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Assessment Report

on a

Biogeochemical Test Line

across

Placer Mining Lease 1475

Situated Immediately South

of

The Settlement of

Tulameen

Similkameen Mining Division

Southern British Columbia

Latitude 49°32'N; Longitude 120°45'W

N.T.S. 92H/10

Field Work October 20 and 21, 1978

Report by
D. R. Cochrane, P. Eng.
Delta, B. C.
November 14, 1978

6980

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Geotechnical Consulting / Exploration Services

geology
geophysics
geochemistry

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INTRODUCTION

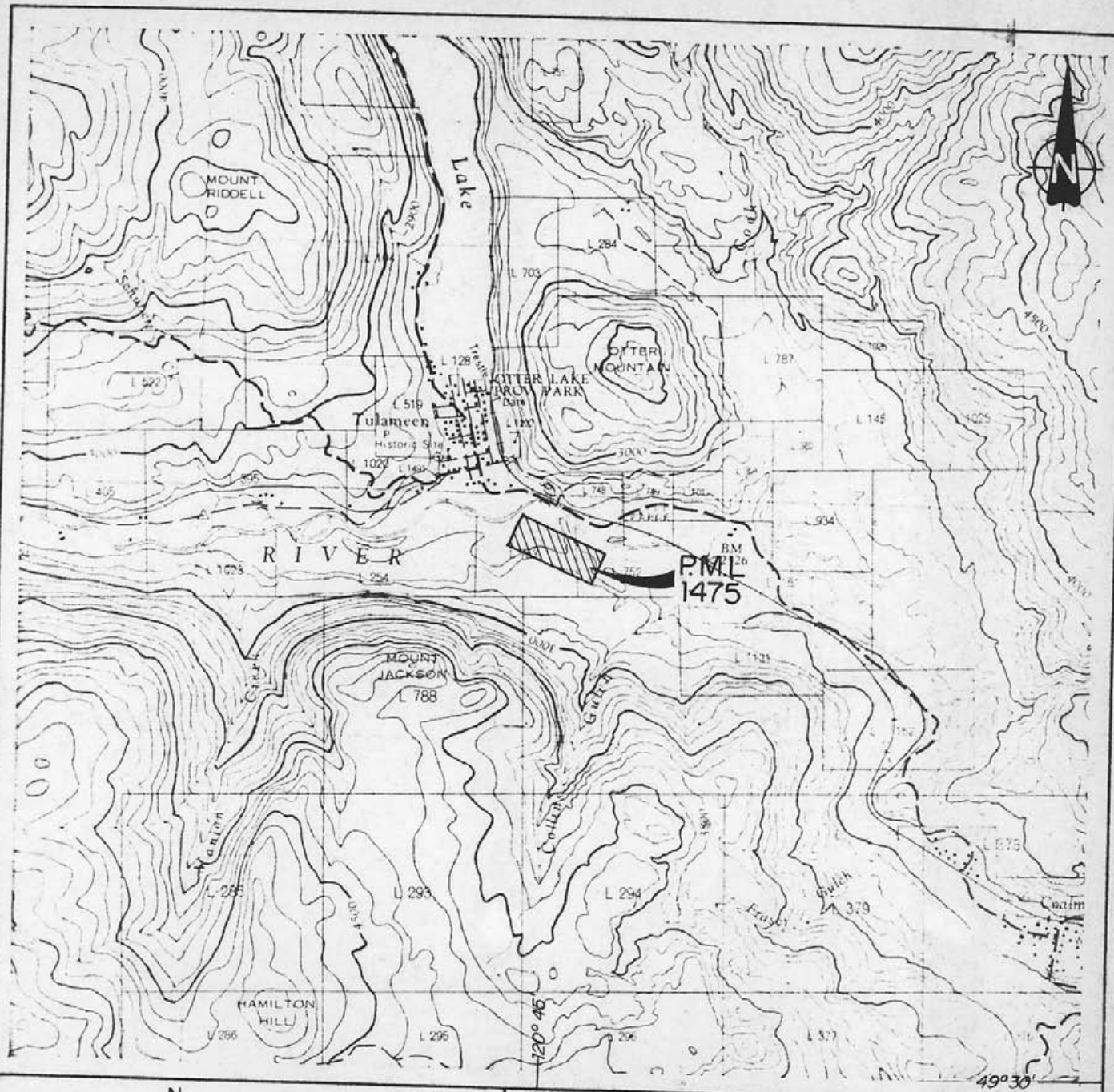
The author was retained by Carolin Mines Ltd of Vancouver B. C. to further examine P.M.L. 1475 situated at Tulameen in Southern British Columbia. The author first visited the property in October 1977 (see Assessment Report # 6508 dated November 8, 1977), and in October 1978, a field crew mobilized to the property to conduct additional sampling for evaluation purposes.

