

Assessment Report

on a

Brief Geological Examination

of

P.M.L. 1475

Situated immediately South

of the settlement of

Tulameen

Similkameen Mining Division

British Columbia

Latitude $49^{\circ}32'N$ Longitude $120^{\circ}45'W$

N.T.S. 92H/10

Field work, October 18, 19, 1977

Report by

D. R. Cochrane, P. Eng.

Delta, B. C.

November 8, 1977



Cochrane Consultants Limited
4882 Delta St., Delta, B.C. V4K 2T8 946-9221
Geotechnical Consulting / Exploration Services

geology
geophysics
geochemistry

TABLE OF CONTENTS

	Page
Introduction.....	1
Location & Access.....	2
Property Information.....	3
General Setting.....	4
History.....	5
Work Done.....	7
Results Obtained.....	8
Tenor	12
Conclusions.....	15

APPENDICES

- I Assessment Work Details
- II Certificate

FIGURES

- | | | |
|---|------------------------------------|-------------|
| 1 | Location Map | Report Body |
| 2 | Claims Sketch and Sample Locations | Report Body |



INTRODUCTION:

The author was recently engaged by Carolin Mines Ltd. of Vancouver, B. C. to examine P.M.L. 1475 situated at Tulameen in Southern British Columbia. The field work was conducted on October 18 and 19, 1977, and assay results received November 7, 1977.

This report describes the general setting, work done and results obtained. Assessment work details and the costs incurred are contained in Appendix I at the back of the report.

