409	181	265	<	<	2	<	<	1.5	9	22	69	<	26	49	797	20	10	1	2	0.06	1.71	0.11	3.42	0.40	0.30	0.01	0.09
10900N - 9800E P	1.0	17	128	180	132	<	<	2	<	<	<	9	29	80	16	25	49	1917	22	12	1	1	0.04	1.74	0.13	3.06	0.40	0.12	0.02	0.09
10900N - 9850E P	5.3	8	106	200	328	8	<	1	<	<	<	5	13	58	<	8	13	2911	28	34	1	1	0.01	1.23	0.10	2.55	0.19	0.23	0.02	0.10
10900N - 9900E P	2.0	13	227	261	317	7	<	1	<	<	<	5	10	124	13	12	28	2651	22	15	1	<	0.01	1.31	0.06	2.60	0.14	0.15	0.01	0.11
10900N - 9950E P	3.2	16	1025	144	449	13	<	2	<	<	1.5	3	12	71	5	9	38	216	21	15	1	<	0.01	0.81	0.04	2.36	0.05	0.19	0.02	0.08
10900N - 10000E P	2.1	24	564	355	415	6	<	2	<	<	<	9	30	73	8	14	26	2115	30	20	1	<	0.01	1.64	0.05	2.94	0.22	0.20	0.01	0.11
10900N - 10050E P	23.0	33	5838	185	4748	65	<	2	<	<	0.8	5	9	68	8	8	31	932	14	24	1	<	0.01	0.81	0.09	3.12	0.09	0.26	0.02	0.09
10900N - 10100E P	11.1	31	2612	434	983	22	<	1	<	<	1.2	9	27	115	25	19	31	1226	21	31	1	2	0.03	1.60	0.30	3.61	0.35	0.35	0.02	0.12
10900N - 10150E P	1.9	19	319	228	425	<	<	1	<	<	0.9	9	26	119	69	23	42	1015	21	20	1	2	0.05	1.83	0.18	3.11	0.41	0.30	0.02	0.09
10900N - 10200E P	1.7	16	575	163	199	<	<	2	<	<	<	10	12	97	14	13	35	4307	11	14	<	<	0.01	1.06	0.12	2.15	0.19	0.12	0.02	0.10
10900N - 10250E P	2.9	27	783	225	499	7	<	2	<	<	1.5	7	21	148	63	19	37	721	20	27	1	1	0.02	1.10	0.21	2.96	0.22	0.20	0.02	0.09
10900N - 10300E P	1.9	23	319	362	223	<	<	1	<	<	0.2	6	16	134	6	18	38	1286	20	21	<	<	0.01	1.69	0.27	2.66	0.28	0.15	0.02	0.14
10900N - 10350E P	2.6	36	494	306	535	6	<	<	<	<	1.4	5	17	175	<	13	33	1047	22	28	<	1	0.02	1.20	0.29	2.67	0.22	0.18	0.02	0.10
10900N - 10400E P	1.8	25	477	250	208	<	<	2	<	<	1.5	8	17	76	9	19	49	805	20	14	1	1	0.02	1.51	0.13	2.86	0.26	0.15	0.02	0.11
10900N - 10450E P	0.7	19	409	283	239	<	<	2	<	<	1.4	5	11	94	<	9	36	674	18	18	1	1	0.02	1.00	0.13	2.14	0.16	0.13	0.03	0.06
10900N - 10500E P	1.4	25	588	507	301	<	<	1	<	<	0.7	6	13	89	14	12	34	1220	26	10	1	1	0.02	1.57	0.11	3.01	0.26	0.21	0.02	0.08
10900N - 10550E P	2.4	19	658	394	389	<	<	1	<	<	0.7	5	12	87	<	9	27	1060	18	15	1	1	0.02	1.10	0.12	2.71	0.19	0.19	0.02	0.08
10900N - 10600E P	1.3	11	387	193	177	<	<	1	<	<	1.3	4	11	45	6	7	52	392	10	11	1	<	0.04	0.63	0.11	2.20	0.10	0.08	0.03	0.06
10900N - 10650E P	2.0	21	597	409	228	<	<	1	<	<	1.2	5	12	60	11	12	34	593	17	11	<	1	0.02	1.18	0.14	2.51	0.22	0.12	0.02	0.08
10900N - 10700E P	0.2	17	459	451	151	<	<	2	<	<	1.1	6	14	66	<	14	40	616	12	10	1	1	0.05	1.03	0.11	2.44	0.24	0.12	0.02	0.04
10900N - 10750E P	2.6	51	835	3186	369	7	<	<	<	<	4.0	7	27	122	<	22	44	3483	41	19	1	3	0.02	2.62	0.29	3.92	0.45	0.16	0.01	0.08
10900N - 10800E P	<	6	34	87	22	<	<	<	<	<	1.5	3	3	25	<	3	28	116	5	13	<	<	0.03	0.48	0.19	0.90	0.06	0.04	0.03	0.06
10900N - 10850E P	1.8	18	574	968	125	<	<	1	<	<	4.6	5	13	67	5	12	42	381	22	21	1	1	0.03	1.11	0.33	1.93	0.22	0.07	0.03	0.09
10900N - 10900E P	<	16	102	294	88	<	<	2	<	<	2.1	7	20	89	<	24	68	406	16	13	1	1	0.05	1.33	0.12	2.71	0.27	0.10	0.01	0.05
10900N - 10950E P	<	13	151	621	90	<	<	<	<	<	4.2	5	8	100	<	12	30	433	18	24	<	<	0.02	1.16	0.35	1.80	0.24	0.09	0.02	0.09
10900N - 11000E P	<	16	177	309	133	<	<	<	<	<	1.4	6	13	85	<	16	39	349	12	12	<	1	0.02	1.48	0.11	2.26	0.25	0.09	0.02	0.07
11000N - 9700E P	1.2	14	315	212	222	5	<	3	<	<	0.1	7	16	96	<	19	43	1134	19	14	<	1	0.03	1.38	0.09	2.74	0.27	0.14	0.01	0.06
11000N - 9750E P	0.5	10	200	130	195	<	<	2	<	<	<	5	13	91	5	14	39	1126	18	12	<	1	0.03	1.07	0.07	2.24	0.17	0.13	0.01	0.07
Min Limit	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*	99.9	20000	20000	20000	9999	999	9999	999	999	9999	99.9	9999	9999	9999	999	9999	9999	9999	9999	9999	9999	9999	1.00	9.99	9.99	9.99	9.99	9.99	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

—=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No SampleP=Pulp

CERTIFICATE OF ANALYSIS
iPL 99-0646

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Client : Northern Analytical Laboratories
Project: W.O. 05698

221 Samples
221=Pulp

[064612:38:49:99072999]

Out: Jul 29, 1999
In : Jul 27, 1999

Sample Name	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
11000N - 9800E P	2.7	13	101	84	236	<	<	3	<	<	3.2	4	12	69	6	11	37	219	16	15	1	1	0.02	0.65	0.06	1.62	0.05	0.11	0.01	0.06
11000N - 9850E P	3.3	16	504	121	227	8	<	2	<	<	1.7	3	10	73	9	7	34	167	12	13	1	<	0.01	0.52	0.03	2.25	0.04	0.16	0.02	0.09
11000N - 9900E P	2.8	15	272	106	264	9	<	1	<	<	1.5	3	9	87	9	7	18	336	14	57	<	1	0.01	0.82	0.04	2.62	0.10	0.24	0.02	0.08
11000N - 9950E P	10.6	18	1459	114	996	18	<	2	<	<	1.4	5	14	83	5	12	40	321	14	17	1	1	0.02	0.66	0.04	2.53	0.06	0.16	0.02	0.07
11000N - 10000E P	7.6	46	417	283	1795	13	<	3	<	<	2.1	14	34	97	21	26	49	906	17	18	1	2	0.05	1.68	0.08	4.84	0.34	0.36	0.02	0.08
11000N - 10050E P	4.2	31	185	177	342	<	<	2	<	<	1.9	12	27	93	33	26	57	783	19	16	1	2	0.05	1.65	0.05	4.26	0.31	0.25	0.01	0.05
11000N - 10100E P	2.6	31	738	282	653	13	<	2	<	<	2.7	15	40	174	134	33	50	750	22	27	1	4	0.09	1.93	0.26	4.06	0.55	0.45	0.02	0.09
11000N - 10150E P	2.7	25	300	147	308	7	<	1	<	<	1.7	10	31	130	113	28	57	707	15	17	1	2	0.06	1.55	0.11	3.60	0.36	0.25	0.02	0.07
11000N - 10200E P	1.5	29	237	171	247	<	<	2	<	<	0.9	9	24	127	51	23	41	822	22	15	1	2	0.03	1.75	0.14	2.99	0.39	0.16	0.02	0.07
11000N - 10250E P	1.4	14	119	207	115	<	<	2	<	<	1.2	5	15	60	11	16	39	641	10	11	<	<	0.01	0.92	0.10	2.50	0.18	0.12	0.01	0.09
11000N - 10300E P	1.3	22	389	288	469	<	<	2	<	<	1.1	7	23	120	14	17	35	991	18	21	1	1	0.03	1.06	0.23	2.86	0.28	0.19	0.02	0.09
11000N - 10350E P	0.6	18	275	238	295	<	<	<	<	<	0.5	8	14	107	<	15	37	1105	16	20	<	1	0.02	1.11	0.18	2.71	0.25	0.15	0.02	0.09
11000N - 10400E P	<	11	130	146	134	<	<	1	<	<	2.8	4	12	99	<	11	44	517	13	15	<	<	0.02	0.90	0.18	1.97	0.15	0.09	0.02	0.07
11000N - 10450E P	1.3	16	512	413	229	<	<	1	<	<	0.8	5	10	89	9	9	31	875	18	18	1	1	0.02	1.02	0.23	2.71	0.20	0.15	0.02	0.10
11000N - 10500E P	1.7	17	643	406	430	5	<	2	<	<	0.1	5	15	96	10	12	31	1374	19	17	<	1	0.02	1.04	0.19	2.95	0.21	0.17	0.02	0.10
11000N - 10550E P	1.7	22	715	666	284	<	<	1	<	<	1.0	7	15	77	12	14	34	1396	24	13	1	2	0.02	1.37	0.20	3.06	0.26	0.18	0.02	0.10
11000N - 10600E P	1.7	23	665	415	221	5	<	3	<	<	1.6	5	14	77	<	15	38	554	17	11	1	1	0.01	1.51	0.12	2.53	0.26	0.12	0.02	0.09
11000N - 10650E P	1.6	15	410	312	176	<	<	2	<	<	1.4	5	10	77	<	9	30	495	14	13	1	1	0.02	0.81	0.12	2.13	0.17	0.10	0.02	0.07
11000N - 10700E P	1.5	26	683	799	305	<	<	1	<	<	0.2	8	16	72	6	11	31	1813	22	11	1	2	0.03	1.28	0.17	3.10	0.27	0.20	0.01	0.08
11000N - 10750E P	1.0	23	507	464	232	<	<	2	<	<	2.2	6	15	96	<	15	38	720	15	12	1	1	0.02	1.27	0.10	2.62	0.25	0.12	0.02	0.07
11000N - 10800E P	<	18	395	364	116	<	<	1	<	<	1.2	3	9	69	6	8	36	497	11	10	<	<	0.01	0.88	0.06	2.53	0.09	0.11	0.02	0.08
11000N - 10850E P	1.4	26	682	1240	181	<	<	<	10	<	4.0	4	13	89	11	15	40	473	29	19	1	1	0.01	1.95	0.22	2.74	0.26	0.10	0.02	0.13
11000N - 10900E P	0.6	17	284	284	82	<	<	1	<	<	2.1	5	13	80	<	14	43	404	13	13	1	<	0.01	1.31	0.14	2.01	0.18	0.09	0.02	0.10
11000N - 10950E P	<	4	20	64	11	<	<	1	<	<	1.7	3	3	28	<	3	23	83	4	13	<	<	0.03	0.29	0.16	0.73	0.05	0.03	0.04	0.04
11000N - 11000E P	0.2	14	223	320	105	<	<	1	<	<	1.9	6	14	86	15	12	40	433	15	11	<	<	0.02	1.21	0.11	2.25	0.22	0.10	0.02	0.07
11100N - 9700E P	4.2	13	377	163	500	8	<	1	<	<	<	5	13	86	10	13	30	1330	23	24	<	1	0.02	1.10	0.06	2.67	0.18	0.17	0.01	0.07
11100N - 9750E P	41.5	17	623	187	1023	20	<	<	<	<	<	6	14	97	<	14	27	3755	15	20	<	1	0.01	1.03	0.04	3.29	0.14	0.13	0.01	0.07
11100N - 9800E P	19.0	43	171	162	553	14	<	1	<	<	2.5	11	24	65	<	19	33	672	12	7	1	6	0.01	0.95	0.02	5.28	0.12	0.23	0.01	0.05
11100N - 9850E P	<	38	65	117	262	<	<	3	<	<	2.4	16	37	95	5	33	68	884	9	14	1	3	0.10	1.66	0.04	4.81	0.32	0.31	0.01	0.07
11100N - 9900E P	1.0	35	64	159	105	<	<	2	<	<	3.9	25	43	174	<	58	70	1027	8	13	2	7	0.14	3.12	0.18	5.24	0.79	0.82	0.02	0.06
11100N - 9950E P	2.0	36	78	162	140	<	<	2	<	<	0.8	27	38	170	21	36	68	1661	7	19	1	3	0.09	1.85	0.13	4.36	0.41	0.37	0.02	0.11
11100N - 10000E P	4.0	67	91	460	881	12	<	2	76	<	3.4	62	96	191	12	27	45	2167	18	73	2	4	0.03	1.56	0.06	7.31	0.24	0.40	0.03	0.10
11100N - 10050E P	2.5	39	121	231	430	<	<	3	33	<	0.4	31	61	204	41	44	59	2452	14	24	1	6	0.07	2.50	0.10	6.00	0.60	0.50	0.02	0.07
11100N - 10100E P	6.9	24	668	180	678	13	<	2	<	<	2.6	11	31	117	75	33	61	527	13	16	1	3	0.07	1.71	0.12	4.05	0.42	0.27	0.02	0.05
11100N - 10150E P	2.0	28	254	183	151	<	<	1	<	<	1.1	10	27	109	51	24	51	937	16	18	1	2	0.05	1.49	0.10	3.29	0.33	0.19	0.02	0.06
11100N - 10200E P	4.3	21	842	244	1030	12	<	2	<	<	1.2	7	23	71	18	18	36	704	16	19	1	1	0.03	0.98	0.18	2.92	0.26	0.17	0.02	0.09
11100N - 10250E P	1.4	15	269	142	268	<	<	2	<	<	0.5	5	14	80	10	14	42	649	13	11	<	1	0.03	0.77	0.06	2.35	0.09	0.11	0.01	0.04
11100N - 10300E P	1.7	17	340	219	154	5	<	1	<	<	0.9	4	11	101	<	10	22	536	18	21	<	<	0.01	0.73	0.20	2.13	0.15	0.12	0.02	0.09
11100N - 10350E P	1.3	14	371	226	235	<	<	1	<	<	1.3	4	17	85	7	13	28	503	16	16	1	1	0.02	0.85	0.19	2.27	0.21	0.13	0.01	0.09
Min Limit	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*	99.9	20000	20000	20000	9999	999	9999	999	999	9999	99.9	9999	9999	9999	999	9999	9999	9999	9999	9999	9999	9999	1.00	9.99	9.99	9.99	9.99	9.99	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

——=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No SampleP=Pulp

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CERTIFICATE OF ANALYSIS
iPL 99-0646

Client : Northern Analytical Laboratories
Project: W.O. 05698

221 Samples
221=Pulp

[064612:38:49:99072999]

Out: Jul 29, 1999
In : Jul 27, 1999

Sample Name	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
11100N - 10400E P	2.0	16	635	362	182	<	<	2	<	<	0.6	5	8	72	17	6	23	982	15	19	<	1	0.02	0.86	0.23	2.62	0.17	0.17	0.02	0.10
11100N - 10450E P	1.4	16	290	246	157	<	<	2	<	<	0.3	6	14	93	11	14	35	871	14	14	<	<	0.01	1.00	0.13	2.45	0.18	0.12	0.01	0.09
11100N - 10500E P	1.4	14	445	451	236	<	<	1	<	<	0.6	5	10	128	5	11	29	1260	15	18	1	1	0.01	1.14	0.19	2.75	0.21	0.14	0.01	0.08
11100N - 10550E P	<	13	354	251	166	<	<	1	<	<	0.7	3	7	61	10	9	35	493	11	12	1	<	0.02	0.70	0.10	2.31	0.11	0.10	0.01	0.06
11100N - 10600E P	0.7	17	703	501	262	<	<	1	<	<	<	6	14	73	6	10	28	1341	16	14	1	1	0.02	1.11	0.18	2.90	0.23	0.17	0.02	0.09
11100N - 10650E P	1.6	15	446	386	228	<	<	2	<	<	0.7	5	9	70	9	10	27	999	15	12	1	1	0.01	0.92	0.13	2.30	0.15	0.12	0.02	0.08
11100N - 10700E P	1.1	17	442	518	244	<	<	1	<	<	1.2	5	12	76	15	11	29	914	16	12	1	1	0.02	1.14	0.12	2.68	0.23	0.14	0.02	0.07
11100N - 10750E P	1.6	17	447	561	157	<	<	<	<	<	0.3	6	16	74	<	12	29	1239	15	12	1	1	0.02	1.07	0.15	2.51	0.24	0.13	0.02	0.07
11100N - 10800E P	1.6	19	428	478	190	<	<	1	<	<	1.6	6	16	70	8	16	43	797	16	10	1	1	0.03	1.28	0.09	2.95	0.22	0.13	0.01	0.06
11200N - 9750E P	0.2m	24	14306	513	1.1%	429	<	1	64	<	6.7	4	14	45	<	4	13	465	8	37	2	<	<	0.36	0.02	7.60	0.03	0.87	0.10	0.08
11200N - 9800E P	3.5	33	175	158	500	5	<	2	<	<	<	17	38	85	16	24	46	2160	9	11	1	3	0.03	1.24	0.07	4.85	0.20	0.22	0.01	0.06
11200N - 9850E P	16.6	47	344	146	441	8	<	2	<	<	1.6	15	37	114	25	24	36	871	6	29	1	1	0.01	1.55	0.17	4.26	0.23	0.25	0.02	0.13
11200N - 9900E P	5.7	38	165	307	1158	7	<	1	<	<	3.8	17	40	152	<	28	41	942	7	64	1	5	0.06	1.32	0.06	6.32	0.29	0.63	0.02	0.06
11200N - 10000E P	<	75	61	381	193	<	<	3	22	<	2.9	22	57	132	181	30	57	1595	12	28	1	3	0.02	1.68	0.13	5.42	0.45	0.20	0.01	0.07
11200N - 10050E P	0.7	29	54	413	226	<	<	1	<	3	1.4	14	37	189	397	28	54	1832	15	37	1	3	0.04	1.96	0.33	3.12	0.51	0.10	0.02	0.08
11200N - 10100E P	<	40	69	165	146	<	<	1	<	<	2.1	17	32	138	23	32	60	753	12	13	1	2	0.06	1.87	0.08	4.24	0.47	0.22	0.02	0.05
11200N - 10150E P	0.2	27	173	175	191	<	<	3	<	<	<	11	33	96	14	25	48	1451	14	15	1	2	0.04	1.37	0.09	3.37	0.35	0.13	0.02	0.05
11200N - 10200E P	1.8	21	784	194	203	5	<	2	<	<	1.8	4	6	134	<	6	23	575	9	32	<	<	0.01	0.56	0.04	3.72	0.05	0.30	0.03	0.12
11200N - 10250E P	<	20	186	131	202	<	<	3	<	<	0.6	5	12	81	8	12	40	529	8	13	<	<	0.01	0.83	0.10	2.19	0.11	0.09	0.01	0.09
11200N - 10300E P	0.4	19	196	153	300	<	<	2	<	<	1.4	5	15	85	<	13	47	391	9	14	<	<	0.02	0.90	0.07	2.49	0.17	0.14	0.01	0.07
11200N - 10350E P	<	19	172	148	269	<	<	2	<	<	1.8	5	15	69	8	15	42	262	11	13	1	1	0.02	0.81	0.08	2.29	0.16	0.10	0.01	0.06
11200N - 10400E P	0.9	19	128	134	112	<	<	3	<	<	0.9	4	11	103	<	12	34	1129	10	9	1	<	<	0.73	0.04	1.86	0.09	0.07	0.01	0.09
11200N - 10450E P	1.1	18	347	153	174	<	<	2	<	<	0.9	6	13	74	<	14	52	606	14	13	1	1	0.04	0.82	0.09	2.32	0.15	0.11	0.01	0.05
11200N - 10500E P	1.8	20	392	114	117	<	<	2	<	<	0.4	4	12	103	10	10	42	1310	11	11	<	<	0.02	0.77	0.08	1.72	0.08	0.08	0.02	0.07
11200N - 10550E P	1.5	19	755	424	393	5	<	1	<	<	0.3	5	11	82	<	9	27	1262	23	20	1	1	0.02	0.87	0.25	2.85	0.18	0.16	0.02	0.11
11200N - 10600E P	1.6	20	363	221	225	<	<	2	<	<	0.9	5	17	78	<	15	42	719	13	11	<	1	0.03	0.95	0.09	2.47	0.17	0.12	0.01	0.07
11200N - 10650E P	3.1	17	883	319	257	<	<	2	<	<	1.2	4	13	69	<	13	32	617	13	10	1	1	0.01	0.92	0.10	2.65	0.18	0.10	0.01	0.06
11200N - 10700E P	1.3	17	210	345	120	<	<	1	<	<	1.1	5	13	72	<	15	36	821	16	9	<	1	0.02	0.99	0.09	2.41	0.18	0.09	0.01	0.07
11200N - 10750E P	1.6	23	345	421	112	<	<	2	<	<	0.8	6	12	80	5	18	45	943	17	10	1	1	0.02	1.20	0.09	2.78	0.23	0.11	0.01	0.07
11200N - 10800E P	0.5	21	475	585	255	<	<	<	<	<	1.1	4	11	55	<	12	32	674	14	11	<	1	0.02	1.04	0.13	2.69	0.22	0.13	0.01	0.08
11300N - 9700E P	7.0	21	667	731	537	9	<	1	<	<	<	6	23	39	6	8	14	2249	24	40	1	1	0.02	1.03	0.27	3.21	0.20	0.25	0.02	0.12
11300N - 9750E P	17.2	18	1187	528	1635	10	<	1	<	<	<	5	13	85	12	7	15	2360	16	36	1	1	0.01	0.68	0.14	4.79	0.11	0.52	0.04	0.08
11300N - 9800E P	18.7	23	1795	203	790	18	<	2	<	<	0.9	9	22	51	<	12	22	763	10	19	1	2	0.01	0.76	0.07	3.55	0.11	0.23	0.01	0.05
11300N - 9850E P	3.3	50	170	230	527	<	<	<	10	<	1.8	25	53	184	<	39	56	1703	10	24	1	5	0.08	2.04	0.12	5.98	0.46	0.62	0.02	0.07
11300N - 9900E P	1.9	48	654	305	608	5	<	2	<	<	2.7	19	35	88	<	24	39	912	19	44	2	4	0.07	1.77	0.22	4.27	0.43	0.46	0.02	0.10
11300N - 10000E P	1.8	22	38	115	103	<	<	2	<	<	3.7	6	10	54	<	13	56	171	10	14	1	1	0.05	1.24	0.23	1.93	0.19	0.07	0.03	0.10
11400N - 9700E P	1.6	27	211	426	1134	12	<	2	<	<	0.7	6	14	39	5	5	18	986	20	78	1	1	0.01	1.11	0.20	2.94	0.19	0.24	0.02	0.07
11400N - 9750E P	1.7	44	271	1848	179	<	<	1	<	<	<	27	29	62	7	7	23	1.4%	25	30	2	2	0.04	1.23	0.22	4.19	0.26	0.30	0.02	0.10
11400N - 9800E P	2.4	36	1703	1282	311	5	<	1	<	<	1.8	6	21	23	10	6	13	1820	32	79	7	1	0.01	0.80	0.22	4.27	0.17	0.21	0.03	0.13
Min Limit	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*	99.9	20000	20000	20000	9999	999	9999	999	999	9999	99.9	9999	9999	9999	999	9999	9999	9999	9999	9999	9999	9999	1.00	9.99	9.99	9.99	9.99	9.99	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

