

ARIS SUMMARY SHEET

District Geologist, Prince George

Off Confidential: 94.12.14

ASSESSMENT REPORT 23201

MINING DIVISION: Cariboo

PROPERTY: Deception Ledge  
LOCATION: LAT 52 01 00 LONG 120 34 00  
UTM 10 5765469 666981  
NTS 093A02E  
CLAIM(S): D.L. 1-8  
OPERATOR(S): Pioneer Metals  
AUTHOR(S): Dunn, C.;Ridley, D.W.  
REPORT YEAR: 1993, 39 Pages  
COMMODITIES  
SEARCHED FOR: Gold  
KEYWORDS: Jurassic,Phyllites,Quartz veins  
WORK  
DONE: Geological,Geochemical,Physical  
ROCK 37 sample(s) ;ME  
SILT 7 sample(s) ;ME  
SOIL 40 sample(s) ;ME  
TREN 105.0 m 7 trench(es)

LOG NO:	80
ACTION:	JAN 07 1994
FILE NO:	

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Gold Commissioner's Office  
VANCOUVER, B.C.

GEOLOGICAL and GEOCHEMICAL REPORT

on the  
DECEPTION LEDGE PROPERTY  
(D.L. 1-8 mineral claims)  
Cariboo Mining Division

NTS 93A\2E  
LAT. 52' 01" N.  
LONG. 120' 34" W.

BY  
D. RIDLEY (owner)

and  
D. DUNN

PIONEER METALS CORPORATION (operator)

DECEMBER, 1993

WORK APPROVAL NUMBER: PRG-1993-1000761-4-5677

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

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(1)

SUMMARY  
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The Deception Ledge property, situated approximately 75 kilometers northeast of 100 Mile House, is underlain by a thick package of upper Triassic black phyllites of the Quesnel River or Nicola Group.

Gold-bearing pyritic quartz veins were first discovered by unknown person(s) in 1886 as seen in B.C. Dept. of Mines Annual Report for that year. A short adit and several trenches were completed during this time after which no further work was done until the showings were re-discovered by Eric Scholtes in 1987 (Durfeld, R.M., 1988).

Work recorded to date has shown values as high as 1.5 oz\ton gold, 620 gm\ton silver, 5.2% lead and 444 ppm antimony. These results were obtained from narrow outcropping quartz veins and material on the adit and trench dumps. Mineralized quartz veins are small, discontinuous and appear restricted to the old adit and trenches only. A detailed pan sampling survey up Ledge Creek failed to reveal economic or anomalous gold values.

Future work on the Deception Ledge property should be concentrated around the known showings and consist of detailed soil sampling followed by trenching of anomalous zones. The most obvious target would be a small high-grade vein, although similarities to the Frasergold property, a low-grade high-tonnage gold property situated in similar rocks 35 kilometers north, should be considered during the initial soil sampling.

## INTRODUCTION

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During September 1993, a program of detailed pan concentrate sampling and prospecting up Ledge Creek was followed by hand-trenching, rock-chip and limited soil sampling of the adit area. This work failed to reveal significant gold values other than those at the adit.

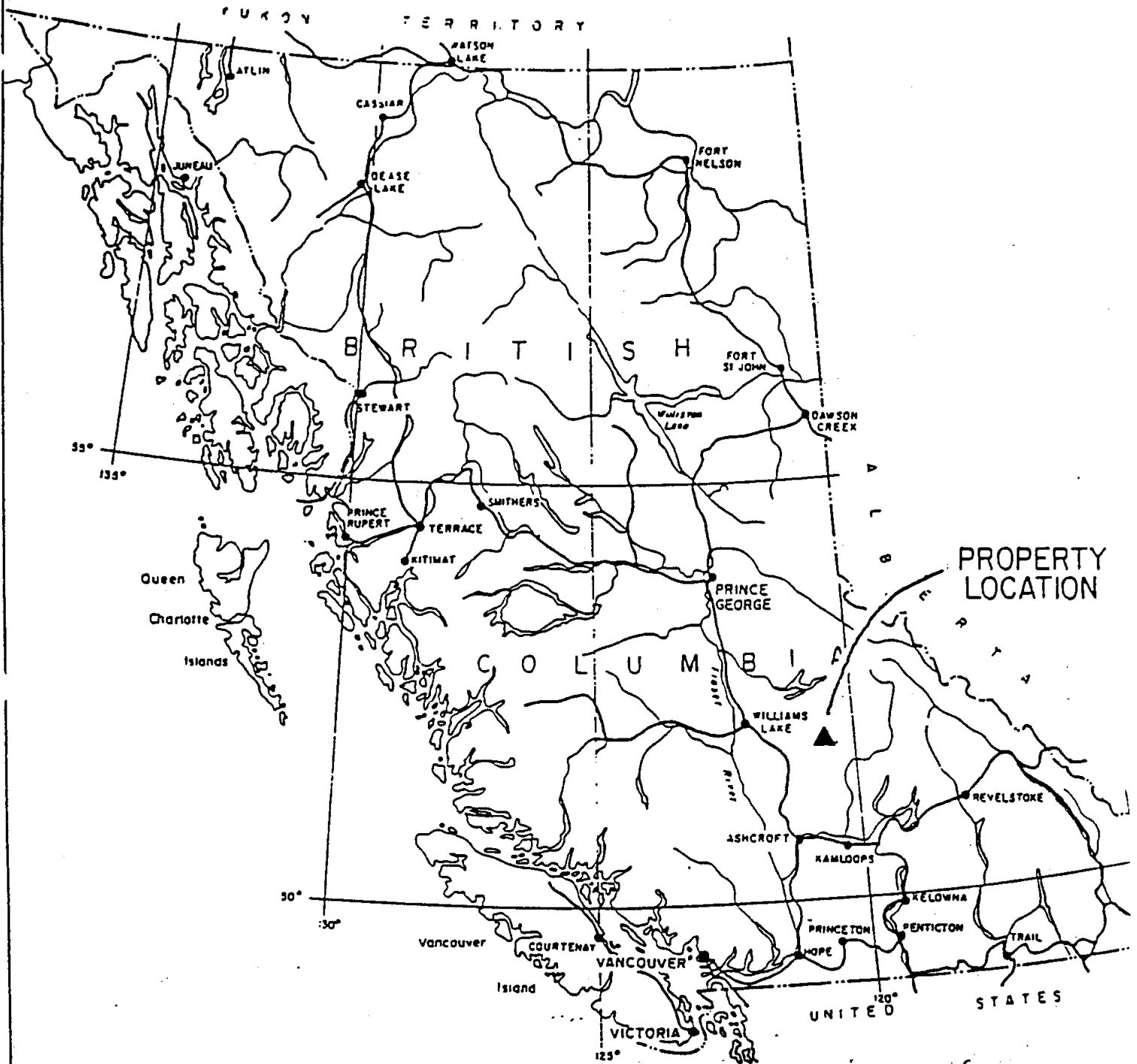
## LOCATION AND ACCESS

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The Deception Ledge property is located approximately 75 kilometers northeast of 100 Mile House, B.C. and is easily accessible by vehicle to within 200 meters of the adit. Access from highway 97 is gained via the Canim Lake road to the end of pavement at Eagle Creek, thence via the Hendrix Lake road for about 20 kilometers to the Spanish-Deception Creek forest access road. This road is traveled easterly approximately 12 kilometers to an arterial road heading northerly up the west side of Deception Creek for about 700 meters where it swings to the north. An older road, still in very good condition is followed northerly about 3 kilometers to an old gravel pit which provides a good parking or camping area. A trail from the road follows the north side of Ledge creek. The adit is located about 200 meters westerly from the road.

The claims are adjacent to the western side of the Interior Wet Belt and within Quesnel Highlands physiographic region. Elevations range between 3100 feet along Deception creek to the east and 4100 feet at the western extremity. Topography is relatively gentle except for Ledge creek canyon which locally has vertical walls to 200 feet followed by several hundred feet of steep terrain. Ledge creek contains appreciable volumes of water rendering it extremely difficult to work the canyon areas except during low water from late July to October.

The area is well forested with spruce, balsam, douglas fir and lodgepole pine old growth. The area near the adit and old workings typically contain a jungle of juvenile cedar, spruce and balsam intergrown with alder, willow, devil's club and a wide variety of herbaceous plants. This is largely due to past fires in the region which may have been set by the earliest owners to expose the rock, a common practice in the early days of B.C. mining.



**PROPERTY LOCATION - FIG. 1**

**DECEPTION LEDGE PROPERTY: DL-1-8**

**CARIBOO Mining Division**

**N.T.S. 93A/2E**

D.W. Ridley.

0 100 200 miles

0 100 200 300 kilometers

FIG. 2

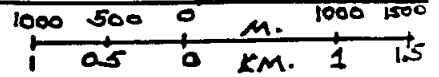
# CLAIMS MAP

## DECEPTION LEDGE PROPERTY

### CARIBOO M.D. NTS: 93A/2E

#### DL 1-8 CLAIMS

SCALE: 1-50,000



780101
ECT
780101

McNeil Lake

Bozif

Cross Lake

Deception

Deception

Cross Lake

DL 1 302028	DL 2 302027	DL 3 302030
DL 2 302026	DL 1 302025	DL 3 302029
DL 3 302122	DL 1 302013	DL 3 302014

L12333

8017 04

CLAIM STATUS  
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The Deception Ledge property consists of eight two-post units located in Cariboo Mining Division. All are held by Dave and Catherine Ridley, General Delivery, Eagle Creek, B.C., VOK 1L0. In June 1993, an option agreement was signed with Pioneer Metals Corp., who has corporate offices at 1770-401 West Georgia Street, Vancouver, B.C., V6B 5A1. Pioneer has the right to earn a 100% interest in the property subject to a 2% NSR retained by Ridley. Pertinent claim data is listed below.

Claim Name	Record No.	* Expiry Date *
D.L. 1	302825	July 11, 1998
D.L. 2	302826	July 11, 1998
D.L. 3	302827	July 11, 1998
D.L. 4	302828	July 11, 1998
D.L. 5	302829	July 11, 1998
D.L. 6	302830	July 11, 1998
D.L. 7	302843	July 11, 1998
D.L. 8	302844	July 11, 1998

\* Pending assessment report approval \*

PROPERTY HISTORY  
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No documentation as to collaring the adit or blasting of the trenches has been found in government literature although it appears the first claims were staked in 1886 as seen in the B.C. Dept. of Mines Annual Report for that year. A brief account in the Annual Report for 1903 (pg. H-67) describing the area between Horsefly River and Canim Lake states: "... there is an immense amount of quartz occurring in lenses and veins in the slate, but, while much of this quartz carries sulphides of iron and lead, as far as can be learned the values are not such as to admit of its being worked under existing circumstances". It is unclear whether the present property was taken into account at that time or if it had already been "lost" because it was not until 1987 that work resumed around the old showings (Durfeld, R.M., 1988).