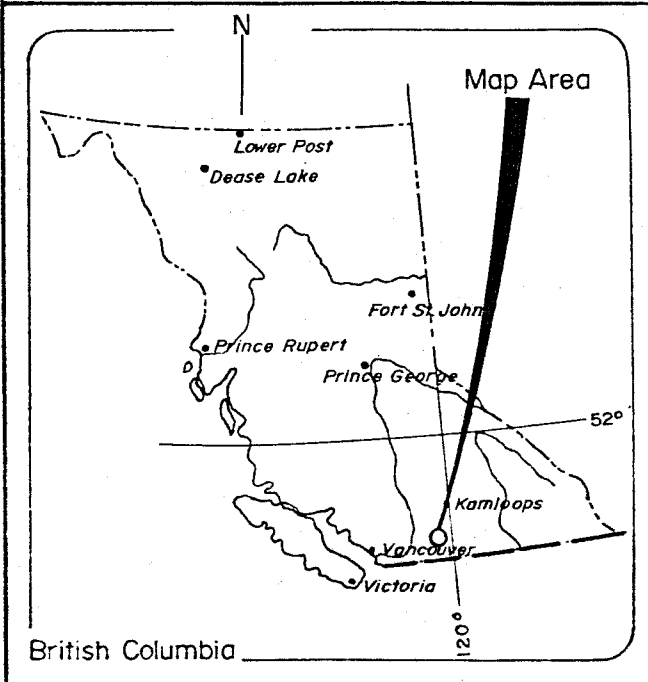
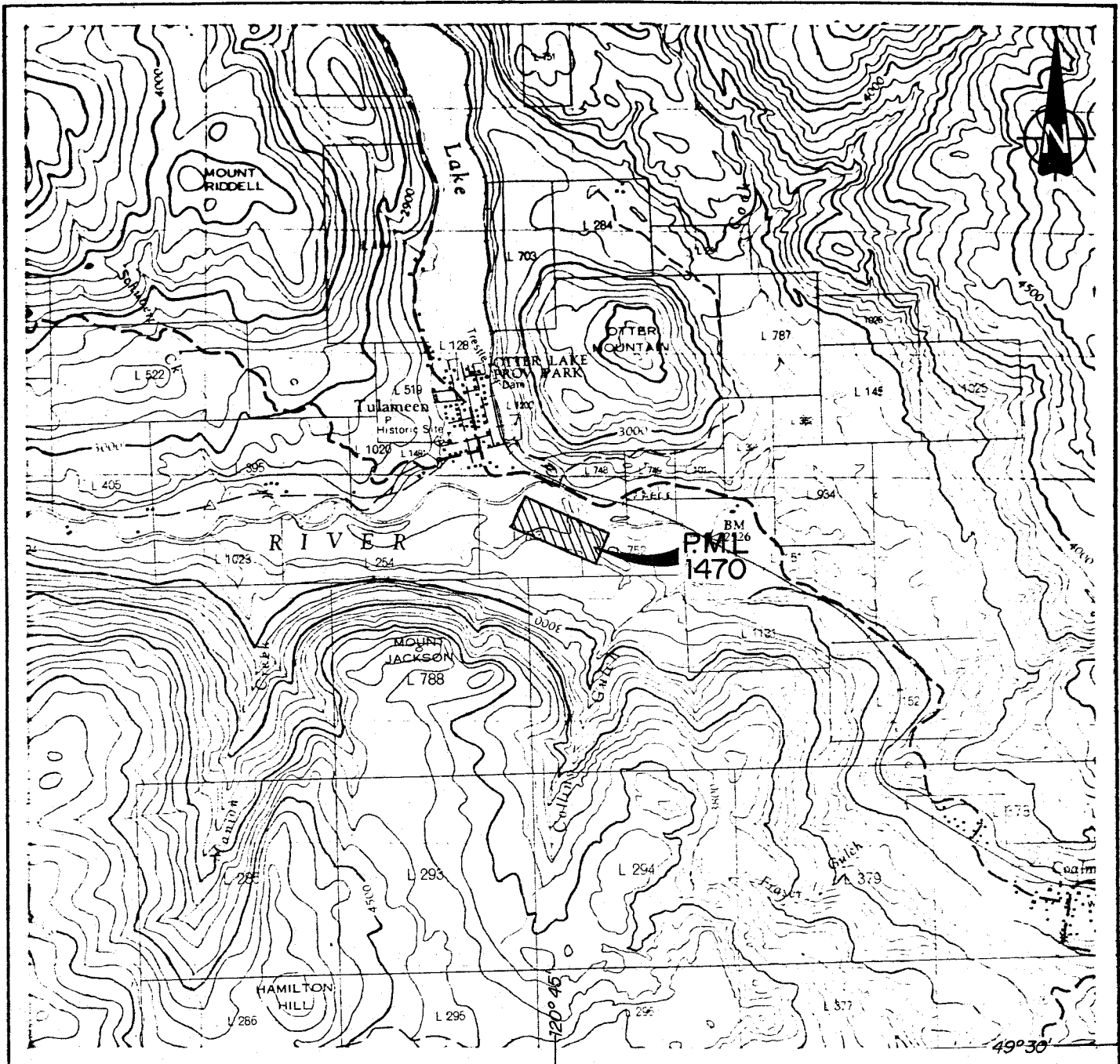


LOCATION AND ACCESS:

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 $49^{\circ}32'N$, longitude $120^{\circ}45'W$ and N.T.S. 92H/10.





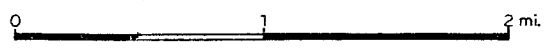
CAROLIN MINES LTD. (N.P.L.)

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



B.A.C., NOV. 77.

PROPERTY INFORMATION:

P.M.L. 1475 is owned by Ernest E. Evernden 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 annual assessment work and a rental fee of \$30.00 is paid each year.



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 forrested with ponderosa and jackpine.

The Tulameen River, which forms the west boundary of the lease, has cut a bank some $1\frac{1}{2}$ 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 "Haydays" 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 \$150.00 per ounce. Platinum has remained relatively steady recently in the \$162.00 to \$172.00 per ounce range.

