

GOLDEN MINING DIVISION

Report on  
Prospecting, Geological Mapping  
and  
E-M Survey

RAD Mineral Claims

NTS Location - 82K/8W

Coordinates  $116^{\circ} 20' W$ ,  $50^{\circ} 20' N$

Operator - Cochrane Oil & Gas Ltd.

Author - R.G. Dales

Date Technical Report Prepared - October 14, 1981

COCHRANE OIL & GAS LTD.

Registered Owner

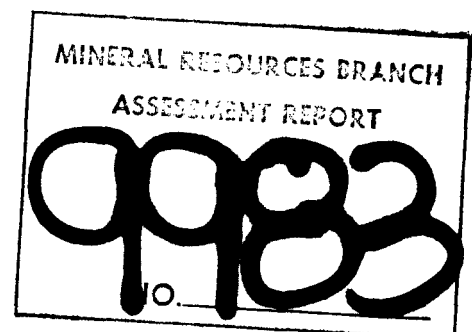


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## INTRODUCTION

This report will describe exploration carried out during the period 1979 - 1981 and correlate the information gathered with previously recorded data.

The RAD Mineral Claims encompassing the Outlook and Outcrop reverted crown granted claims are located 37 km. (23 miles) along the Toby Creek Road west of Invermere, B.C. on the south side of Delphine Creek valley. Coordinates are  $115^{\circ} 20' W$ ,  $50^{\circ} 20' N$  (NTS 82K/8W) in the Golden Mining Division.

In total there are 9 claims (1500' X 1500') covering an area of 465 acres.

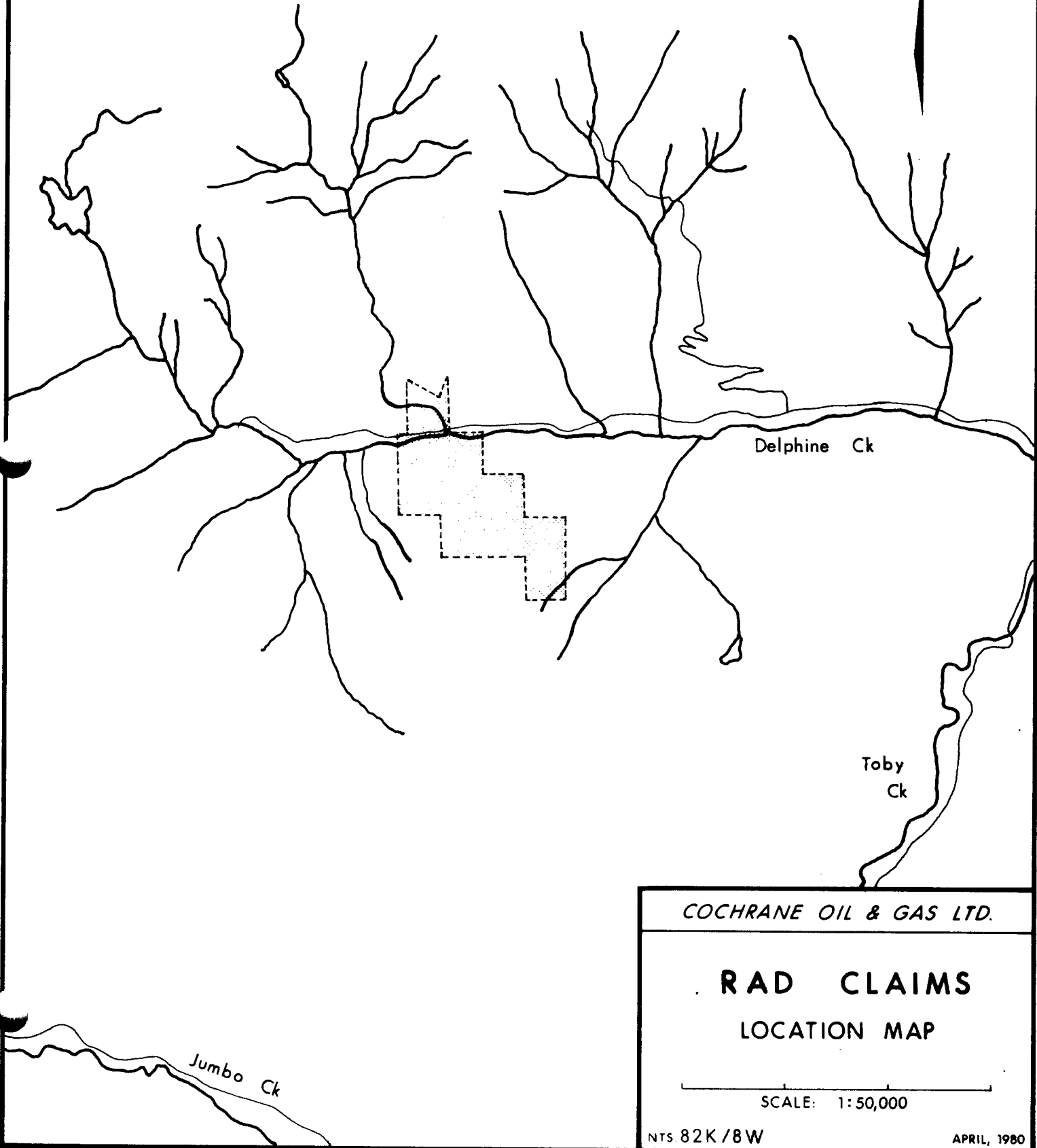
Access to the property is provided by Provincial Highway #92 south from Radium to Invermere, followed by 37 km. along a gravel road and 9.8 km. along a wagon road up Delphine Creek. Trails and caterpillar trails provide access to higher elevations.

