

CANADIAN OCCIDENTAL PETROLEUM LTD.

MINERALS DIVISION

GEOLOGY, GEOCHEMISTRY AND GEOPHYSICS

OF THE

GOAT 37-86 CLAIMS

CLAIM SHEET NO. 105-B-2E

Lat.: 60°10'N
Long.: 130°38'W

WATSON LAKE MINING DISTRICT

YUKON TERRITORY

by:

M.J. Crandall, B.Sc.

Work Completed August 3, 1981

090977

This report has been prepared by
the Geological Division
under Section 10 of the Budget
Act, 1911, and is a part of the
Annual Report of the Department
of the Interior for the year
1911. The total amount of
of \$ 19,200 -

A. Walker

for Regional Geology and
Geology for the Territory
of Yukon Territory.

Project Watsu - 1981
Statement of Expenditures
GOAT 37-84 Mineral Claims
Record Nos. YA55443-490



| | |
|---|-----------------------|
| (1) Salaries and benefits - 44 m.d. @ \$262 | \$11,528 ¹ |
| (2) Helicopter - 15.7 hrs. @ \$420 | 6,594 ² |
| (3) Geochemical analyses - 946 determination @ \$1.12 | 1,061 ³ |
| | <hr/> |
| SUBTOTAL | \$19,183 |
| (4) Administration @ 10% | 1,918 |
| | <hr/> |
| TOTAL | <u>\$21,101</u> |

Notes:

¹A total of 124 mandays spent on the GOAT claim group (37-86). Of these 44 mandays were spent on the GOAT 37-84 carrying out geology, geochemical surveys at a cost of \$262 per manday. This covers field work only conducted after the claim anniversary date of July 4, 1981.

²CanWest Aviation, Calgary completed flights into, around and out of the property.

³Geochemical analyses were completed by Chemex Labs., Vancouver. Total costs for GOAT 37-86 was \$2,814.40. Pro-rated costs for GOAT 37-84 are \$1,061.00

090977

TABLE OF CONTENTS

PAGE

| | | |
|-------|---|----|
| 1. | Summary Recommendations | 1 |
| 1.1 | Geology | 1 |
| 1.2 | Mineralized Showings | 2 |
| 1.3 | Recommendations | 4 |
| 2. | Introduction | 6 |
| 2.1 | Location and Access | 7 |
| 2.2 | Physiography and Vegetation | 7 |
| 2.3 | Previous Work | 10 |
| 2.4 | Claim Status | 11 |
| 3. | Work Completed | 12 |
| 3.1 | Grids | 12 |
| 3.2 | Geochemistry | 12 |
| 3.3 | Geophysics | 13 |
| 3.4 | Geological Mapping and Prospecting | 14 |
| 3.5 | Summary of Work Completed 1981 | 15 |
| 3.6 | Personnel | 19 |
| 4. | General Geology | 21 |
| 4.1 | Table of Formations | 22 |
| 4.2 | Description of Rock Units | 23 |
| 4.2.1 | Clastic Metasedimentary Rocks - Unit 1 | 23 |
| 4.2.2 | Calc-Silicate Hornfels - Unit 2 | 24 |
| 4.2.3 | Recrystallized Limestone - Unit 3 | 25 |
| 4.2.4 | Skarn - Unit 4 | 26 |
| 4.2.5 | Granitic Intrusive Rocks - Unit 5, and Unit 6 | 30 |
| 4.2.6 | Mafic Dykes - Unit 7 | 32 |
| 4.3 | Structure | 33 |
| 4.4 | Metamorphism | 34 |
| 4.5 | Alteration | 35 |
| 5. | Economic Geology | 36 |
| 5.1 | Skarn Mineralization | 36 |
| 5.2 | Vein-and/or Fracture-Related Mineralization | 37 |
| 6. | Geochemistry | 39 |
| 6.1 | Statistical Treatment of Results | 39 |
| 6.2 | Rock Geochemistry | 44 |
| 6.2.1 | Intrusive Rocks | 44 |
| 6.2.2 | Hybridized Intrusive Rocks | 46 |
| 6.2.3 | Schist and Quartzite | 46 |
| 6.2.4 | Calc-silicate Hornfels | 46 |
| 6.2.5 | Skarn | 49 |
| 6.2.6 | Fracture and Vein Mineralization | 50 |
| 6.3 | Soil Geochemistry | 53 |
| 6.3.1 | Soil Anomalies | 54 |
| 6.3.2 | Soil Pit Geochemistry | 57 |
| 7. | Geophysics | 61 |
| 7.1 | Summary of Geophysical Interpretation - by F.L. Jagodits | 61 |
| 8. | Conclusions | 63 |
| 9. | References | 66 |