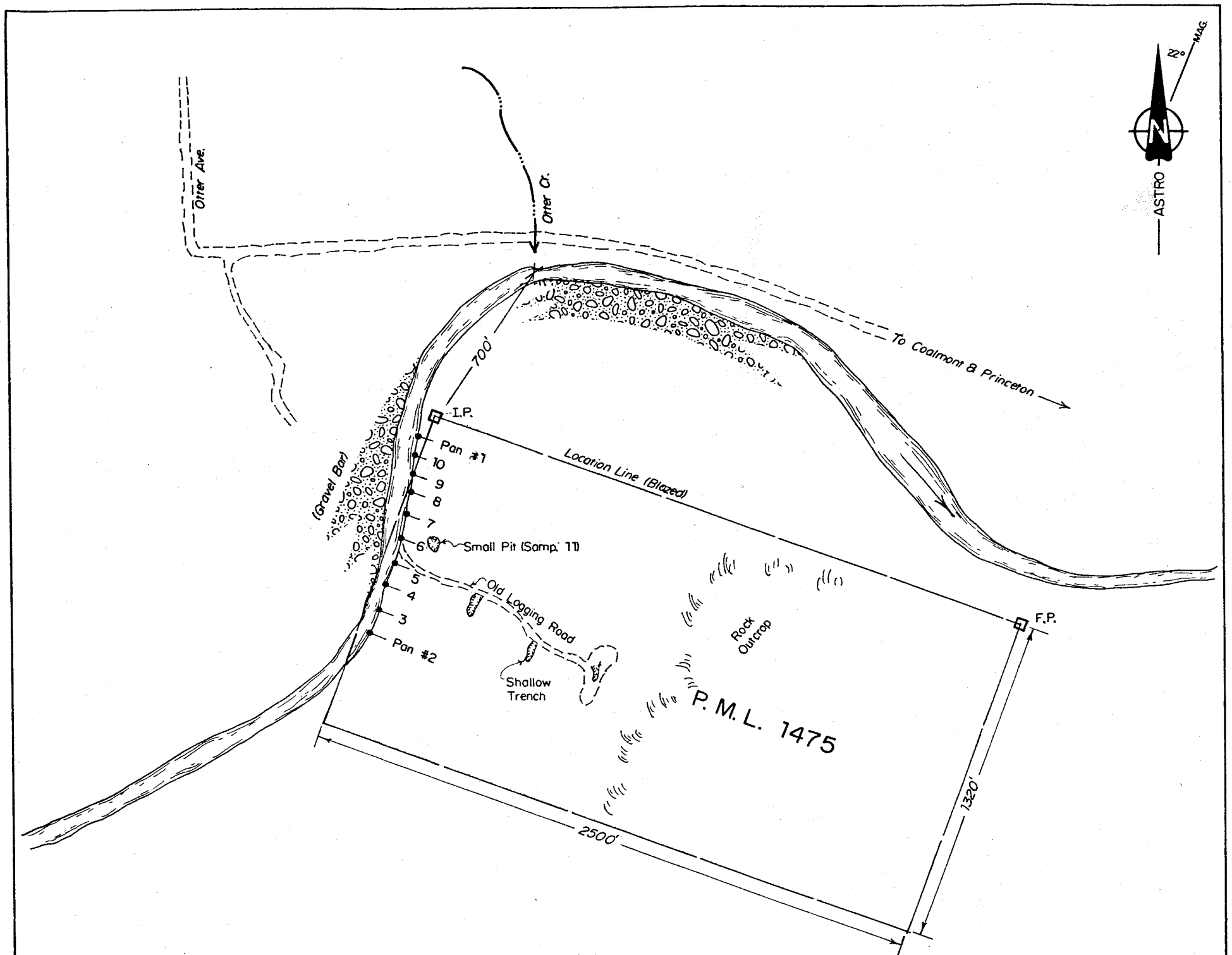
An inspection of the surface of P.M.L. 1475 indicates it is virginal and has not been extensively worked. There are several small test pits on the property.



WORK DONE:

The brief two day inspection of the lease included a quick surface orientation, shallow excavation with a shovel, and hand panning samples after seiving. Most of the samples were collected from the bank exposure along the west side of the lease, and a shovel full was seived through a series of standard screens, the percentage of each size estimated, and in all cases the -10mesh fraction was panned and often the -6, +10 mesh was panned as well. A total of ten (10) pan concentrates were saved by washing the heavy minerals with a wash bottle into a filter paper. A visual inspection of each concentrate was made, and later in the Ladner office the concentrates were examined under a binocular microscope. Finally, a composite sample of the concentrates was made, weighed and assayed for gold and platinum by Bondar Clegg and Co. Ltd. in Vancouver, B. C.