Elevation on the claim block ranges from 1350 m. (4500') to 2400 m. (8000') on generally well treed slopes.

The RAD Claims are registered in the name of Cochrane Oil & Gas Ltd. of Calgary, Alberta.

LEGEND

- CLAIM BOUNDARY    - - - - -
- ROAD                - - - - -
- RAILWAY            - + - + -
- RIVER / CREEK     ~ ~ ~ ~ ~



COCHRANE OIL & GAS LTD.

**RAD CLAIMS  
LOCATION MAP**

SCALE: 1:50,000

NTS 82K/8W

APRIL, 1980

EXPLORATION HISTORY

The Original RAD Claims were staked in 1966 by Mr. J. Adamson of Calgary and subsequently sold to Medesto Oils Ltd. of Calgary for \$56,700.00. The purchase price being taken as 500,000 shares of Medesto in lieu of cash. All interest in the claim transferred to Medesto. In 1972, Moria Mining Syndicate was granted the exclusive rights to explore and develop the property and subsequently earned 75% working interest in the RAD Claims, Medesto retaining 25% working interest. The 1972 agreement was expanded in 1975 to cover any new claims staked within an area of mutual interest. Various claims were allowed to lapse and others staked until the claims presently held under agreement between Moria Mining Syndicate and Cochrane Oil & Gas Ltd. (formerly Medesto Exploration Ltd.) are:

RAD 1 (11977)	RAD 3 (11979)	RAD 4 (11980)
RAD 5 (11981)	RAD 16 (12131)	RAD 17 (12132)
RAD 28 (12139)	RAD 40 (12151)	RAD 41 (12152)

The following work has been done on the property from 1967 to present:

geochemical sampling	2200 line meters (290 samples)
geological mapping	
diamond drilling	220 meters
geophysical surveys	1200 line meters
trenching	65 meters
underground development	6 adits (pre-1925)

## GEOLOGY

This part of the Purcell Range is described by Reesor, J.E., 1957 and Walker, J.F., 1926. The RAD Claims lie on the south flank of the Delphine Creek Valley. The area is characteristic of a glaciated region with broad, U-shaped valleys, hanging valleys and remnant glaciers at higher elevations.

