ARIS SUMMARY SHEET

District Geologist, Smithers Off Confidential: 92.08.14

ASSESSMENT REPORT 21816 MINING DIVISION: Atlin

PROPERTY: Lawsan
LOCATION: LAT 59 32 00 LONG 134 27 00
UTM 08 6599362 531109
NTS 104M09W
CLAIM(S): Sephil,Norm
OPERATOR(S): Gruber, K.
AUTHOR(S): Baldys, C.
REPORT YEAR: 1991, 25 Pages
COMMODITIES
SEARCHED FOR: Gold,Silver,Lead,Zinc
KEYWORDS: Yukon Group,Metamorphics,Folds,Dykes,Quartz veins,Pyrite
Sphalerite,Galena,Chalcopyrite,Gold
WORK
DONE: Geochemical
SAMP 29 sample(s) ;AU,AG
MINFILE: 104M 006,104M 007

ROCK GEOCHEMISTRY SURVEYS

ON

LAWSON VEIN

SEPHIL AND NORM CLAIMS

ATLIN MINING DIVISION

LATITUDE 134° 27' W

LONGITUDE 59° 30' N

OWNER: Karl J. Gruber

OPERATOR: Oro Quest Inc.

& 489166 Alberta Limited

AUTHOR: Christopher Baldys, P.Eng.

OCTOBER 1991

VANCOUVER, B.C.

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INTRODUCTION

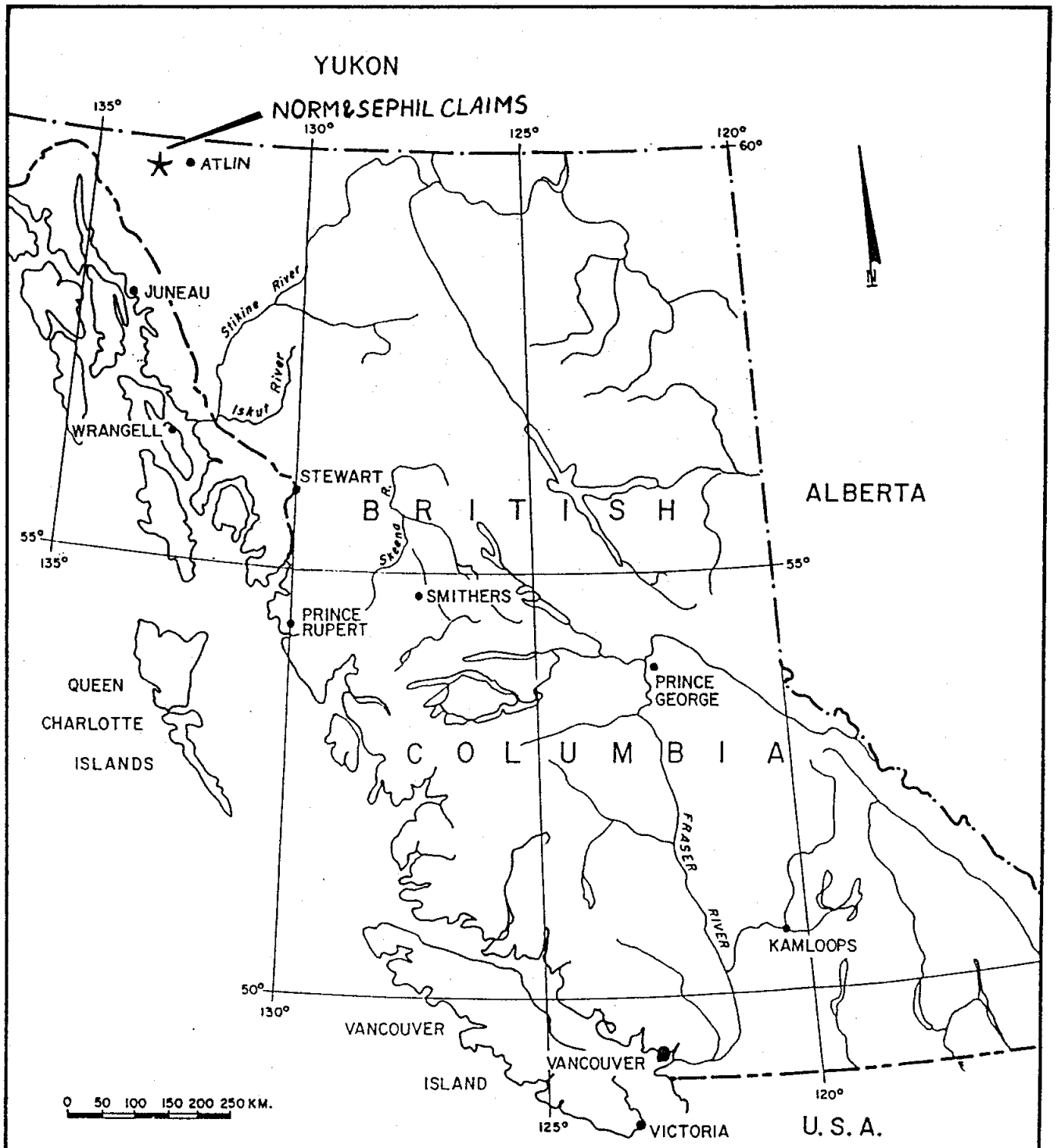
Norm on Sephil claims cover the area of the mineralized structure referred to as Lawson Vein. The property is located 43 km due west of Atlin, B.C. on the western slope of the Bighorn Creek Valley.