Tulameen, B.C.

P.M.L. 1475

Similkameen, M.D.

Figure 2

Claim Sketch & Sample Locations

0 250 500 feet



0 100 200 metres



1" = 500' (1:6000)



B.A.C. NOV. 77

Cochrane Consultants Limited
4887 Delta St., Delta, B.C. V4K 2T8 948-9221

RESULTS OBTAINED:

A. Field Work.

The following summarizes the results of the hand panning, and the position of samples are marked on the accompanying sketch.

Pan #1 & 2

<u>Mesh Size</u>	<u>Estimated % (volume)</u>	<u>Remarks</u>
+3	75	
-3; +6	5	
-6; +10	5	
-10	15	a few small colors gold.

Pan # 3

+3	40	
-3; +6	5	
-6; +10	5	
-10	50	two small flat colors



Mesh Size Estimated % (volume) Remarks

Pan #4

Not saved; one small color gold, one small color platinum.

Pan #5

+3	45	
-3; +6	5	
-6; +10	5	
-10	45	four (4) very small platinum flakes, no gold.

Pan #6

+3	60	
-3; +10	5	no gold in +10 mesh
-10		no colors.

Pan #7

+3	60	
-3; +10	5	
-10	35	no colors.



<u>Mesh Size</u>	<u>Estimated % (volume)</u>	<u>Remarks</u>
<u>Pan #8</u>		
+3	55	
-3; +10	5	
-10	40	One small color gold
<u>Pan #9</u>		
+3	65	
-3; +10	10	
-10	25	One wheat size color.
<u>Pan #10</u>		
+3	60	
-3; +6	3	
-6; +10	5	
-10	22	No colors
<u>Pan #11</u>		
+3	25	
-3; +6	5	
-6; +10	5	
-10	65	Two (2) small gold colors.



The gravels along the bank are moderately to well sorted and consist predominately of sand and cobbles with boulders up to 0.5 metres in diameter. The pan concentrates consisted predominately of magnetite, with varying amounts of feldspar, chromite, quartz, garnets, and mafic minerals.

The composite sample of concentrates, from ten (10) pans weighed 48.61 grams and assayed:

0.14 troy ounces Au per short ton

< 0.005 troy ounces Pt per short ton

An estimate of the value from this small sample and from a depth of 1 to 1.5 metres along the bank, can therefore be made.



TENOR:

It is with some reservation that a calculation of the value of the gravels is made, however it has value in that it is not only important to know that the gravels on P.M.L. 1475 contain gold but it is of course , of prime importance to know the amount and therefore the value.

However, please consider the following limitations to the work done:

1. The total amount sampled was estimated at 0.7 cubic feet which is an extremely small sample. A mechanized sample approach is much more desirable, however, hand panning is inexpensive and expedient.
2. The sample was obtained from near surface, and presumably the heavy metals are more concentrated at and near bedrock.
3. There are inevitable losses of fine gold and platinum in the hand panning process.



The calculation may be made as follows.

1. Estimated volume of the total of the ten pans:
0.7 cubic feet or $\frac{1}{38.6}$ of a cubic yard.
2. Estimated weight of the total $0.7 \times 100 = 70$ pounds
or $\frac{70}{2.2} = 31.75$ kilograms.
3. Weight of pan concentrate: 48.61 grams.
4. Therefore the concentration ratio is $\frac{48.61}{31.75 \times 10^3} = \frac{1}{653}$
5. The pan concentrate assayed 0.14 troy ounces per short ton, which may be converted to cubic yards as follows:
1 cubic yard estimated at 2700 pounds or 1.35 short tons therefore the assay is
 $0.14 \times 1.35 = 0.189$ troy ounces per cubic yard.
6. The estimated tenor of a cubic yard is then
 $\frac{0.189 \times 38.6}{653} = 0.011$ troy ounces per cubic yard.