The property is underlain by rocks of the Dutch Creek and Mount Nelson Formations, PreCambrian sediments of the Purcell Supergroup. The Dutch Creek Fm. consists of grey, green and black argillite and slate, buff weathering dolomite, and green argillaceous quartzite. The Mount Nelson Fm. consists of buff weathering grey dolomitic limestones, purple-grey and black argillite and slate, and white and green quartzite. Both are Proterozoic in age and have been intruded by Mesozoic granodiorite, exposed approximately 19 km (12 miles) north of the property. It is generally accepted that silver-lead mineralization in the area is associated with granodioritic intrusion and the Mount Nelson Fm.. Columbian Orogeny tectonism has deformed and slightly metamorphosed the Purcell sediments.

A major fault passes to the east of the claims and is part of a fault complex continuing north to the Starbird Ridge Batholith. An anticline is present some 760 m (2500') west of this fault and can be described as an open fold (apical angle greater than  $70^{\circ}$ ) with parallel layering characteristics. The axis of the fold has an approximate orientation of  $350^{\circ} 20-25^{\circ}$ . This appears to be nearly parallel in strike/trend to veins carrying Pb-Zn-Ag mineralization. The poles to these veins and faults have approximate orientation of  $075^{\circ} 15-20^{\circ}$  and may constitute a feeder system.

Superimposed on the anticline are numerous joints, fractures, vein filled fractures and vein faults. The most readily detected structural features are found on cliff faces and run approximately parallel to the axial plane of the anticline and are quartz filled. Some of these fractures are mineralized and several adits are located along them. A definite set of oblique shear joints is present but these are unmineralized and probably a later phenomenon. Two other sets of fractures, one normal to the axial plane of the anticline, and one parallel to bedding, can be vein-filled with quartz-calcite and Pb-Zn-Ag minerals.

In the past various samples of mineralized vein material have been collected and some spectacular values in Pb and Ag have been detected. The main metalliferous minerals present are galena, tetrahedrite, sphalerite, chalcopyrite, azurite, malachite and pyrite. There are also previously unnoticed values in barite on the property. Sulphide mineralization occurs most evidently in the main vein-fault ( $075^{\circ} 18^{\circ}$ , pole to fault). The vein strikes approximately parallel to the axial plane of the anticline but is located in the western limb. The vein pinches and swells from .2 m - 1.5 m (8" to 5') and is a definite shear zone with mylonitized quartz-calcite-siderite gangue.

The limestone units appear to be favourable hosts for vein blooms and the more impervious siltstone/phyllites act as a "roof" to mineralization.