The Rec and LK claims, comprising 14 units, was staked in June and July by E. Scholtes to cover the adit and



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trenches. Durfeld Geological Management Ltd. was contracted to perform a limited program of rock sampling and geological mapping. The work returned values as high as 620 grams\ton silver, 3.23 grams\ton gold, 5.2% lead and 444 ppm antimony (Durfeld, R.M., 1988). No further work was done and the claims were allowed to lapse in 1991.

The present property was staked in July, 1991 to cover the old showings and a length of Ledge creek canyon which was interpreted to represent a westerly trending fault, possibly related to the mineralization. A prospecting program consisting of rock sampling quartz veins in and near the adit was conducted by D. and C. Ridley during July 1991 and May 1992 (Ridley D.W., 1992). While sampling failed to confirm the high lead-silver values from the previous program, it was successful in revealing high-grade gold values in the main adit vein. A chip sample across one meter from well-weathered quartz in a surface trench above the adit returned 42,906 ppb gold and 34.7 ppm silver.

In June 1993, an option was signed with Pioneer Metals Corporation. Hand-trenching, rock chip sampling, geological mapping and an orientation soil sampling program, as well as, collection of pan concentrates from Ledge creek were carried out under the supervision of D. Dunn, geologist. This work is the subject of the following report.

#### REGIONAL GEOLOGY

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The oldest rocks in the vicinity of the Deception Ledge property consist of quartz-mica schists, micaceous quartzite and quartz-feldspar gneiss of lower Cambrian Snowshoe Formation (Cariboo Group; Struik L.C., 1988). These rocks occur east of the property forming the high mountain peaks in this area.

Permian-Mississippian rocks of the Redfern Complex consisting of amphibolite, gabbro, norite, serpentinite, pyroxenite and peridotite outcrop east of the property. These rocks are in apparent fault contact with underlying Snowshoe Formation by means of the Eureka thrust. They are derived from oceanic crust which was thrust onto the ancient North American continental shelf during Jurassic time (Bloodgood M.A., 1990).

(5)

The Eureka thrust separates Paleozoic rocks east of Deception-No Name valleys from Mesozoic rocks to the west. The actual fault can be observed along the Deception creek road where scattered outcrops of chlorite-biotite schist and amphibolite gneiss of the Crooked Amphibolite are found. The rocks strike NNW dipping moderately eastward and generally follow the main valley.

West of Deception creek a thick succession of black graphitic phyllites and slate form the basal metasedimentary sequence of Quesnel Terrane. These Triassic metasediments form the base of the Quesnel Trough upon which a thick sequence of Triassic to Jurassic volcanics, volcanic-derived sediments, with lesser limestone and argillite were deposited in an island arc environment. The boundary between the predominantly black phyllites and volcanic rocks to the west is undoubtedly a detachment fault.

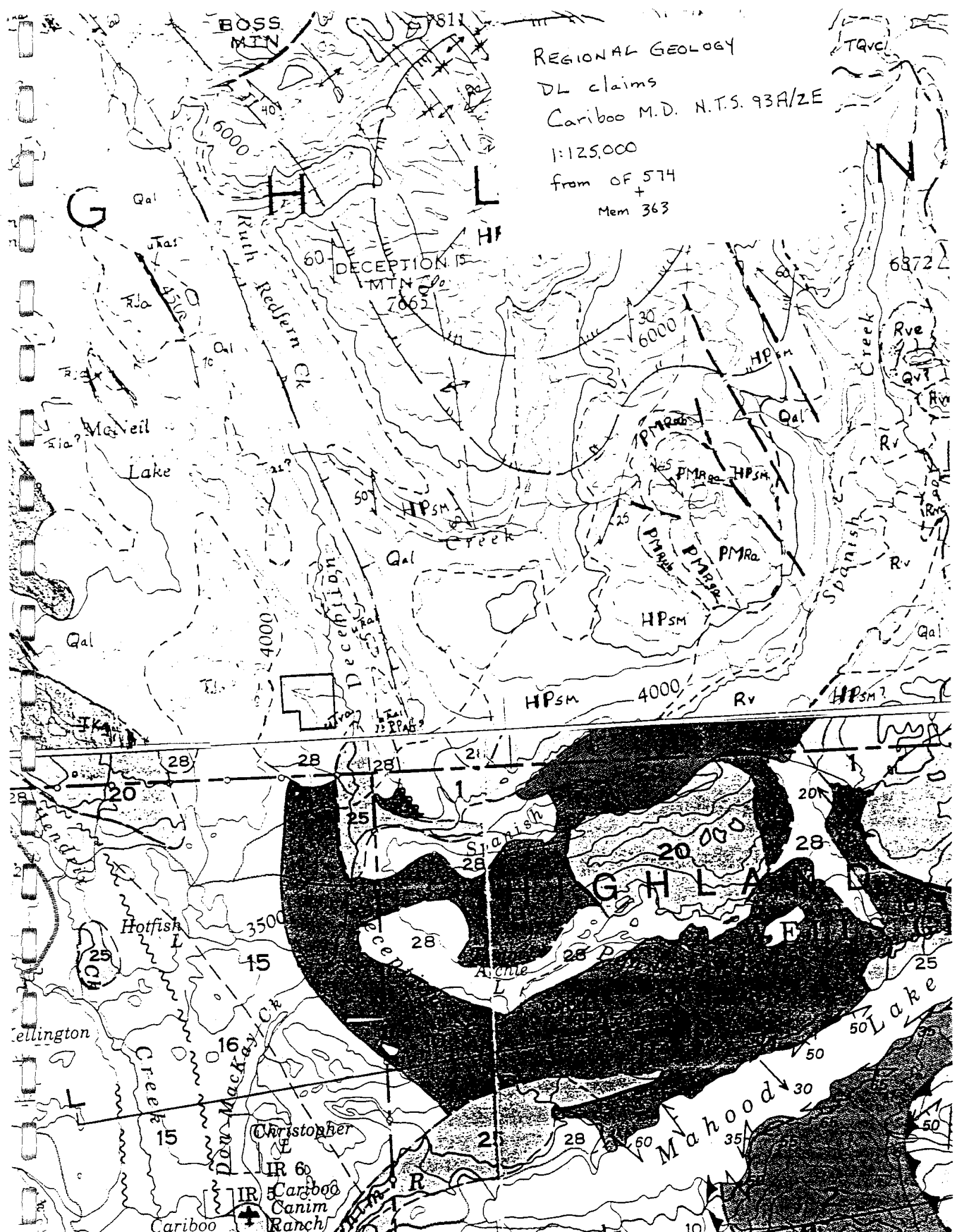
The Takomkane batholith underlies a large area several kilometers west of the claims and intrudes Triassic Nicola Group but is in apparent fault contact with younger Jurassic rocks. The batholith consists of diorite, granodiorite, with a border phase of gabbro, hornblendite and lesser syenite or syno-diorite.

Smaller bodies of Cretaceous intrusives form stocks, plugs, dykes or sills, and are found to cut all other formations. These rocks are typically quartz-feldspar-rich granodiorite. They are believed to be related to the waning stages of igneous activity during easterly directed thrusting of Quesnel Terrane over the North American craton.

Several pockets of Tertiary to Recent volcanic flows are scattered about, generally in the lower-lying areas. A small outcropping of Miocene plateau basalt is found at the confluence of Deception and Spanish creeks south of the claims. These rocks were laid down in paleo depressions and usually mark old faults.

Glacial alluvium and fluvial deposits blanket all rocks except the Recent volcanic flows in Spanish creek valley, several kilometers east of the property.

REGIONAL GEOLOGY  
DL claims  
Cariboo M.D. N.T.S. 93A/ZE  
1:125,000  
from OF 574  
+  
Mem 363



# LEGEND

## QUESNEL LAKE (93-A) MAP-AREA

- PALEOZOIC**
- DEVONIAN**
- (29) **Rv** Olivine basalt blocks, flows, Bv related cinder cones, ultrabasic nodules common
- PLEISTOCENE AND PREICE**
- (28) **Qa1** Glacial deposits, till, gravel, sand, silt, alluvium, few scattered unmaped outcrops
- Qv** Olivine basalt flows and breccia; Qv related volcanic cones including basalt flows, breccia and cinder; ultrabasic nodules common
- TERTIARY AND QUATERNARY**
- PLIOCENE AND/OR PLEISTOCENE**
- TQvc** Olivine basalt, volcanic cones, flows and cinder; TQvc basaltic breccia, minor flows, ultrabasic nodules common
- TERTIARY**
- MIOCENE AND PLEISTOCENE**
- (25) **uTva** Plateau basalt, olivine basalt, felsitic porphyry basalt, minor breccia, conglomerate and sandstone, also areas underlain by plateau basalt, few scattered unmaped outcrops; also coarse felsitic porphyry, may be other intrusions
- uTs** Shale, sandstone (mainly Miocene)
- LIXEN AND (?) OLIGOCENE**
- ImTv** Basaltic, andesitic, and dacitic breccia and flows, minor shale, sandstone and conglomerate; may include small areas of younger volcanics; ImTv areas of few scattered unmaped outcrops of ImTv and ImTs undivided
- ImTs** Shale, sandstone, tuff, conglomerate

## QUESNEL and OMINECA BELTS

### QUESNEL BELT

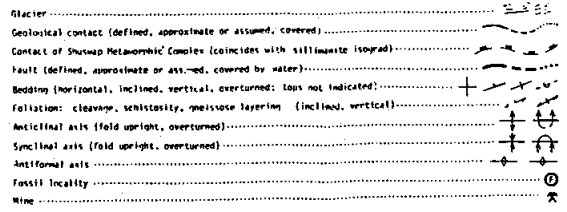
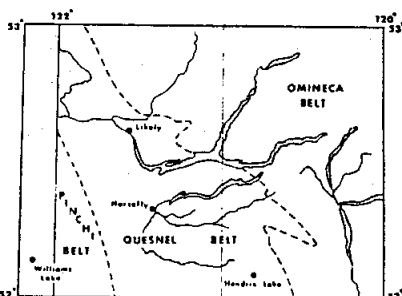
- CRETACEOUS AND (?) TERTIARY**
- KTs** Conglomerate, sandstone, shale
- JURASSIC AND CRETACEOUS**
- JKg** Granodiorite, quartz monzonite, quartz diorite
- JKns** Amphibole gneiss, gneiss
- QUESNEL RIVER GROUP (uKa to uKj)**
- JURASSIC**
- LINEA AND (?) MIDDLE JURASSIC**
- PLEISTOCENE TO (?) BADJACIAN**
- ImJs** Conglomerate (local granitic class), greywacke, shale
- TRIASSIC AND JURASSIC**
- UPPER TRIASSIC AND LOWER JURASSIC**
- TJi** Syenite, monzonite, diorite; sub-volcanic intrusive phases, probably mainly lower Jurassic
- NORIAN TO SINEMURIAN**
- TJd** Purple or purple, minor grey and green basaltic and felsitic breccia, minor flows, tuff, sandstone and limestone, also purple and maroon basalt with analcite phenocrysts
- NORIAN AND (?) NERTAYAN**
- TJc** Green and purple conglomerate and sandstone
- NORIAN AND (?) YOUNGER**
- (16) **TJb** Augite porphyry basalt breccia, minor flows, tuff and tuffaceous argillite; local andesitic basalt
- (15) **TJa** Basaltic tuff and breccia, generally fine-grained; argillite, flows, chert
- TRIASSIC**
- UPPER TRIASSIC**
- KARINIA AND (?) ADRIAN**
- uTb** Basaltic and andesitic flows and breccia, minor argillite and limestone
- (10) **uTca1** Phyllite, argillite, slaty argillite, quartzite, schist, minor greenstone (sub-green schist to amphibolite (kyanite) facies of metamorphism)
- uTca2** Greenstone, augite-porphry breccia, tuff breccia, tuff; possible dykes and sills (green schist facies of metamorphism)
- uTca3** Undivided uTca1 and uTca2 not separable at scale of mapping; may include dykes and sills and passes gradationally upward to Biv (sub-green schist and green schist facies of metamorphism)