—=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No SampleP=Pulp

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CERTIFICATE OF ANALYSIS
iPL 99-0646

Client : Northern Analytical Laboratories
Project: W.O. 05698

221 Samples
221=Pulp

[064612:38:49:99072999]

Out: Jul 29, 1999
In : Jul 27, 1999

Sample Name	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
11400N - 9850E P	14.0	34	5655	401	1664	39	<	1	<	<	2.8	6	15	56	<	10	19	454	12	31	2	2	0.03	0.78	0.05	4.52	0.18	0.51	0.03	0.10
11400N - 9900E P	6.5	54	2109	389	1958	29	<	<	<	<	1.0	19	42	91	<	21	34	1821	14	34	3	4	0.06	1.31	0.17	5.15	0.33	0.51	0.02	0.12
11400N - 10000E P	1.2	15	81	128	98	<	<	2	<	<	3.0	6	12	80	<	13	39	505	8	12	1	<	0.02	1.13	0.11	1.97	0.19	0.10	0.02	0.07
11500N - 9700E P	1.0	21	511	781	143	<	<	<	<	<	1.1	10	15	63	<	8	34	1486	23	18	2	3	0.04	2.08	0.40	2.91	0.50	0.33	0.01	0.08
11500N - 9750E P	14.7	32	4187	181	341	22	<	2	<	<	1.8	2	4	32	18	3	18	263	11	29	1	1	0.01	0.53	0.06	3.05	0.05	0.30	0.02	0.07
11500N - 9800E P	4.9	60	1930	552	574	15	<	1	<	<	3.6	3	8	43	12	4	17	170	19	45	2	2	0.01	0.81	0.02	3.92	0.13	0.36	0.02	0.08
11500N - 9850E P	6.6	51	2023	393	1736	19	<	1	<	<	2.5	15	29	91	<	22	37	1146	18	31	2	4	0.06	1.53	0.17	4.89	0.38	0.55	0.02	0.10
11500N - 9900E P	2.3	56	310	402	551	<	3	2	<	<	2.4	29	55	158	10	40	57	1984	17	23	3	6	0.13	2.46	0.26	6.03	0.72	0.73	0.02	0.08
11050N - 9800E P	7.0	22	232	216	597	6	3	<	<	<	<	9	19	108	20	24	48	2097	12	11	1	1	0.04	1.27	0.05	3.62	0.23	0.22	0.01	0.06
11150N - 9800E P	3.6	62	76	221	578	<	<	<	11	<	4.4	20	38	101	6	26	42	675	10	8	2	7	0.02	1.11	0.01	6.71	0.16	0.32	0.01	0.08
11250N - 9800E P	0.9	63	82	212	93	<	<	1	24	<	4.9	30	57	108	9	36	48	978	9	43	2	5	0.05	2.17	0.08	6.57	0.48	0.33	0.02	0.09
11350N - 9800E P	32.6	63	6132	348	3880	60	<	2	16	<	3.3	19	40	112	<	23	39	1343	9	30	2	5	0.06	1.23	0.16	6.02	0.30	0.60	0.02	0.08
11450N - 9800E P	36.9	30	8986	597	1617	46	<	2	<	<	2.6	6	23	25	<	10	18	555	22	39	9	2	0.04	1.24	0.12	3.77	0.30	0.46	0.02	0.11
10050N - 10000E P	5.3	38	138	360	188	<	<	3	<	<	2.8	15	52	237	9	43	77	771	20	28	1	5	0.06	3.00	0.36	3.75	0.64	0.24	0.02	0.07
10100N - 10000E P	4.3	20	78	224	116	<	<	2	<	<	2.6	11	31	158	<	35	63	340	22	25	1	4	0.08	2.19	0.41	2.91	0.57	0.22	0.02	0.07
10150N - 10000E P	3.9	19	44	146	110	<	<	3	<	<	1.4	5	26	136	<	17	41	267	8	27	1	1	0.02	2.16	0.34	2.01	0.23	0.12	0.03	0.08
10250N - 10000E P	1.9	27	66	220	126	<	<	3	<	<	2.5	7	25	151	<	25	48	377	17	38	1	1	0.03	2.07	0.56	2.75	0.43	0.19	0.02	0.10
10350N - 10000E P	<	24	113	241	180	<	<	1	<	<	1.1	8	19	161	<	23	58	803	14	20	<	1	0.04	1.37	0.25	2.98	0.31	0.20	0.02	0.06
10450N - 10000E P	1.6	21	186	224	269	<	<	2	<	<	1.7	6	17	134	<	22	47	503	13	11	1	1	0.02	1.90	0.09	2.87	0.36	0.13	0.02	0.07
10550N - 10000E P	1.0	26	230	171	252	<	<	2	<	<	0.3	4	9	72	<	13	36	763	9	10	<	<	0.01	1.28	0.08	2.31	0.15	0.07	0.02	0.08
10650N - 10000E P	2.3	29	877	144	317	<	<	2	<	<	1.4	4	9	95	13	13	36	303	10	15	<	<	0.01	1.22	0.08	2.46	0.16	0.12	0.02	0.08
10750N - 10000E P	4.6	20	740	146	380	6	<	1	<	<	1.3	3	9	63	<	9	26	318	11	13	<	<	0.01	1.15	0.06	2.36	0.16	0.17	0.02	0.09
10850N - 10000E P	18.1	29	2634	433	1423	42	<	2	<	<	2.0	3	14	51	7	10	17	388	26	37	1	<	0.01	1.17	0.19	2.80	0.20	0.29	0.02	0.13
10950N - 10000E P	1.4	15	191	142	159	<	<	1	<	<	<	7	22	67	9	22	44	1591	20	9	1	1	0.02	1.67	0.12	3.08	0.30	0.10	0.01	0.08
10000N - 10000E P	<	41	43	184	67	<	<	3	<	<	3.6	16	42	220	<	44	81	410	19	22	2	7	0.15	2.52	0.24	4.09	0.67	0.56	0.02	0.07
10200N - 10000E P	2.3	28	66	299	152	<	<	2	<	<	1.7	11	25	183	<	31	56	960	17	39	1	4	0.07	2.13	0.70	3.14	0.52	0.23	0.02	0.07
Min Limit	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	6	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*	99.9	20000	20000	20000	9999	999	9999	999	999	9999	99.9	9999	9999	9999	999	9999	9999	9999	9999	9999	9999	9999	1.00	9.99	9.99	9.99	9.99	9.99	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

——=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No SampleP=Pulp

Northern Analytical Laboratories ltd.

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04/08/99

Certificate of Analysis

of pages (not including this page): 1

Pacific Ridge

WO# 05709

Certified by _____
John Reeve (Senior Chemist)

Date Received: 30/07/99

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
s	28	soil	Screen -80 mesh
s40	2	soil	Screen -80 mesh, -40 mesh for FA (insufficient -80 mesh)

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Au	ppb	Gold	G: FA/AAS	15g FA / aqua regia	5	7000

AAS = atomic absorption spectrophotometry
FA = fire assay

1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

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Pacific Ridge

WO# 05709

Certified by

	Sample #		Au ppb
s	10100N	11050E	39
s	10100N	11100E	5
s	10100N	11150E	<5
s	10100N	11200E	5
s40	10100N	11300E	<5
s	10100N	11350E	16
s	10100N	11400E	<5
s	10100N	11450E	19
s	10100N	11550E	91
s	10100N	11600E	5
s	10100N	11650E	<5
s	10100N	11700E	6
s40	10100N	11750E	9
s	10100N	11800E	<5
s	10100N	11850E	5
s	10100N	11900E	<5
s	10100N	11950E	5
s	10100N	12000E	<5
s	RIDGE-1		6
s	RIDGE-2		<5
s	RIDGE-3		<5
s	RIDGE-4		<5
s	RIDGE-5		<5
s	RIDGE-6		<5
s	RIDGE-7		<5
s	RIDGE-8		<5
s	RIDGE-9		<5
s	RIDGE-10		<5
s	RIDGE-11		9
s	RIDGE-12		6

CERTIFICATE OF ANALYSIS
iPL 99H0691

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Northern Analytical Laboratories

30 Samples Out: Aug 10, 1999 In: Aug 04, 1999 [069113:46:31:99081099]

Project : W.O. 05709
Shipper : Norm Smith
Shipment: PO#:
Analysis:
ICP(AqR)30

Comment: PACIFIC RIDGE

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CODE	AMOUNT	TYPE	PREPARATION DESCRIPTION	PULP	REJECT
B311	30	Pulp	Pulp received as it is, no sample prep.	12M/Dis	00M/Dis

NS=No Sample Rep=Replicate M=Month Dis=Discard

Analytical Summary

##	Code	Method	Units	Description	Element	Limit Low	Limit High
01	0721	ICP	ppm	Ag ICP	Silver	0.1	99.9
02	0711	ICP	ppm	Cu ICP	Copper	1	20000
03	0714	ICP	ppm	Pb ICP	Lead	2	20000
04	0730	ICP	ppm	Zn ICP	Zinc	1	20000
05	0703	ICP	ppm	As ICP	Arsenic	5	9999
06	0702	ICP	ppm	Sb ICP	Antimony	5	999
07	0732	ICP	ppm	Hg ICP	Mercury	3	9999
08	0717	ICP	ppm	Mo ICP	Molydenum	1	999
09	0747	ICP	ppm	Tl ICP (Incomplete Digestion)	Thallium	10	999
10	0705	ICP	ppm	Bi ICP	Bismuth	2	9999
11	0707	ICP	ppm	Cd ICP	Cadmium	0.1	99.9
12	0710	ICP	ppm	Co ICP	Cobalt	1	9999
13	0718	ICP	ppm	Ni ICP	Nickel	1	9999
14	0704	ICP	ppm	Ba ICP (Incomplete Digestion)	Barium	2	9999
15	0727	ICP	ppm	W ICP (Incomplete Digestion)	Tungsten	5	999
16	0709	ICP	ppm	Cr ICP (Incomplete Digestion)	Chromium	1	9999
17	0729	ICP	ppm	V ICP	Vanadium	2	9999
18	0716	ICP	ppm	Mn ICP	Manganese	1	9999
19	0713	ICP	ppm	La ICP (Incomplete Digestion)	Lanthanum	2	9999
20	0723	ICP	ppm	Sr ICP (Incomplete Digestion)	Strontium	1	9999
21	0731	ICP	ppm	Zr ICP	Zirconium	1	9999
22	0736	ICP	ppm	Sc ICP	Scandium	1	9999
23	0726	ICP	%	Ti ICP (Incomplete Digestion)	Titanium	0.01	1.00
24	0701	ICP	%	Al ICP (Incomplete Digestion)	Aluminum	0.01	9.99
25	0708	ICP	%	Ca ICP (Incomplete Digestion)	Calcium	0.01	9.99
26	0712	ICP	%	Fe ICP	Iron	0.01	9.99
27	0715	ICP	%	Mg ICP (Incomplete Digestion)	Magnesium	0.01	9.99
28	0720	ICP	%	K ICP (Incomplete Digestion)	Potassium	0.01	9.99
29	0722	ICP	%	Na ICP (Incomplete Digestion)	Sodium	0.01	5.00
30	0719	ICP	%	P ICP	Phosphorus	0.01	5.00

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* Our liability is limited solely to the analytical cost of these analyses

BC Certified Assayer: David Chiu

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CERTIFICATE OF ANALYSIS
iPL 99110691

Client : Northern Analytical Laboratories
Project: W.O. 05709

30 Samples
30=Pulp

[069113:46:31:99081099]

Out: Aug 10, 1999
In : Aug 04, 1999

Sample Name	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
10100N 11050E P	5.0	68	120	285	132	<	<	4	<	<	<	20	54	146	<	28	60	1279	13	34	3	4	0.02	1.98	0.80	4.48	0.45	0.17	0.02	0.07
10100N 11100E P	2.8	63	109	280	106	<	<	3	<	<	<	21	63	147	11	31	67	1585	13	25	2	4	0.06	1.86	0.36	4.34	0.55	0.36	0.02	0.07
10100N 11150E P	1.5	35	62	190	121	<	<	2	<	<	<	19	35	87	<	20	31	2342	20	25	1	3	0.05	1.45	0.23	4.52	0.36	0.44	0.01	0.10
10100N 11200E P	1.4	36	65	198	101	<	<	1	<	<	<	18	37	57	<	13	23	3155	31	23	1	2	0.04	1.34	0.37	3.66	0.40	0.37	0.02	0.11
10100N 11300E P	2.4	26	90	201	115	5	<	<	<	<	<	8	11	48	<	7	16	3843	25	17	1	1	0.03	0.85	0.32	2.44	0.26	0.27	0.02	0.10
10100N 11350E P	2.7	30	459	223	263	5	<	<	<	<	<	4	8	68	<	5	14	2222	28	19	<	1	0.01	0.81	0.09	2.98	0.10	0.18	0.02	0.08
10100N 11400E P	0.8	11	91	242	160	<	<	<	<	<	<	3	8	53	<	3	13	999	37	56	1	1	0.01	0.71	0.37	3.60	0.15	0.26	0.02	0.11
10100N 11450E P	3.4	23	237	275	241	8	<	<	<	<	<	5	13	60	<	5	16	4055	22	21	<	<	0.01	0.77	0.18	2.67	0.12	0.20	0.02	0.10
10100N 11550E P	1.0	17	70	175	155	<	<	<	<	<	<	6	12	56	<	6	18	2543	31	32	1	1	0.01	1.16	0.25	3.13	0.22	0.23	0.02	0.10
10100N 11600E P	0.8	15	61	162	69	<	<	2	<	<	<	7	16	46	<	9	16	2338	37	20	1	1	0.02	1.27	0.26	2.84	0.31	0.27	0.02	0.10
10100N 11650E P	1.9	13	126	171	83	<	<	<	<	<	<	5	9	38	7	5	11	2132	33	16	<	<	0.01	0.65	0.13	2.46	0.12	0.18	0.02	0.08
10100N 11700E P	1.0	7	79	169	74	<	<	<	<	<	<	6	12	48	<	7	11	4106	32	11	<	1	0.02	0.73	0.13	2.35	0.16	0.25	0.02	0.08
10100N 11750E P	2.4	13	114	158	117	6	<	1	<	<	<	4	9	68	6	8	14	1858	23	11	<	<	0.01	0.96	0.11	2.26	0.14	0.20	0.01	0.13
10100N 11800E P	3.8	8	171	185	112	6	<	<	<	<	<	3	7	83	11	5	18	1309	31	15	<	1	0.02	0.92	0.20	2.58	0.18	0.28	0.02	0.12
10100N 11850E P	0.6	12	53	181	55	<	<	<	<	<	<	6	7	55	19	3	26	1082	27	14	<	1	0.02	1.37	0.38	2.48	0.26	0.28	0.02	0.14
10100N 11900E P	2.7	10	69	151	71	<	<	<	<	<	0.5	5	10	73	<	11	27	354	32	9	1	1	0.06	2.50	0.20	2.13	0.57	0.43	0.01	0.10
10100N 11950E P	0.3	18	48	120	58	<	<	2	<	<	<	9	24	126	<	28	62	399	25	11	1	2	0.06	1.79	0.12	3.12	0.42	0.10	0.02	0.06
10100N 12000E P	0.4	16	66	111	47	<	<	1	<	<	<	6	14	75	<	21	55	247	30	12	1	2	0.06	1.50	0.10	3.09	0.33	0.12	0.02	0.05
RIDGE - 1 P	2.2	8	212	116	59	6	<	1	<	<	<	5	5	147	13	9	22	350	27	30	1	1	0.05	1.73	0.07	3.37	0.32	0.61	0.07	0.08
RIDGE - 2 P	0.5	13	43	117	64	<	<	1	<	<	<	6	21	86	<	23	54	396	19	12	<	1	0.03	1.59	0.10	2.95	0.36	0.10	0.01	0.06
RIDGE - 3 P	0.3	9	22	90	44	<	<	1	<	<	<	3	10	40	<	9	22	194	29	7	1	1	0.02	1.39	0.15	1.77	0.20	0.20	0.01	0.08
RIDGE - 4 P	0.2	10	39	58	44	<	<	<	<	<	<	3	7	50	5	11	27	235	26	7	1	1	0.03	1.10	0.04	2.56	0.15	0.13	0.01	0.09
RIDGE - 5 P	1.3	7	50	73	66	6	<	<	<	<	<	2	3	121	<	5	9	1082	30	17	1	1	<	0.77	0.03	2.56	0.03	0.23	0.01	0.08
RIDGE - 6 P	1.6	12	101	117	128	7	<	1	<	<	<	7	15	85	<	13	24	1269	27	8	<	1	0.01	1.59	0.10	2.41	0.22	0.13	0.01	0.08
RIDGE - 7 P	0.7	10	42	84	46	<	<	<	<	<	<	4	7	53	<	5	21	892	28	4	1	1	0.02	1.72	0.26	2.44	0.18	0.18	0.01	0.14
RIDGE - 8 P	1.3	17	84	105	65	<	<	3	<	<	<	8	22	78	<	25	53	701	20	9	1	1	0.04	1.63	0.11	2.79	0.34	0.09	0.01	0.06
RIDGE - 9 P	2.2	13	55	74	72	<	<	2	<	<	<	4	14	69	<	17	73	243	18	9	1	1	0.05	1.10	0.06	2.28	0.14	0.07	0.01	0.04
RIDGE - 10 P	1.8	14	44	114	76	<	<	2	<	<	<	8	18	82	5	24	59	810	18	10	1	1	0.06	1.62	0.10	3.12	0.36	0.15	0.01	0.05
RIDGE - 11 P	2.9	25	92	215	119	<	<	1	<	<	<	9	24	125	<	21	40	2039	31	17	1	2	0.03	1.47	0.21	3.13	0.32	0.13	0.02	0.10
RIDGE - 12 P	1.2	20	76	128	91	<	<	1	<	<	<	10	25	88	<	23	41	840	24	9	1	2	0.04	1.77	0.12	3.26	0.38	0.15	0.01	0.07
Min Limit	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*	99.9	20000	20000	20000	9999	999	9999	999	999	9999	99.9	9999	9999	9999	999	9999	9999	9999	9999	9999	9999	9999	1.00	9.99	9.99	9.99	9.99	9.99	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

—=No Test Ins=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % NS=No SampleP=Pulp

TSL Assayers Vancouver
8282 Sherbrooke St.
Vancouver, B.C.
V5X 4R6
Tel: (604) 327-3436
Fax: (604) 327-3423

Quality Assaying for over 25 Years

Assay Certificate

9V-0361-RA1

Company: **Pacific Ridge**
Project:
Attn: Wayne Roberts

Oct-04-99

We *hereby certify* the following assay of 2 rock samples submitted Sep-29-99 by Wayne Roberts.