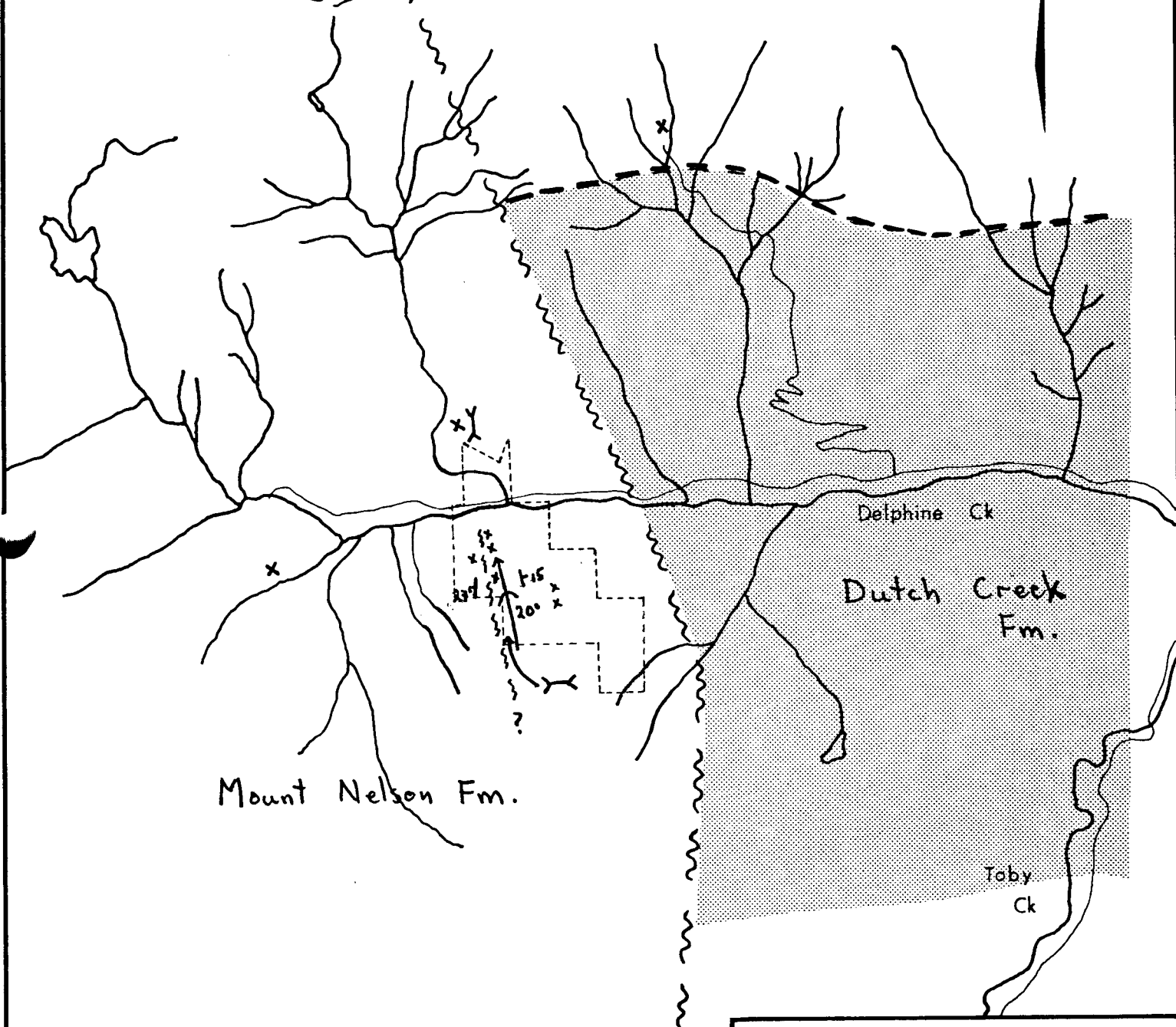
Samples of various hand picked rocks were collected, submitted for assay and the results are shown in Appendix 1.

LEGEND

- CLAIM BOUNDARY ..... (dashed line)
- ROAD \_\_\_\_\_ (solid line)
- RAILWAY \_\_\_\_\_ (line with cross-ticks)
- RIVER / CREEK \_\_\_\_\_ (wavy line)



Mount Nelson Fm.



Delphine Ck

Dutch Creek Fm.

Mount Nelson Fm.

Toby Ck

Jumbo Ck

COCHRANE OIL & GAS LTD.