This report describes the general setting, work done, and results obtained this year on P.M.L. 1475. Assessment work details and the costs incurred are contained in Appendices at the back of this report.

LOCATION AND ACCESS:

P.M.L. 1475 is situated immediately south of the settlement of Tulameen and on the south side of the Tulameen River just upstream from its confluence with Otter Creek. Facile road access to Tulameen is northwest from Princeton via the Tulameen Road, a distance of approximately 25 road kilometres. The northwest corner of the lease is some 200 metres southwest of the confluence of Otter Creek and the Tulameen River, and on the south side of the river. (see location map.)

The latitude is 49°32'N, longitude 120°45'W and N.T.S. 92H/10.



CAROLIN MINES LTD. (N.P.L.)

Placer Mining Lease 1475

Tulameen, B.C. Similkameen M.D.

Figure 1

Location Map

(from N.T.S. 92 H/10)

Scale 1:50,000

0 1 2 3 kilometres

0 1 2 mi.

B.A.C., NOV./77.

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PROPERTY INFORMATION:

P.M.L. 1475 is owned by Ernest E. Everden of North Vancouver, and was recorded on October 21, 1965. It contains 80 acres, more or less, and the location line runs S20°E. The lease was issued for 20 years providing:

1. Annual Assessment work to the value of $250.00 is done;

2. a $50.00 per year rental fee is paid.

Placer Mining Lease No.	Expiry Date*
1475	October 21, 1980

* with this assessment report as credit.

GENERAL SETTING:

The placer lease lies at the junction of the south trending Otter Valley and the east west trending Tulameen Valley at an elevation of 770 metres above sea level. Mount Jackson rises sharply to the south of the lease to an elevation of just over 1340 metres A.S.L. In general the area is a moderately gently rolling upland surface with broad valleys partly cleared for farming and ranching. The hillsides are well forested with ponderosa and jackpine.

The Tulameen River,which forms the west boundary of the lease,has cut a bank some 1½ to 2 metres high thus well exposing the gravels. Bedrock is exposed on the hillside on the west side of the lease and the remainder is flat except for small spill channel banks.

HISTORY:

Placer gold was first reported along the Tulameen and Similkameen Rivers in the early 1860's, however not until the Granite Creek discovery in the 1880's did the Tulameen area achieve significant placer production. By 1892, the Minister of Mines reported 18 companies were working in 47 areas of interest on the Tulameen River, and total production for the year was estimated at 450 troy ounces (a total of $8,000.00 with unrefined gold at $17.75 per ounce.) (*Presumably then Tulameen gold is $\frac{17.75}{20.67}$ or 860 fine). The Tulameen during the 1890's was the most important platinum producer in North America. The "heydays" lasted for about a decade, and since that time production has dwindled. Some revival of the once flourishing industry has occurred in recent years with the increase in the price of gold from a fixed $35.00 per ounce to a recent (E. and M.J. September average) price of $206.30 (U.S.) per ounce. Platinum has remained relatively steady recently in the $250.00 (U.S.) per ounce range.

An inspection of the surface of P.M.L. 1475 indicates it is virginal and has not been extensively worked. There are several small test pits on the property.

WORK DONE

The brief examination conducted by the author in 1977 included hand panning mainly along selected areas of the south bank of the Tulameen River which runs along the north side of P.M.L. 1475. There was, however, a suggestion, (induced mainly from topographic evidence), that perhaps a former channel of the Tulameen River passed through the lease somewhat south of the present stream bed of the Tulameen. In order to test this theory, and in order to test the usefullness of a relatively unused technique in gold exploration, it was decided to conduct biogeochemical orientation work in hope that this method would prove valuable in future work.

There is a paucity of current literature on biogeochemical prospecting for gold (or simply the collection of plant samples and the subsequent analysis of the specimens for gold content). Dr. H.J. Warren in an article on "An Attempt to Discover a Carlin-Cortez" (Western Miner, Oct./73) describes up to 1050 parts per billion (ppb) Au in the roots of Mountain Phacelin, and the author has obtained 500 ppb Au from the ash of the common horsetail fern (Equisetum arvense L).