### OMINECA BELT

- JURASSIC (?) CRETACEOUS AND/OR TERTIARY**
- KTg** Muscovite - biotite granite and quartz monzonite
- JURASSIC AND (?) CRETACEOUS**
- (20) **JKg** Granodiorite, quartz monzonite, quartz diorite, minor diorite
- PALEOZOIC OR MESOZOIC**
- PMub** Serpentine, peridotite; may be pre PPAa
- REDFERN COMPLEX (PMub, PMag and PMAw)**  
(may be equivalent to PMub and PPAw)
- PMRa** Amphibolite
- PNRga** Gabbro, norite
- PNRub** Serpentine, pyroxenite, peridotite
- PENNSYLVANIAN, (?) PERMIAN AND (?) YOUNGER**
- SLIDE MOUNTAIN GROUP (PPaw and DMg)**
- ANIER FORMATION: pillow basalt, breccia, chert greywacke, minor limestone, PPAa, amphibolite, probably equivalent to PPAa**
- (2) **PPAa**

**TJg** TARDIMAN BATHOLITH: granodiorite, quartz monzonite, quartz diorite

(1) **HPSm** SHONKIDE FORMATION: may include HPSa undivided: phyllite, schist and gneiss in amphibolite facies of metamorphism; HPSm: marble (shown in solid black where thin); HPSg: gneissite granitoid layers of uncertain origin



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1993 WORK PROGRAM  
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The 1993 work program consisted of hand-trenching, rock chip sampling, geological mapping and establishment of an orientation soil sampling survey in the area of the old workings and pan concentrate sampling and prospecting a length of Ledge creek. The work was conducted by D. and C. Ridley under the supervision of Dave Dunn, geologist and was carried out between September 7-10, 14-18 and 29, 1993. This work resulted in the collection of 40 soil, 28 rock, 7 stream sediment and 9 pan concentrate samples.

PROPERTY GEOLOGY  
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The Deception Ledge property is underlain by a thick sequence of sediments comprising the Triassic "black phyllites" of the Quesnel River Group (Bloodgood M.A., 1990). Bloodgood (1990) recognized six distinct units within the succession in the Eureka Peak area, north of the claims.

Exposure on the claims is limited to minor road cuts while extensive exposures are found in Ledge creek canyon. Two and possibly three of these units are found within the confines of the property. These are slaty phyllite, "knotty phyllite" and minor interbedded argillite-quartzite. Quartz veins cut all sediments and probably represent several generations of veining.

The adit area is underlain by carbonaceous, locally graphitic "knotty phyllite" and dark grey slaty phyllite. The "knotty phyllite" is characterized by knots or bunches of chloritoid and/or carbonate forming porphyroblastic textures. A strong westerly foliation developed here and in the canyon to the west is probably due to faulting along this trend.

Quartz veins are developed approximately parallel to the main foliation trend although a few were seen to cross-cut the phyllitic wallrocks. The veins are typically milky-white and shattered due to later shearing. They contain more or less abundant carbonate knots and locally breccia fragments of the wallrocks. The carbonate knots tend to weather-out forming vuggy textures containing a bright-orange earthy limonite (?). Veins typically range in thickness from narrow hair-line

(7)

fracture fillings to +2 meters wide. Sulphides are rare except for a small area centered on the adit.

In the adit area, a mineralized zone approximately 2 meters wide consisting of several en echelon quartz veins, 0.05 to 1.0 meters wide, separated by narrow, 10 to 30 cms. wide, bands of highly contorted porphyroblastic, graphitic phyllite returned 42,906 ppb gold across one meter (Ridley, 1992). Hand-trenching in 1993 uncovered the zone and revealed its true extent. The zone was found to be localized on a westerly trending fault zone which has been interrupted by later northerly trending faults, effectively cutting off the mineralization within 5 meters of the adit. Rock chip sampling returned 4.12 gram\ton gold across 2 meters and 4.57 gram\ton gold across 1.6 meters (this report). Anomalous gold values ranging from 100 to +300 ppb have been found in several quartz veins in the adit area as well as a large 1.3 meter wide vein approximately 500 meters west of the main showings.

In the first canyon, 100-175 meters west of the adit, the phyllitic wallrocks are cut by an immense amount of andesitic sills and dykes along with abundant quartz veins (inset, Fig.5 ). One exposure, just inside the canyon, consists of a 1.2 meter wide andesitic dyke which narrows upwards as smaller "branches" roll out forming sills lying along the main foliation. The andesitic rocks commonly contain abundant pyrite and are generally geochemically enriched in arsenic. Cross-cutting quartz veinlets to 2 mm thick occur in the andesitic dyke where they contain galena, sphalerite, arsenopyrite, pyrite, and stibnite. This is a local feature and although many similar dykes and sills were examined no further mineralization was encountered.

#### SOIL GEOCHEMISTRY

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A small reconnaissance soil survey was conducted over the adit area in order to ascertain the overall usefulness of this exploration tool. A baseline was established along the location line of the Jewellery Box placer claim. Lines were run at 25 meter intervals on either side of the adit and samples were collected at 10 meter intervals. Samples were obtained using a mattock with the BF horizon being the preferred medium. Average sample depth was 20-35 cms. and the area was found to have good soil profile development. In addition, several samples were obtained as soil profiles in the trenches to determine the best sample horizon for subsequent work.

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Gold anomalies are mainly restricted to the old trenches except for a single anomaly at L5W:0+00 where gold reaches 75 ppb. This is not related to any old showings and may represent additional vein mineralization covered by a thin blanket of overburden. Hand-trenching should be carried out in an attempt to verify its source.

Soil profile samples show the A and B horizons best reflect underlying bedrock conditions. The C horizon shows substantially lower gold values. It is interesting to note the occurrence of a thin layer of river-washed gravel lying directly on top of bedrock in Trench 2. Panning of this material showed free gold and this must be considered during subsequent work. It would appear that some areas have had river gravels deposited which could result in the formation of false anomalies (ie those not directly related to a bedrock source). Silver, arsenic, and to a lesser extent iron and zinc appear related to the mineralized zone and may have some use as path-finder elements.

#### STREAM GEOCHEMISTRY

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Stream sediment samples, taken in conjunction with pan concentrates were collected from Ledge and Deception creeks as well as an un-named creek about one kilometer south of the property. The silt samples failed to return anomalous results while the pan concentrates contained one highly anomalous sample. This sample was taken about 20 meters downstream of the adit, its likely source and contained up to 6.73 grams\ton gold. No other samples returned anomalous results and as such it can be concluded that no significant gold mineralization exists upstream of the adit, within the confines of Ledge Creek.

The bottoms of all trenches were panned on site and visual examination revealed gold in all of them. Trench 2 and 3 contained abundant fine gold with 1-2 grams recovered per pan. This resulted in staking the Jewelry Box placer claim which may prove to be an economically viable, small scale producer. The area of good gold values is limited to a 10x25 meter zone of approximately 30 cms. thick. Further exploration may expand this zone. Additional gold may be recovered by crushing and roasting quartz vein material from the adit.

CONCLUSIONS  
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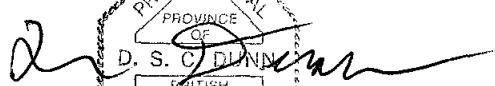

Based on compilation of past data and results of the 1993 work program it can be concluded that the Deception Ledge property is underlain by a thick sequence of black phyllitic metasediments which contain abundant quartz veins with local high grade gold values. The gold values are not widespread and appear limited to the historic showings. Since the mineralization appears faulted off, particularly to the west, there is a chance of locating additional mineralization in the area. All the country away from the immediate confines of Ledge creek canyon are covered by a blanket of till and residual soil. Soil sampling of the oxidized BF horizon appears to reflect underlying bedrock conditions with a good degree of certainty.

Pan concentrate sampling is far superior to regular silt sampling and should be utilized in any further work program on the property. A small-scale placer operation may prove to be economically viable.

RECOMMENDATIONS  
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Further work is recommended for the Deception Ledge property in the form of detailed geological mapping of lower Ledge creek canyon, detailed rock sampling of quartz veins in the upper part of the canyon, with particular attention to the large vein above the second canyon. In addition a detailed soil sampling survey followed by magnetometer and VLF-EM16 surveys around the area of the main showings. Diamond drilling and/or backhoe trenching of anomalous zones uncovered during the initial phase would follow, if results warrant it.

The main target on the property would consist of a small, high-grade gold-bearing quartz vein, therefore grid lines should be established at 25 meter separations with samples taken every 10 meters along the lines



FINANCIAL STATEMENT

Personel

D. Ridley, prospector; 9D @ \$200\day .....	\$ 1800.00
C. Ridley, prospector; 8D @ \$125\day .....	\$ 1000.00
D. Dunn, geologist; 2D @ \$250\day .....	\$ 500.00

Travel

i) Truck Rental; 9D @ \$40\day .....	\$ 360.00
ii) Gas; .....	\$ 135.00

GST Payable

(7% on contracting wages and vehicle only) .....	\$ 281.40
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Sample Analysis

i) Soils; 40 @ \$15 each .....	\$ 600.00
ii) Silts; 7 @ \$15 each .....	\$ 105.00
iii) Pan concentrates; 9 @ \$16 each .....	\$ 144.00
iv) Rocks; 28 @ \$16 each .....	\$ 448.00

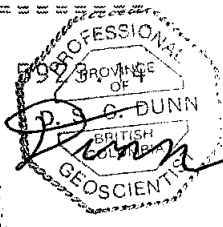
Shipping .....	\$ 21.88
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Field Supplies .....	\$ 20.86
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Fax .....	\$ 7.00
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Report Preparation .....	\$ 500.00
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TOTAL EXPENDITURES for 1993 WORK PROGRAM .....	\$ 5992.00
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*Dr*  


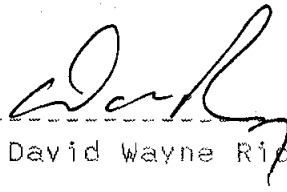
(11)

STATEMENT OF QUALIFICATIONS  
-----

I, David Wayne Ridley, of General Delivery, Eagle Creek, BC, do hereby certify:


- 1) That I completed the Mineral Exploration Course for Prospectors, hosted by the BC Ministry of Mines at Mesachie Lake, BC in 1984
- 2) That I completed the short course entitled "Petrology for Prospectors" held in Smithers, BC and hosted by the Smithers Exploration Group in 1990.
- 3) That I have prospected independently since 1982 and have been employed as a prospector by various exploration companies in BC, Alaska and Yukon Territory since 1984.
- 4) That I conducted the work set out in this report under the supervision of Dave Dunn.
- 5) That I currently own an interest in subject property.