**RAD CLAIMS**

LOCATION MAP  
and  
Geology

SCALE: 1:50,000

- > Trench
- x Adit
- ↗ Plunging Anticline
- ∨ Bedding
- § Fault

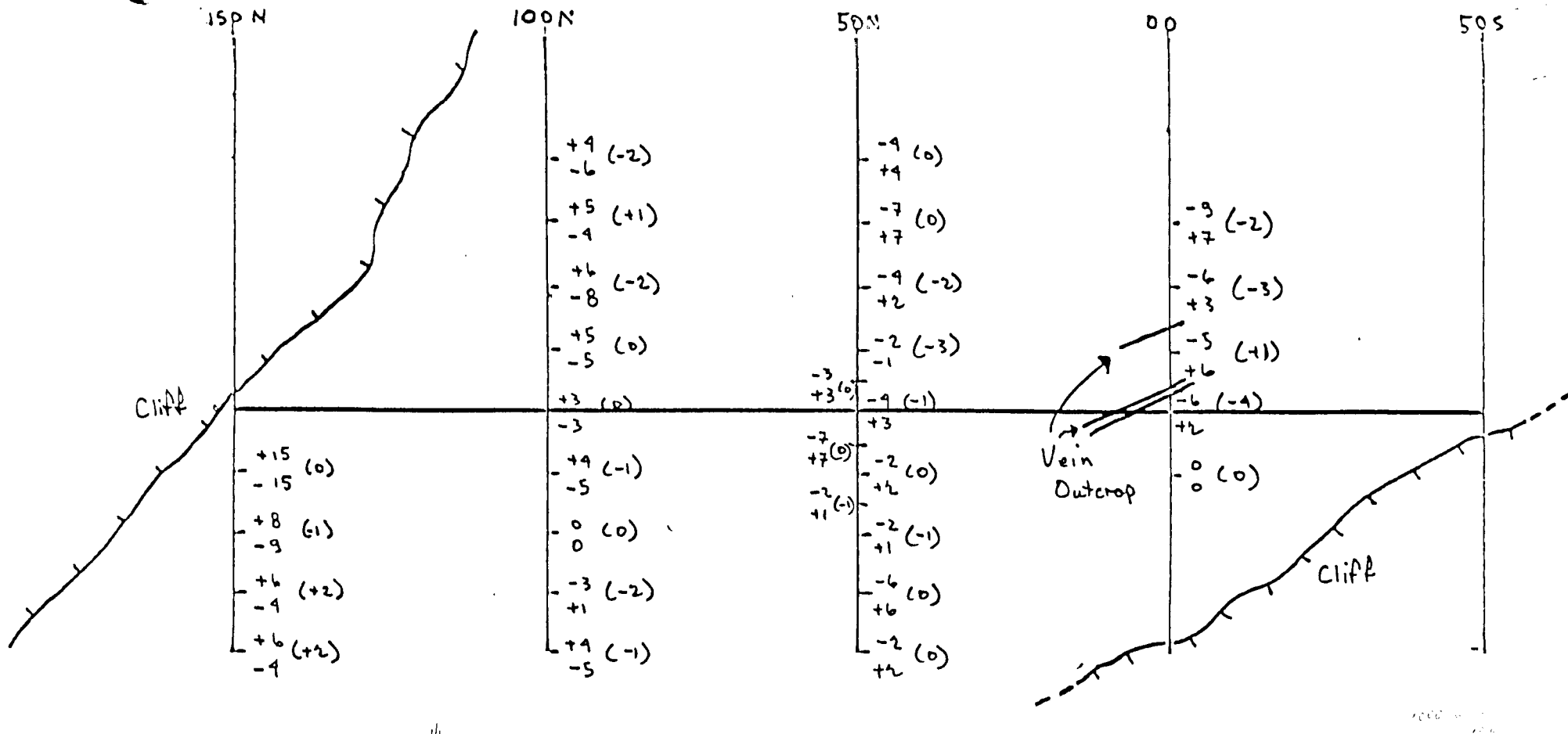


## E-M SURVEY

In September of 1979, a limited ground E-M Survey was conducted over part of the claim group. The equipment used was a Crone Shoot back E-M System and the results are shown on Map 3.

The grid used for the survey was 50 meter line spacing and 50 meter sample spacing. At each station readings were taken at medium and high frequencies (1520 Hz and 5200 Hz) but only the medium frequency results have been reported as there was no significant difference in values.

No obvious vein system was detected.