From July 12, 1991 to July 17, 1991 rock geochemistry surveys were conducted on the property by the author at the request of the directors of 489166 Alberta Limited to assess the economic potential for high-grade low tonnage gold-silver deposit. The results of this survey are the subject of this report.

1. LOCATION, ACCESS AND TOPOGRAPHY

The property is located in northwestern British Columbia in the Atlin Mining Division (Figure 1). The claims lie on the western slope of the Bighorn Creek Valley approximately 11 kilometres upstream from its confulence with the Fantail River.
The property can be reached by helicopter from Atlin which is located 43 km due east of the property. Alternative access is by boat from Carcross to Kirland Landing located on the west shore of Taku Arm of Tagish Lake. From there an overland trek would be required along the old trail on the west side of Bighorn Creek.

The property occupies steep slopes of U-shaped valley of the Bighorn Creek with elevations raning from 780 m to 1500 m. The topography of the area includes glacial morraines and outflow lakes in the upper part and steep slopes with deeply ~~increased~~ incised creeks and canyons cutting through the bedrock on lower elevations.



PROPERTY LOCATION MAP

Figure 1

2. PROPERTY OWNERSHIP

The property consists of two modified-grid system claims, NORM and SEPHIL, which are located in the Atlin Mining Division. The registered owner of the property is Karl J. Gruber of Whitehorse, Yukon Territory. The particulars are as follows:

Claim Name	Record Number	No. of Units	New Expiry Date
NORM	2669	(20) reduced to 4	August 18, 1995
SEPHIL	2668	(10) reduced to 4	August 18, 1995

As of August 1991, the property had been under option agreement between Oro Quest Inc. of Whitehorse, Yukon Territory and 489166 Alberta Limited of Calgary, Alberta, the first company being the operator and beneficial owner and the latter being the optionee.