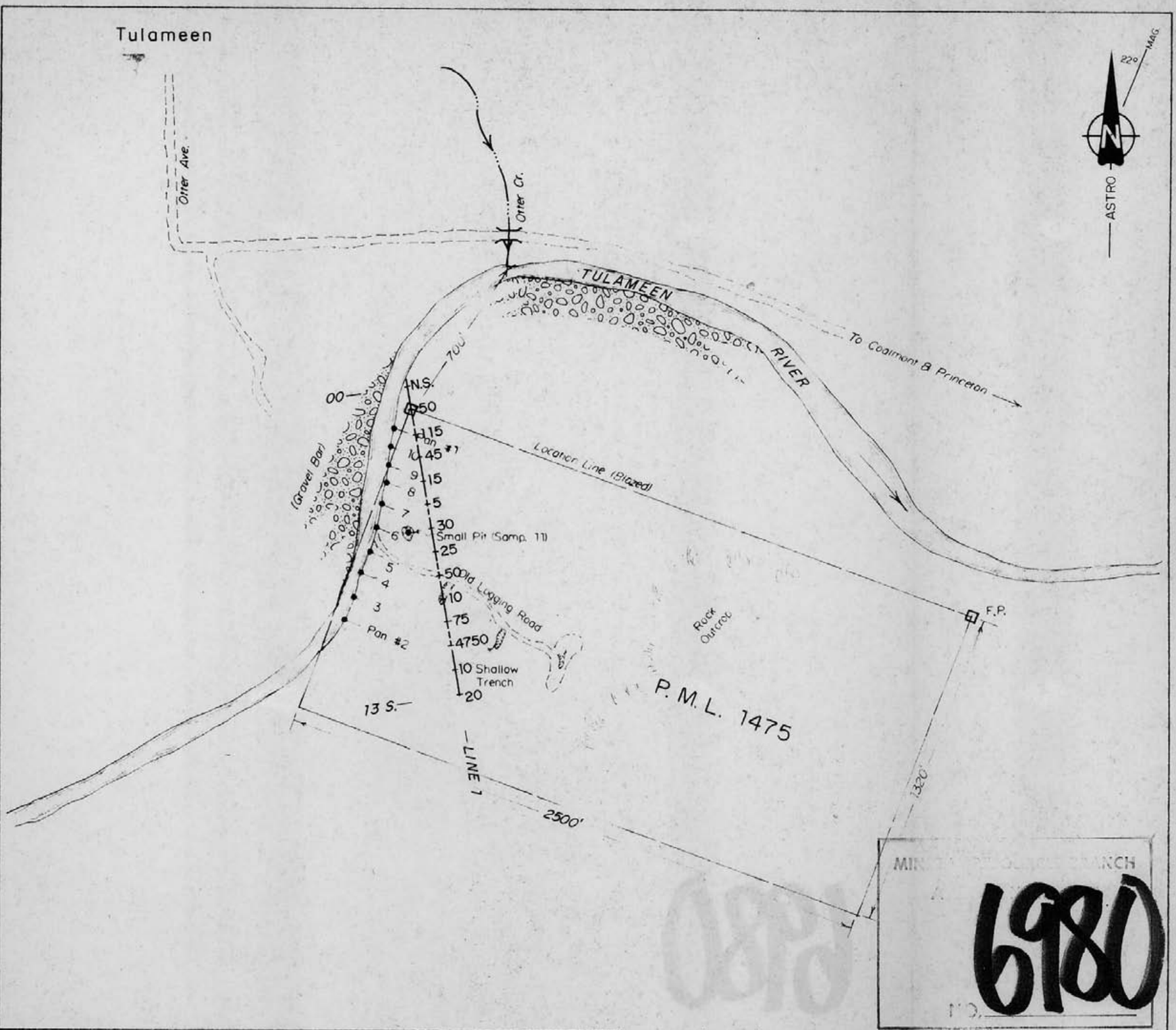
The U.S.G.S. (see Bull. 1330, 1974) reports 216 ppb Au in the ash of bark in timber pine at Cripple Creek, Col., and Doxtader (U.S.G.S. Bull. 1330) reported on the solubility of gold by micro-organisms and organic substances.

Consequenty a field crew collected second year growth needles from ponderosa pine (Pinus ponderosa) along a test line running diagonally across the placer lease.

The test line was blazed, flagged and chained and runs 170° (true) from the location line and Tulameen River intersection point. Samples were collected at 30 metre intervals for a distance of 400m. The proceedure was as follows:

First year growth on the trees was clipped off with prunning shears, and second year growth was collected and placed in a large plastic sample bag. The sample bag was numbered with marks-a-lot, and twist tied. All samples were placed into a large cardboard carton and delivered to Min-En Labs of North Vancouver for analysis for gold in plant ash.

The Min-En Lab procedure was an Aqua Regia digestion and Atomic Adsorption analysis. The samples are calculated on ash weight basis.