Sample Name	Au g/tonne	Au g/tonne	Ag g/tonne
298077	0.70	0.69	94.3
298078	0.10		9.9
*DUP 298077			94.7
*MP-1a			13.8
*KC-1a			332.0
*97-3	0.68		
*Blank	0.01		<0.1

Certified by _____

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TSL Assayers Saskatoon
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Tel: (306) 931-1033 Fax: (306) 242-4717

TSL Assayers Swastika
1 Cameron Ave.
Swastika, Ontario
P0K 1T0
Tel: (705) 642-3244 Fax: (705) 642-3300

APPENDIX VI

Summary of Reconnaissance Mapping

C. Sebert, 1999

Summary of Reconnaissance Mapping at the JRV Property

By Chris Sebert

Performed August 8 to 14, 1999 for Pacific Ridge Exploration Ltd.

South Ridge

Five days were spent mapping the geology of the crest and north-facing slope of the southern side of the Ace High creek valley. Mapping was at 1:10,000 scale and the area covered comprises a >2.5 km long swath covering metasediments in the west and extends across the underlying granitic intrusive rocks in the east. Strike and dip measurements were taken of mineralized and altered zones as well as joint sets occurring in the granitic rocks.

Local Stratigraphy

Several rock-types outcrop in the mapped area. They are broadly of two types: metasediments in the west, which cap granitic intrusive rocks that outcrop to the east (refer to field map).

The metasediments are composed of well-foliated dark biotite-rich phyllite and green to grey, bedded calcareous siltstone and fine-grained sandstones. The calcareous metasediments contain a muddy component in the matrix and host discreet beds and laminations of mudstone. Bedding/foliation in the metasediments tends to dip toward the southwest (see appendix).

The calcareous metasediments generally underlie the phyllites and grade upwards into phyllite via a transition zone of several metres of intercalated black and grey-green formerly muddy and silty beds. A dark brown, rusty weathering, flakey biotite-rich, hornfelsed layer occurs at the base of the metasediments where they contact granitic plutonic rocks. Coarse-grained quartz-feldspar-muscovite pegmatitic granite sills up to ~10 metres wide intrude the metasediments in places. Fine-grained aplitic garnet-bearing granite sills were also observed in the overlying metasediments.

The underlying granitic rocks are fine to medium grained composed of anhedral to subhedral feldspar, quartz, biotite, muscovite and minor opaques. A cursory inspection suggests that most of the feldspar is plagioclase and therefore they have been tentatively mapped as granodiorite. The granodiorite tends to be well fractured by two dominant steeply dipping joint sets trending north-northwest to north and by a second in an east-northeast direction (see appendix). Minor steep joints striking west-northwest and north-northeast are also present A prominent shallow joint set is also present in the granodiorite and this occurs parallel to biotite-rich bands, which may represent schlieren.

One set of steeply dipping, fine to medium-grained quartz-feldspar-porphyry dikes cut the granodiorite at station PR-14 (see field map). The dikes appear to occupy a north-south recessive zone, which is interpreted as a steep fault.

Summary of Mineralized Structures

Several quartz-rich mineralized and clay-sericite altered zones were mapped in the granodiorite. These are summarized in Appendix 2.

Mineralization consists of quartz veinlets, stringers and quartz-sealed breccias in granodiorite. These tend to display open space filling textures, which include various combinations of vugs, crustiform coarse-grained quartz bands and cockade-textured quartz growing around altered granodiorite clasts. Rhodocrosite accompanies the quartz in some mineralized zones; weathering tends to turn such mineralization black. Grey to cream chalcedony was present in some of the mineralization.

The sulphide content in the quartz-rich structures is low. No sulphides were observed in some zones while others contained only trace sulphides. Sulphides that were observed included one or more of arsenopyrite, pyrite, chalcopyrite, sphalerite, galena and dark sulphosalt. Green scorodite was present in some samples.

The wall rock in mineralized areas is frequently altered to a yellow-green colour by an argillic-style assemblage consisting of clay and sericite, which affects the feldspar grains in the granodiorite.

The mineralization and clay-sericite alteration zones follow two dominant strike directions: north south and east-northeast (see rose diagram). The northerly trending zones generally consist of quartz +/-rhodocrosite-rich float or boulder trains in rusty limonitic recessive draws in granodiorite, which cut the ridge crest. These recessive zones probably represent north-south faults striking between 340 and 360 degrees, which is subparallel to steeply dipping joints in the granodiorite. Many of these faults appear to dip steeply to the east given the trace of the recessive area down the north-facing slope of the ridge. One of these structures cuts the metasediment-granodiorite contact; the west side appears to have been down-dropped in relation to the east side. Quartz-feldspar-porphyry dikes are contained in one of these north-south trending recessive zones at field station PR-14. They tend to be slightly clay-altered and are strongly stained by Mn, limonite and goethite in places. Boulder trains of vuggy quartz with minor sulphides parallel the dikes and a vuggy crustiform quartz vein trending 050 degrees subcrops just to the east of the dikes on the ridge crest.

The east-northeast trending mineralized zones occur more frequently as outcrop compared to the north-south trending zones but the style of mineralization is broadly similar and is made-up of

vuggy and occasionally crustiform textured coarse-grained quartz. The strike of this second set of structures is between 040 and 070 degrees and is subparallel to steeply dipping joint sets in the granodiorite and to normal faults mapped at stations PR-28, 30 and 33. Thicknesses of the mineralization observed in outcrop vary from centimetre-scale veinlets to quartz-rich vein zones up to several metres wide. The continuity of the mineralization along strike is unknown due to the frequent occurrence of talus on the steep slopes and a tendency of the mineralization to become recessive in places. Most outcrops of the east-northeast trending mineralization were observed near the north-south trending recessive zones but this may be purely coincidental.

Potential Exploration Targets

Several of the outcrops containing quartz-rich mineralization mapped in this reconnaissance are worthy of follow-up. These recommendations are made in the absence of assay results from the samples taken between August 8 and 13.

The silicified vein-zone outcropping at station PR-35 should be examined further. It is composed of a combination of quartz phases and rhodocrosite, contains minor sulphides and is a strong structure on the order of 2 m wide. This zone could be trenched to facilitate additional sampling. If sample results are encouraging then the structure could be drilled to determine its extent and grade continuity.

One or more of the north trending recessive areas containing vuggy quartz float with minor sulphide should be better explored. Potential zones include the one at station PR-5 or PR-14. These areas could also be trenched to confirm the character and trend of the mineralized zones and to better expose them for additional sampling. Drilling could then be done as follow-up if sampling yields significant results.

Dike Mapping on North Ridge

Two days were spent mapping a rusty weathered clay-altered area of granodiorite cut by quartz-feldspar porphyry dikes on the north ridge. Outcrop and subcrop were mapped at 1:2000 scale (refer to field map). GPS point 144 locates the field map with respect to the topographical base.

Mapping of available outcrop and subcrop suggests that the area is penetrated by a set of quartz-feldspar-porphyry dikes trending northwest southeast with splays striking east west and north south. The mapped trend pattern of these dikes may be largely the result of intrusion along pre-existing steeply dipping joint sets in the granodiorite host rocks (see field map). The dikes are generally partially clay-altered and may contain large vugs several centimetres across, which may be the product of a high volatile content.

A prominent clay-altered and strongly limonite-goethite stained zone with occasional quartz veinlets occurs in the dikes and host granodiorite to the east of GPS station 144 (marked orange on field map). Several areas of dark brown, rusty vuggy gossan (hatched on field map) trend east west within the alteration zone. These rust-rich zones may be the product of weathered-out sulphide or carbonate (?). No intact sulphides were found in the alteration zone.

Samples were taken of outcrop and subcrop across the alteration zone and their location is shown on the attached field map.