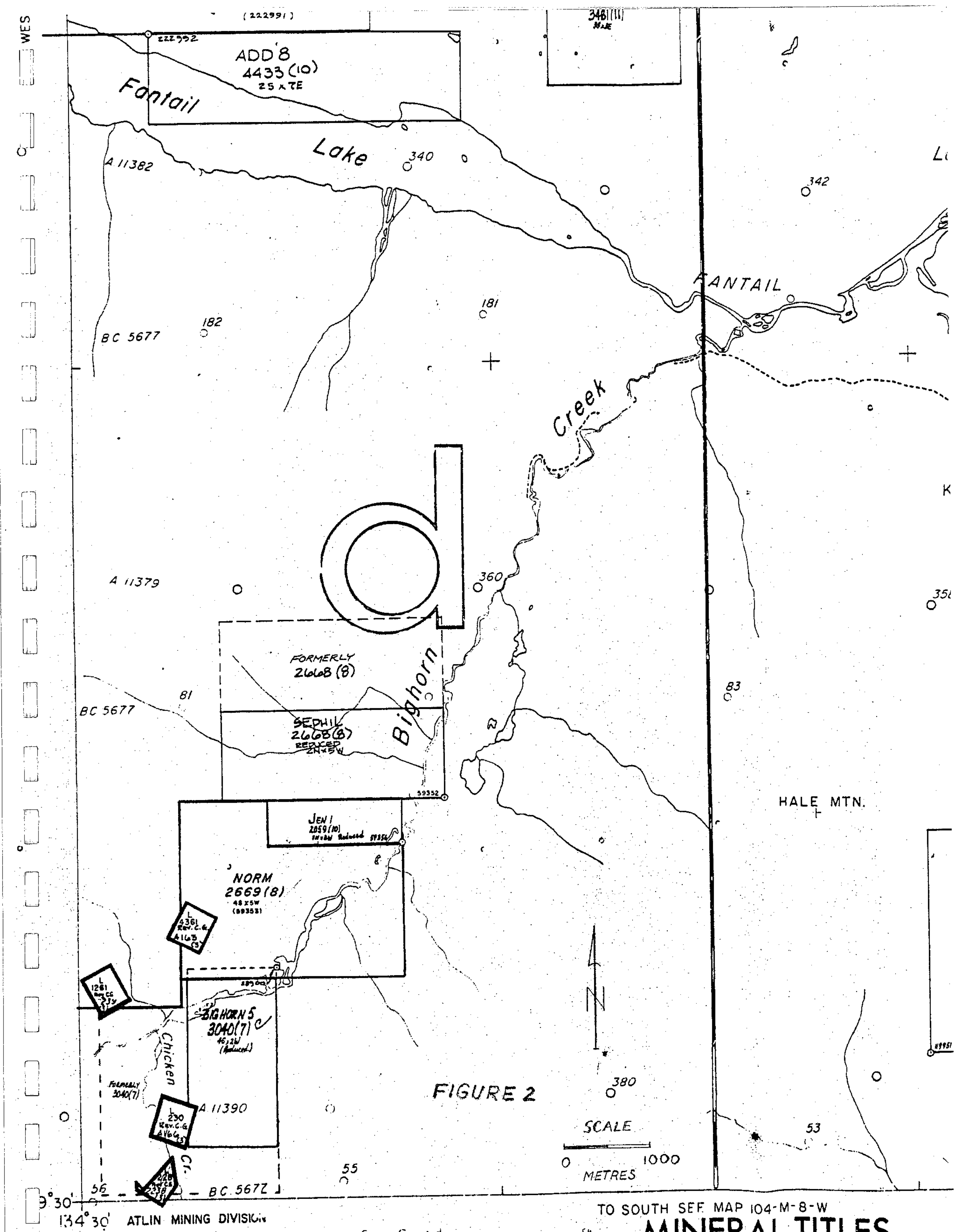

ADD 8
4433 (10)
25 x 7E
Fantail
Lake
340
342
A 11382
FANTAIL
BC 5677
182
181
Creek
A 11379
360
FORMERLY
2668 (8)
SEPHIL
2668 (8)
REDUCED
Bighorn
BC 5677
81
83
59352
JEN 1
2059 (10)
HALE MTN.
NORM
2669 (8)
L
4361
Rev. C.G.
A163
L
1281
BIGHORN 5
3040 (7)
Chicken
FORMERLY
3040 (7)
A 11390
L
230
Rev. C.G.
380
53
55
56
Cr.
BC 5672
SCALE
0
1000
METRES
9°30'
134°30'
ATLIN MINING DIVISION
TO SOUTH SEE MAP 104-M-8-W
MINERAL TITLES

FIGURE 2

3. HISTORY

Engineers working on the White Pass and Yukon Railroad and prospectors first entered the area between Bennett and Atlin in 1978. The famous Klondike Gold Rush between 1897 and 1898 saw a tremendous influx of prospectors into the area, either on their way to the Klondike gold fields or working their way eastward to the Atlin gold camp. Since 1898, approximately 34,300 kilograms of placer gold has been won from the Atlin gold fields.

However, west of Atlin only small vein-type gold prespects have been worked, with the exception of the well-known Engineer gold mine which produced 597,176 grams of gold from 1913 until 1932.

To the northwest of the study area, the Venus and Skukum properties have outlined sufficient reserves to warrant mining operations under suitable economic conditions.

Mr. Fred Lawson and associates prospected the Bighorn Creek area during the early 1900s. This prospecting eventually led to the staking of the Spokane group, which comprised of three mineral claims, the Spokane, Mohawk and Edwin. The Edwin claim is presently crown-granted.

Work was carried out on the property from 1921 - 1935 when several open-cut trenches and three drifts were developed. These were named in ascending order the Peters, Blacksmith and Incline. This development indicated that a quartz vein could be traced intermittently along a horizontal length of 920 meters. It was also identified through a vertical distance of over 460 meters. The vein where exposed has an average thickness of 1.1 metres.

The property was bonded to Norgold Mines Limited in 1933. This company later changed its name to Atlin-Pacific Mining Co. Ltd. Late in 1934, Bobjo Mines Limited, an Ontario company, also acquired an interest in the company and assumed management of the property. Bobjo Mines relinquished its interest in February 1935.

In 1933 a group of samples channelled across the vein at six places in the upper "Incline" adit, over an average width of 0.76 meters , by an engineer assayed 9.4 gm gold per metric ton. In 1934, systematic sampling by another independent engineer is reported to indicate ore-shoots of about 10.6 gm gold per metric ton across an average width of 0.91 meters. No development work has been done on the property since 1936.

Sporadic exploration of the vein in the last two decades included geological examination and sampling performed in 1975 by Lobell Mines Ltd. and prospecting and sampling carried out by Silver Ice Mining Ltd. in 1981 (Assessment Reports 5910 and 10069).

Of the total 20 samples collected during the 1975 surveys 8 yielded values greater than 0.1 oz/t gold. The highest assay produced 0.52 oz/t gold across 1.52 m vein width in the Incline adit. The results of the 1981 sampling were less encouraging. Only two samples out of 20 yielded values greater than 0.1 oz/t gold. In this case, however, there is no description of the material sampled and the width of the chip samples.

The latest geochemistry surveys were performed in 1985 by the Geological Survey Branch of the B.C. Ministry of Energy, Mines and Petroleum Resources. Selective samples of the high grade quartz-sulphide material taken from the drift dumps assayed up to 297 ppm Au and 120 ppm Ag.

4. 1991 GEOCHEMISTRY SURVEYS

From July 12, 1991 to July 17, 1991, the property was examined by Christopher Baldys, P.Eng. at the request of 489166 Alberta Limited to assess the economic potential of the gold-silver mineralization. For this purpose a two-men fly camp was established at elev. 1200 m between Blacksmith and Incline adits. A total of 12 man/days was spent on the property performing systematic geochemistry surveys and detailed mapping of selected areas on surface and underground.

A total of 29 rock samples were collected from the property including systematic chip samples from three of the four underground drifts. The vein in the incline and the Blacksmith drifts was sampled at 5 m intervals and in the Peters drift at 20 m intervals (Figures 5 to 6).