Legend

- 1977 Panning (Sample Nº's)
- ——— 1978 Biogeochem Line (Au, p.p.b.)

CAROLIN MINES LTD. (N.P.L.)

Tulameen, B. C.

P.M.L. 1475

Similkameen, M. D.

0 250 500 feet

0 100 200 metres

1" = 500' (1:6000)

B.A.C. NOV./78
B.A.C. NOV./77

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Figure 2
Claim Sketch & Sampling

RESULTS OBTAINED

The gold content of pine needles on the test line across P.M.L. 1475 are presented in an appendix at the end of this report. The gold content ranged from a low of 5 parts per billion (ppb) to a high of 4750 ppb. The arithmetic mean of 12 of the 13 samples (excluding the abnormally high value) is 37.5 ppb.

The sample at 2 south, running 115 ppb may be considered marginally anomalous, but of considerable interest is the 4750 ppb value at 11 south, some distance from the present channel of the river, and well over 100 times the arithmetic mean.

DISCUSSION

There is very little current literature on biogeochemical sampling and analysis for gold, and, in an attempt at testing this technique, an orientation line was run across P.M.L. 1475, and second year growth ponderosa pine needles were geochemically analyzed for their gold content. The results are somewhat scanty but some general ideas may be gleaned from the work.

1. Background gold content of needle ash appears to be less than 50 ppb and the arithmetic mean of 12 of the 13 samples is 37.5 ppb.

2. A value of 115 ppb at station 2 south appears to be moderately anomalous however the sample at 11 south, which contained 4750 ppb gold is certainly anomalous and may indicate a buried channel.

3. The limited biogeochemical test work suggests this technique may be a useful tool in locating burried placer channels.

4. Additional testing is required.

Respectfully submitted

D. R. Cochrane, P. Eng.

November 14, 1978

APPENDIX 1

CERTIFICATE:

I Donald Robert Cochrane, of the Municipality of Delta, British Columbia, do hereby certify that:

1. I am a consulting geological engineer with an office at 4882 Delta Street, Delta B. C.

2. I am a graduate of the University of Toronto (1962) with a degree in Applied Geology (B.A. Sc.) and a graduate of Queen's University (1964) with a M. Sc. Eng. degree in Geology.

3. I have practiced my profession continuously since graduation and while being employed by such companies as Noranda Exploration Co. Ltd., Quebec Cartier Mines, and Meridian Exploration Syndicate. During the last eight years I have consulted on an independent basis.

4. I have no interest, either direct or indirect in P.M.L. 1475.

5. I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia and also a member of the A.P.E. in the provinces of Ontario, Saskatchewan, Alberta and the Yukon Territories.

November 14, 1978

(signed) D. R. Cochrane, P. Eng.
Delta, B. C.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
D. R. COCHRANE

APPENDIX II

ASSESSMENT WORK DETAILS

PROJECT: P.M.L. 1475

LOCATION: Immediately south of the Settlmment of Tulameen, B.C.

SPONSOR: Carolin Mines Ltd.

OPERATOR: Cochrane Consultants Ltd.
4882 Delta St.,
Delta, B. C.

FIELD WORK DATES:

October 20, 21, 1978

OFFICE WORK: D. R. Cochrane, P. Eng. November 14, 1978

Typing November 15, 1978

Drafting November 17, 1978

PERSONNEL & COST BREAKDOWN:

Field man Oct. 20, 21, 1978 @ $80/day .....$	160.00
Helper Oct. 20, 21, 1978 @ $50/day	100.00
Lab costs.....	91.00
Food & accommodation, (2 men, 2 days).....	49.49
4 x 4 rental (2 days @ $20/day)	40.00
Mileage: 622 km @ 15¢/km	93.30
D. R. Cochrane, P. Eng. Report Preparation ½ day @ $225/day	112.50
Typing 4½ hrs @ $9/hr	40.50
Drafting 2½ hrs @ $12/hr	30.00
Reproduction	23.88
Total costs.....$	740.67

APPENDIX III

GEOCHEMICAL DATA SHEET

COMPA Cochrane Consultants

PROJECT N 1014

ATTENTION D. Cochrane

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.

705 WEST 15th ST. NORTH VANCOUVER, B.C. V7M 1T2

PHONE (604) 980 5814

F. . No. 8-532

DATE: Nov.10, 1978.

PINE NEEDLES

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
L1,1S												50
2S												115
3S												45
4S												15
5S												5
6S												30
7S												25
8S												50
9S												10
10S												75
11S												4750
12S												10
L1,13S												20