E-M SURVEY, 1979  
 using  
 Crone E-M Shoot back System

Loud frequency - 540 Hz  
 Medium frequency - 1520 Hz  
 High frequency - 5200 Hz

(all values shown at medium frequency)

Scale: 1:1000

50 m



## SUMMARY

In summary, the RAD Claims lie close to a major fault, are underlain by a favourable host rock which has hosted at least one mine in the immediate vicinity, contain at least one minor structure similiar to that found in the Mineral King Mine and have occurrences of high grade vein type Pb-Ag mineralization on them.

Past geochemical and geophysical surveys, prospecting and trenching have shown encouraging results. Diamond drilling on the property has met with limited success.

To date, all work has been of an exploratory nature and no proven or probable tonnage has been outlined. Vein-type occurrences of silver, lead, copper, and zinc minerals have been found at various locations on the claims.

## RECOMMENDATIONS

It is recommended that the following steps be taken in the 1982 field season:

1. clean out and examine all adits.
2. dig trenches at additional locations to encounter new mineralization.
3. continue mapping and prospecting the area.

These tasks could be accomplished by a small crew in a relatively short time and for a relatively small expenditure of funds.

## REFERENCES

## Minister of Mines Reports

Outlook: Minister of Mines reports  
1903 (pp103); 1921 (pp 165); 1924 (pp 181); 1926 (pp 241);  
1927 (pp265); 1928 (pp 276); 1929 (pp 293); 1930 (pp 237)

Outcrop: Minister of Mines reports  
1902 (pp 135); 1903 (pp 103); 1905 (pp 144); 1908 (pp 89);  
1924 (pp 181); 1926 (pp 241); 1927 (pp 265); 1928 (pp 276);  
1929 (pp 293); 1930 (pp 237)

## Minister of Mines Assessment Reports

# 5542

Reesor, J.E., 1959; GSC Map 12-1957  
Lardeau 82K/east half.

Walker, J.F., 1926; Geology and Mineral Deposits  
of the Windermere Map Area, B.C.  
GSC Mem 148

Various Company Reports.

ASSAY RESULTS



CALGARY 2021 - 41 AVE. N.E. CALGARY, CANADA T2E 6P2  
 TELEPHONE (403) 276-9627 TELEX 038-25541  
 EDMONTON 6112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9  
 TELEPHONE (403) 465-9877 TELEX 037-41596

## CERTIFICATE OF ANALYSIS

• MINERAL    • GAS    • WATER    • OIL    • SOILS    • VEGETATION    • ENVIRONMENTAL ANALYSIS

COCHRANE OIL AND GAS

DATE OCT. 30, 1981

GEOCHEM ANALYSIS

PROJECT NO. 0701-1-5491

LOCATION	AU OZ/TON	AG OZ/TON	PB %	ZN%	U <sub>3</sub> O <sub>8</sub> %
0002	<0.003	<0.01			0.050
0003	<0.003	<0.01	0.979	0.786	
0004	0.016	1.62	0.075	0.054	
0005	0.015	6.91	0.166	0.181	
0006	<0.003	0.05	0.998	0.292	
0007	<0.003	<0.01	<0.01	<0.01	
0008	<0.003	<0.01	5.14	5.090	
0009	<0.003	<0.01	0.510	0.555	
0010	0.014	18.19	10.91	0.197	



Certified by *Shwaleys*



CALGARY 2021 - 41 AVE. N.E. CALGARY, CANADA T2E 6P2  
TELEPHONE (403) 276-9627 TELEX 038-25541  
EDMONTON 6112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9  
TELEPHONE (403) 465-9877 TELEX 037-41596