The survey also included sampling of the surface exposures of the vein and dump material below the drift portals (Figure 4). These samples are listed below:

Sample No.	Type	Description
416052H	chip across 0.2 m	coarse, rusty quartz with minor pyrite
416053H	chip across 0.6 m	coarse, rusty, quartz with minor pyrite
416070H	selective grab	quartz-sulphide material from Blacksmith dump
416071H	random grab	mainly gneiss with minor quartz, Blacksmith dump
416072H	float	coarse, rusty quartz
416079H	chip across 0.8 m	coarse, rusty quartz vein with minor pyrite
416080H	selective grab	quartz-sulphide material from the dump below Lower Drift portal

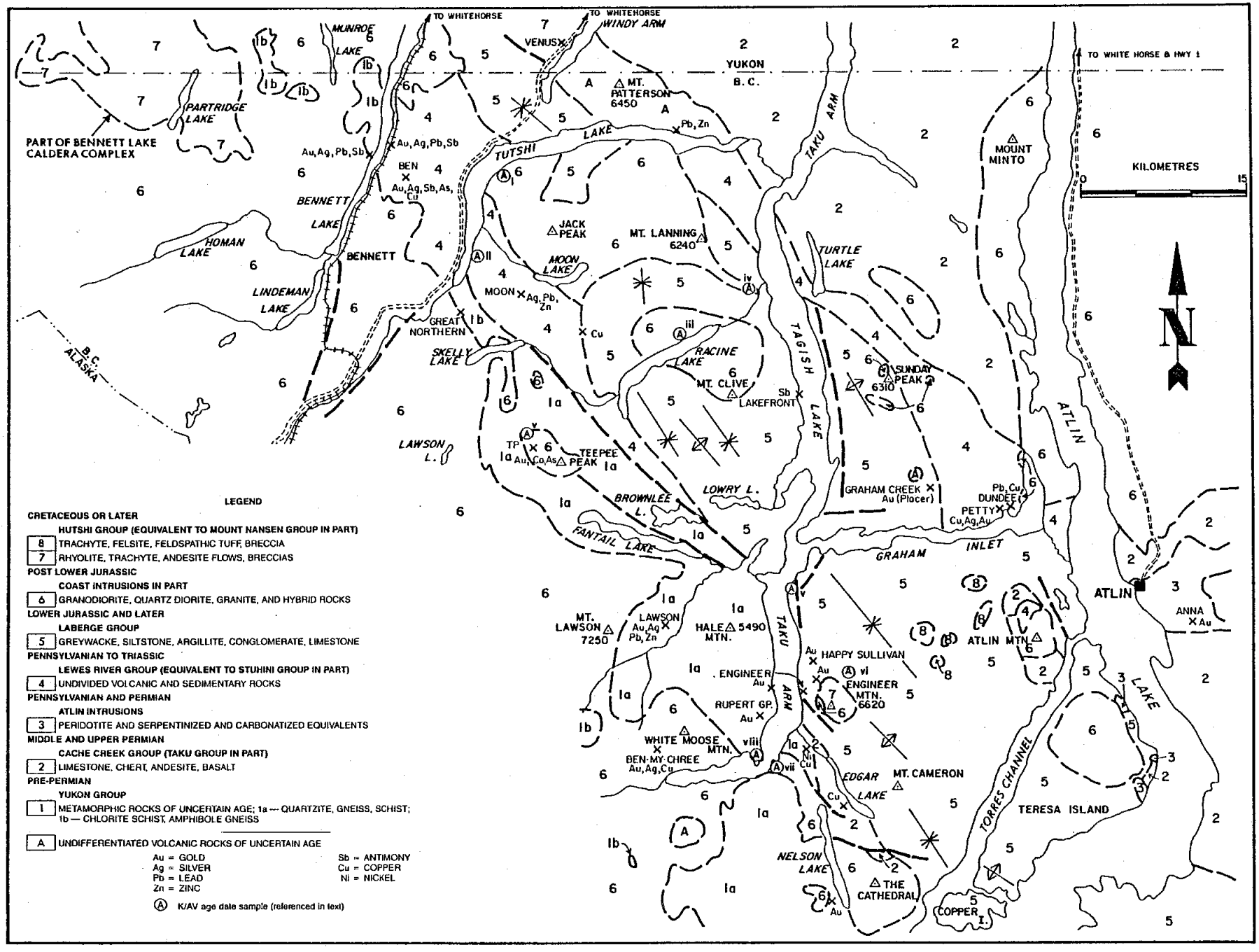
5. GENERAL GEOLOGY AND STRUCTURE

In the Taku Arm - Fantail Lake area, the major components of the geology are:

- Upper Triassic to Middle Jurassic strata within the Whitehorse trough (Stuhini Group and Laberge Group)
- Pre-Permian metamorphic rocks of the Yukon Group
- Intrusions of Coast Plutonic Complex of post-early Jurrassic age

Figure 3 shows stratigraphic and structural components for larger area extending from Bennett Lake to Atlin Lake with location of mineral deposits.

The main structure in the Bennett-Atlin area is the Llewellyn fault system. It separates the Whitehorse trough from the Coast Plutonic Complex. The trace of this steeply dipping structure passes through the Nelson Lake Valley under Tagish Lake near the mouth of Fantail Creek, and northwesterly to the south end of Tutshi Lake.



Compilation of geology, structure, and mineral deposits, Bennett area.

FIGURE 3

AFTER T. SCHROETER

6. LOCAL GEOLOGY

The property is underlain by schistose gneisses and amphibolites of the Yukon Group. Intruded into these rocks are dykes of andesite and feldspar porphyry which might represent feeder conduits for extrusive units of Stuhini Group preserved within the Whitehorse trough further to the northeast.