TABLE OF CONTENTS

PAGE

APPENDICES

| | | |
|------------|---|-----|
| Appendix I | Sampling and Laboratory Procedures | 68 |
| II | Geochemical Certificates of Analysis | 72 |
| III | Frequency Distribution Tables, Histograms, and Cumulative Frequency Graphs for Soil and Rock Geochemistry | 100 |
| IV | Soil Pit Profiles and Geochemistry | 115 |
| V | Rock Descriptions and Geochemistry | 125 |

LIST OF TABLES

| | | |
|---------|--|-----|
| Table 1 | Summary of Mean, Probably Anomalous, Anomalous Values and Range for Soils | 40 |
| 2 | Summary of Rock Geochemistry Results | 41 |
| 3a | Comparison of Values for Split Samples - Soils | 42 |
| 3b | Reproducibility of Control Samples - Soils | 43 |
| 4 | Geochemistry of Intrusive Rocks | 44 |
| 4a | Geochemistry of Hybridized Intrusive Rocks | 45 |
| 5 | Geochemistry of Schist and Quartzite Rocks | 46 |
| 6 | Geochemistry of Calc-Silicate Hornfels | 46 |
| 7 | Geochemistry of Skarn Rocks | 48 |
| 8 | Geochemistry of Fracture-and Vein-Related Material | 50 |
| 9 | Frequency Distribution of Lead in Soils | 101 |
| 10 | Frequency Distribution of Zinc in Soils | 104 |
| 11 | Frequency Distribution of Silver in Soils | 107 |
| 12 | Frequency Distribution - Skarns | 110 |

LIST OF FIGURES

| | | |
|----------|---|-----|
| Figure 1 | Location of Watsu Claim Group | 5 |
| 2 | Location of GOAT 37-86 Claims | 8 |
| 3 | GOAT 37-86 Mineral Claims | 9 |
| 4 | Schematic Drawing of Sulphide-Skarn Zone | 28 |
| 5 | Frequency Distribution for Pb in Soils | 102 |
| 6 | Cumulative Frequency Graph for Pb in Soils..... | 103 |
| 7 | Frequency Distribution for Zn in Soils..... | 105 |
| 8 | Cumulative Frequency Graph for Zn in Soils | 106 |
| 9 | Frequency Distribution for Ag in Soils | 108 |
| 10 | Cumulative Frequency Graph for Ag in Soils..... | 109 |
| 11 | Frequency Distribution Diagrams - Skarns | 113 |

TABLE OF CONTENTS

LIST OF PLANS

| | |
|---------|--|
| Plan 0 | Base Plan |
| Plan 1 | Geology and Rock Geochemistry |
| Plan 2 | Soil Geochemistry - Pb contoured Values |
| Plan 3 | Soil Geochemistry - Zn contoured Values |
| Plan 4 | Soil Geochemistry - Ag contoured Values |
| Plan 5 | Magnetic Survey - Contours |
| Plan 6 | VLF-EM survey - Profiles |
| Plan 7 | VLF-EM survey - Filtered |
| Plan 8 | Magnetic and VLF-EM survey Interpretation |
| Plan 9a | Geologic, Geochemical, and Geophysical Crossection, A'-A' |
| Plan 9b | Geologic, Geochemical and Geophysical Crossection, B'-B' |
| Plan 9c | Geologic, Geochemical and Geophysical Crossection, C'-C' |
| Plan 10 | Compilation |

1. SUMMARY AND RECOMMENDATIONS

The GOAT 37-86 claims are located at approximately 60°10'N Latitude, 130°38'W Longitude, within N.T.S. map-area 105/B/2, Watson Lake Mining District, Yukon Territory. The claim group comprises of 50 claims, covering an area of 2600 acres or 10.5 km².