Maps

1) 1:10,000 Field Map of South Ridge

2) 1:2000 Field Map of Altered Dike - North Ridge

Appendix

South Ridge Reconnaissance

1) Joint attitudes in granodiorite

2) Summary of mineralized and altered zones

3) Bedding/foliation attitudes in metasediments

4) Geological field notes

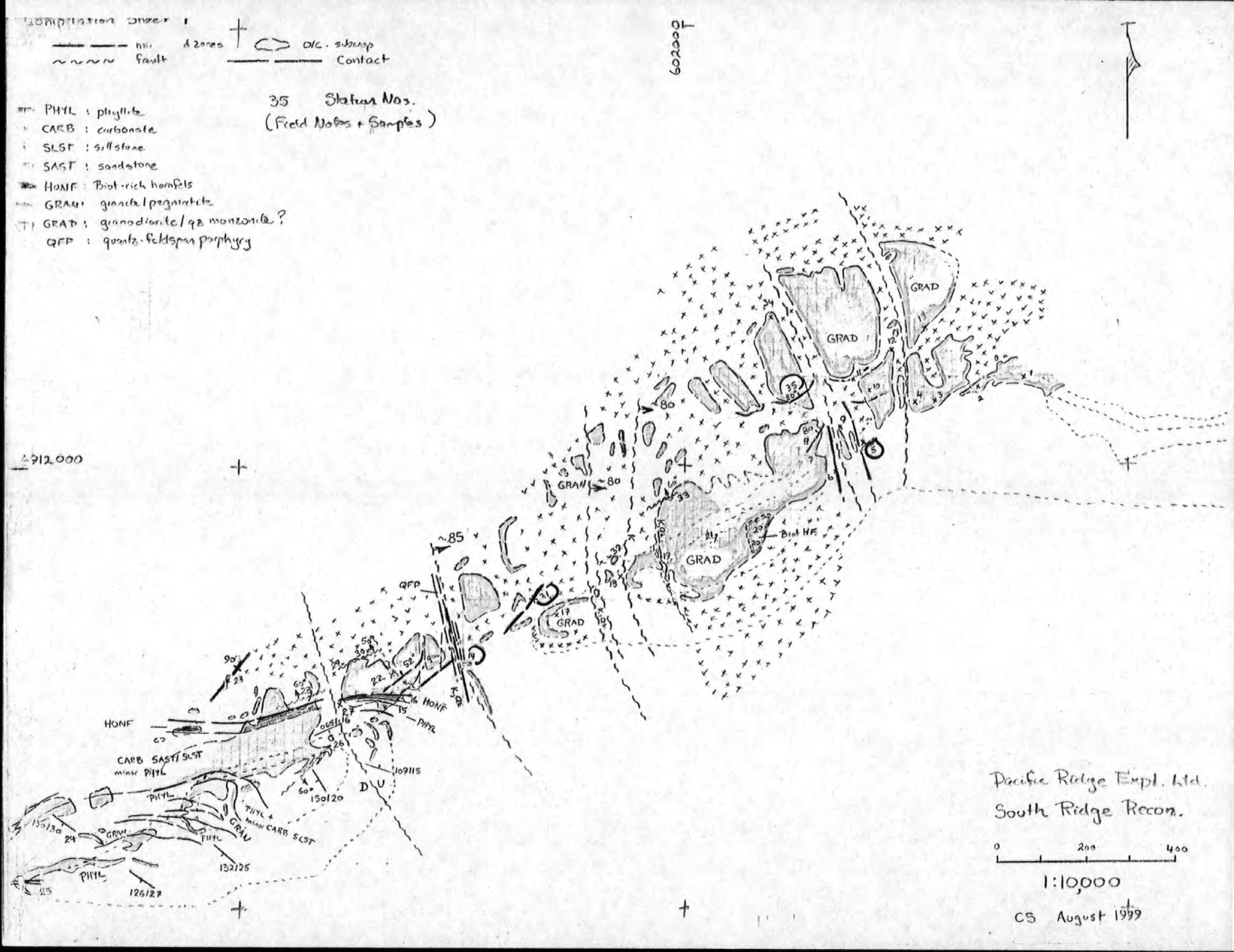
5) List of samples taken for assay

Compilation Sheet 1

— — — mtn. d zones + ⊂⊃ o/c. subcrop
~~~~ fault —— —— Contact

35 Station Nos.
(Field Notes + Samples)

PHYL : phyllite
CARB : carbonate
SLST : siltstone
SAST : sandstone
HONF : Biot-rich hornfels
GRAN : granite / pegmatite
GRAD : granodiorite / qz monzonite ?
QFP : quartz-feldspar porphyry

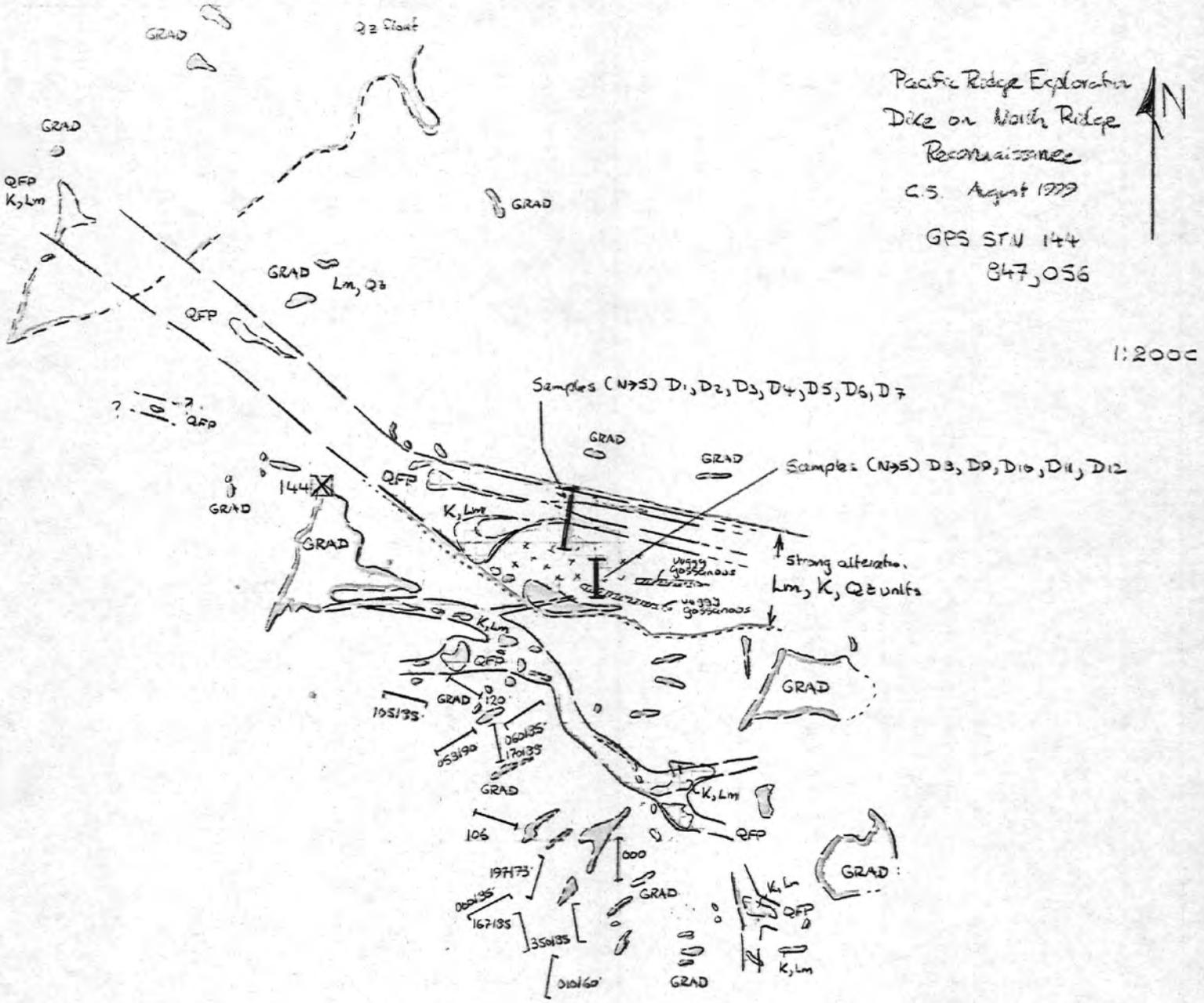


Pacific Ridge Expl. Ltd.
South Ridge Recon.

0 200 400

1:10,000

CS August 1999
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K - clay

Lm - limonite +/- goethite

Qz - quartz

Samples:	D1	2m	Dike	Lm, K
N	D2	2.5m	Grad	Lm, K
taken ↓	D3	2.5m	Grad	Lm, K
	D4	2m	Dike	Lm, K
S	D5	2.5m	Grad	Lm, K
	D6	2.5m	Grad	Lm, K
	D7	2.5m	Grad	Lm, K
N	D8	3m	Grad	Lm, K
	D9	3m	Grad	Lm, K
taken ↓	D10	3m	Grad	Lm, K
S	D11	2m	Grad + Qz veins	Lm,
	D12	2m	Grad + Qz veins	Lm,

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South Ridge Reconnaissance

Structural Data **Joints in Granodiorite**

Field Station	Joint Set:	Steep		Flat	
		Azimuth	Dip	Azimuth	Dip
PR 1					
		230	82	65	40
		207	65	285	12
		60	80	286	25
		225	80	228	10
		70	80	140	20
		96	75	63	15
		262	71		
		310	86		
		315	87		
		320	88		
		150	90		
		142	81		
		152	80		
		307	83		
PR 2		190	82	225	16
		63	80		
		200	87		
		52	85		
PR 3		35	87	345	20
		233	80	20	15
		149	88		
		340	80		
PR 4		55	90	23	5
		202	85	23	15
		70	90	11	10
		100	90		
		105	82		
		307	80		
PR 5		184	80	20	5
		160	80	35	27
		185	68	73	20
		168	80	35	12
		105	88		
		65	82		

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South Ridge Reconnaissance

Structural Data **Joints in Granodiorite**

Field Station	Joint Set:	Steep		Flat	
		Azimuth	Dip	Azimuth	Dip
		64	90		
PR 7		235	75		
		240	80		
PR 8		15	80		
PR 9		230	80		
PR 10		180	85		
PR 11		240	77		
PR 13		236	85		
		214	88		
PR 17		223	52	45	17
		240	56	57	20
		230	65	25	22
		234	62	80	7
		335	81		
		340	80		
		314	83		
		150	70		
PR 20		242	85	90	5
		340	88		
PR 21		248	83		
		340	82		
		160	85		
PR 22		240	58		

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South Ridge Reconnaissance

Structural Data — Joints in Granodiorite

Field Station	Joint Set:	Steep		Flat	
		Azimuth	Dip	Azimuth	Dip
PR 23		40	90		
PR 29		250	72	105	14
		248	71		
		337	80		
		173	75		
PR 31		210	85		
PR 32		265	60		
PR 34		340	70	20	20
		250	89		
		250	75		
		220	68		
		240	80		
		280	80		
		132	72		
		335	8		
		115	75		

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South Ridge Reconnaissance

Mineralized and Altered Zones

Field Station	Description				Width	Host Rock	Mineralogy	
	Azimuth	Dip	Showing Type	Exposure	m		Gangue	Sulphides
PR 5	160	steep	Boulder train	recessive	N.A.	GRAD	Qz, Chlc, Rhcr	N.O.
PR-6	160	steep	Boulder train	recessive	N.A.	GRAD	Qz, K, Ser	N.O.
PR 8	15	80	Altered Zone	outcrop	~2	GRAD	K, Ser	N.O.
PR-10	180	85	Altered Zone	outcrop	~3	GRAD	K	N.O.
PR-11	240	steep to N	Altered Zone	recessive	N.A.	GRAD	K	N.O.
PR-12	0	steep	Altered Zone	recessive	N.A.	GRAD	K, Ser	N.O.
PR-14	350	steep E	Silicified Zone	recessive	N.A.	GRAD	Qz, K, Ser	Gl, Sslt
	50	steep N?	Silicified Zone	outcrop	~1	GRAD	Qz, K, Ser	Gl, Sslt
PR-18	353	steep E	Altered Zone	recessive	N.A.	GRAD	Qz, K, Ser	As, Sslt
PR-19	345	steep E	Altered Zone	recessive	N.A.	GRAD	Qz, K, Ser	N.O.
PR 22	230	52	Silicified Zone	outcrop	0.4 - 2.0	GRAD	Qz, Rhcr	Py, As, Sslt
PR-23	40	90	Silicified Zone	outcrop	cm-scale veinlets	GRAD	Qz, K	N.O.
PR-26	342	steep E?	Altered Zone	recessive	N.A.	GRAD	K	N.O.
PR 29	260	70	Altered Zone	outcrop	1.0 - 2.0	GRAD	K, Ser	N.O.
PR 31	210	85	Silicified Zone	outcrop	0.7	GRAD	Qz	Py, Cp, Sl, Sslt

PACIFIC RIDGE EXPLORATION LTD.

South Ridge Reconnaissance

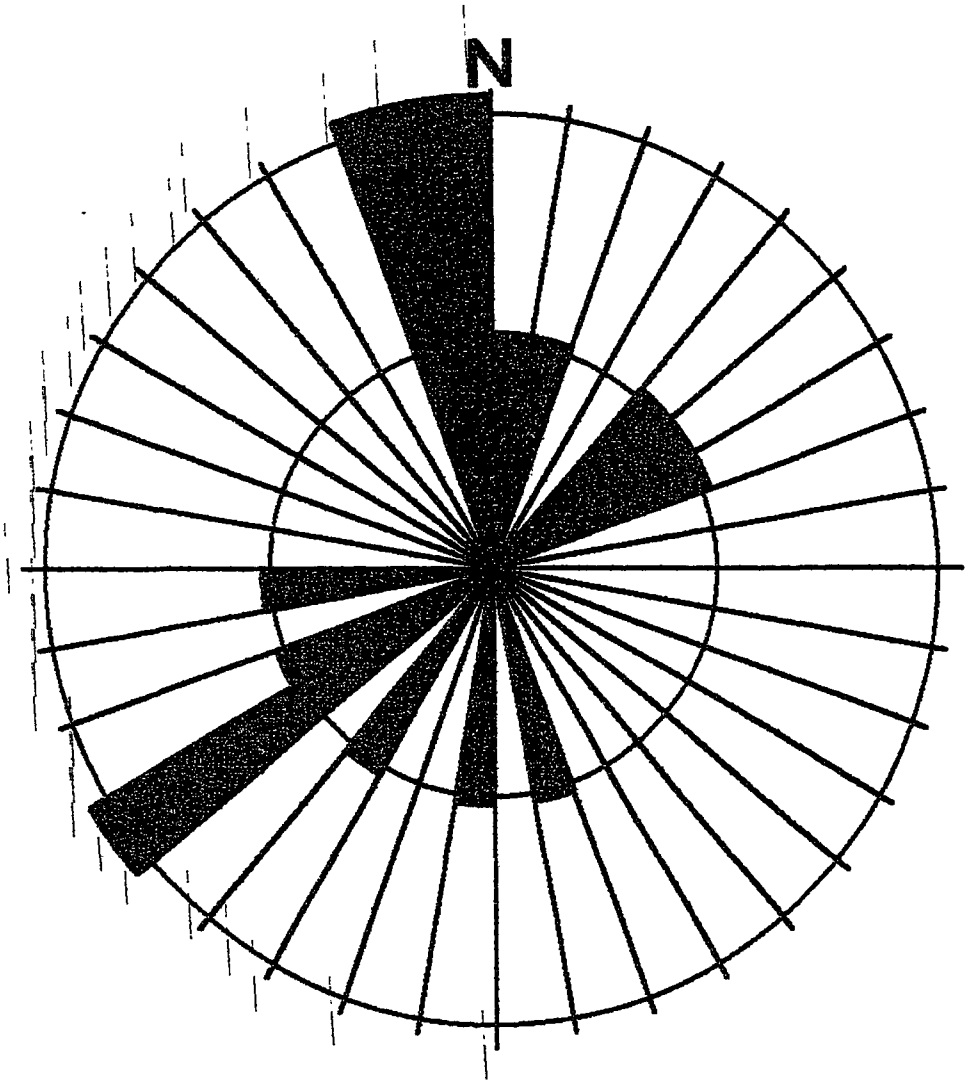
Mineralized and Altered Zones

Field Station	Description				Width	Host Rock	Mineralogy	
	Azimuth	Dip	Showing Type	Exposure	m		Gangue	Sulphides
PR-32	60	steep	Altered Zone	recessive	N.A.	GRAD	Rhcr	N.O.
PR 35	238	80	Silicified Bx Zone	outcrop	~2	GRAD	Qz, Rhcr	Py, As, Sc

Py = pyrite
As = arsenopyrite
Sl = sphalerite
Sslt = sulphosalt
Sc = scorodite
Cp = chalcopyrite
Gl = galena
Qz = quartz
Rhcr = rhodocrosite
Chlc = chalcedony
K = clay
Ser = sericite
N.O. = not observed
N.A. = not applicable

South Ridge

Rose Diagram of Altered and Mineralized Zones - Appendix 2.



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South Ridge Reconnaissance

Structural Data **Attitude of Bedding/Foliation in Metasediments**

Field Station	Azimuth	Dip	Structure	Unit
PR 15	170	31	Bedding/Foliation	PHYL
	165	15	Bedding/Foliation	PHYL
	155	20	Bedding/Foliation	PHYL
PR 16	100	10	Bedding/Foliation	HONF
	120	10	Bedding/Foliation	HONF
PR 24	125	30	Bedded Contact	PHYL - SAST
	95	20	Bedding	CARB SLST/SAST
PR 25	115	18	Bedding/Foliation	PHYL
PR 27	70	20	Contact	HONF - GRAD
	120	1	Contact	HONF - GRAD
Other Bedding Measurements				
	120	30	Bedding/Foliation	PHYL
	126	27	Bedding/Foliation	PHYL
	132	25	Foliation	GRAN
	150	20	Bedding/Foliation	CARB SLST/SAST
	65	16	Bedding/Foliation	CARB SLST/SAST
	289	15	Bedding/Foliation	CARB SLST/SAST

PHYL = phyllite
SLST = siltstone
SAST = sandstone
CARB = carbonate
GRAN = granite/pegmatite
HONF = biotite-hornfels

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South Ridge Reconnaissance

Geological Notes

Field Station

PR-1 Rock Type: Well jointed phaneritic granodiorite

Limonite and goethite stain on joint surfaces

PR-2 Rock Type: Well jointed medium grained granodiorite. Grain size averages between 2 - 4 mm.

Contains about 65% feldspar, 15% quartz, 10% biotite, 5% muscovite and minor opaques

PR-3 Rock Type: Granodiorite

Joint measurements summarized in structure section.

PR-4 Rock Type: Granodiorite

Joint measurements summarized in structure section.

PR-5 Rock Type: Granodiorite

Boulder train strikes about 160 degrees azimuth.
Boulders composed of vuggy bladed medium to coarse grained quartz with rhodocrosite and chalcedony bands in some pieces.
Outside of boulders are rusty and black with limonite and Mn stain. Some late stage crustiform quartz layers.
Sulphides are not visible; they may be oxidized or hidden by Mn stain.

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South Ridge Reconnaissance

Geological Notes

Field Station

Some pale green sericitized float occurs nearby

Ground granodiorite and limonite stain occur just to the west of the quartz float and this may be a parallel fault

PR-6 Rock Type: Granodiorite

Dark Mn stained boulders and cobbles in recessive area strike between 150 to 170 degrees azimuth
Some fragments are altered granodiorite others are vuggy and drusy to crustiform yellow to clear quartz. No sulphides were observed.

PR-7 Rock Type: Granodiorite

Mn stained joint set at 055/75N and 060/80N.

PR-8 Rock Type: Granodiorite

Clay/sericite altered zone several metres wide parallels 015/80E joint set.
Some coarse grained barren quartz float occurs in immediate area.

PR-9 Rock Type: Granodiorite

Mn stained joint set at 050/80N occurs southeast of ~050 trending rusty zone about 1 m wide.

PR-10 Rock Type: Granodiorite

3 m wide clay altered zone parallels 000/85W joints in nose of ridge above ~050 degree rusty zone.

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South Ridge Reconnaissance

Geological Notes

Field Station

PR-11 Rock Type: Granodiorite