### CERTIFICATE OF ANALYSIS

- MINERAL
- GAS
- WATER
- OIL
- SOILS
- VEGETATION
- ENVIRONMENTAL ANALYSIS

COCHRANE OIL AND GAS  
ROCK ASSAY

DATE NOVEMBER 5, 1981  
PROJECT NO. 0701-1-5491

LOCATION	Ba %
0003	0.032
0004	0.012
0005	<0.01
0006	<0.01
0007	<0.01
0008	<0.01
0009	<0.01
0010	<0.01



Certified by *[Signature]*



ITEMIZED STATEMENT OF COSTS

## ITEMIZED STATEMENT OF COSTS

## a) Wages and Salaries

<u># of Days</u>	<u>Rates/day</u>	<u>Dates</u>	<u>Total Wages</u>	<u>No. Persons</u>	<u>Type Employed</u>
2	125.00	26/09/81 27/09/81	750.00	3	Prospecting/ Assistants
1	125.00	13/10/81	125.00	1	Assistant
1	275.00	13/10/81	275.00	1	Geologist
TOTAL			<u>1,150.00</u>		

## b) Food and Accomodation

The Company allowed \$25.00 per man per day to cover the support costs in the field. Specific dates are mentioned in (a).

Total Man Days = 8 man days X \$25.00/day = \$200.00

TOTAL = \$200.00

## c) Transportation

The Company paid for 2 days rental on a suburban 4 X 4 at the following rate:

\$50.00/day plus \$0.60/mile (392 miles)

ie. \$100.00 rental plus \$235.00 mileage = \$335.00

TOTAL \$335.00

## d) Surveys

The surveys mentioned in the report were not charged for as they were done prior to 1981.

## e) Analyses

Several rock samples were collected and assayed at Chemex Labs (Alberta) Ltd.

8 samples @ \$32.50/sample = \$260.00

TOTAL = \$260.00

## f) Report and Supervision

A surcharge of \$200.00 has been added to cover report preparation and office overhead.

TOTAL = \$200.00

Costs summarized as follows:

Wages & Salaries	\$ 1,150.00
Food & Accomodation	200.00
Transportation	335.00
Analyses	260.00
Report & Supervision	200.00
	<hr/>
TOTAL COSTS	\$ 2,145.00
	<hr/> <hr/>

Geological mapping, prospecting, trail clearing

\$ 2,145.00

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STATEMENT OF QUALIFICATIONS

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EDUCATION

University of Alberta  
Edmonton, Alberta

B.A., Specialization in  
Economics & Geology (1974)

University of Toronto  
Toronto, Ontario

M. Sc. in Geology, Thesis  
(1978)

WORK EXPERIENCE

1968 - 1974

Medesto Exploration Ltd.  
Western Warner Oils Ltd.  
215 A - 10th Street N.W.  
Calgary, Alberta

Dr. E.E. Pelzer: Supervisor

1975

CANMET (Dept. of Energy Mines  
& Resources)  
3303 - 33rd Street N.W.  
Calgary, Alberta

Dr. Hans Bielenstein: Supervisor

1976 - 1978

Chevron Canada, Minerals Staff  
901 - 355 Burrard Street  
Vancouver, B.C.