The Yukon Group rocks strike northeasterly and dip at varying angles to the east and west. Numerous folds trending northeasterly and northerly are present within this unit.

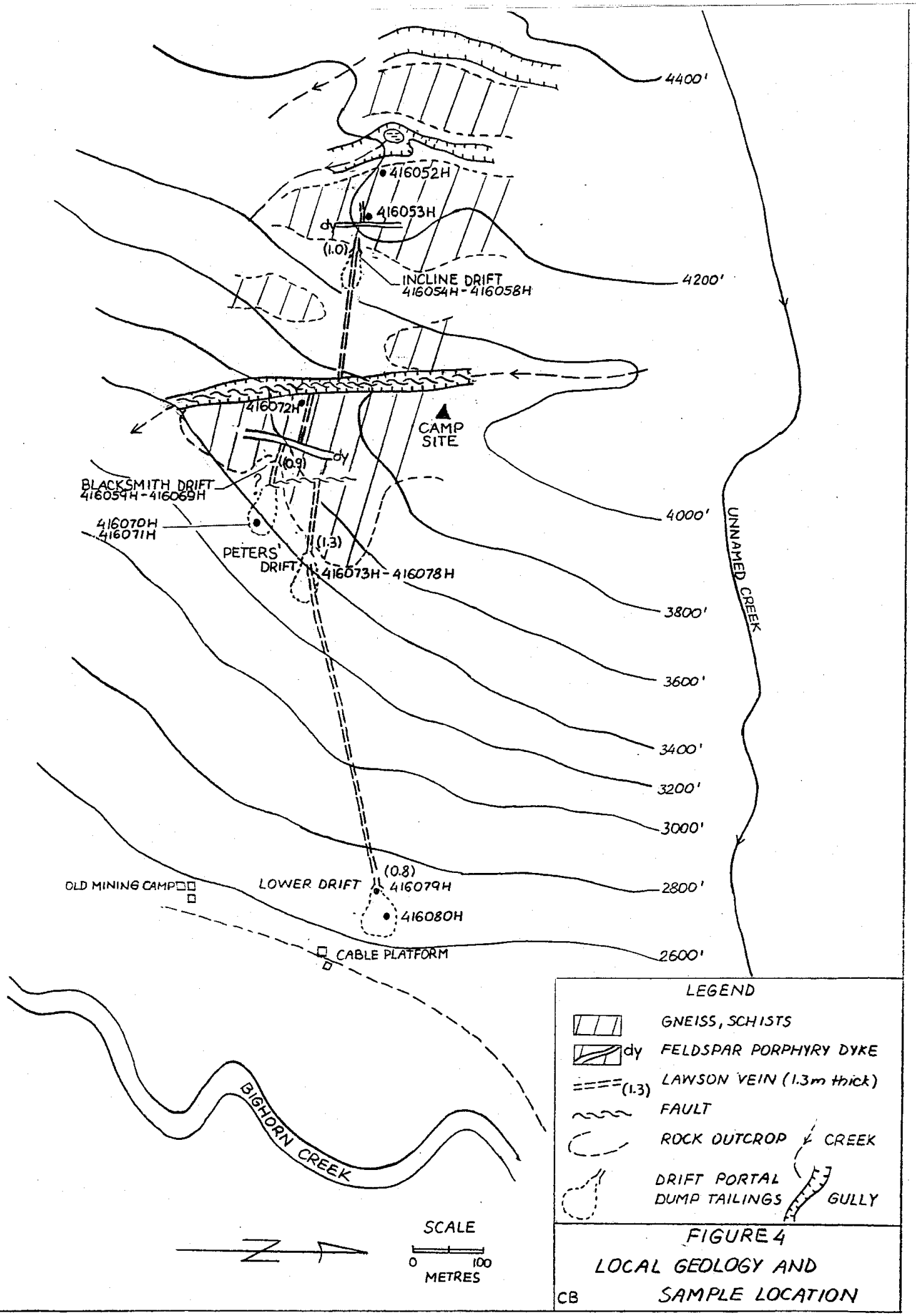


FIGURE 4

LOCAL GEOLOGY AND SAMPLE LOCATION

CB

7. STRUCTURE

On the property scale east-west trending lineaments exploited by the creeks pass a short distance to the north of the Lawson Vein. They might represent movement zones related to the uplift of the Coastal Batholith. Other faults include the easterly trending structure now occupied by the vein itself. These appear to be subsidiary splays of the Llewellyn fault system. A prominent shear zone trending north-south is traceable between Blacksmith and Incline drifts. It is marked by the exposure of brecciated, iron-stained gneiss in a gully mid-way between the drifts (Figure 4). Geological mapping performed by M.J. Cooper in 1975 indicates a right-lateral displacement of the Lawson Vein along this shear of approximately 75 meters.

Underground mapping in 1991 revealed that right-lateral displacement is rather gradual and related to a system of parallel shears trending north-south, sometimes bounded by feldspar porphyry dykes. One of these shears accounts for the absence of the vein in the cross-cuts at the end of the Blacksmith drift. Another offsetting structure is believed to occur Blacksmith and Peter's drifts (Figure 4).