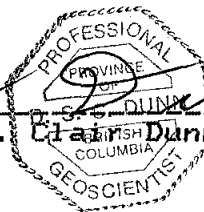
Dated at Eagle Creek, BC, November 29, 1993.

  
-----  
David Wayne Ridley

I, David St. Clair Dunn, with a business address of 2348 Palmerston Avenue, West Vancouver, B.C. V7V 2W1, declare that;

1. I am a professional Geoscientist registered under the Professional Engineers and Geoscientists Act of the Province of British Columbia.
2. I am a Fellow of the Geological Association of Canada.
3. I am a Fellow of the Association of Exploration Geochemists.
4. I have practiced my profession as a prospector and geologist for more than 20 years in Canada, U.S.A. and Australia.
5. I supervised the work program on the Deception Ledge Property described in this report.
6. I am Exploration Manager for Pioneer Metals Corporation.

  
David St. Clair Dunn, P. Geo.



(12)

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APPENDIX A  
ROCK SAMPLE DESCRIPTION SHEETS

# ROCK SAMPLE SHEET

Sampler C.J. RIDLEY  
 Date SEPT. 17

Property DL CLAIMS

NTS 93A/2E

SAMPLE NO.	Sample Width	DESCRIPTION			ADDITIONAL OBSERVATIONS	ASSAYS				
		Rock Type	Alteration	Mineralization		Au PPB	Ag PPM	As PPM		
DL 93 CR: C1	1.5m	Knotty Phyllite		very minor Py	@ 40m. SE of TR#1 <u>CHIP SAMPLE</u> - OC STRIPPING - TRUE WIDTH 1m.	15	.4	65		
DL 93 CR: C2	1.7m	Qtz. vein		sporadic Py	- Qtz. vein @ 37m. SE of TR#1 <u>CHIP</u> - OPEN CUT - 30°/86°S XPOSED: 3m. height	10	.2	40		
DL 93 CR: C3	27 cm.	Qtz vein Phyllite	weathered carbonate	trace hematite Py-cubed crystals (minor)	- ? lens 8-12cm. width <u>CHIP</u> - 3:20/vertical dip - in drag fold abutting Qtz. vein in C2 / S. side	15	.6	25		
DL 93 CR: C4	2.2m.	Knotty Phyllite	Carbonate		- TR#5: 35m. SE of TR#1 <u>CHIP</u> - phyllite silvery grey graphitic - extremely sheared	20	1.4	70		
DL 93 CR5	grab	Qtz/ carb veins	Carbonate		- TR#5 - 45cm. width of vein & sample - vein follows foliation	5	.2	10		
DL 93 CR: C6	1.9m	Knotty Phyllite	weathered carb.		- @ 1.5m SE of 30m. mark from TR#1. - vein follows foliation (5cm. wide Qtz. vein) @ 1.9m from top of Trench <u>CHIP</u>	45	.4	40		
DL 93 CR: C7	1m.	"			- extension of same OC as C6 (below it) <u>CHIP</u> - this OC much more competent than same OC below & SE in TR#5	5	.6	50		
DL 93 CR8	grab	Qtz. vein	weathered carb limonite		- ? lens? 10-21cm. width: appears to pinch out @ both ends: @ 25cm. length - vein follows foliation	5	.2	15		
DL 93 CR: C9	1.5m	Knotty Phyllite			- @ 1m. S.E. of 25m. mark for TR#1 <u>CHIP</u> - C8 sits on top of this OC - possible fault gouge inc in sample	45	.2	45		

C-CHIP G-GRAB F-FLOAT

# ROCK SAMPLE SHEET

Sampler D. Ridley  
Date Sept 1993

Property DL claims

NTS 93A/2E

SAMPLE NO.	Sample Width	DESCRIPTION			ADDITIONAL OBSERVATIONS	g/t = gram/ton ASSAYS		
		Rock Type	Alteration	Mineralization		Au ppb	Ag ppm	As ppm
DL 93 DR 1	1.7m	qtz vein	limonite minor sericite	trace pyrite pyrite "ghosts"	Trench 1 = 20m NW of adit: includes minor 5-10cm bands highly sheared graphitic phyllite: vein cut by strong fracturing @ 050/55NW.	105	.8	205
DL 93 DR 2	2m	"knotty" phyllite	carbonate limonite sericite	minor pyrite	Trench 1 con't from DR-1: phyllite trends 140/35NE: contains many tiny qtz veinlets.	5	.6	80
DL 93 DR 3	1.2m	qtz vein	carbonate limonite	trace pyrite	Trench 2: ± 7 m NW of adit: poorly exposed: can't get altitude?	15	1.0	40
DL 93 DR 4	1.5m	phyllite	<del>tanopyrite</del> sericite	"	Trench 2: con't southerly from DR3:	45	.2	70
DL 93 DR 5	1.5m	knotty phyllite	limonite abundant sericite	minor pyrite	Trench 2: con't southerly from DR4: local pockets of heavy limonite stain + high sericite content.	45	.6	35
DL 93 DR 6	2m	qtz veins phyllite	phyllitic fault gouge graphite	none visible well-weathered material.	Trench 3: ± 4 m NW of adit: sample consists of 3 qtz veins (coverage width 10-15cm) separated by zones of highly sheared graphitic phyllite: probable con't of Adit veins.	4.12 g/t	4.4	125
DL 93 DR 7	1.6m	"	"	"	Trench 3: above adit: previous sample 242,000ppb Au across 1m: (1992)	4.57 g/t	17.4	200
DL 93 DR 8	75cm	qtz vein	limonite minor sericite	rare pyrite euhedral qtz crystals in vugs	Trench 3: con't SW from DR 7: vein <del>to</del> pinches out 2.5m E on W wall of adit:	100	1.4	75
DL 93 DR 9	1.1m	"knotty" phyllite	limonite sericite qtz stringers	minor pyrite	above E wall of adit: wallrx trend 100/40N:	20	.4	65
DL 93 DR 10	G	qtz lens	trace pyrite "ghost" vugs	→	40 cm below DR9: qtz lens following foliation as @ DR9: (size 10x15x30cm).	255	1.2	105
DL 93 DR 11	1.6m	"knotty" phyllite qtz veins	limonite minor sericite	trace pyrite	@ 24.5m S of Trench 1: upper 30cm of limonite-cemented phyllitic fault breccia:	30	.6	345
DL 93 DR 12	50cm	"	"	minor euhedral pyrite	25m W of Trench 1: trends 122/80NE:	5	.6	20
DL 93 DR 13	25cm	graphitic knotty phyllite	limonite sericite	up to 30% euhedral pyrite	at 70W: <del>top</del> 20 of 2nd falls: in shear trending bottom 150/50NE: wallrx trend 118/36N.	65	2.6	75
DL 93 DR 14	F	breccia	limonite qtz	up to 1% disem. pyrite	@ 1473W: in creek: angular float: phyllitic breccia frags in qtz: sub-rounded.	5	<.2	20
DL 93 DR 15	G	qtz-carb veins	limonite	minor pyrite	@ 4125W: grab from several qtz-carb veins outcropping in creek-bed: main trend of veins 040/40W.	15	1.8	35

C-CHIP 6-GRAB F-FLOAT

# ROCK SAMPLE SHEET

Sampler D. Ridley

Date Sept. 1993

Property Deception Ledge.

NTS 93 A/2E

SAMPLE NO.	Sample Width	DESCRIPTION			ADDITIONAL OBSERVATIONS	ASSAYS				
		Rock Type	Alteration	Mineralization		Au Ppb	Ag Ppm	As Ppm		
DL 93 DR 16	G.	qtz carb veins	limonite	minor pyrite	@ 3+25W: grab from several qtz-carb veins in creek-bed: main trend 120/20NE.	10	<2	30		
Samples DR 17+18 not taken										
DL 93 DR 19	F?	qtz veins	limonite sericite	pyrite to 3%	@ 3+60W: qtz subcropping vein cutting across creek @ 130°: 1.2m wide:	15	2.4	35		
DL 93 DR 20	40cm	"	"	2-3% pyrite	base of 1 <sup>st</sup> canyon: vein exposed in creek: abundant carbonate	5	1.2	95		
DL 93 DR 21	"	"	"	" "	near DR 20: vein trends 310/70N:	5	.2	870		



APPENDIX B  
SAMPLE ANALYSIS CERTIFICATES



ASSAYING  
GEOCHEMISTRY  
ANALYTICAL CHEMISTRY  
ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 2J3 Phone (604) 573-5700  
Fax (604) 573-4557

SEPTEMBER 30, 1993

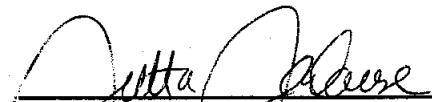
**CERTIFICATE OF ASSAY ETK 93-377**  
=====

PIONEER METALS CORPORATION  
17770-401 W. GEORGIA STREET  
VANCOUVER, B.C.  
V6B 5A1

ATTENTION: DAVID DUNN  
-----

SAMPLE IDENTIFICATION: 25 ROCK samples received SEPTEMBER 20, 1993  
-----  
PROJECT #: CANIM LAKE  
SHIPMENT #: 11

ET#	Description	Au (g/t)	Au (oz/t)
6	DR- 6	4.12	.120
7	DR- 7	4.57	.133

  
-----  
ECO-TECH LABORATORIES LTD.  
FRANK J. PEZZOTTI, A.Sc.T.  
B.C. Certified Assayer

SC93/Pioneer

ECO-TECH LABORATORIES LTD.  
 10041 EAST TRANS CANADA HWY.  
 RAMLOOPS, B.C. V2C 2J3  
 PHONE - 604-573-5700  
 FAX - 604-573-4557