Mr. Earl Dodson - Supervisors  
Mr. Helmut Wober

1978 - present

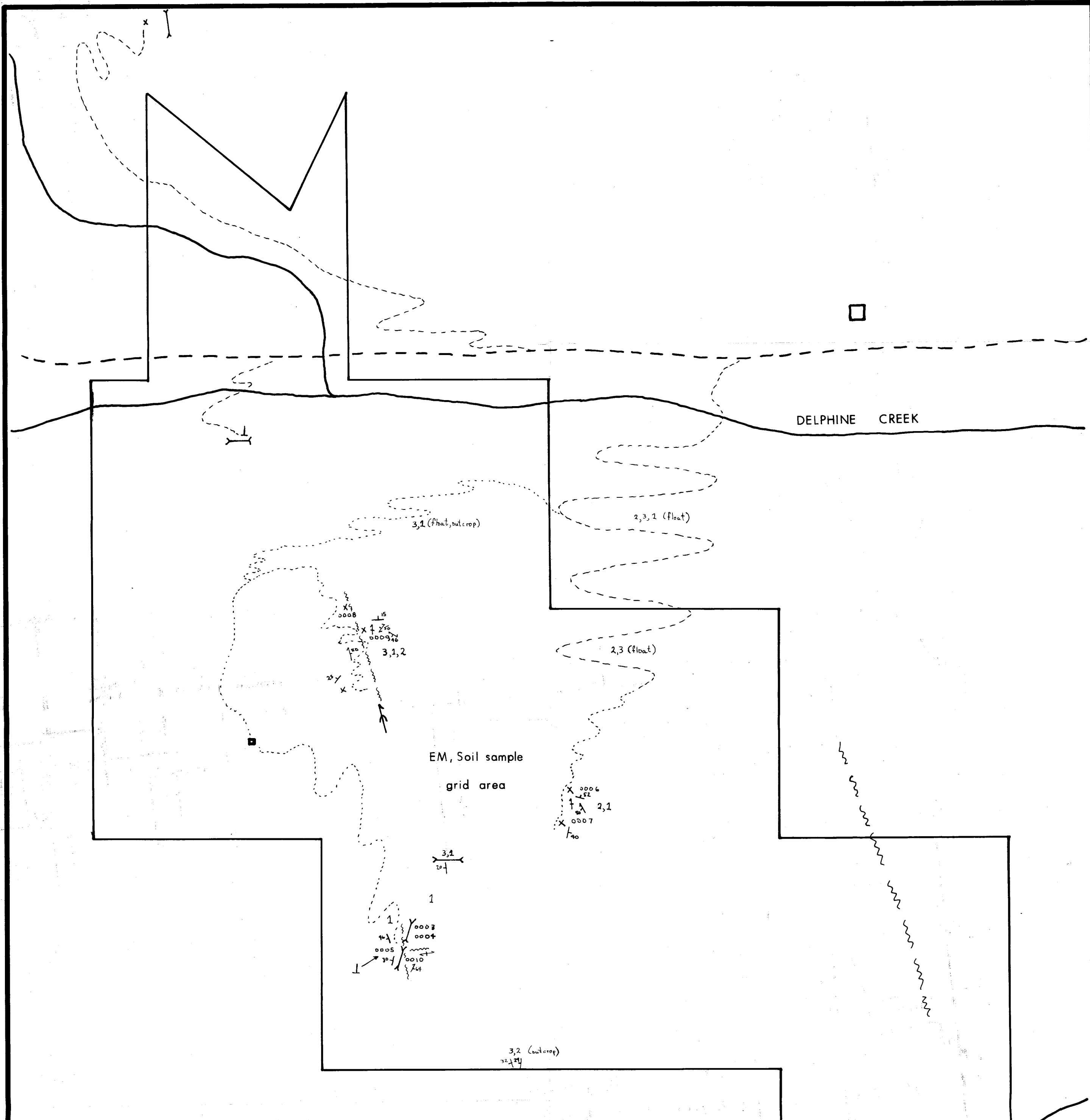
Cochrane Resources Ltd.  
2340 - 1st Avenue N.W.  
Calgary, Alberta

Mr. George Isfan: Supervisor

I am a registered Professional Geologist (#27978) in good standing and have practiced my profession continuously since 1978.

Per: \_\_\_\_\_

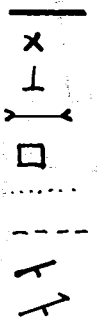




**Cochrane Oil & Gas Ltd.**

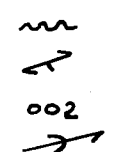
**RAD Mineral Claims**

- Claim lines
- Adit
- DDH
- Trench
- Cabin
- Trail
- Cat road
- Bedding
- Foliation



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**9983**  
NO.

- Fault
- Fracture
- Sample location
- Fold axis
- 1-rusty phyllite w/minor qtzite
- 2-green qtzite w/limey qtzite
- 3-buff weathering grey lst.



Scale 1:5000  
1000 meters