8. MINERALIZATION

The mineralization consists of a gold bearing quartz-sulphide vein which is confined to a narrow, persistent fissure zone. The zone cuts at right angles the sequence of schistose gneisses and amphibolites. The vein has been traced intermittently along a horizontal length of 920 metres and over a vertical distance of 460 metres. It averages 1.1 metres in thickness and contains pyrite plus minor chalcopyrite, galena, sphalerite and native gold. The vein is striking east-west and dipping at 85^{o} to the north.

The wallrock of the vein does not appear to be mineralized or altered. This along with coarse, pited and locally comblike textures of quartz suggests a pattern of open-space mineralization.

The vein has been explored by a total of 4 drifts named in ascending order; Lower (at elev. 830 m), Peter's (at elev. 1035 m), Blacksmith (at elev. 1080 m) and Incline (at elev. 1265).

The 1991 surveys of the drifts revealed that feldspar porphyry dykes cut the Lawson Vein. This suggests that the dykes, contrary to earlier interpretations, are not part of the Yukon Group. The sulphide mineralization within the vein appears to be localized along intersections with oblique fracture zones. Gold in turn, correlates well with pyrite which is essentially more abundant than other sulphides. Judging from a detailed examination of the dump material, the total sulphide content increases with the elevation. This explains the highest gold returns from the upper drifts.

9. ANALYTICAL PROCEDURE

All rock samples collected from the property during the 1991 surveys were sent to Loring Laboratories Ltd. in Calgary for gold and silver assays.

The preparatory procedure consisted of drying, primary and secondary crushing, homogenizing, riffling to pulp size, rotary pulverizing to approximately -140 mesh and screening at 140 mesh. The +140 fraction was hand pulverized to -140 mesh and homogenized. The 30 g pulp was fire assayed with atomic absorption finish for gold and gravimetric finish for silver. The +1000 ppb Au pulps were re-assayed for gold using gravimetric finish.