~15 m wide recessive zone with limonite-stained clay-altered float.
Trend of recessive zone is ~060 degrees, which is in line to a similar zone in the west across the draw.

PR-12 Rock Type: Granodiorite

Located in draw. Sericite and clay altered float marks alteration zone or fault trending ~000 degrees azimuth.

PR-13 Rock Type: Granodiorite

Strong joint set as noted in structure summary.

PR-14 Rock Type: Quartz-feldspar-porphyry dikes in granodiorite.

Altered float and mineralized vein material occur parallel to the dikes at ~170 degrees azimuth and at ~050 degrees.
Vein material consists of vuggy Mn-stained quartz. Minor dark sulphosalt and galena occur in some float.
Mn-stained joints and clay-sericite alteration in granodiorite host rock.

Dikes occur in a recessive faulted zone trending ~350-355 degrees.

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South Ridge Reconnaissance

Geological Notes

Field Station

Sample PR-14-1 taken from ~1 m wide vein at ~050 degrees. Vein material is vuggy and contains crustiform quartz and chalcedony.

PR-15 Rock Type: Biotite-muscovite-rich phyllite

Bedding/foliation measurements listed in structure section.

PR-16 Rock Type: Biotite-rich hornfels

PR-17 Rock Type: Granodiorite

Joint measurements summarized in structure section.

PR-18 Rock Type: Granodiorite

Recessive zones in granodiorite with clay-sericite-altered float.
Suspected north-south trending fault at between 160 and 005 degrees azimuth.
Some vuggy crustiform textured quartz float with minor sulphosalt and arsenopyrite (?).

PR-19 Rock Type: Granodiorite

Recessive zone with cleft trends ~165 degrees azimuth.
Contains yellow-green clay-sericite-altered granodiorite and some bull quartz float.
Some clay-sericite-altered granodiorite boulders are penetrated by chalcedony veinlets.

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South Ridge Reconnaissance

Geological Notes

Field Station

PR-20 Rock Type: Granodiorite

PR-21 Rock Type: Granodiorite

Joint measurements summarized in structure section.

PR-22 Rock Type: Granodiorite

~0.4 - 2 m wide yellow-green bleached silicified zone in granodiorite.
Orientation of zone is ~050/52N.

Sample PR-22-2 taken of silicified granodiorite. Minor pyrite, arsenopyrite and sulphosalt.
Clay altered granodiorite contains up to 10% fine-grained pyrite.

Sample PR-22-1 and 3 of float below outcrop includes crustiform quartz stringers with rhodocrosite layers.

PR-23 Rock Type: Granodiorite

Outcrop contains Mn-stained joints and silicified zones along joint set at 040/90.

PR-24 Rock Type: Metasediments

Outcrop composed of dark fine-grained biotite-rich phyllite at top.
Green fine-grained sandstone (volcaniclastic) occurs below; bedding contact to phyllite at 125/30SW.

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South Ridge Reconnaissance

Geological Notes

Field Station

Next below is more biotite-rich phyllite, which contains sill-like fingers of granodiorite.
Carbonate-bearing siltstone-sandstone occurs below the phyllite separated from it by a transition zone ~3 m thick of intercalated silts and muds.
Bedding in silt-sandstone is ~095/20S.
All units are well metamorphosed and contain up to 20% quartz segregations as foliation parallel lenses and biotite.

PR-25 Rock Type: Phyllite

Dark well foliated biotite-rich phyllite.
Contains white coarse-grained pegmatitic quartz-feldspar-muscovite sills.
Barren bull quartz veins occasionally parallel foliation at 115/18S.

PR-26 Rock Type: Metasediments and granodiorite

Recessive zone with limonite-stained clay-altered float; interpreted as steeply dipping fault trending ~162 degrees.

PR-27 Rock Type: Metasediments and granodiorite

Same recessive zone as in PR-26.
Contact of biotite-hornfels to granodiorite is ~15 m higher on east side of draw than on the west side.
This suggests fault offset.
Attitude of contact on east side is ~070/20S and on west side is ~120/1S.

PR-28 Rock Type: Granodiorite

Granodiorite outcrop below contact with metasediments.
Contains dip-slip fault (qz fibres indicate normal movement); fault oriented at ~078/52N.

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South Ridge Reconnaissance

Geological Notes

Field Station

PR-29 Rock Type: Granodiorite

Yellow-brown limonite-stained and clay-altered zone in granodiorite ~1-2 m wide at ~080/70N.
Mn stain on peripheral fractures.

PR-30 Rock Type: Granodiorite

Fault in granodiorite at ~058/52N.
Weak striae on fault plane are Mn stained and dip vertically.

PR-31 Rock Type: Granodiorite

0.7 m wide outcropping of silicified granodiorite in ~10 m altered recessive zone.
Mn-stained fractures with vuggy subhedral quartz veinlets hosting pyrite, chalcopyrite, sphalerite and dark sulphosalt.
Orientation of veinlets parallel to joints at 030/85W.
Sample PR-31

PR-32 Rock Type: Granodiorite

Black vuggy quartz-rhodocrosite-rich veinlets at ~060 degrees azimuth.

PR-33 Rock Type: Granodiorite

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South Ridge Reconnaissance

Geological Notes

Field Station

Fault at 060/65N with well developed slickensides.
Attached quartz fibres indicate normal dip slip.

PR-34 Rock Type: Granodiorite

Joint measurements summarized in structure section.

PR-35 Rock Type: Granodiorite

Limonite and Mn-stained, well jointed silicified, weakly mineralized zone in granodiorite.

Composed of central vein-like core ~2 m wide made-up of crustiform and vuggy quartz.
Occasional cockade textured quartz grows around clay-altered granodiorite breccia fragments.
Some rhodocrosite bands occur locally. Both white and grey quartz phases are present.
Sulphides are sparse and consist of pyrite and arsenopyrite patches.
Some green scorodite lines cavities.

Footwall and hanging wall are clay-sericite altered and contain vuggyquartz veinlets with trace pyrite.
Footwall zone is about 2 m wide. Hanging wall alteration zone is about 1 m wide.

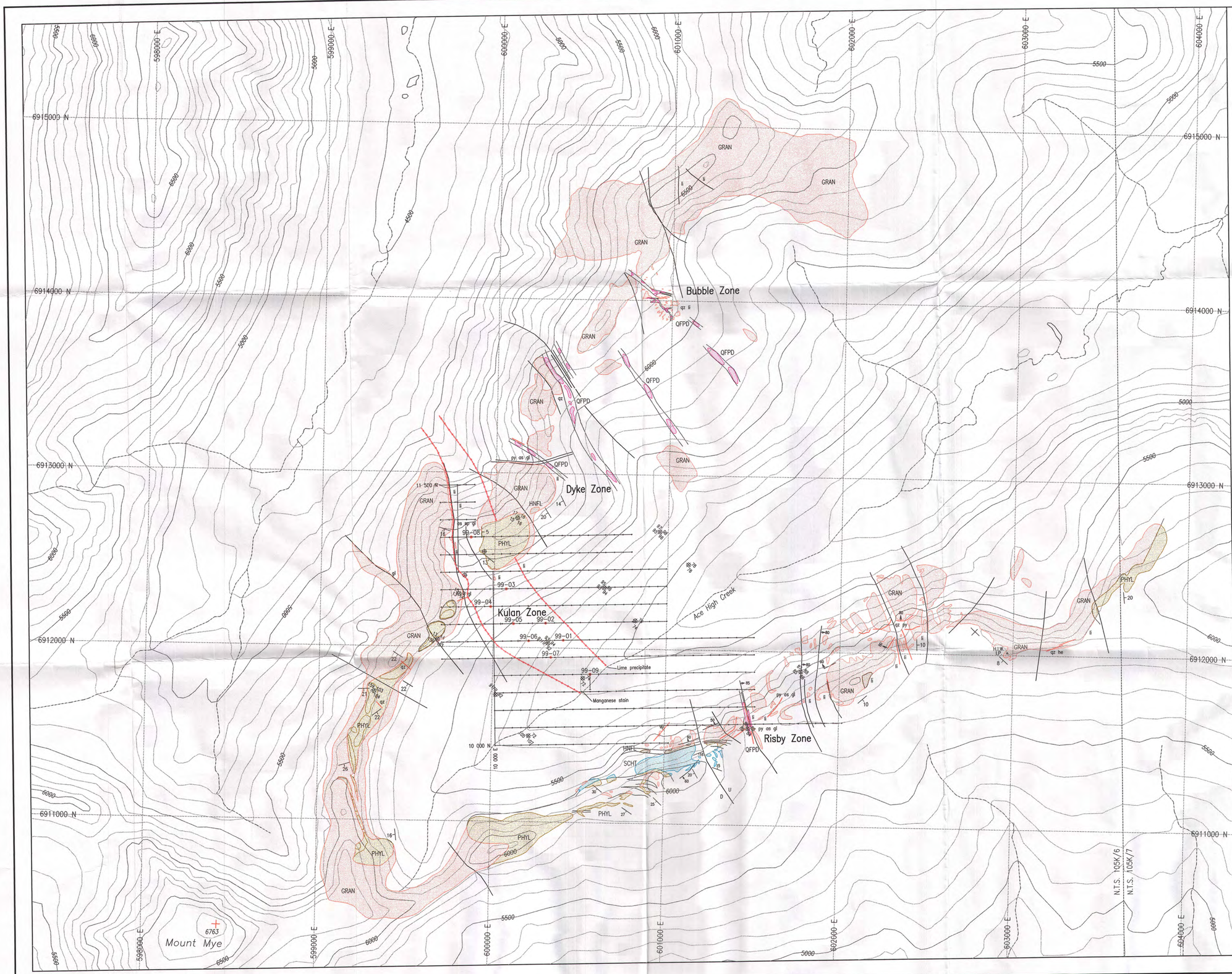
Sample PR-35-1 is of central vein zone.
Sample PR-35-2 is of altered footwall zone.

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South Ridge Reconnaissance

Summary of Samples taken by C.S.

Station	Type
PR-5	Float
PR-14-1	O/C
PR-22-1	Float
PR-22-2	O/C
PR-22-3	Float
PR-29	O/C
PR-31	O/C
PR-35-1	O/C
PR-35-2	O/C



UTM Grid
1°33' East
32°
Magnetic North

– LITHOLOGY –

CRETACEOUS AND/OR TERTIARY

- Quartz ± sulphide vein (QZVN)
- QFPD — Quartz–feldspar porphyry dyke

MIDDLE CRETACEOUS (97 Ma)

Anvil Batholith

- GRAN — Light grey, fine– to medium–grained muscovite–biotite granite or granodiorite

LOWER CAMBRIAN

Gull Lake Formation

- HNFL — Dark–brown, biotite–rich hornfels
- PHYL — Brown, well–foliated, biotite–rich phyllite
- SCHT — Light to medium grey–green, calcareous schist (i.e. meta–siltstone and sandstone)

– STRUCTURE –

- Geological contact (defined)
- Bedrock exposure (outcrop)
- Fault (defined)
- Foliation (vertical, inclined, horizontal)
- Zone of quartz–sulphide vein mineralization
- Claim posts
- Survey control gridline and soil sample site

as – arsenopyrite
cp – chalcopyrite
gl – galena
he – hematite
li – limonite
py – pyrite
sp – sphalerite
sx – sulphides

Topographic contours after N.T.S. 105 K/6 & 7 (feet A.M.S.L.)

feet
0 250 500 750 1000 2000 3000
0 100 200 300 400 500 1000
metres

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J. D. Blanchflower

To Accompany Report By J. D. Blanchflower, 1999

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Vancouver, British Columbia, Canada

GEOLOGICAL PLAN

KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB, CS	N.T.S.	105 K/6 & 7