PIONEER METALS CORPORATION ETK 93-377  
 1770-401 W. GEORGIA STREET  
 VANCOUVER, B.C.  
 V6B 5A1

ATTENTION: DAVID DUNN

SEPTEMBER 30, 1993

25 ROCK SAMPLES RECEIVED SEPTEMBER 20, 1993  
 PROJECT: CANIM LAKE  
 SHIPMENT #: 11

VALUES IN PPM UNLESS OTHERWISE REPORTED

ET#	DESCRIPTION	AU (ppb)	AG	AL(%)	AS	B	BA	BI	CA(%)	CD	CO	CR	CU	FE(%)	K(%)	LA	MG(%)	MN	MO	NA(%)	NI	P	PB	SB	SN	SR	TI(%)	U	V	W	Y	ZN
1	- DR - 1	105	.8	.62	205	2	40	5	.09	4	4	368	112	1.98	.16	<10	.05	76	22	.05	16	130	62	<5	<20	21	<.01	10	10	<10	<1	58
2	- DR - 2	5	.6	2.41	80	6	120	5	.15	1	21	731	93	5.03	.49	20	.16	435	49	.23	40	500	20	5	<20	63	<.01	<10	29	<10	2	97
3	- DR - 3	15	1.0	.18	40	4	15	<5	.05	1	6	610	36	2.04	<.01	<10	.03	379	34	.01	26	120	4	<5	<20	10	<.01	10	6	<10	<1	27
4	- DR - 4	<5	.2	1.26	70	2	75	<5	.08	<1	18	166	32	5.21	.29	10	.07	424	8	.13	35	510	18	<5	<20	39	<.01	<10	14	<10	1	92
5	- DR - 5	<5	.6	1.16	35	4	70	<5	.05	<1	16	398	59	4.16	.27	10	.04	919	25	.12	24	390	28	<5	<20	37	<.01	10	12	<10	1	54
6	- DR - 6	>1000	4.4	1.08	125	4	60	5	.03	1	7	321	21	2.79	.26	10	.03	136	19	.10	25	220	66	5	<20	32	<.01	<10	12	<10	1	25
7	- DR - 7	>1000	17.4	1.60	200	4	85	5	.36	2	10	268	19	5.30	.38	20	.07	236	15	.15	22	350	180	20	<20	48	<.01	<10	17	<10	2	47
8	- DR - 8	100	1.4	.58	75	6	30	<5	.07	<1	12	1284	168	3.41	.05	<10	.04	591	84	.04	40	300	44	<5	<20	17	<.01	10	12	<10	1	45
9	- DR - 9	20	.4	1.82	65	8	95	<5	.09	<1	25	1170	179	6.42	.30	10	.12	938	80	.16	57	550	34	<5	<20	48	<.01	10	25	<10	3	97
10	- DR - 10	255	1.2	.58	105	4	25	<5	.02	<1	9	386	89	4.10	.07	<10	.06	154	24	.04	24	250	140	5	<20	19	<.01	10	10	<10	<1	48
11	- DR - 11	30	.6	1.69	345	2	95	<5	.09	3	32	206	97	7.66	.36	20	.12	750	18	.11	50	670	32	5	<20	40	<.01	10	17	<10	4	87
12	- DR - 12	5	.6	.59	20	2	45	<5	.75	<1	8	562	46	2.72	.12	<10	.06	588	37	.06	21	390	14	<5	<20	31	<.01	10	7	<10	1	43
13	- DR - 13	65	2.6	.71	75	2	40	<5	1.05	<1	21	241	142	4.64	.18	<10	.35	383	14	.07	31	440	64	10	<20	54	<.01	10	7	<10	<1	37
14	- DR - 14	5	<.2	1.65	20	42	70	10	1.26	<1	20	253	74	3.30	.08	<10	1.13	514	15	.07	16	1010	18	10	<20	134	.23	<10	101	<10	15	58
15	- DR - 15	15	1.8	.12	35	4	5	<5	.89	<1	6	497	42	1.81	<.01	<10	.30	439	28	.01	27	90	26	<5	<20	25	<.01	<10	3	<10	<1	85
16	- DR - 16	10	<.2	.16	30	2	25	10	10.24	<1	10	214	15	6.05	<.01	<10	3.62	1188	13	.01	32	50	6	30	<20	502	<.01	<10	4	<10	6	61
17	- CR 1	15	.4	1.64	65	4	90	5	.30	<1	23	127	43	5.69	.39	30	.12	1038	10	.19	38	670	40	15	<20	56	<.01	<10	17	<10	2	104
18	- CR 2	10	.2	.08	40	4	5	<5	.02	<1	2	585	18	.96	<.01	<10	.01	77	31	.01	18	30	2	<5	<20	7	<.01	10	3	<10	<1	15
19	- CR 3	15	.6	1.27	25	4	65	<5	.15	<1	7	461	14	1.66	.31	10	.06	313	25	.13	16	240	28	<5	<20	37	<.01	<10	14	<10	2	40
20	- CR 4	20	1.4	1.82	70	4	100	<5	.44	<1	25	135	24	4.69	.45	20	.14	1083	11	.16	48	910	18	5	<20	59	<.01	<10	34	<10	6	61
21	- CR 5	5	.2	.49	10	4	45	10	6.38	<1	6	400	9	6.59	.10	<10	1.55	2395	21	.04	17	290	26	10	<20	206	<.01	<10	11	<10	11	52
22	- CR 6	<5	.4	1.63	40	4	80	<5	.22	<1	17	131	27	4.53	.39	20	.10	733	7	.17	26	550	12	<5	<20	46	<.01	<10	17	<10	2	44
23	- CR 7	5	.6	1.43	50	4	70	<5	.11	<1	16	147	25	4.36	.34	20	.07	488	7	.15	27	450	10	<5	<20	41	<.01	<10	14	<10	2	59
24	- CR 8	5	.2	.42	15	4	30	10	.08	<1	27	432	15	5.55	.02	<10	.03	1611	26	.02	50	160	6	<5	<20	12	<.01	10	7	<10	3	88
25	- CR 9	<5	.2	1.77	45	4	70	5	.12	<1	13	225	19	5.24	.33	20	.31	344	13	.11	23	560	8	5	<20	33	.01	<10	19	<10	2	58

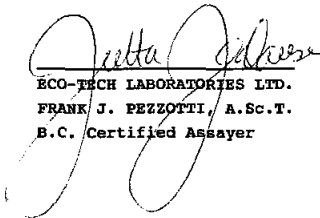
PIONEER METALS CORPORATION ETR 93-377

QC/DATA:	AG	AL(%)	AS	B	BA	BI	CA(%)	CD	CO	CR	CU	FE(%)	K(%)	LA	MG(%)	MN	MO	NA(%)	NI	P	PB	SB	SN	SR	TI(%)	U	V	W	Y	ZN
Repeat #:																														
20 - CR -04	1.4	1.75	75	4	95	<5	.41	<1	24	124	22	4.44	.42	20	.13	1018	10	.15	45	840	16	<5	<20	56	<.01	<10	32	<10	6	57
STANDARD 1991:	1.0	2.23	65	10	125	<5	1.61	1	18	63	82	3.79	.37	<10	.93	666	<1	.02	26	630	14	20	<20	60	.11	<10	76	<10	11	75

NOTE: < = LESS THAN  
> = GREATER THAN

Fax #: 669-1240

cc: David Ridley  
Fax #: 397-2958  
CALL : 397-2771 for pick-up  
SC93/Pioneer Metals

  
ECO-TECH LABORATORIES LTD.  
FRANK J. PEZZOTTI, A.Sc.T.  
B.C. Certified Assayer

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PIONEER METALS CORPORATION ETK 93-378  
 1770-401 W. GEORGIA STREET  
 VANCOUVER, B.C.  
 V6B 5A1

ATTENTION: DAVID DUNN

OCTOBER 6, 1993

33 SOIL SAMPLES RECEIVED SEPTEMBER 20, 1993

PROJECT #: CANIM LAKE

SHIPMENT #: 11

VALUES IN PPM UNLESS OTHERWISE REPORTED


ET#	DESCRIPTION	AU (ppb)	AG	AL(%)	AS	B	BA	BI	CA(%)	CD	CO	CR	CU	FE(%)	K(%)	LA	MG(%)	MN	MO	NA(%)	NI	P	PB	SB	SN	SR	TI(%)	U	V	W	Y	ZN
1	L4 + 50 W 0 + 00W	10	<.2	1.23	10	6	65	10	.19	<1	13	34	14	3.00	.03	<10	.22	286	2	.01	18	750	18	<5	<20	20	.16	<10	73	<10	9	74
2	L4 + 50 W 0 + 10W	10	<.2	2.46	20	8	85	10	.41	<1	21	57	26	4.29	.06	<10	1.06	294	2	.01	55	1930	26	10	<20	26	.15	<10	69	<10	11	117
3	L4 + 50 W 0 + 20W	15	<.2	1.51	15	4	65	20	.16	<1	14	48	11	5.10	.05	<10	.34	182	2	<.01	20	2590	28	5	<20	15	.23	<10	125	<10	12	119
4	L4 + 50 W 0 + 30W	10	1.0	2.09	15	6	90	10	.27	<1	15	47	14	3.89	.06	<10	.40	503	1	<.01	22	3500	26	5	<20	24	.14	<10	74	<10	8	150
5	L4 + 50 W 1S	5	.2	1.62	10	4	105	10	.20	<1	16	40	13	3.15	.07	<10	.42	325	2	.01	27	760	22	5	<20	22	.16	<10	65	<10	10	120
6	L4 + 50 W 0 + 10S*	5	.4	.55	25	4	50	5	.14	<1	10	10	16	3.43	.03	40	.07	472	2	<.01	12	640	32	<5	<20	18	.02	<10	23	<10	3	78
7	L4 + 50 W 0 + 20S	10	.4	1.15	15	2	50	5	.17	<1	10	35	13	2.64	.09	20	.28	163	1	<.01	17	870	20	<5	<20	17	.12	<10	53	<10	8	68
8	L4 + 50 W 0 + 30S*	10	.4	1.85	50	6	120	5	1.12	1	27	127	46	3.99	.10	<10	1.37	1308	1	.01	77	1010	58	10	<20	66	.10	<10	67	<10	10	129
9	L4 + 50 W 0 + 50S	5	1.0	1.59	10	4	120	5	.38	<1	17	39	16	2.76	.09	10	.80	306	1	.01	43	950	18	5	<20	28	.12	<10	43	<10	11	63
10	L4 + 50 W 0 + 60S*	5	.4	2.39	10	4	90	5	.35	<1	21	51	29	3.62	.12	<10	.95	296	1	.01	57	810	26	10	<20	35	.12	<10	53	<10	9	129
11	L4 + 50 W 0 + 70S*	5	.4	.29	5	4	65	<5	.55	<1	3	11	21	.72	.03	<10	.12	74	1	.01	7	250	6	<5	<20	82	.05	<10	22	<10	3	31
12	L4 + 50 W 0 + 80S	5	<.2	2.32	10	4	115	10	.82	<1	18	104	26	4.06	.11	<10	1.01	369	4	.01	35	540	28	5	<20	77	.22	<10	122	<10	14	70
13	L4 + 50 W 0 + 90S	10	.2	1.90	10	4	85	10	.16	<1	16	46	15	3.99	.06	<10	.48	217	2	.01	28	390	24	5	<20	20	.20	<10	79	<10	12	87
14	L4 + 69 W 0 + 27S	300	3.4	3.10	45	4	65	10	.29	<1	25	55	19	4.52	.04	10	.78	212	<1	.01	66	1020	38	10	<20	23	.11	<10	52	<10	7	118
15	L4 + 75 W 0 + 00	10	.2	2.14	30	4	80	10	.19	<1	14	59	21	3.79	.04	<10	.51	172	1	.01	32	870	28	5	<20	22	.15	<10	76	<10	9	77
16	L4 + 75 W 0 + 10W*	10	<.2	2.49	10	8	60	5	.23	<1	13	39	16	2.58	.04	<10	.43	132	1	.01	31	450	30	5	<20	20	.11	<10	38	<10	8	36
17	L4 + 75 W 0 + 20W	5	<.2	.62	5	4	30	5	.09	<1	4	13	4	1.38	.02	<10	.06	65	<1	.01	5	170	10	<5	<20	11	.08	<10	34	<10	4	18
18	L4 + 75 W 0 + 30W	10	.6	1.88	15	2	65	10	.17	<1	9	32	11	2.76	.04	<10	.27	134	1	<.01	16	870	26	<5	<20	20	.12	<10	59	<10	7	80
19	L4 + 75 W 1S	5	.8	3.34	20	4	85	10	.23	<1	16	53	15	4.86	.05	<10	.54	240	4	<.01	34	2880	38	5	<20	21	.14	<10	73	<10	8	164
20	L4 + 75 W 0 + 10S	65	2.2	2.64	40	4	75	10	.29	<1	14	37	21	4.27	.05	<10	.34	218	1	<.01	37	1220	52	5	<20	24	.08	<10	43	<10	5	105