7. Based on the average September 1977 gold price the value is $\$150 \times 0.011 = \$ 1.65$ per cubic yard.



CONCLUSIONS:

1. Placer Mining Lease 1475 is located on the Tulameen River immediately south of the settlement of Tulameen.
2. The Tulameen River gravels were fairly extensively worked for gold and platinum in the late 1800's and early 1900's however P.M.L. 1475 has not been extensively previously worked.
3. The Tulameen River cuts the west side of the lease and a bank between 1½ and 2 metres high exposes moderate to well sorted sand, gravel, cobbles and boulders.
4. Standard Tyler screen tests were made on the gravels along the bank, and the average visual estimates are as follows (% by volume).

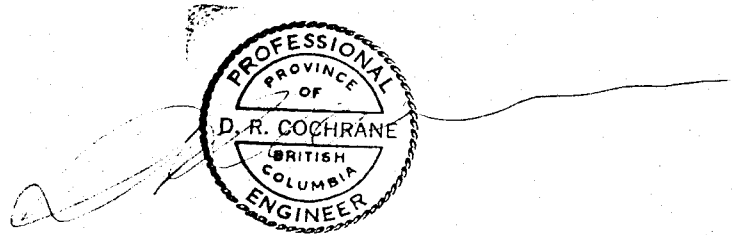
plus 3 mesh (mesh opening 4.34 to 7.65 mm)	54%
<hr/>	
minus 3 mesh plus 10 mesh	9%
<hr/>	
minus 10 mesh (mesh opening 1.117 to 2.16 mm)	37%
<hr/>	



5. Gold was observed in several pans, and the colors were small and all less than 10 mesh. A few extremely small flakes of platinum were observed.
6. A composite sample was made of the pan concentrates and weighed and assayed for gold and platinum. The results should be treated with caution since the sample was small, losses are possible and the sample was from near surface.
7. The sample showed platinum in trace amounts and the gold estimate is 0.011 troy ounces per cubic yard.
8. Using the average September 1977 London final average of \$150.00 (U.S.) per troy ounce, the estimate of value of the sample is \$1.65 per cubic yard.
9. A mechanized sample program, and valuation at a greater depth is required to more accurately determine the tenor of the gravels on P.M.L. 1475



Respectfully submitted



D. R. Cochrane, P. Eng.



APPENDIX I

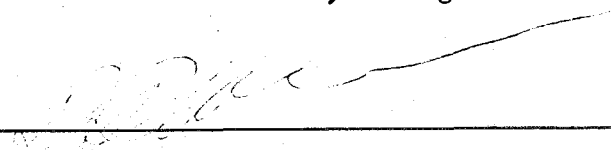
ASSESSMENT WORK DETAILS

PROJECT: Placer Mining Lease 1475
LOCATION: at the settlement of Tulameen
ACCESS: by road
N.T.S. 92H/10
SPONSOR: Carolin Mines Ltd., Vancouver, B. C.
OWNER: Earnest E. Evernden of North Vancouver, B. C.
WORK DONE: brief examination, hand panning, examination
and assay of pan concentrates

COSTS:

(a)	rental of 4 x 4, 2 days @ \$20/day.....	\$ 40.00
	and 418 miles @ 20¢/mile.....	83.60
(b)	D. R. Cochrane, P. Eng.; two (2) field days @ \$200/day.....	400.00
(c)	Field expenses (motel, food).....	31.80
(d)	Assay costs (Bondar Clegg invoice # A7701).....	25.00
(e)	Office work on concentrates and report preparation-D.R. Cochrane 1 day @ \$200/day	200.00
(f)	Drafting, typing, reproduction of report.....	172.85
	Total.....	<u>\$ 953.25</u>

D. R. Cochrane, P. Eng.



APPENDIX II

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 8, 1977,
Delta, B. C.

(signed) D. R. Cochrane, P. Eng.