Drawn By:	JDB	Scale:	1 : 10 000
Date:	October, 1999	Figure No.	5

6913000-N

600000 E

601000 E

11 500 N

11 000 N

10 500 N

10 000 N

6912000-N

5500

6000

5000

99-01

99-02

99-03

99-04

99-05

99-06

99-07

99-08

99-09

20 ppb

30 ppb

10 ppb

Ace High (White) Creek

Camp Site

UTM Grid
1°30' East

Magnetic North

– LEGEND –

Tertiary (97 Ma) peraluminous granite belonging to the Mount Mye phase of the Anvil batholith

Lower Cambrian Gull Lake formation of schist and phyllite with lesser marble and metabasalt

Topographic contours after G.S.C. N.T.S. 105 K/6 & 7 (feet A.M.S.L.)

– SYMBOLS –

Geological contact (defined, inferred)

Bedrock exposure (outcrop, subcrop, float)

Fault (defined, assumed, inferred)

Claim posts

Survey control gridline

99-02 — Diamond drill hole

Au ppb Ag ppm
Pb ppm As ppm — Soil geochemical sample site

feet
0 50 100 150 200 400 600

0 20 40 60 80 100 200
metres

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SOIL GEOCHEMICAL PLAN
CONTOURED GOLD VALUES
KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6 and 7
Drawn By:	JDB	Scale:	1 : 2 000
Date:	October, 1999	Figure No.	6

6913000 N

600000 E

601000 E

11 500 N

11 000 N

10 500 N

10 000 N

6912000 N

5500

6000

5000

5600

99-08

99-03

99-04

99-05

99-02

99-06

99-01

99-07

99-09

3 ppm

5 ppm

10 ppm

Ace High (White) Creek

Camp Site

UTM Grid
1°33' East

Magnetic North

– LEGEND –

Tertiary (97 Ma) peraluminous granite belonging to the Mount Mye phase of the Anvil batholith

Lower Cambrian Gull Lake formation of schist and phyllite with lesser marble and metabasalt

Topographic contours after C.S.C. N.T.S. 105 K/6 & 7 (feet A.M.S.L.)

– SYMBOLS –

Geological contact (defined, inferred)

Bedrock exposure (outcrop, subcrop, float)

Fault (defined, assumed, inferred)

Claim posts

Survey control gridline

99-02 Diamond drill hole

Au ppb Ag ppm
Pb ppm As ppm
Soil geochemical sample site

feet
0 50 100 150 200 400 600

0 20 40 60 80 100 200
metres

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SOIL GEOCHEMICAL PLAN
CONTOURED SILVER VALUES
KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6 and 7
Drawn By:	JDB	Scale:	1 : 2 000
Date:	October, 1999	Figure No.	7

6913000 N

11 500 N

11 000 N

10 500 N

10 000 N

6912000 N

600000 E

601000 E

11 000 E

11 500 E

5500

6000

5000

99-08

99-03

99-04

99-05

99-02

99-06

99-01

99-07

99-09

500 ppm

1000 ppm

2000 ppm

Ace High (White) Creek

Camp Site

UTM Grid
Y33° East

Magnetic North

— LEGEND —

Tertiary (97 Ma) peraluminous granite belonging to the Mount Nye phase of the Anvil batholith

Lower Cambrian Gull Lake formation of schist and phyllite with lesser marble and metabasalt

Topographic contours after G.S.C. N.T.S. 105 K/6 & 7 (feet A.M.S.L.)

— SYMBOLS —

Geological contact (defined, inferred)

Bedrock exposure (outcrop, subcrop, float)

Fault (defined, assumed, inferred)

Claim posts

Survey control gridline

Diamond drill hole

Soil geochemical sample site

99-02
Au ppb Ag ppm
Pb ppm As ppm

feet
0 50 100 150 200 400 600

0 20 40 60 80 100 200
metres

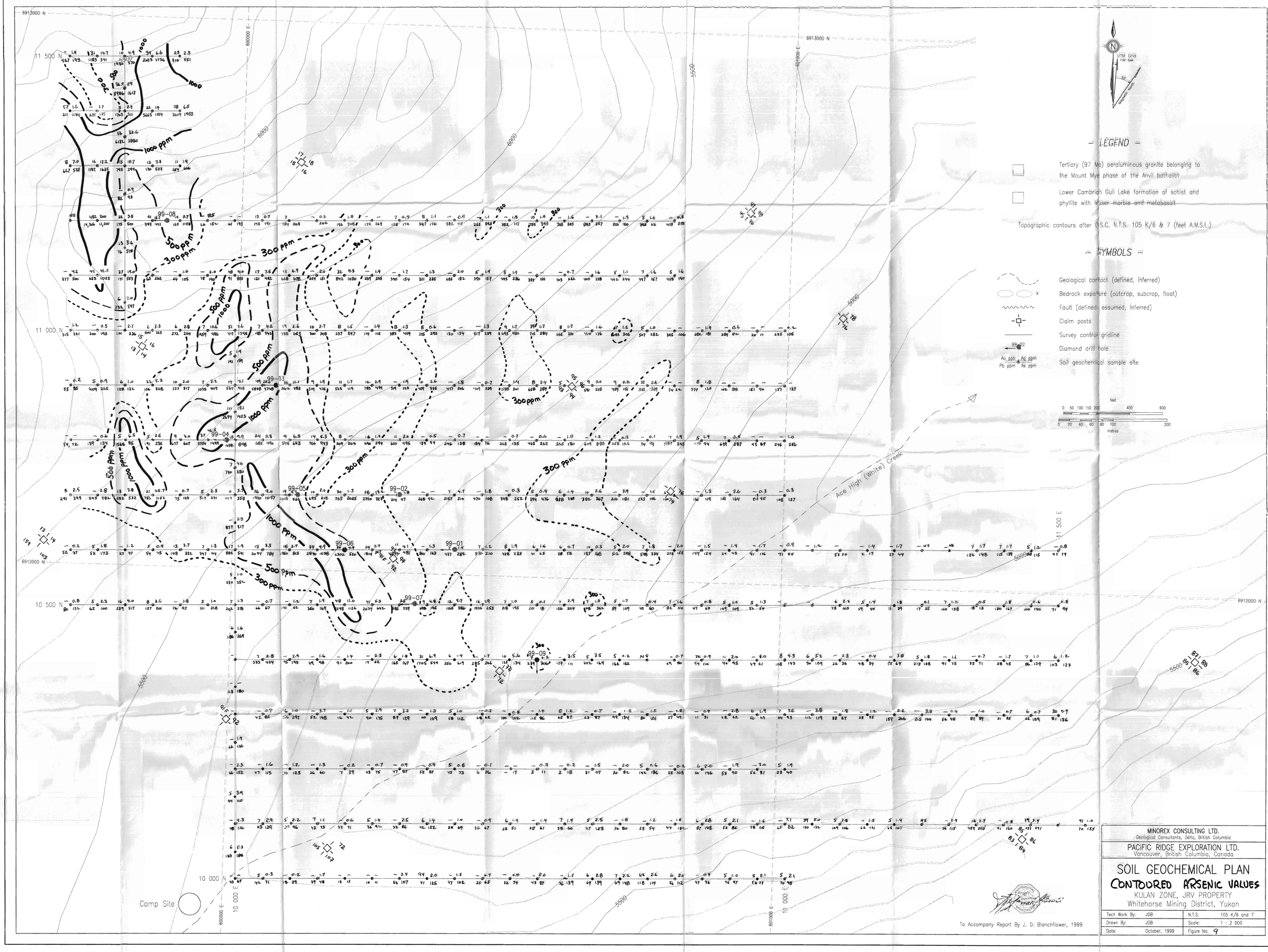
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Vancouver, British Columbia, Canada

SOIL GEOCHEMICAL PLAN
CONTOURED LEAD VALUES
KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6 and 7
Drawn By:	JDB	Scale:	1 : 2 000
Date:	October, 1999	Figure No.	8



UTM Grid
133° East

Magnetic North

— LEGEND —

Tertiary (97 Ma) peraluminous granite belonging to the Mount Mye phase of the Anvil batholith

Lower Cambrian Gull Lake formation of schist and phyllite with lesser marble and metabasalt

Topographic contours after O.S.C. N.T.S. 105 K/6 & 7 (feet A.M.S.L.)

— SYMBOLS —

- Geological contact (defined, inferred)
- Bedrock exposure (outcrop, subcrop, float)
- Fault (defined, assumed, inferred)
- Claim posts
- Survey control gridline
- 99-02 — Diamond drill hole
- Au ppb / Pb ppm — Ag ppm / As ppm — Soil geochemical sample site

feet
0 50 100 150 200 400 600
0 20 40 60 80 100 200
metres

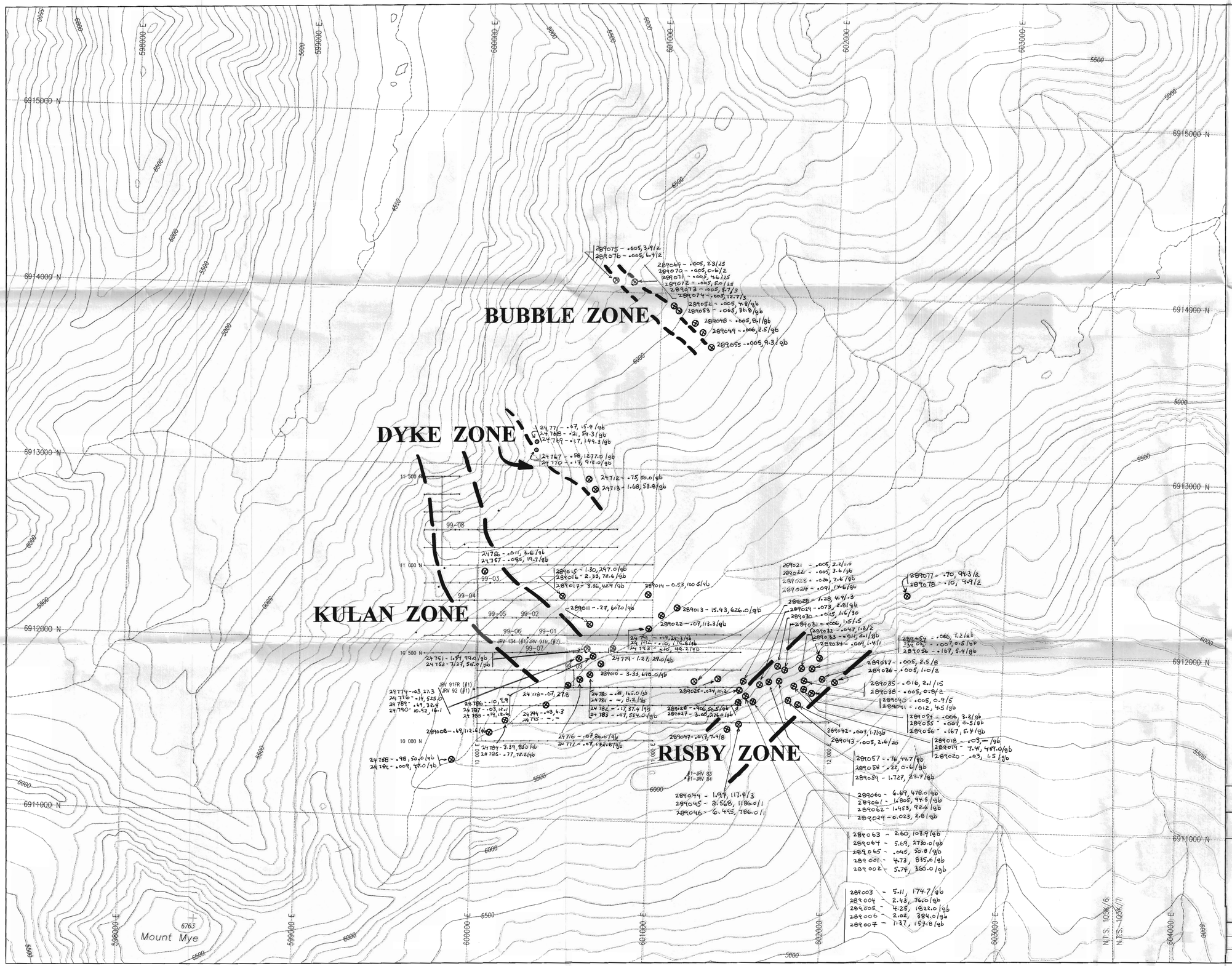
To Accompany Report By J. D. Blanchflower, 1999

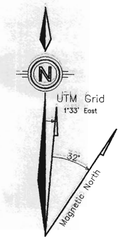
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SOIL GEOCHEMICAL PLAN
CONTOURED ARSENIC VALUES
KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6 and 7
Drawn By:	JDB	Scale:	1 : 2 000
Date:	October, 1999	Figure No.	9





— LEGEND —

289089 ⊗ 25, 50.2 — Rock geochemical sample site (Sample No., ppm Gold, ppm Silver)

99-02 — Diamond drill hole

Claim post

Survey control gridline

Topographic contours after N.T.S. 105 K/6 & 7 (feet A.M.S.L.)

feet

0 250 500 750 1000 2000 3000

0 100 200 300 400 500 1000

metres



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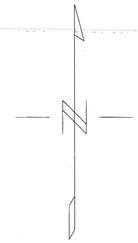
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ROCK GEOCHEMICAL SAMPLING PLAN

JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6 & 7
Drawn By:	JDB	Scale:	1 : 10 000
Date:	October, 1999	Figure No.	10

FIGURE 11



9700E 9800E 9900E 10000E 10100E 10200E 10300E 10400E 10500E 10600E 10700E 10800E 10900E 11000E 11100E 11200E 11300E 11400E

11300N 11200N 11100N 11000N 10900N 10800N 10700N 10600N 10500N 10400N 10300N 10200N 10100N 10000N

LEGEND

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY
DIPOLE SEPARATION : 50 METRES
CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

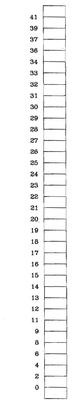
CONTOUR INTERVALS

1 msec
5 msec
25 msec

INSTRUMENTS

Iris Instruments ELREC-6 Receiver

Iris Instruments VIP-4000 Transmitter



Scale 1:2000

50 0 50 100 150 200
(meters)

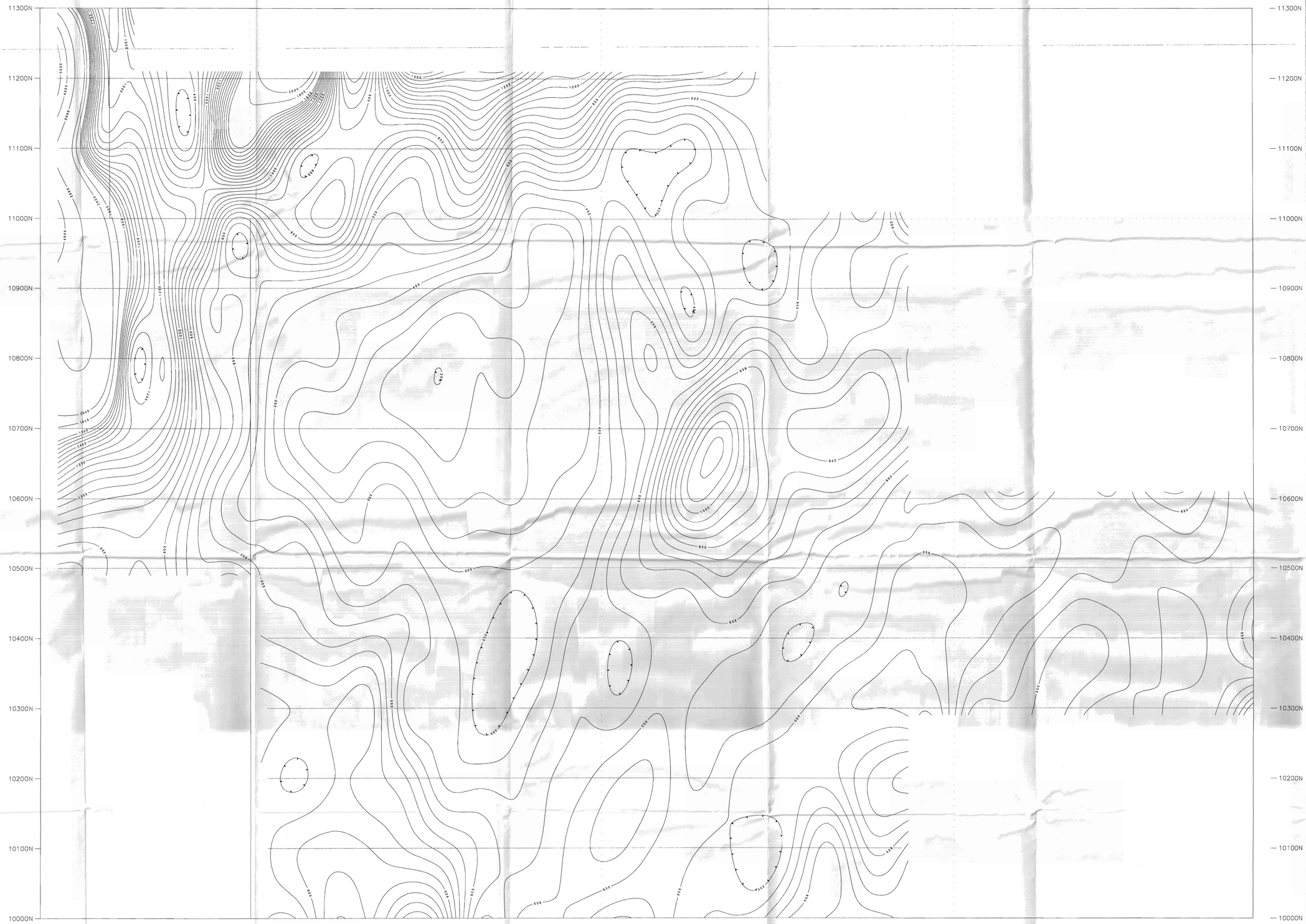
PACIFIC RIDGE EXPLORATION LTD.

JRV Property
Yukon Territory

FILTERED (TRIANGLE) CHARGEABILITY
Scale 1:2000 Drawing No: 99436 - 17

LLOYD GEOPHYSICS INC.

FIGURE 12



LEGEND

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY
DIPOLE SEPARATION : 50 METRES
CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

CONTOUR INTERVALS

50 ohm-m
200 ohm-m
1000 ohm-m

INSTRUMENTS

Iris Instruments ELREC-6 Receiver

Iris Instruments VIP-4000 Transmitter

1450
1350
1250
1200
1150
1100
1050
1000
950
900
850
800
750
700
650
600
550
500
450
400
350
300
250
150
100
ohm-m

Scale 1:2000

50 0 50 100 150 200
(meters)

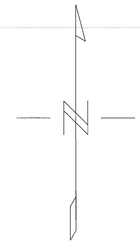
PACIFIC RIDGE EXPLORATION LTD.

JRV Property
Yukon Territory

FILTERED (TRIANGLE) RESISTIVITY
Scale 1:2000 Drawing No: 99436 - 18

LLOYD GEOPHYSICS INC.

FIGURE 13



LEGEND

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY
DIPOLE SEPARATION : 50 METRES
CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

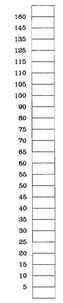
CONTOUR INTERVALS

5
25
100

INSTRUMENTS

Iris Instruments ELREC-6 Receiver

Iris Instruments VIP-4000 Transmitter



Scale 1:2000

50 0 50 100 150 200

(meters)

PACIFIC RIDGE EXPLORATION LTD.

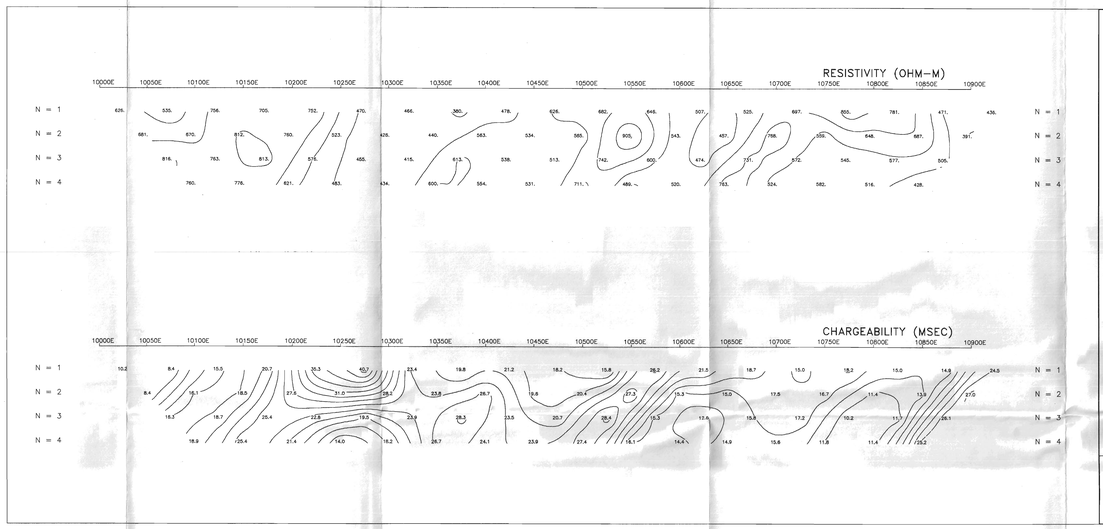
JRV Property
Yukon Territory

FILTERED (TRIANGLE)
METAL FACTOR

Scale 1:2000 Drawing No: 99436 - 19

LLOYD GEOPHYSICS INC.

FIGURE 14



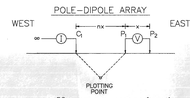
PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 10200N

POLE–DIPOLE ARRAY



x = 50m n = 1 – 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

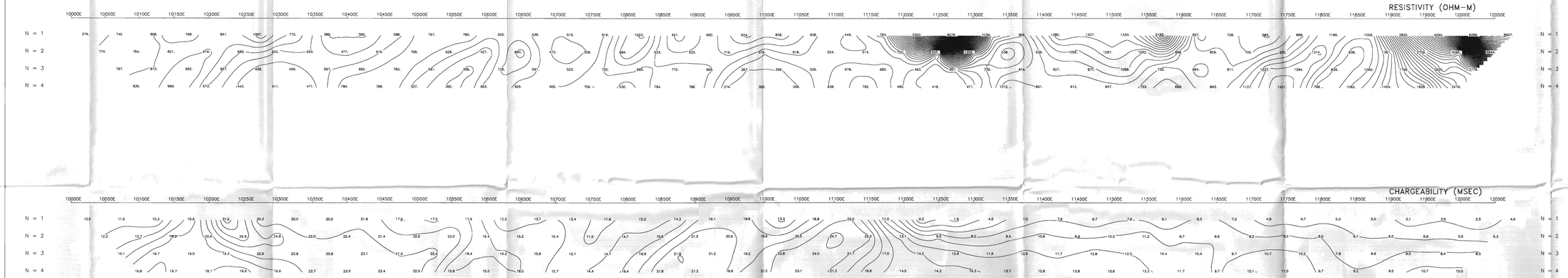
CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

DATE SURVEYED: July 25, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 99436 – 03



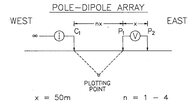
PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 10100N

POLE–DIPOLE ARRAY



x = 50m n = 1 – 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

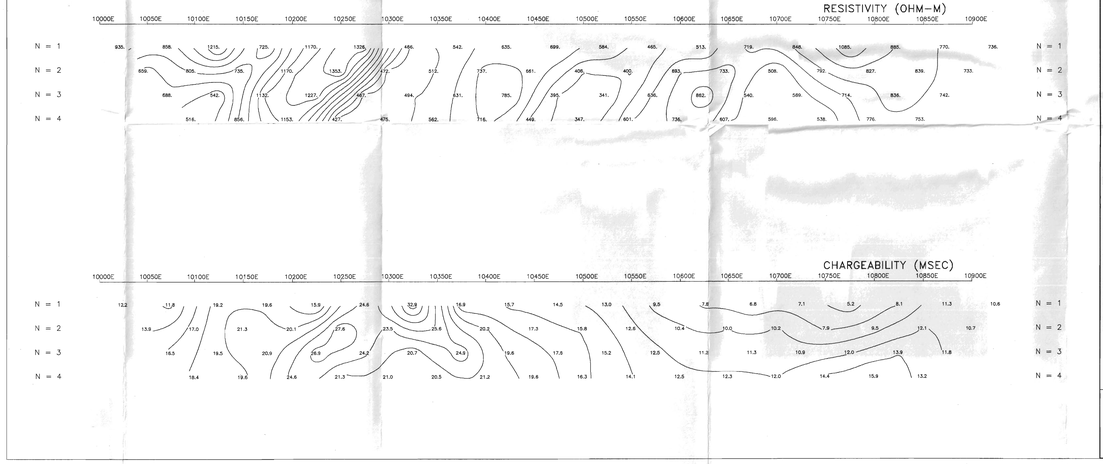
CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

DATE SURVEYED: July 27, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 99436 – 02



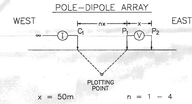
PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 10000N

POLE–DIPOLE ARRAY



x = 50m n = 1 – 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

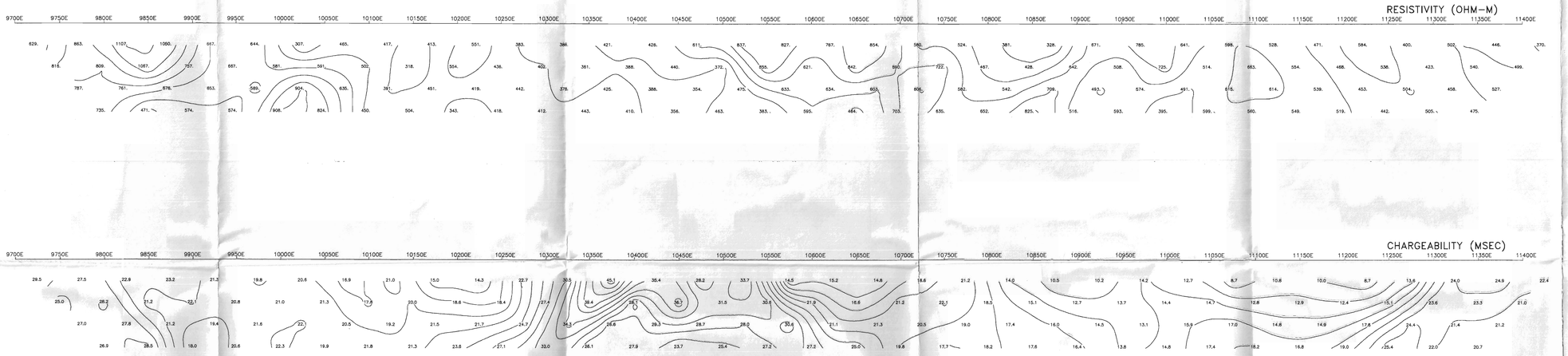
CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

DATE SURVEYED: July 26, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 99436 – 01



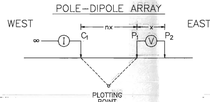
PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 10500N

POLE-DIPOLE ARRAY



x = 50m n = 1 - 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

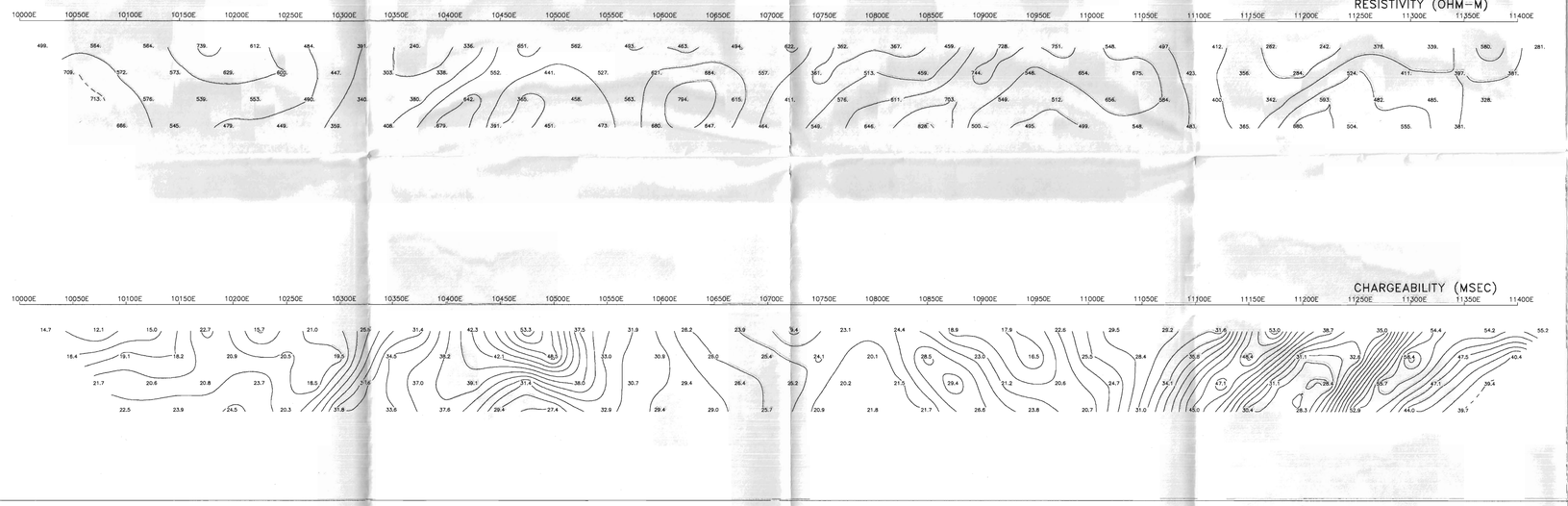
CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

DATE SURVEYED: July 18, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 99436 - 06



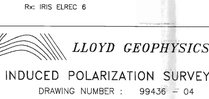
PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 10400N

POLE-DIPOLE ARRAY



x = 50m n = 1 - 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

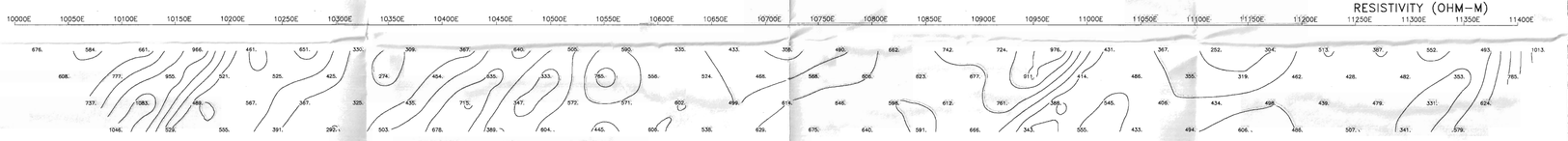
CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

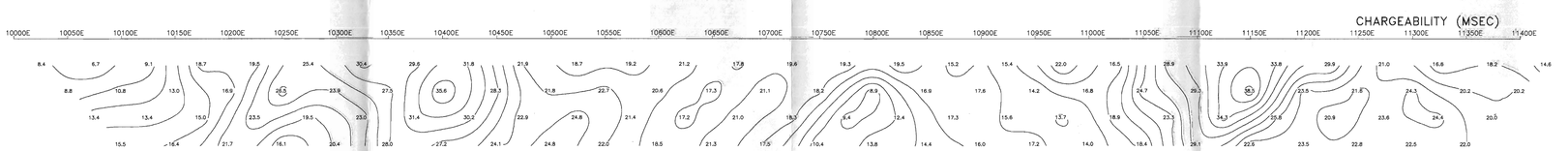
DATE SURVEYED: July 18, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 99436 - 05





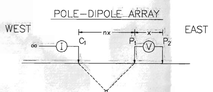
PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 10300N

POLE-DIPOLE ARRAY



x = 50m n = 1 - 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

DATE SURVEYED: July 17, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

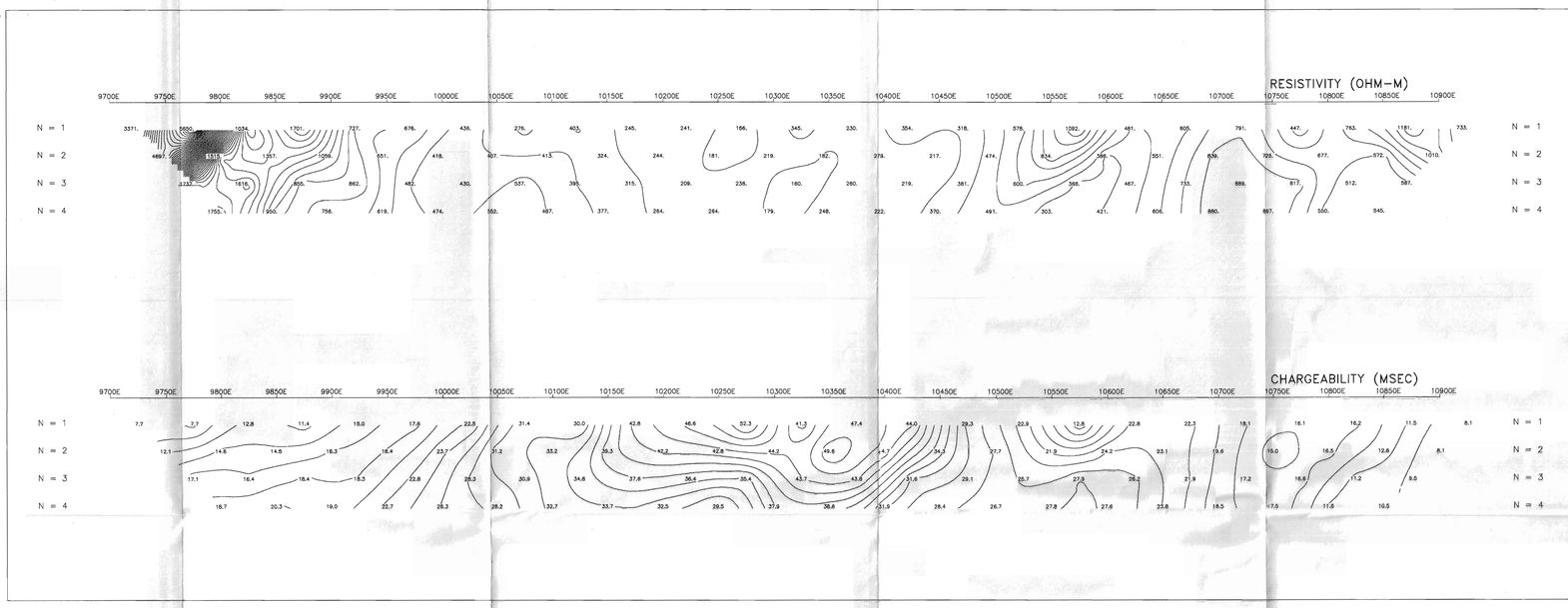
LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 99436 - 04

FIGURE 15

FIGURE 16

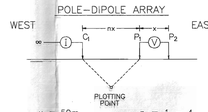


PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 10800N



x = 50m n = 1 - 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

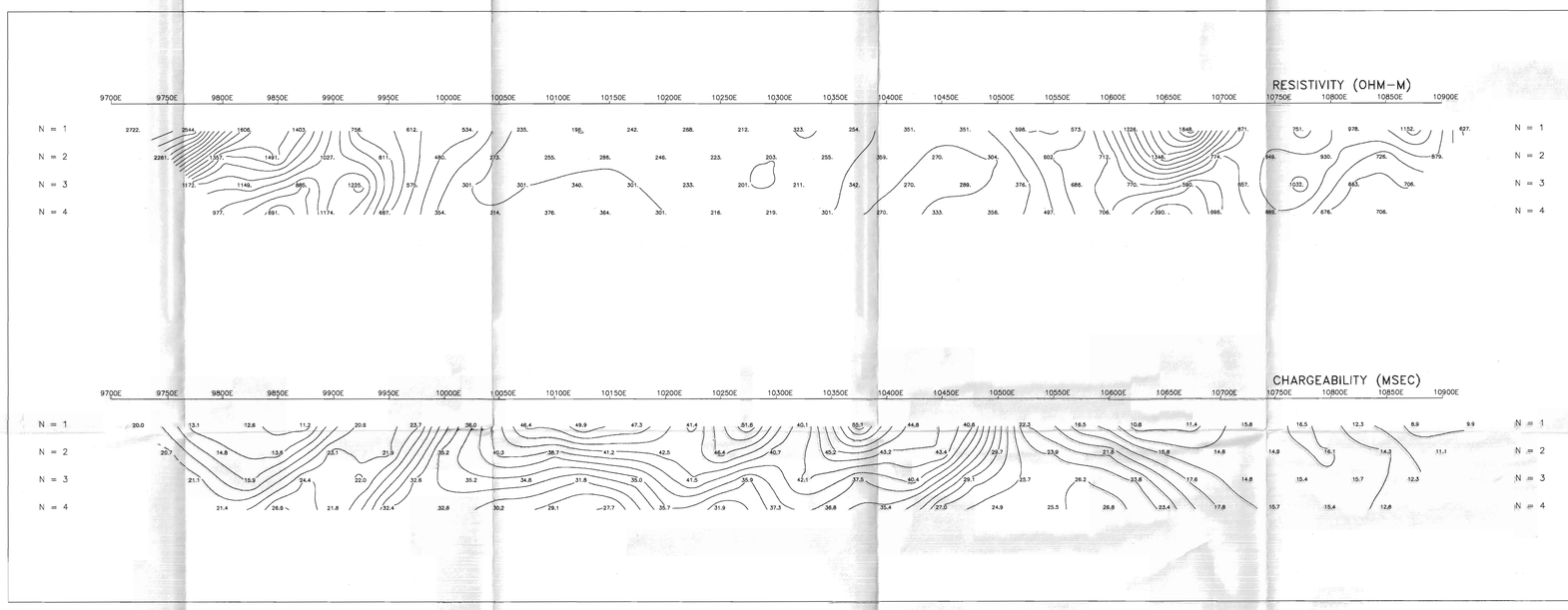
CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

DATE SURVEYED: July 20, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 99436 - 10



PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 10700N

x = 50m n = 1 - 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

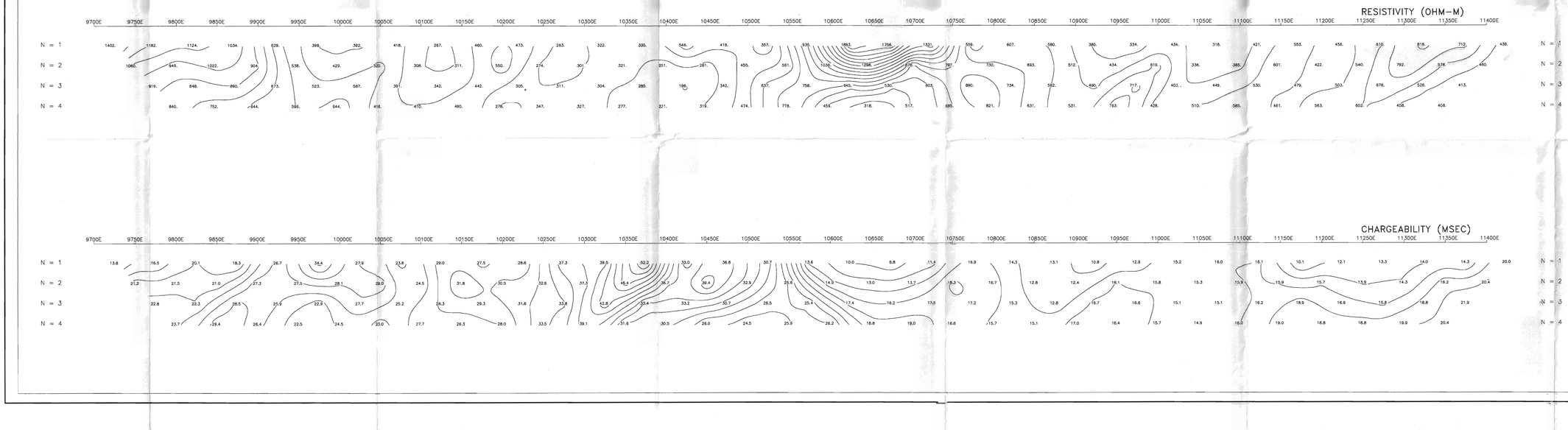
CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

DATE SURVEYED: July 20, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 99436 - 08

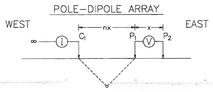


PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 10600N



x = 50m n = 1 - 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

DATE SURVEYED: July 19, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

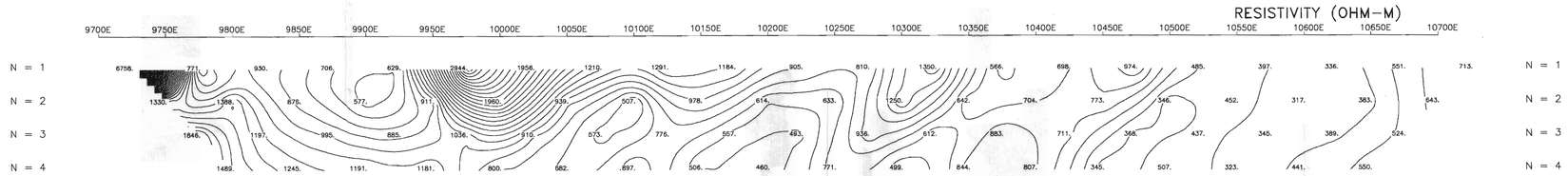
LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

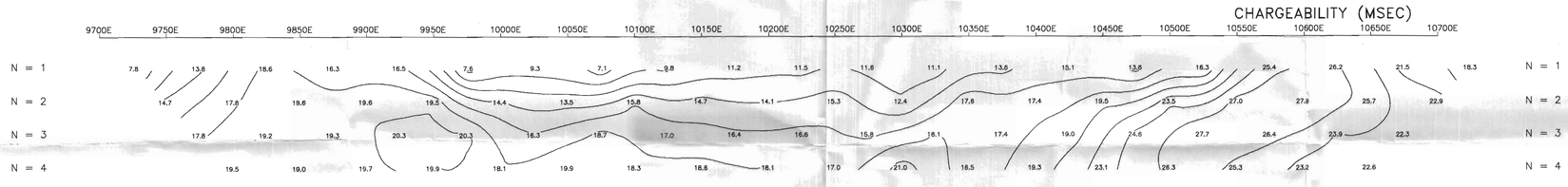
DRAWING NUMBER : 99436 - 07

FIGURE 17

RESISTIVITY (OHM-M)



CHARGEABILITY (MSEC)



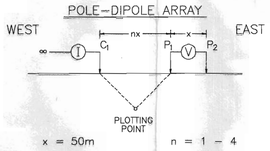
PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 11100N

POLE-DIPOLE ARRAY



x = 50m n = 1 - 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

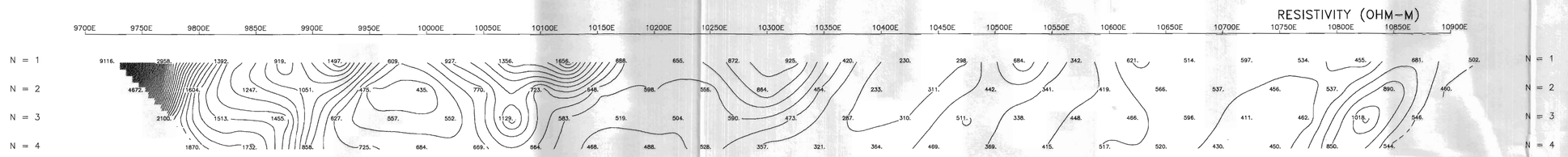
CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

DATE SURVEYED: July 23, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

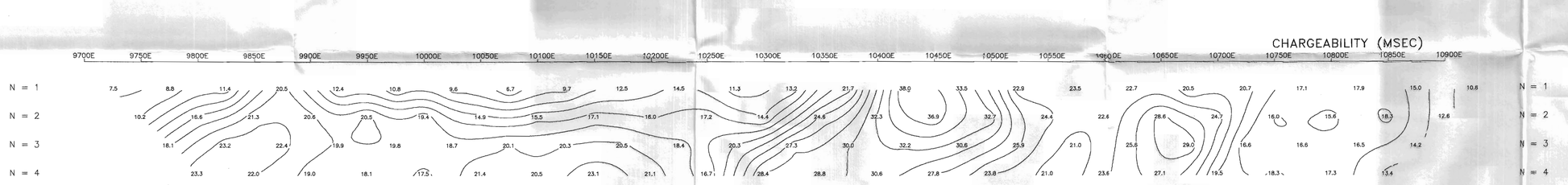
LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY
DRAWING NUMBER : 99436 - 13

RESISTIVITY (OHM-M)



CHARGEABILITY (MSEC)



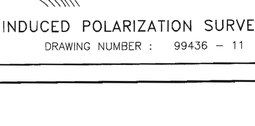
PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 11000N

POLE-DIPOLE ARRAY



x = 50m n = 1 - 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

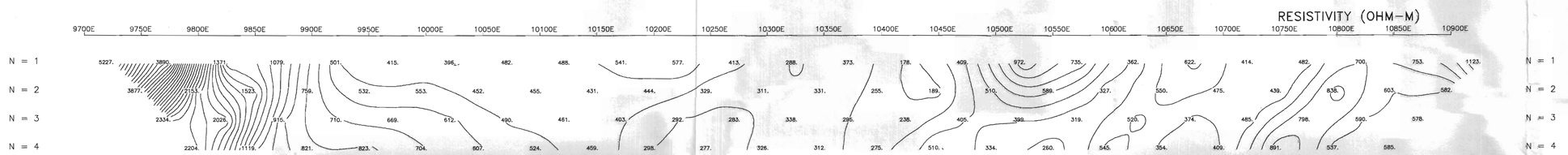
CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

DATE SURVEYED: July 23, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

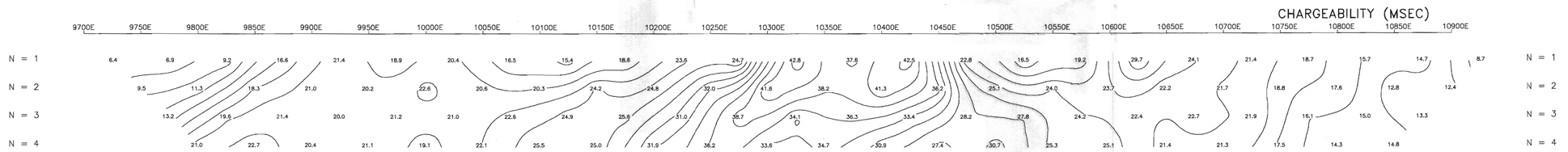
LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY
DRAWING NUMBER : 99436 - 12

RESISTIVITY (OHM-M)



CHARGEABILITY (MSEC)



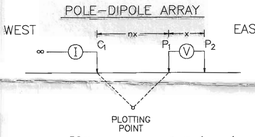
PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 10900N

POLE-DIPOLE ARRAY



x = 50m n = 1 - 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

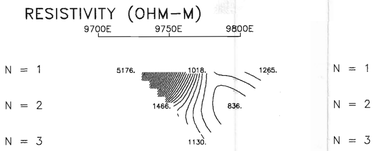
CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

DATE SURVEYED: July 21, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

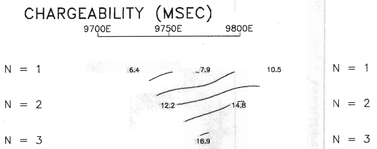
LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY
DRAWING NUMBER : 99436 - 11

RESISTIVITY (OHM-M)



CHARGEABILITY (MSEC)



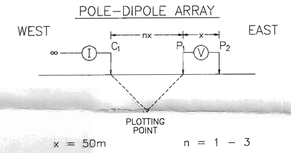
PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 11300N

POLE-DIPOLE ARRAY



x = 50m n = 1 - 3

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

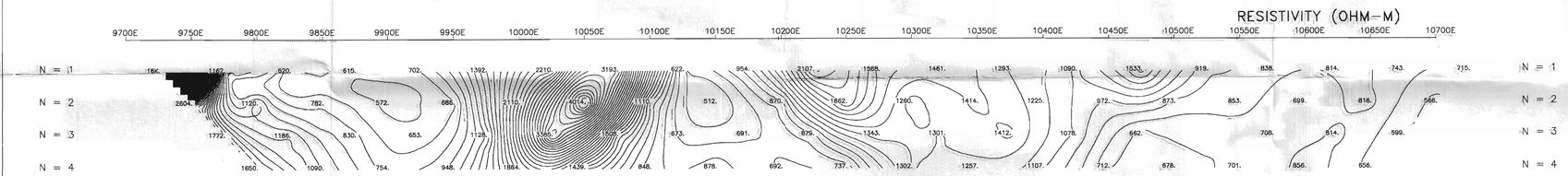
DATE SURVEYED: July 24, 1999
Tx: IRIS VIP 4000
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LLOYD GEOPHYSICS INC.

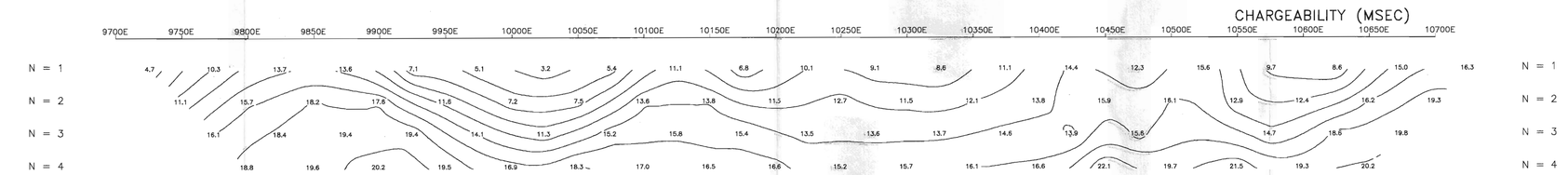
INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 99436 - 15

RESISTIVITY (OHM-M)



CHARGEABILITY (MSEC)



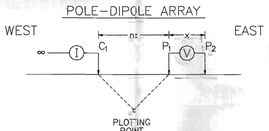
PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

YUKON TERRITORY

LINE: 11200N

POLE-DIPOLE ARRAY



x = 50m n = 1 - 4

CURRENT ELECTRODE C_1 WEST OF POTENTIAL DIPOLE P_1P_2

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE
AT DEPTH

SCALE 1 : 2000

CONTOUR INTERVALS
APP.CHARGEABILITY : 2.0 (msec)
APP.RESISTIVITY : 100 (ohm-m)

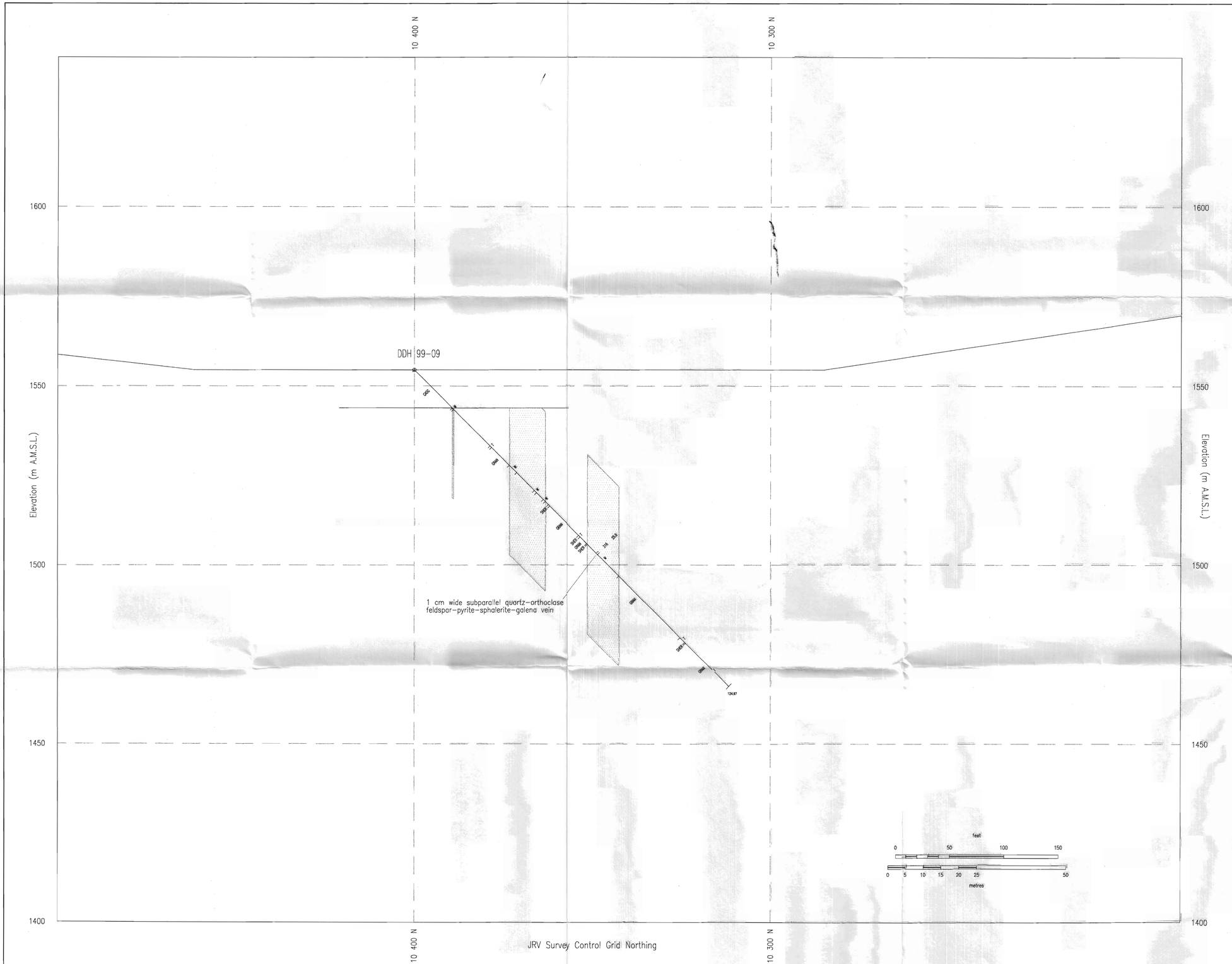
DATE SURVEYED: July 24, 1999
Tx: IRIS VIP 4000
Rx: IRIS ELREC 6

LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER : 99436 - 14

FIGURE 18



NORTH

UTM North is 1.55° East of True North

000°

180°

Section Orientation: Looking Eastward At 090.00°

– LITHOLOGY –

MIDDLE CRETACEOUS

Anvil Batholith

APLT	Aplite dyke
PEGM	Pegmatite dyke
QZVN	Quartz vein
MSSX	Semi-massive to massive pyrite (± sphalerite, galena, chalcopyrite, arsenopyrite, and/or pyrrhotite)
GRAN	Light grey, fine- to medium-grained muscovite-biotite granite

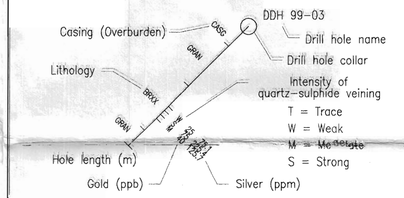
LOWER CAMBRIAN

Gull Lake Formation

MSED	Non-calcareous schist and phyllite with lesser carbonaceous phyllite, marble, calc-silicate schist and metabasalt

– STRUCTURE –

SHER	Shear zone
BRXX	Fault breccia (± quartz-sulphide infilled)
FAUL	Fault zone





To Accompany Report By J. D. Blanchflower, 1999

MINOREX CONSULTING LTD.
Geological Consultants, Delta, British Columbia

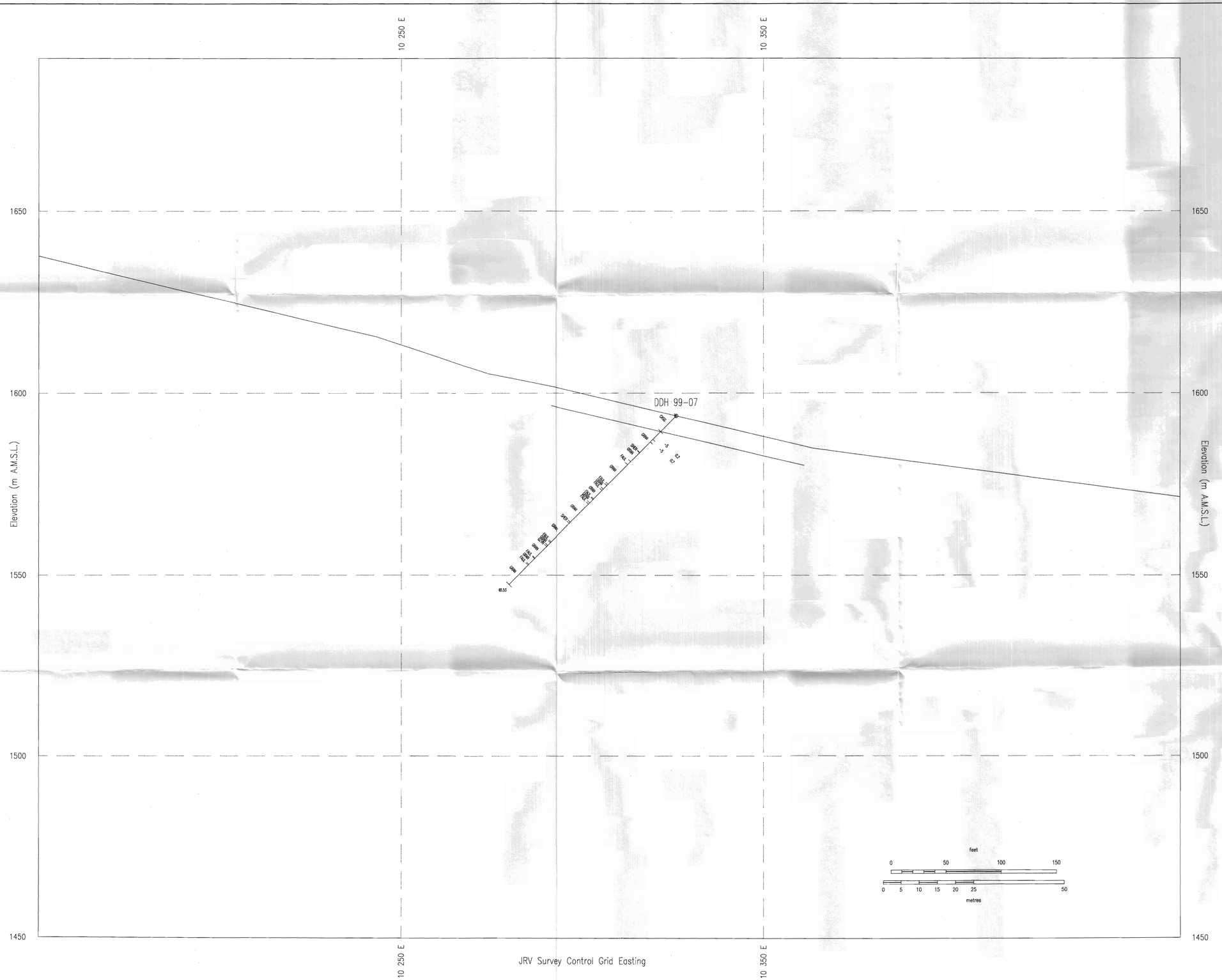
PACIFIC RIDGE EXPLORATION LTD.
Vancouver, British Columbia, Canada

DIAMOND DRILL HOLE

Vertical Section 10 550 East

KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6
Drawn By:	JDB	Scale:	1 : 500
Date:	October, 1999	Figure No.	19



NORTH

UTM North is 1.55° East of True North

270° 090°

Section Orientation: Looking Northward At 000.00°

– LITHOLOGY –

MIDDLE CRETACEOUS

Anvil Batholith

- APLT — Aplite dyke
- PEGM — Pegmatite dyke
- QZVN — Quartz vein
- MSSX — Semi-massive to massive pyrite (± sphalerite, galena, chalcopyrite, arsenopyrite, and/or pyrrhotite)
- GRAN — Light grey, fine- to medium-grained muscovite-biotite granite

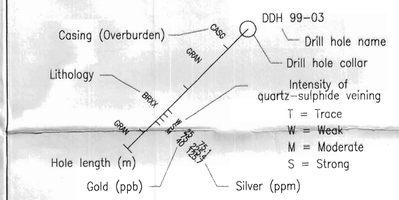
LOWER CAMBRIAN

Gull Lake Formation

- MSED — Non-calcareous schist and phyllite with lesser carbonaceous phyllite, marble, calc-silicate schist and metabasalt

– STRUCTURE –

- SHER — Shear zone
- BRXX — Fault breccia (± quartz-sulphide infilled)
- FAUL — Fault zone



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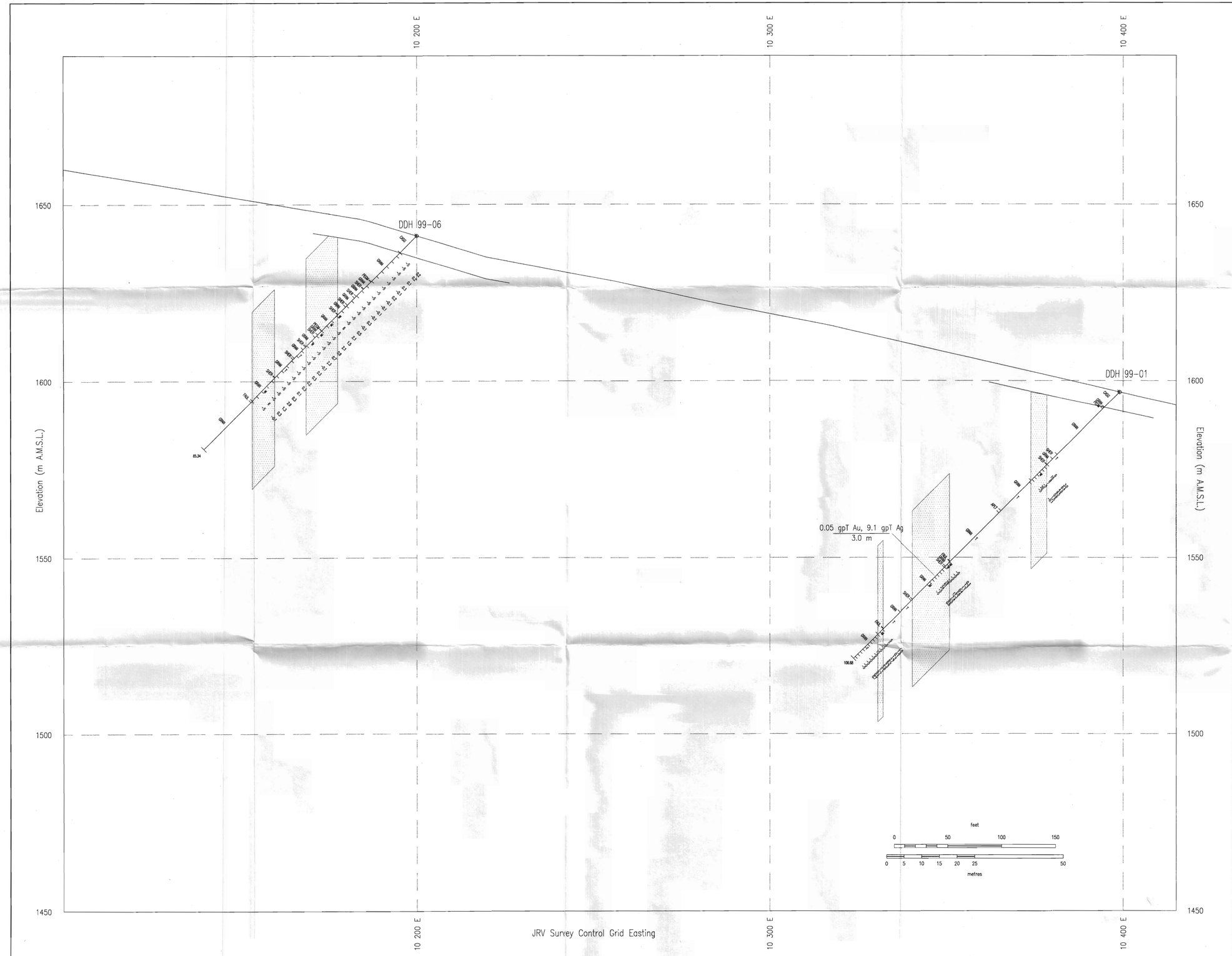
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DIAMOND DRILL HOLE