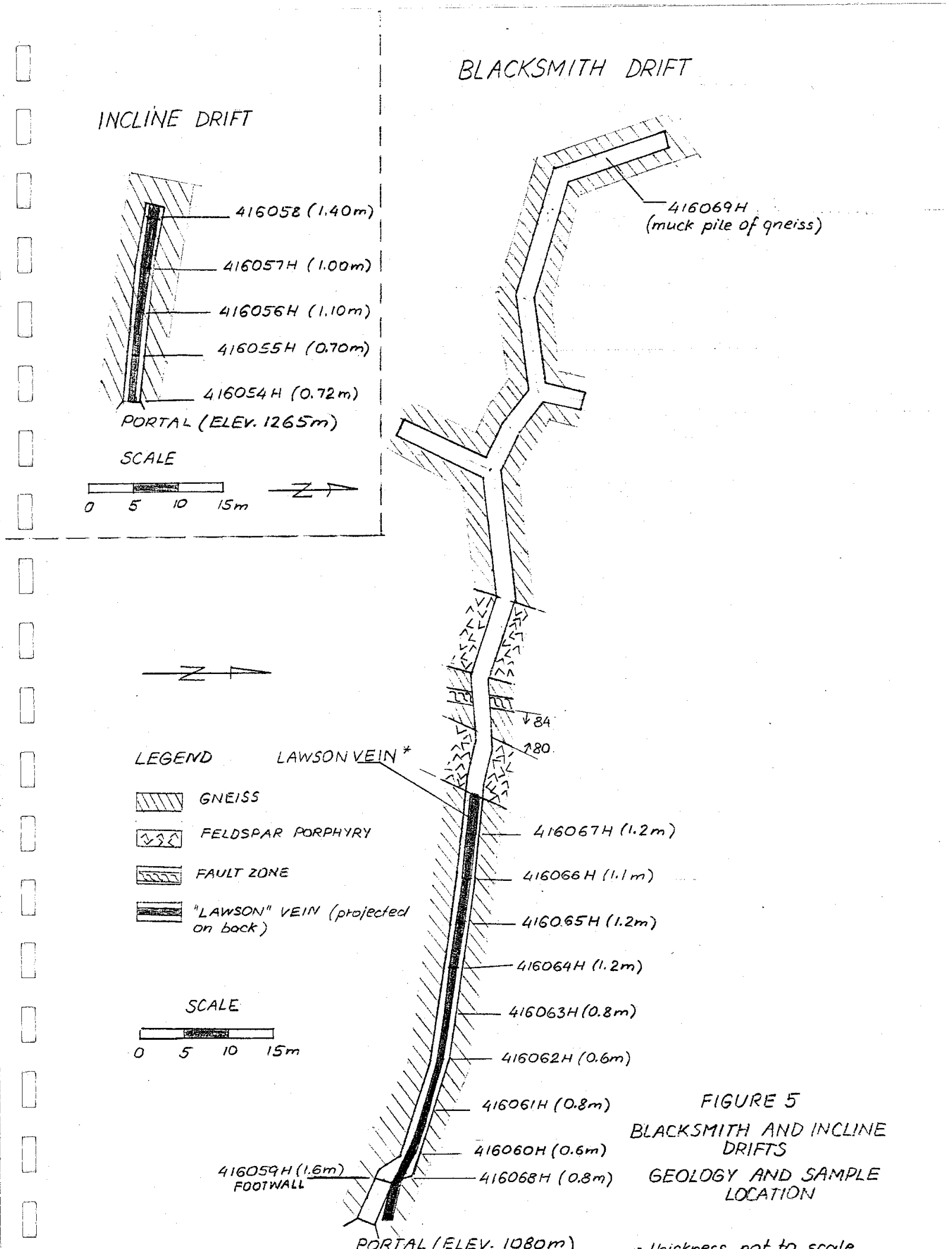


FIGURE 5

BLACKSMITH AND INCLINE DRIFTS

GEOLOGY AND SAMPLE LOCATION

* Thickness not to scale

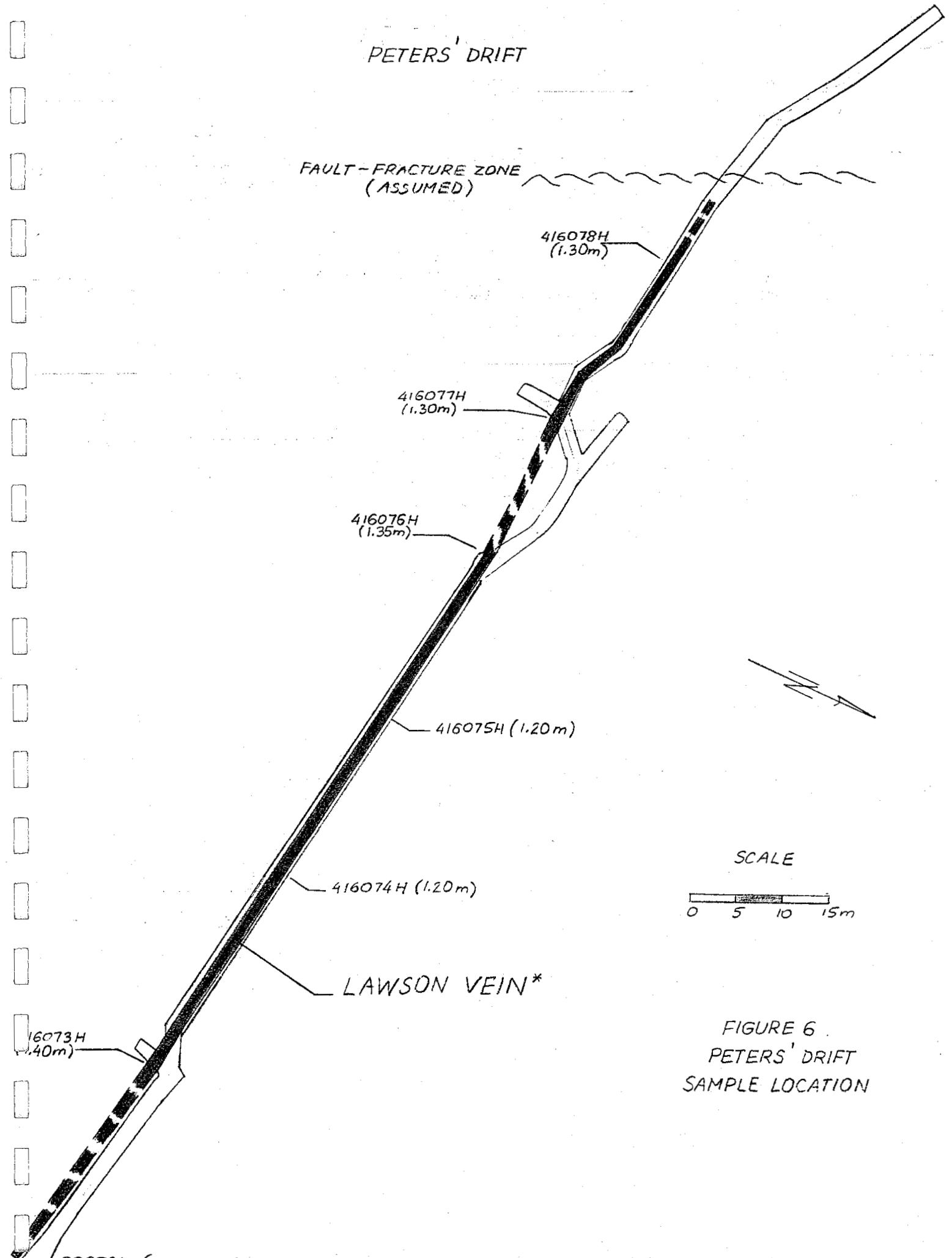


FIGURE 6
PETERS' DRIFT
SAMPLE LOCATION

10. ROCK GEOCHEMISTRY RESULTS

From the total of 29 samples collected from the property, 11 assayed amounts greater than 0.10 oz/t gold with associated silver yielding up to 0.99 oz/t. The highest assay produced 0.48 oz/t gold from 0.8 m thick section of the vein in the Blacksmith drift.

The gold assays from the drifts yielded average weighted grades as follows:

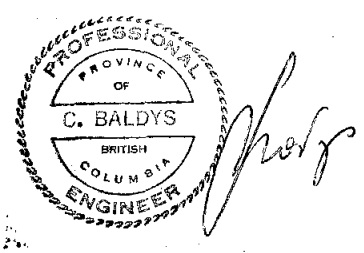
- 0.06 oz/t across 1.3 m vein in the Peter's drift (135 m of horizontal length sampled)
- 0.13 oz/t across 0.9 m vein in Blacksmith drift (47 m horizontal length)
- 0.20 oz/t across 1.0 m in the Incline drift (23 m horizontal length)

11. CONCLUSIONS AND RECOMMENDATIONS

Mineralization on the property is confined to a persistent quartz-sulphide zone which has a geometry of a central shear-fissure vein cutting at the right angles the sequence of metamorphic schists and gneisses of the Yukon Group.