ET#	DESCRIPTION	AU (ppb)	AG	AL(%)	AS	B	BA	BI	CA(%)	CD	CO	CR	CU	FE(%)	K(%)	LA	MG(%)	MN	MO	NA(%)	NI	P	PB	SB	SN	SR	TI(%)	U	V	W	Y	ZN
21	L4 + 75 W 0 + 20S*	80	3.0	2.18	85	8	80	10	.34	<1	37	60	34	4.37	.04	10	1.14	597	<1	.01	104	1470	32	5	<20	28	.12	<10	57	<10	13	152
22	L4 + 75 W 0 + 30S*	320	.8	1.00	115	4	40	5	.17	<1	19	17	34	3.96	.04	40	.21	163	1	<.01	39	720	34	5	<20	17	.01	<10	20	<10	3	109
23	L4 + 75 W 0 + 50S*	10	1.8	.47	20	4	30	<5	.07	<1	7	11	19	1.42	.02	20	.04	59	<1	<.01	11	510	20	<5	<20	9	.02	<10	29	<10	2	34
24	L4 + 75 W 0 + 60S*	10	.2	.53	45	6	45	<5	.11	<1	19	9	87	5.45	.02	20	.04	410	1	<.01	22	880	24	<5	<20	13	.03	<10	21	<10	2	57
25	L4 + 75 W 0 + 70S*	5	<.2	2.19	15	8	95	10	.17	<1	15	47	14	3.66	.07	10	.49	175	2	<.01	34	680	24	10	<20	15	.12	<10	58	<10	9	97
26	L4 + 75 W 0 + 80S*	5	<.2	.90	5	4	85	5	.44	<1	7	29	12	1.55	.08	10	.33	297	1	<.01	16	200	10	<5	<20	50	.10	<10	38	<10	8	51
27	L4 + 75 W 0 + 90S*	5	<.2	1.66	10	4	75	10	.44	<1	20	39	24	3.35	.07	<10	1.05	291	2	.01	51	620	18	5	<20	43	.12	<10	52	<10	10	69
28	L5 + 75 W 0 + 00 *	75	.6	.58	20	4	30	<5	.11	<1	8	16	19	2.53	.03	20	.08	99	1	<.01	11	430	14	<5	<20	14	.09	<10	55	<10	6	46
29	L5 + 75 W 0 + 10W*	5	<.2	3.17	25	4	90	10	.47	<1	22	73	30	4.93	.07	<10	.76	244	1	<.01	52	1450	26	5	<20	33	.15	<10	82	<10	10	159
30	L5 + 75 W 0 + 20W*	5	<.2	2.47	20	6	75	5	.12	<1	10	59	21	3.56	.02	<10	.28	120	2	.01	29	400	28	5	<20	19	.13	<10	70	<10	9	82
31	L5 + 75 W 0 + 30W*	5	1.8	2.97	15	8	70	10	.45	<1	25	42	28	3.31	.05	10	.43	899	1	.01	37	490	34	5	<20	44	.15	<10	57	<10	19	104
32	L5 + 75 W 0 + 10S*	10	.8	.37	10	2	15	<5	.05	<1	3	7	5	.88	.02	20	.03	67	<1	<.01	5	180	6	<5	<20	7	.03	<10	25	<10	3	19
33	L5 + 75 W 0 + 20S*	10	2.6	1.49	1130	6	60	10	.18	12	35	13	84	11.07	.04	<10	.34	1547	<1	<.01	68	830	46	20	<20	17	.01	<10	17	<10	3	205

NOTE: < = LESS THAN  
> = GREATER THAN  
\* = -42 MESH

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PIONER METALS CORPORATION ETK 93-383  
 1770-401 W. GEORGIA STREET  
 VANCOUVER, B.C.  
 V6B 5A1

ATTENTION: DAVID DUNN

OCTOBER 12, 1993

15 PANCONCENTRATES RECEIVED SEPTEMBER 20, 1993  
 PROJECT #: CANIM LAKE  
 SHIPMENT #: 11

VALUES IN PPM UNLESS OTHERWISE REPORTED

ET#	DESCRIPTION	AU (ppb)	AG	AL(%)	AS	B	BA	BI	CA(%)	CD	CO	CR	CU	FE(%)	K(%)	LA	MG(%)	MN	MO	NA(%)	NI	P	PB	SB	SN	SR	TI(%)	U	V	W	Y	ZN
1	- SPAN 93 DP1	<5	<.2	1.95	10	6	55	25	.68	<1	23	354	15	5.40	.14	10	.78	2284	17	.03	38	320	16	5	<20	16	.50	<10	37	<10	61	36
2	- SPAN 93 DP2	<5	<.2	3.91	20	8	65	40	1.24	<1	32	972	24	11.34	.10	20	.77	6158	55	.03	36	210	20	<5	<20	17	.70	<10	39	<10	130	43
3	- RED 93 DP1	800	*																													
4	- RED 93 DP2	95	<.2	2.74	10	8	65	25	1.59	<1	30	690	27	9.41	.09	<10	1.06	1750	36	.11	36	140	12	5	<20	22	.35	<10	287	<10	41	41
5	- RED 93 CP1	<5	<.2	1.50	10	6	50	25	.88	<1	26	202	16	8.16	.06	<10	1.06	1059	5	.05	44	200	6	10	<20	11	.27	<10	291	<10	27	31
6	- DL 93 DP1	90	<.2	1.46	15	6	70	10	.59	<1	22	511	15	4.54	.11	30	1.57	1302	28	.05	70	390	12	5	<20	37	.18	<10	46	<10	26	50
7	- DL 93 DP2	<5	<.2	1.98	20	10	105	10	.89	<1	25	281	26	5.48	.23	10	1.80	1413	9	.07	75	570	16	10	<20	57	.15	<10	65	<10	23	74
8	- DL 93 DP3	155	<.2	1.73	35	8	100	10	.86	<1	26	459	27	5.12	.17	10	1.73	1127	20	.05	80	600	12	10	<20	53	.17	<10	69	50	20	78
9	- DL 93 DP4	30	<.2	2.22	30	16	135	15	1.28	<1	35	1460	42	6.19	.19	10	2.26	1430	83	.10	108	560	16	<5	<20	88	.23	<10	94	30	28	86
10	- DL 93 DP5	5	<.2	1.89	30	14	120	10	1.11	<1	26	304	26	4.75	.18	<10	2.07	1303	8	.05	92	620	14	10	<20	68	.15	<10	69	<10	22	75
11	- DL 93 CP1	>1000	<.2	1.72	25	8	80	10	.73	<1	24	325	24	5.44	.12	<10	1.52	1449	12	.03	71	550	16	5	<20	36	.14	<10	70	130	24	74
12	- DL 93 CP2	5	<.2	1.46	30	8	100	5	.59	<1	19	198	25	3.46	.19	<10	1.35	596	5	.04	65	720	14	10	<20	44	.09	<10	53	<10	9	82
13	- DL 93 CP3	5	<.2	.85	15	8	55	<5	.34	<1	6	290	9	1.88	.12	<10	.36	286	16	.03	21	380	8	<5	<20	26	.05	<10	25	<10	7	27
14	- DL 93 CP4	<5	<.2	.84	5	6	35	5	.38	<1	25	207	7	1.65	.10	10	.58	557	8	.03	41	420	8	<5	<20	18	.09	<10	19	50	14	23
15	- 127432 DP1	60	<.2	1.56	10	8	30	15	.71	<1	27	1410	16	8.00	<.01	<10	2.18	2231	37	.01	211	250	6	<5	<20	11	.15	<10	164	610	29	36

PAGE 2

ETK 383

OCTOBER 12, 1993

ET#	DESCRIPTION	AU (ppb)	AG	AL(%)	AS	B	BA	BI	CA(%)	CD	CO	CR	CU	FE(%)	K(%)	LA	MG(%)	MN	MO	NA(%)	NI	P	PB	SB	SN	SR	TI(%)	U	V	W	Y	ZN
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QC/DATA:

Repeat #:

5	- RED 93 CP1	-	<.2	1.47	<5	6	50	20	.86	<1	25	196	15	7.92	.06	<10	1.03	1030	5	.05	42	190	6	10	<20	11	.27	<10	282	<10	26	30
10	- DL 93 DP5	-	<.2	1.85	<5	12	120	5	1.09	<1	26	302	25	4.70	.18	<10	2.04	1288	8	.05	91	610	14	10	<20	66	.15	<10	68	<10	22	74

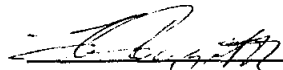
STANDARD 1991:

			1.2	2.38	<5	8	115	<5	1.78	<1	20	69	80	3.78	.37	<10	.99	695	<1	.02	24	610	24	10	<20	68	.13	<10	82	<10	13	73
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NOTE: < = LESS THAN  
 > = GREATER THAN  
 \* = INSUFFICIENT SAMPLE

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1770-401 W. GEORGIA STREET  
 VANCOUVER, B.C.  
 V6B 5A1