Vertical Section 10 500 North

KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6
Drawn By:	JDB	Scale:	1 : 500
Date:	October, 1999	Figure No.	20



NORTH

UTM North is 1.55° East of True North

270° 090°

Section Orientation:
Looking Northward At 000.00°

– LITHOLOGY –

MIDDLE CRETACEOUS

Anvil Batholith

APLT	Aplite dyke
PEGM	Pegmatite dyke
QZVN	Quartz vein
MSSX	Semi–massive to massive pyrite (± sphalerite, galena, chalcopyrite, arsenopyrite, and/or pyrrhotite)
GRAN	Light grey, fine– to medium–grained muscovite–biotite granite

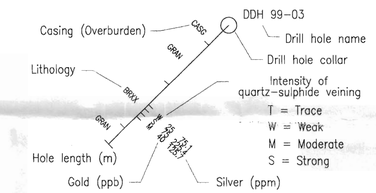
LOWER CAMBRIAN

Gull Lake Formation

MSED	Non–calcareous schist and phyllite with lesser carbonaceous phyllite, marble, calc–silicate schist and metabasalt

– STRUCTURE –

SHER	Shear zone
BRXX	Fault breccia (± quartz–sulphide infilled)
FAUL	Fault zone





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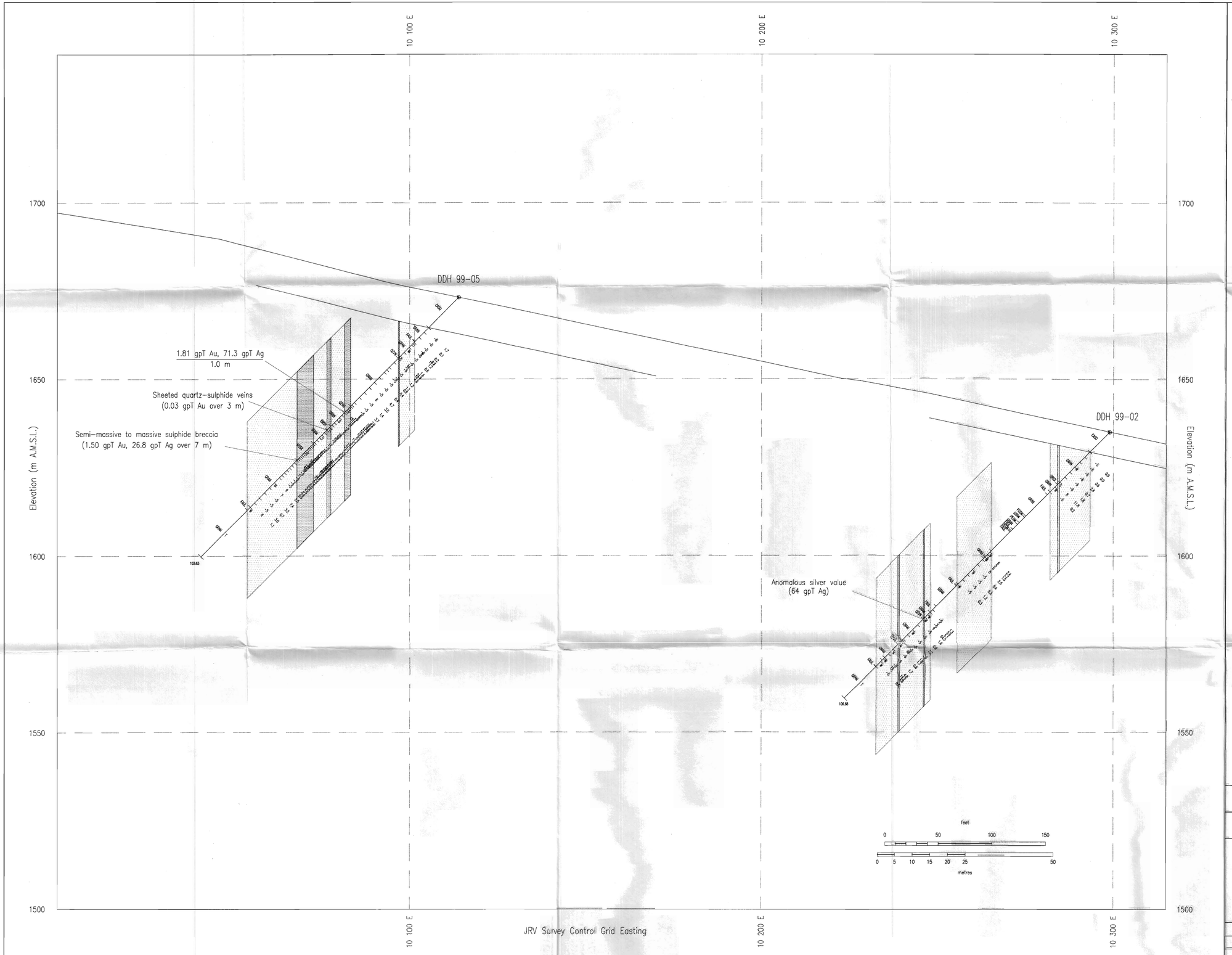
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DIAMOND DRILL HOLE

Vertical Section 10 600 North

KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6
Drawn By:	JDB	Scale:	1 : 500
Date:	October, 1999	Figure No.	21



NORTH

UTM North is 1.55° East of True North

270° 090°

Section Orientation:
Looking Northward At 000.00°

– LITHOLOGY –

MIDDLE CRETACEOUS

Anvil Batholith

APLT	Aplite dyke
PEGM	Pegmatite dyke
QZVN	Quartz vein
MSSX	Semi-massive to massive pyrite (± sphalerite, galena, chalcopyrite, arsenopyrite, and/or pyrrhotite)
GRAN	Light grey, fine- to medium-grained muscovite-biotite granite

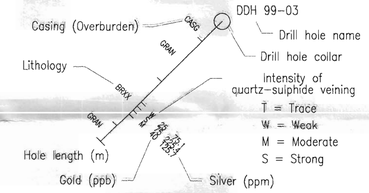
LOWER CAMBRIAN

Gull Lake Formation

MSED	Non-calcareous schist and phyllite with lesser carbonaceous phyllite, marble, calc-silicate schist and metabasalt

– STRUCTURE –

SHER	Shear zone
BRXX	Fault breccia (± quartz-sulphide infilled)
FAUL	Fault zone





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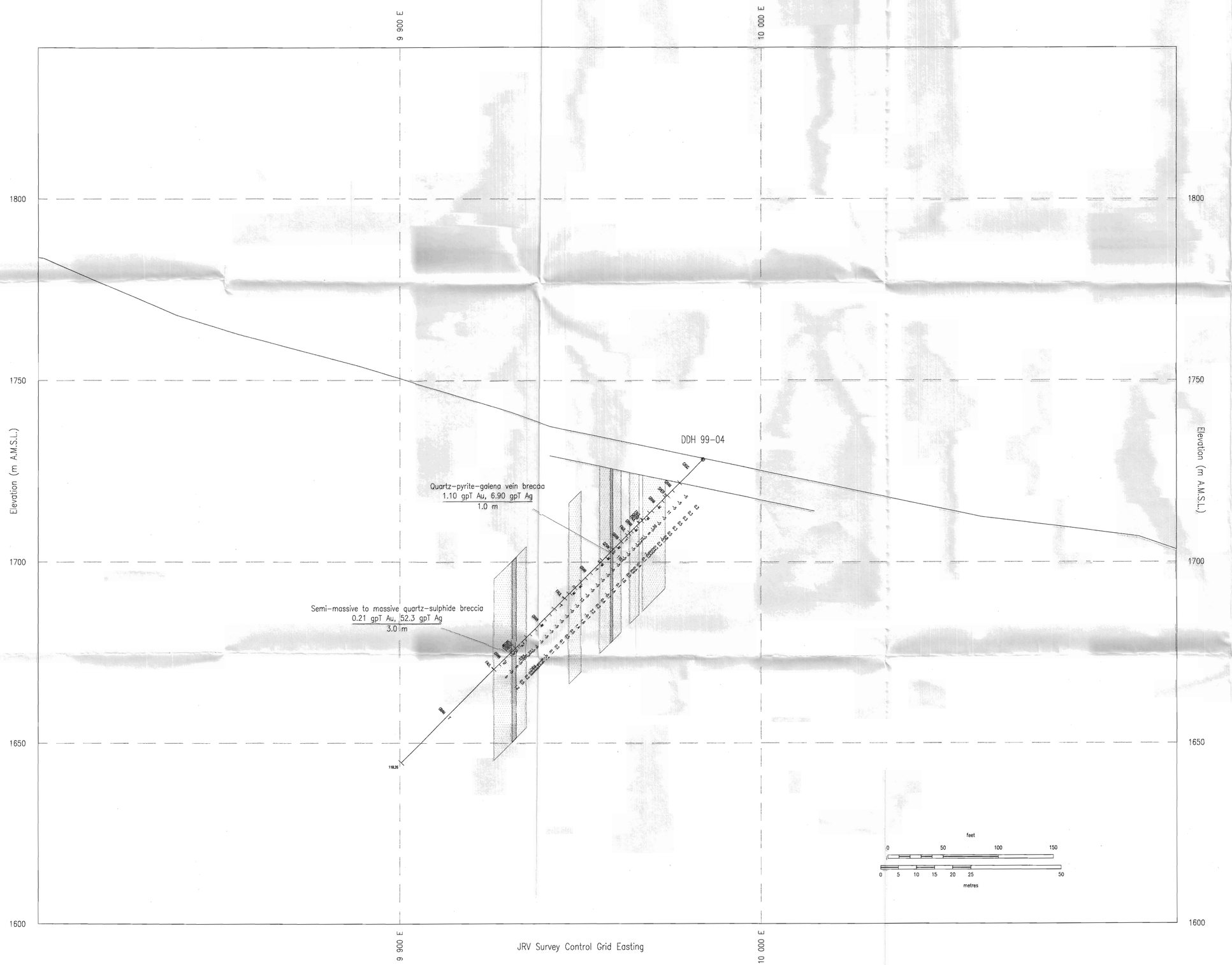
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DIAMOND DRILL HOLE

Vertical Section 10 700 North

KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6
Drawn By:	JDB	Scale:	1 : 500
Date:	October, 1999	Figure No.	22



NORTH

UTM North is 1.55° East of True North

270° 090°

Section Orientation:
Looking Northward At 000.00°

– LITHOLOGY –

MIDDLE CRETACEOUS

Anvil Batholith

APLT	Aplite dyke
PEGM	Pegmatite dyke
QZVN	Quartz vein
MSSX	Semi-massive to massive pyrite (± sphalerite, galena, chalcopyrite, arsenopyrite, and/or pyrrhotite)
GRAN	Light grey, fine- to medium-grained muscovite-biotite granite

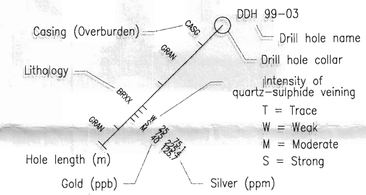
LOWER CAMBRIAN

Gull Lake Formation

MSED	Non-calcareous schist and phyllite with lesser carbonaceous phyllite, marble, calc-silicate schist and metabasalt

– STRUCTURE –

SHER	Shear zone
BRXX	Fault breccia (± quartz-sulphide infilled)
FAUL	Fault zone



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DIAMOND DRILL HOLE

Vertical Section 10 800 North

KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6
Drawn By:	JDB	Scale:	1 : 500
Date:	October, 1999	Figure No.	23

9 950 E

10 050 E

1800

1750

1700

1650

1600

Elevation (m A.M.S.L.)

DDH 99-03

2.47 gpT Au, 35.4 gpT Ag
2.0 m

Weakly Mineralized Quartz-Sulphide
Sheeted Veins (~0.03 gpT Au, ~10 gpT Ag)

Weakly Mineralized Quartz-Sulphide Breccia and
Sheeted Veins (~0.03 gpT Au)

feet
0 50 100 150

0 5 10 15 20 25 50
metres

JRV Survey Control Grid Easting

NORTH

UTM North
is 1.55° East
of True North

270° 090°

Section Orientation:
Looking Northward At 000.00°

– LITHOLOGY –

MIDDLE CRETACEOUS

Anvil Batholith

APLT	Aplite dyke
PEGM	Pegmatite dyke
QZVN	Quartz vein
MSSX	Semi-massive to massive pyrite (± sphalerite, galena, chalcopyrite, arsenopyrite, and/or pyrrhotite)
GRAN	Light grey, fine- to medium-grained muscovite-biotite granite

LOWER CAMBRIAN

Gull Lake Formation

MSED	Non-calcareous schist and phyllite with lesser carbonaceous phyllite, marble, calc-silicate schist and metabasalt

– STRUCTURE –

SHER	Shear zone
BRXX	Fault breccia (± quartz-sulphide infilled)
FAUL	Fault zone

DDH 99-03 — Drill hole name

Casing (Overburden) — Drill hole collar

Lithology

Intensity of quartz-sulphide veining
T = Trace
W = Weak
M = Moderate
S = Strong

Hole length (m)

Gold (ppb) — Silver (ppm)

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PROVINCE OF BRITISH COLUMBIA
J. D. Blanchflower
ENGINEERING GEOSCIENTIST

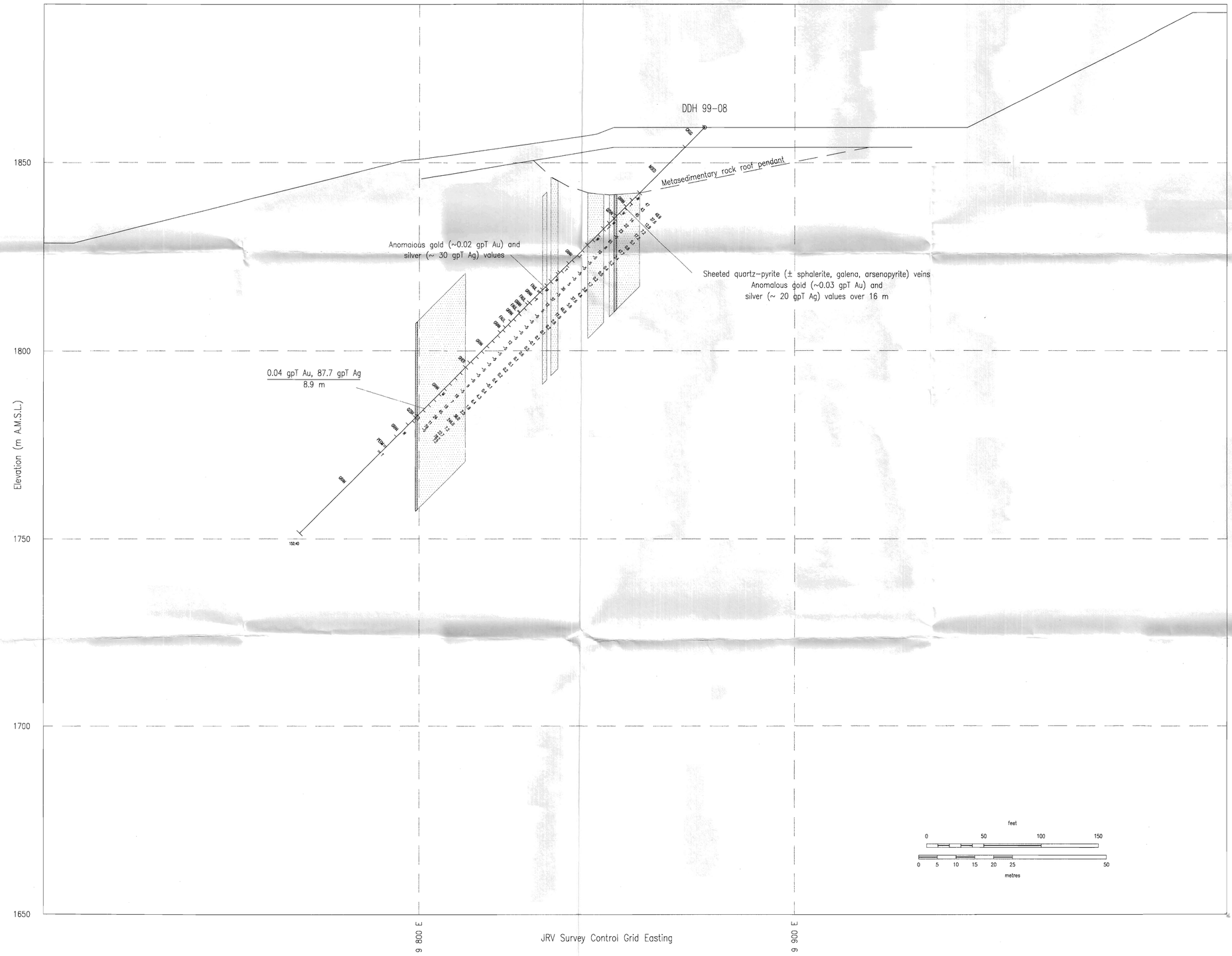
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DIAMOND DRILL HOLE
Vertical Section 10 900 North
KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6
Drawn By:	JDB	Scale:	1 : 500
Date:	October, 1999	Figure No.	24



NORTH

UTM North
is 1.55° East
of True North

270° 090°

Section Orientation:
Looking Northward At 000.00°

– LITHOLOGY –

MIDDLE CRETACEOUS

Anvil Batholith

APLT	Aplite dyke
PEGM	Pegmatite dyke
QZVN	Quartz vein
MSSX	Semi–massive to massive pyrite (± sphalerite, galena, chalcopyrite, arsenopyrite, and/or pyrrhotite)
GRAN	Light grey, fine– to medium–grained muscovite–biotite granite

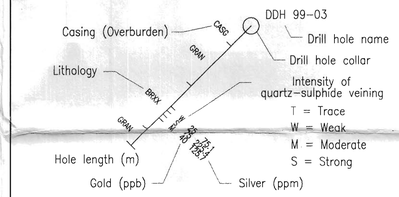
LOWER CAMBRIAN

Gull Lake Formation

MSED	Non–calcareous schist and phyllite with lesser carbonaceous phyllite, marble, calc–silicate schist and metabasait

– STRUCTURE –

SHER	Shear zone
BRXX	Fault breccia (± quartz–sulphide infilled)
FAUL	Fault zone



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PROVINCE OF BRITISH COLUMBIA
J. D. Blanchflower
GEOSCIENTIST

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Vancouver, British Columbia, Canada

DIAMOND DRILL HOLE

Vertical Section 11 200 North

KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech Work By:	JDB	N.T.S.	105 K/6
Drawn By:	JDB	Scale:	1 : 500
Date:	October, 1999	Figure No.	25

Dyke Zone

Kulan Zone

Risby Zone

Lime precipitate

Manganite stain

Camp Site

99-01 99-02 99-03 99-04 99-05 99-06 99-07 99-08 99-09

GRAN QFPD PHYL HNFL SCHT

11 500 N 11 000 N 10 500 N 10 000 N

11 500 E 11 000 E 10 500 E 10 000 E

6913000 N 6912000 N

5500 5000

– LEGEND –

CRETACEOUS AND/OR TERTIARY

- Quartz ± sulphide vein (QZVN)
- QFPD — Quartz–feldspar porphyry dyke

MIDDLE CRETACEOUS (97 Ma)

Anvil Batholith

- GRAN — Light grey, fine– to medium–grained muscovite–biotite granite or granodiorite

LOWER CAMBRIAN

Gull Lake Formation

- HNFL — Dark–brown, biotite–rich hornfels
- PHYL — Brown, well–foliated, biotite–rich phyllite
- SCHT — Light to medium grey–green, calcareous schist (i.e. meta–siltstone and sandstone)
- Gold–in–Soil Geochemical Anomaly (>10 ppb Au)
- Silver–in–Soil Geochemical Anomaly (>3 ppm Ag)
- Lead–in–Soil Geochemical Anomaly (>500 ppm Pb)
- Arsenic–in–Soil Geochemical Anomaly (>300 ppm As)
- Induced Polarization Chargeability Anomaly (>25 msec)
- Zone of quartz–sulphide vein mineralization
- 99-02 — Diamond drill hole
- Geological contact (defined, inferred)
- Fault
- Foliation (vertical, inclined, horizontal)
- 78/76 — Claim posts
- Survey control gridline and soil sample site

as	arsenopyrite	li	limonite
cp	chalcopyrite	py	pyrite
gl	galena	sp	sphalerite
he	hematite	sx	sulphides

Topographic contours after N.T.S. 105 K/6 & 7 (feet A.M.S.L.)

0 50 100 150 200 400 600 feet

0 20 40 60 80 100 200 metres

UTM Grid 1°33' East

Magnetic North

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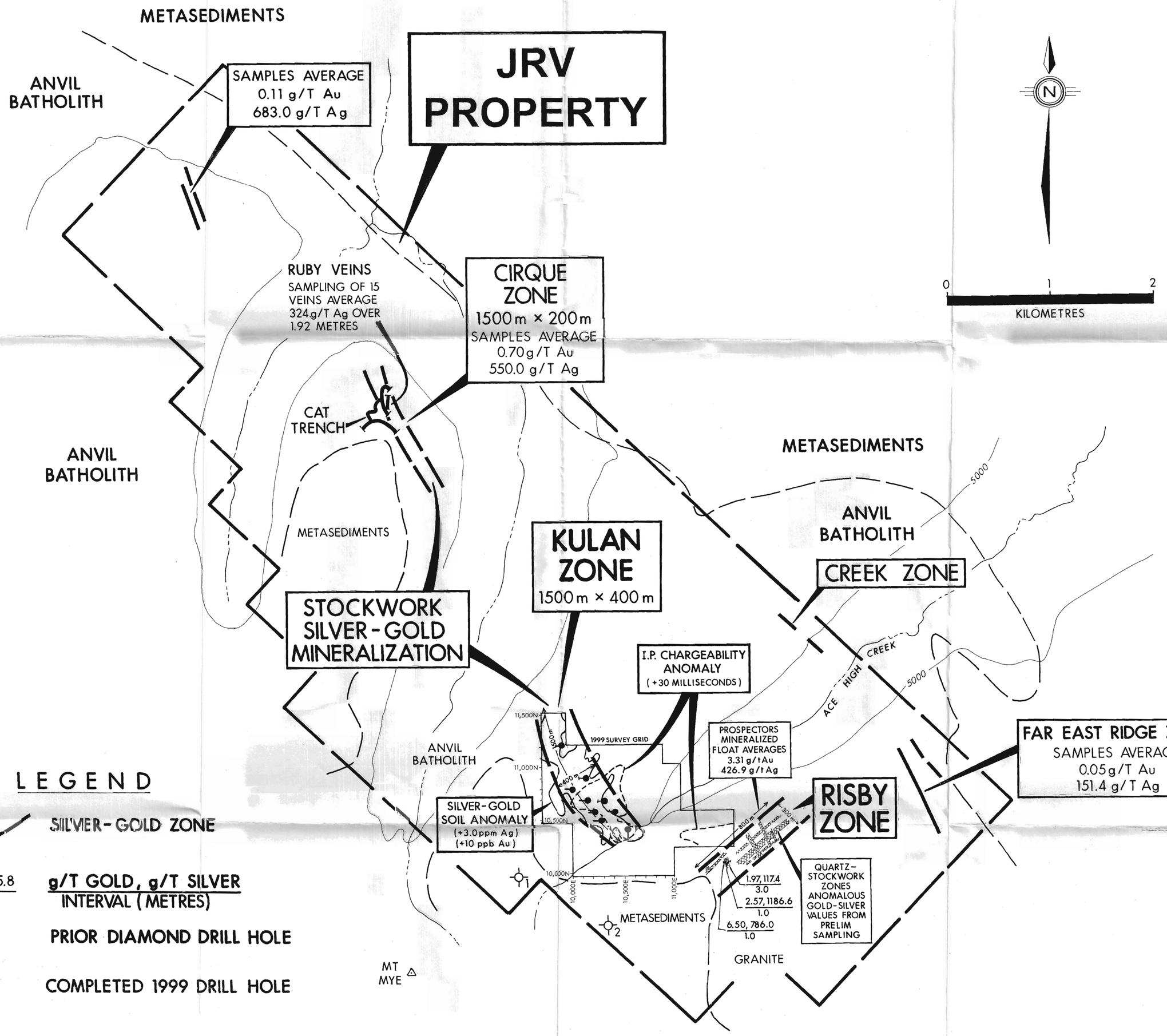
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COMPILATION PLAN

KULAN ZONE, JRV PROPERTY
Whitehorse Mining District, Yukon

Tech. Work By:	JDB	N.T.S.	105 K/6
Drawn By:	JDB	Scale:	1 : 2 000
Date:	October, 1999	Figure No.	26



PACIFIC RIDGE EXPLORATION LTD.

JRV PROPERTY

COMPILATION PLAN

FIGURE 28