Geochemistry results indicate that a limited tonnage potential for ore grade material exists above 1035 m elevation. The area in question lies between the Blacksmith and the Incline drifts. Based on the average drift grades ranging from 0.13 to 0.20 oz/t gold 76,000 tons grading 0.17 oz/t gold is estimated. These are geologic reserves which are qualified as probable, drift indicated. The tonnage was calculated using 1.0 m as the average thickness. The tonnage potential is limited by the vertical distance (185 m) and horizontal distance (295 m) between the drifts. The above reserves do not include vein material grading approximately 0.13 oz/t gold present immediately below Blacksmith drift level.

The results of the 1991 surveys disqualify the Lawson Vein as a target for high-grade small tonnage operation due to low average grades. However, given the continuity of the mineralized structure and an increase of the grades with elevation more exploration effort is recommended for the area to the west of the Incline drift. Although, prelimary prospecting in 1991 failed to locate the vein immediately to the west of the drift, anomallous levels of gold are present in quartz within the limited rock exposures of that area.



APPENDIX 1

STATEMENT OF EXPENSES

GEOLOGIST (C. Baldys, P.Eng.) 7 days @ $300/day	$2,100
FIELD ASSISTANT (S. Mulder) 6 days @ $120/day	720
HELICOPTER CHARTER	1,315
FIELD/CAMP SUPPLIES	120
FOOD	180
AIR TRAVEL	570
LODGING	104
MEALS	60
GASOLINE	70
OFFICE EXPENSES: courier, copying, maps, legal fees	250
ASSAYS (29 samples @ 22.00, 19 samples $8.50)	800
REPORT PREPARATION (C. Baldys, P.Eng.)	950
TOTAL	$7,239

To: MR. JOHN LIBAL,
12, 1220 Prominence Way West,
Calgary, Alberta
T2E 2B4

cc: C. Baldys

File No. 34492
Date July 31, 1991
Samples Rock

Certificate of Assay
LORING LABORATORIES LTD.

SAMPLE NO.	OZ./TON GOLD
"Assays on +1000"	
416054-H	.319
416055-H	.173
416056-H	.056
416057-H	.341
416058-H	.167
416060-H	.070
416061-H	.102
416062-H	.105
416063-H	.475
416064-H	.101
416065-H	.050
416068-H	.398
416070-H	.167
416073-H	.046
416076-H	.153
416077-H	.046
416078-H	.047
416079-H	.034
416080-H	.094

I Hereby Certify that the above results are those assays made by me upon the herein described samples....

Rejects retained one month.
Pulps retained one month
unless specific arrangements
are made in advance.

Assayer

To: MR. JOHN LIBAL,
12, 1220 Prominence Way West,
Calgary, Alberta
T2E 2B4

cc: C. Baldys

File No. 34492
Date July 31, 1991
Samples Rock

Certificate of Assay
LORING LABORATORIES LTD.

SAMPLE NO.	PPB GOLD	OZ./TON SILVER	TOTAL WEIGHT OF SAMPLE IN GRAMS
"Assay Analysis"			
416052-H	260	.05	2918.0
416053-H	217	.14	2227.0
416054-H	+1000	.11	3606.0
416055-H	+1000	.09	5929.0
416056-H	+1000	.25	2388.0
416057-H	+1000	.24	3068.0
416058-H	+1000	.16	4194.0
416059-H	315	.06	2532.0
416060-H	+1000	.38	1505.0
416061-H	+1000	.40	2912.0
416062-H	+1000	.32	2494.0
416063-H	+1000	.49	1625.0
416064-H	+1000	.16	3100.0
416065-H	+1000	.50	4298.0
416066-H	762	.46	1435.0
416067-H	375	.19	2736.0
416068-H	+1000	.83	2426.0
416069-H	119	.08	1886.0
416070-H	+1000	.99	696.0
416071-H	189	.09	2113.0

I Hereby Certify that the above results are those assays made by me upon the herein described samples....

Rejects retained one month.
Pulps retained one month unless specific arrangements are made in advance.

Assayer

To: MR. JOHN LIBAL,
12, 1220 Prominence Way West,
Calgary, Alberta
T2E 2B4

cc: C. Baldys

File No. 34492
Date July 31, 1991
Samples Rock

Certificate of Assay
LORING LABORATORIES LTD.

SAMPLE NO.	PPB GOLD	OZ./TON SILVER	TOTAL WEIGHT OF SAMPLE IN GRAMS
416072-H	29	.08	1986.0
416073-H	+1000	.28	3706.0
416074-H	953	.17	2576.0
416075-H	801	.09	2086.0
416076-H	+1000	.94	2958.0
416077-H	+1000	.72	2696.0
416078-H	+1000	.01	1360.0
416079-H	+1000	.01	1318.0
416080-H	+1000	.02	1030.0

I Hereby Certify that the above results are those assays made by me upon the herein described samples....

Rejects retained one month.
Pulps retained one month
unless specific arrangements
are made in advance.

Assayer