ATTENTION: DAVID DUNN

OCTOBER 12, 1993

14 SILT SAMPLES RECEIVED SEPTEMBER 20, 1993  
 PROJECT #: CANIM LAKE  
 SHIPMENT #: 11

VALUES IN PPM UNLESS OTHERWISE REPORTED

ET#	DESCRIPTION	AU (ppb)	AG	AL(%)	AS	B	BA	BI	CA(%)	CD	CO	CR	CU	FE(%)	K(%)	LA	MG(%)	MN	MO	NA(%)	NI	P	PB	SB	SN	SR	TI(%)	U	V	W	Y	ZN	
1	- DL93 CS *	1	5	<.2	1.64	30	6	95	5	.59	<1	25	165	34	3.83	.13	10	1.65	698	1	.01	83	920	16	10	<20	38	.10	<10	63	<10	10	112
2	- DL93 CS *	2	10	<.2	1.86	30	8	90	10	.45	<1	18	103	34	7.21	.20	<10	1.17	337	3	.01	56	770	14	10	<20	33	.12	<10	55	<10	11	102
3	- DL93 CS *	3	<5	<.2	1.21	5	8	55	5	.27	<1	14	36	11	2.22	.16	<10	.72	411	<1	.01	47	390	10	5	<20	18	.10	<10	24	<10	9	53
4	- DL93 CS *	4	25	<.2	1.29	15	8	90	5	.45	<1	16	40	18	2.91	.12	10	.83	641	<1	.01	45	630	14	10	<20	32	.07	<10	36	<10	8	91
5	- DL93 DS *	1	10	<.2	1.62	60	10	95	5	.71	<1	27	189	46	4.07	.13	<10	1.96	832	1	.01	97	990	28	15	<20	44	.10	<10	64	<10	9	128
6	- DL93 CS *	2	<5	<.2	1.84	35	8	110	5	.79	<1	28	207	40	4.30	.14	10	2.03	992	2	.01	100	1050	16	10	<20	53	.11	<10	73	<10	11	138
7	- DL93 CS *	3	5	<.2	1.74	40	6	100	5	.72	<1	30	216	40	4.41	.14	10	2.28	830	1	.01	113	970	14	10	<20	47	.12	<10	75	<10	10	131
8	- DL93 T-2*	A	320	3.2	3.80	80	4	130	15	.52	<1	22	49	32	8.62	.09	<10	.41	339	4	<.01	60	3300	88	10	<20	43	.11	<10	85	<10	5	202
9	- DL93 T-2*	B	310	12.8	5.07	130	6	165	15	.47	1	197	63	86	12.48	.08	<10	.43	3758	3	<.01	300	1660	182	15	<20	37	.06	<10	36	<10	9	659
10	- DL93 T-2*	C	90	6.4	2.15	60	8	130	5	.40	4	99	59	69	7.32	.07	20	1.07	4645	1	.01	252	880	34	10	<20	33	.11	<10	55	<10	22	247
11	- DL93 T-4*	A	45	.4	1.59	10	4	80	5	.31	<1	16	42	22	3.24	.04	<10	.48	531	1	.01	30	610	26	5	<20	26	.12	<10	72	<10	8	67
12	- DL93 T-4*	B	50	<.2	2.36	10	4	65	10	.22	<1	20	70	19	3.88	.05	<10	.75	270	<1	<.01	38	550	26	5	<20	20	.18	<10	83	<10	11	92
13	- DL93 T-4*	C	20	1.4	1.41	15	4	60	5	.32	<1	15	31	20	2.43	.06	10	.72	225	<1	.01	47	780	14	5	<20	22	.10	<10	30	<10	10	42
14	- DL93 T-4*	D	60	9.2	1.88	10	8	75	5	.34	<1	21	41	36	5.22	.09	20	.68	342	<1	.01	54	690	32	5	<20	38	.10	<10	37	<10	19	73

QC/DATA:

Repeat #:

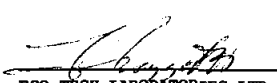
4	- DL93 CS 4	-	.2	1.27	<5	4	85	5	.43	<1	16	37	19	2.94	.11	10	.79	666	1	.01	44	610	16	5	<20	34	.07	<10	36	<10	8	93
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NOTE: < = LESS THAN  
 > = GREATER THAN  
 \* = - 42 MESH

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PIONEER METALS CORPORATION ETK 93-418  
 1770-401 W. GEORGIA STREET  
 VANCOUVER, B.C.  
 V6B 5A1

ATTENTION: DAVID DUNN

OCTOBER 15, 1993

12 ROCK SAMPLES RECEIVED OCTOBER 6  
 PROJECT #: CANIM LAKE  
 SHIPMENT #: 12

VALUES IN PPM UNLESS OTHERWISE REPORTED

ET#	DESCRIPTION	AU (ppb)	AG	AL(%)	AS	B	BA	BI	CA(%)	CD	CO	CR	CU	FE(%)	K(%)	LA	MG(%)	MN	MO	NA(%)	NI	P	PB	SB	SN	SR	TI(%)	U	V	W	Y	ZN
1	- PAT 93 DR 1	5	.6	.32	5	4	135	5	.10	<1	4	220	51	2.36	.15	10	.02	147	43	.04	9	330	18	<5	<20	16	<.01	<10	7	620	3	17
2	- PAT 93 DR 2	5	.4	.76	5	4	100	10	.24	<1	7	343	28	1.97	.22	30	.50	376	23	.04	8	600	26	<5	<20	12	.07	<10	32	130	11	33
3	- DL 93 DR 19	15	2.4	.02	35	4	40	<5	.02	<1	30	415	56	1.57	.01	<10	<.01	49	21	<.01	33	<10	10	<5	<20	<1	<.01	<10	4	30	<1	6
4	- DL 93 DR 20	5	1.2	.21	95	4	20	5	2.15	1	8	603	26	3.65	.01	<10	.70	1040	33	.02	22	170	32	5	<20	74	<.01	<10	6	<10	<1	48
5	- DL 93 DR 21	5	.2	.04	870	2	10	5	3.43	16	3	385	19	2.43	<.01	<10	1.32	872	18	.01	17	20	10	5	<20	94	<.01	<10	4	<10	<1	19
6	- SB 93 DR 1	415	>30	.17	280	4	45	<5	.02	4	54	314>10000	10.77	.04	<10	.05	52	40	<.01	12	<10	358	1215	<20	2	<.01	20	2	20	<1	138	
7	- SB 93 DR 2	5	1.0	1.77	10	4	80	<5	1.18	<1	21	116	110	3.61	.37	<10	1.04	696	6	.05	6	780	16	10	<20	26	.15	<10	79	10	14	55
8	- SB 93 DR 3	>1000	>30	.14	35	4	35	<5	.01	<1	48	240>10000	6.76	.08	<10	.02	37	12	<.01	21	<10	144	25	<20	1	<.01	<10	<1	30	<1	43	
9	- SB 93 DR 4	125	2.8	1.98	35	4	40	<5	1.08	<1	32	177	239	6.61	.29	<10	1.16	905	9	.03	4	660	56	5	<20	21	.02	<10	52	<10	3	80
10	- SB 93 DR 5	45	2.0	2.79	15	4	45	<5	2.39	<1	37	84	564	6.89	.27	<10	1.93	1652	5	.02	6	760	22	5	<20	38	.04	<10	64	20	7	109
11	- SB 93 DR 6	>1000	>30	.10	295	2	45	<5	.32	19	39	260>10000	11.63	.02	<10	.24>10000		16	<.01	21	<10	240	655	<20	4	<.01	160	<1	70	<1	952	
12	- SB 93 DR 7	>1000	>30	1.35	70	4	210	55	.03	<1	15	345	224	5.41	.36	<10	.45	463	21	.01	6	480	96	<5	<20	13	<.01	<10	31	<10	<1	94

QC/DATA:


Repeat #:

5	-DL 93 DR21	-	.2	.04	850	2	10	5	3.41	15	3	385	20	2.45	<.01	<10	1.32	877	18	.01	16	20	10	5	<20	92	<.01	<10	4	<10	1	19
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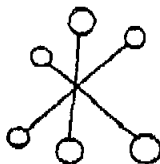
NOTE: < = LESS THAN  
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APPENDIX C  
LABORATORY PROCEDURES



## ECO-TECH LABORATORIES LTD.

ASSAYING - ENVIRONMENTAL TESTING

10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2J3 (604) 573-5700 Fax 573-4557

### GEOCHEMICAL LABORATORY METHODS

#### SAMPLE PREPARATION (STANDARD)

1. **Soil or Sediment:** Samples are dried and then sieved through 80 mesh nylon sieves.
2. **Rock, Core:** Samples dried (if necessary), crushed, riffled to pulp size and pulverized to approximately -140 mesh.
3. **Heavy Mineral Separation:**  
Samples are screened to -20 mesh, washed and separated in Tetrabromothane.  
(SG 2.96)

#### METHODS OF ANALYSIS

All methods have either certified or in-house standards carried through entire procedure to ensure validity of results.

1. **Multi-Element** Cd, Cr, Co, Cu, Fe (acid soluble),  
Pb, Mn, Ni, Ag, Zn, Mo

##### Digestion

Hot aqua-regia

##### Finish

Atomic Absorption, background correction applied where appropriate

- A) **Multi-Element ICP**

##### Digestion

Hot aqua-regia

##### Finish

ICP

2. **Antimony**

##### Digestion

Hot aqua regia

##### Finish

Hydride generation - A.A.S.

3. **Arsenic**

##### Digestion

Hot aqua regia

##### Finish

Hydride generation - A.A.S.

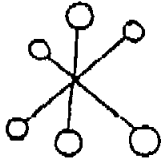
4. **Barium**

##### Digestion

Lithium Metaborate Fusion

##### Finish

I.C.P.

**ECO-TECH LABORATORIES LTD.**

ASSAYING • ENVIRONMENTAL TESTING

10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2J3 (604) 673-5700 Fax 573-4557

**13. Tin**Digestion

Ammonium Iodide Fusion

Finish

Hydride generation - A.A.S.

**14. Tungsten**Digestion

Potassium Bisulphate Fusion

Finish

Colorimetric or I.C.P.

**15. Gold**Digestion

- a) Fire Assay Preconcentration followed by Aqua Regia

Finish

Atomic Absorption

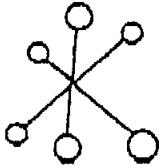
- b) 10g sample is roasted at 800°C then digested with hot Aqua Regia. The gold is extracted by MIBK and determined by A.A.

**16. Platinum, Palladium, Rhodium**Digestion

Fire Assay Preconcentration followed by Aqua Regia

Finish

Graphite Furnace - A.A.S.



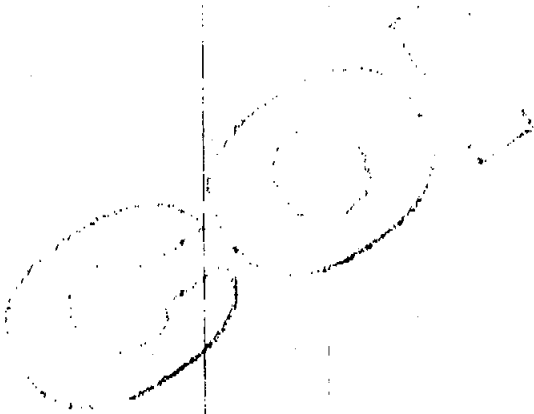
**ECO-TECH LABORATORIES LTD.**

**ASSAYING - ENVIRONMENTAL TESTING**

10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2J3 (604) 573-5700 Fax 573-4557

LABORATORY METHOD ASSAYS

- Gold - Conventional fire assay with A.A. finish
  
- Gold "Metallics" - A 300g re-split is taken from the rejects and pulverized in a ring and puck pulverizer. The entire split is screened to -140mesh. The entire +140 mesh oversize is assayed separately. Two replicate assays are performed on the -140 mesh fraction.
  
- Ag Pb Sb Zn - Aqua regia digestion, A.A. finish
  
- As - Aqua regia digestion, ICP finish

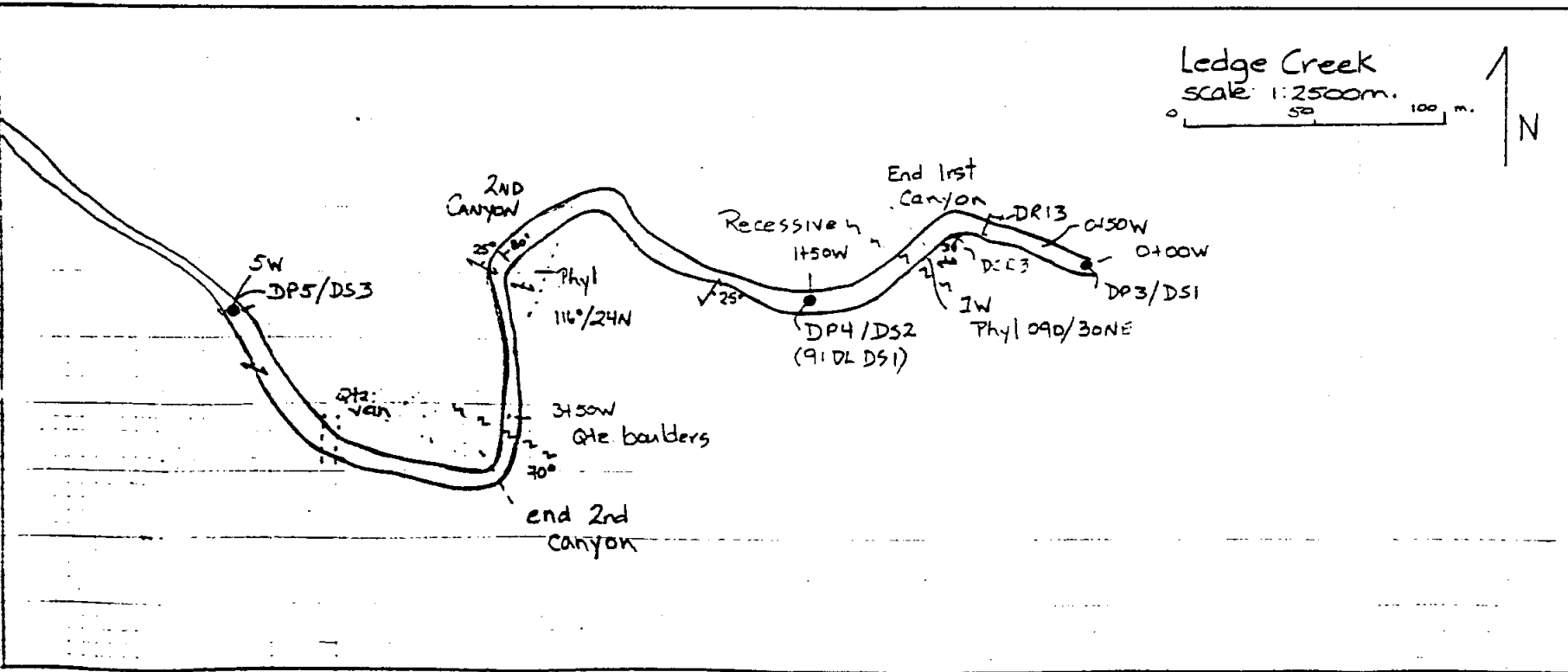
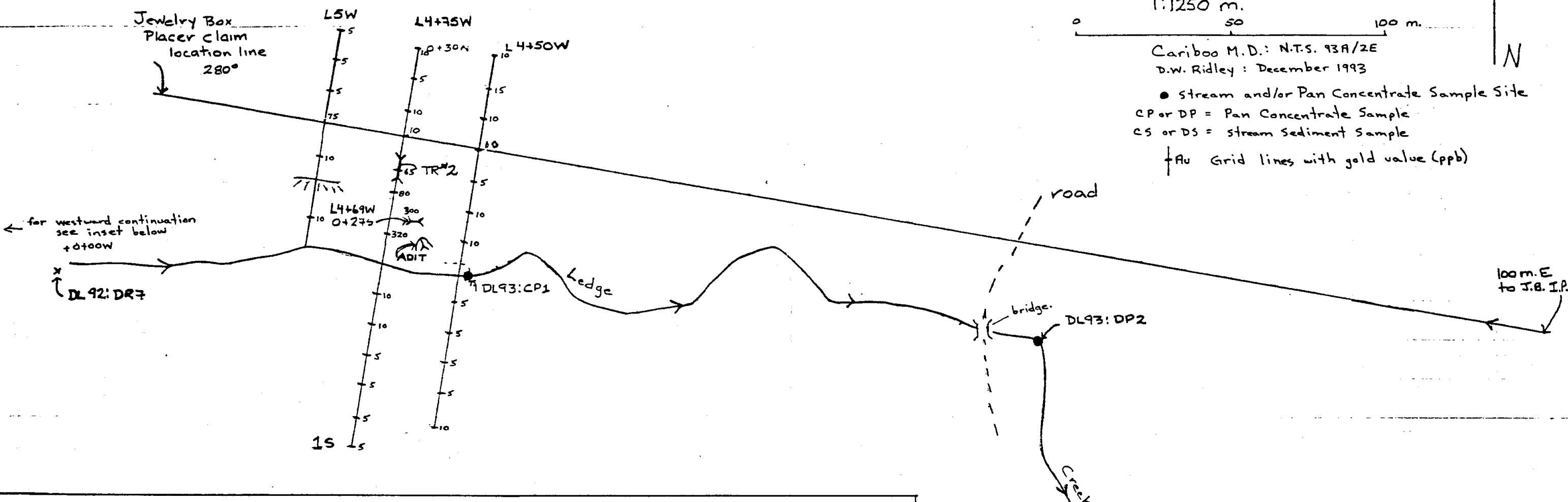


DL SOIL GRID + Stream Sampling  
1:250 m.

0 50 100 m.

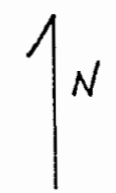
Cariboo M.D.: N.T.S. 93A/2E  
D.W. Ridley: December 1993

- stream and/or Pan Concentrate Sample Site
- CP or DP = Pan Concentrate Sample
- CS or DS = stream Sediment Sample
- | Au Grid lines with gold value (ppb)



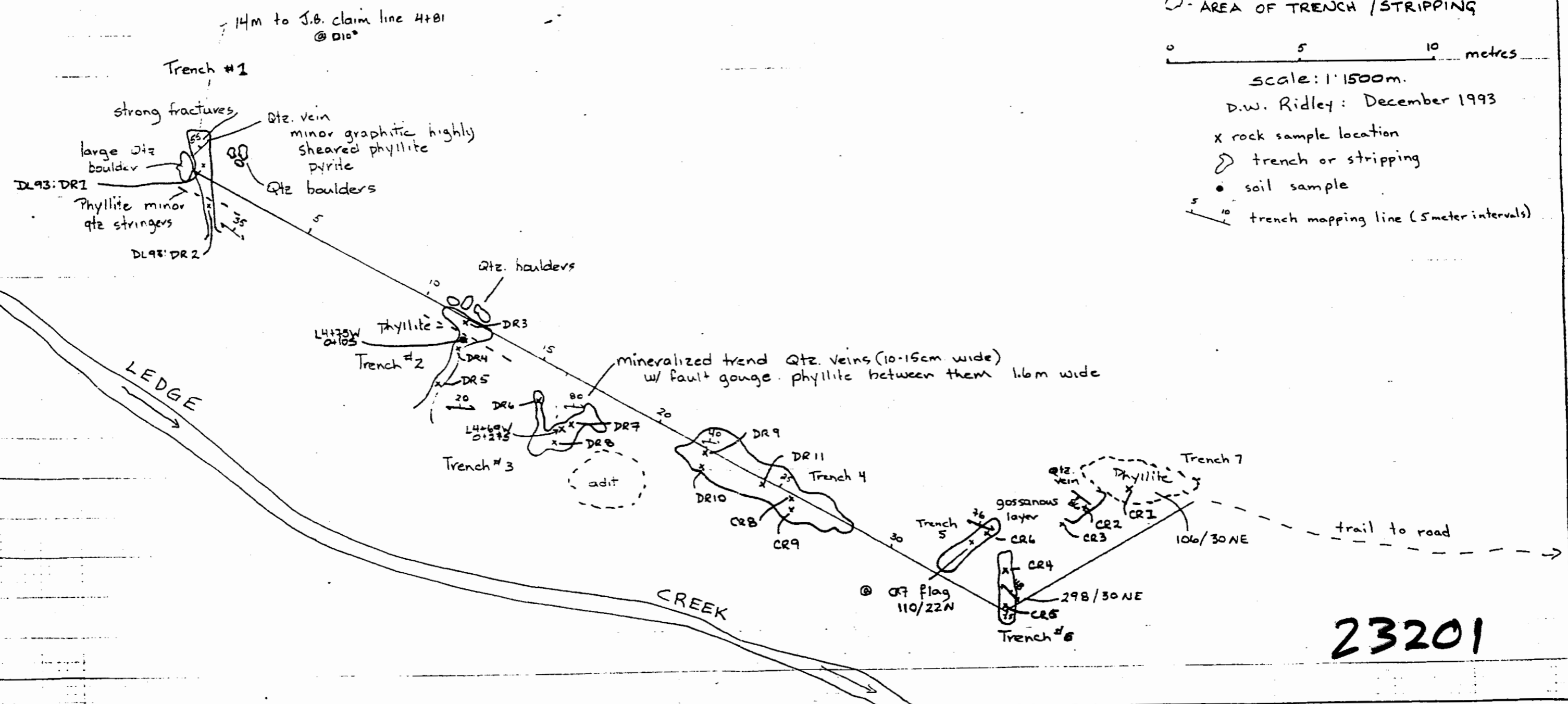
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DL93 CP3 CS2



DL CLAIMS: Cariboo M.D.: N.T.S. 93A/2E  
TRENCH & CHIP SAMPLE PLAN

- X - SAMPLE SITE
  - - AREA OF TRENCH / STRIPPING
- 0 5 10 metres
- scale: 1:1500m.
- D.W. Ridley: December 1993
- x rock sample location
  - trench or stripping
  - soil sample
  - 5 10 trench mapping line (5 meter intervals)



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