The GOAT 37-84 claims were staked on June 19, 1980 to cover the probable source of scheelitiferous skarn float found on the property adjacent to the GOAT 1-36 claims of Canadian Occidental Petroleum Ltd. Detailed geologic mapping, soil and stream sediment surveys were carried out during the summer of 1980 and assessment requirements fulfilled maintain the property in good standing until July 4, 1984. The GOAT 85-86 claims, staked on August 31, 1980, cover a galena-sphalerite showing north of GOAT 37-84 claims; these claims expire September 3, 1984.

In 1980, minor scheelite-and chalcopyrite-bearing skarn and Pb-Zn-Ag vein mineralization were located in outcrop and float over wide areas of the property (Kuehnbaum, 1980). Although the mineralization exposed was recognized as subeconomic, it was decided to carry out geophysical, and further mapping and geochemical prospecting in 1981 to investigate the areas of potential skarn and vein environments in the covered valleys.

1.1 Geology

The GOAT 37-86 claims are partly underlain by a sequence of regionally metamorphosed clastic and carbonate

sedimentary rocks of the Hadrynian (Proterozoic) Grit Unit or Lower Cambrian Atan Group. Isoclinal folds with subvertical axial planes developed at the time of regional metamorphism; schistosity in the quartzitic rocks and recrystallization of the carbonate rocks developed at the same time. The folded sequence was subsequently intruded by at least three phases of granitoid intrusive rocks of the Cassiar Batholith during Jurassic and/or Cretaceous times: diorite to granodiorite, biotite quartz monzonite, and biotite-muscovite quartz monzonite. The metasedimentary rocks occur as large xenoliths, or septa within the intrusive mass. All rocks were subsequently fractured and sheared.

1.2 Mineralized Showings

Local, minor mineralized skarn development has occurred at carbonate/intrusive contacts. Pyrrhotite and/or pyrite commonly occur with minor chalcopyrite and scheelite. The skarns are locally enriched in Mo (up to 0.046%), Cu (up to 0.89%), Zn (up to 1.54%), Ag (up to 0.8 oz/ton, and W (up to 0.96% WO_3). Values of Pb and Sn are generally very low (maxima 790 ppm and 43 ppm, respectively). Most of the skarn zones were mapped and sampled in the 1980 season. Follow-up work in 1981 over these zones consisted mainly of detailed assessment of each area for size and grade of mineralization. No significant changes in geochemistry were found, and all showings are limited in dimension. The outline of the meta-sedimentary rocks suggests that the carbonate units have thickened at noses of folds, and potential for large-scale skarnification and mineralization exists at depth. A buried,

wide magnetic anomaly and subparallel VLF-EM conductor coincide on Grid 4; this area may be underlain by a deep-seated pyrrhotite skarn.

Vein-and fracture-related mineralization possibly have the most economic potential. Enriched contents of Pb, Zn and Ag have been found in pyritic quartz veins and in fracture fillings within quartz monzonites and metasedimentary rocks in several localities. Samples from one galena-sphalerite mineralized shear/fracture zone in quartz monzonite (Grid 5, GOAT 85-86) taken in 1980 returned values up to 1.31% Pb, 5.64% Zn and 1.94 oz/ton Ag. Follow-up sampling of this area in 1981 indicated a shear zone over 3 m wide and returned values of up to 2700 ppm Pb, 7.5 ppm Ag and 5.4% Zn. Both skarn and fracture-related mineralization are suspected at this occurrence. Channeling and/or trenching in this area might determine the source of the mineralization.

On Grid 3, another fracture system with sphalerite associated with Fe-carbonates, intense Mn alteration, pyrite, galena and minor barite at a quartz-monzonite/carbonate contact zone returned values up to 0.53% Pb, 8.22% Zn and 6.10 oz/ton Ag over a 5m x 4 m area.

Detailed soil sampling outlined two Pb+Zn+Ag anomalies located at the base of talus slopes just below mineralized fracture/shear zones; in the southern part of Grid 3 and the southwestern part of Grid 4. Values up to 390 ppm Pb, 1900 ppm Zn and 8.5 ppm Ag occur in soils.

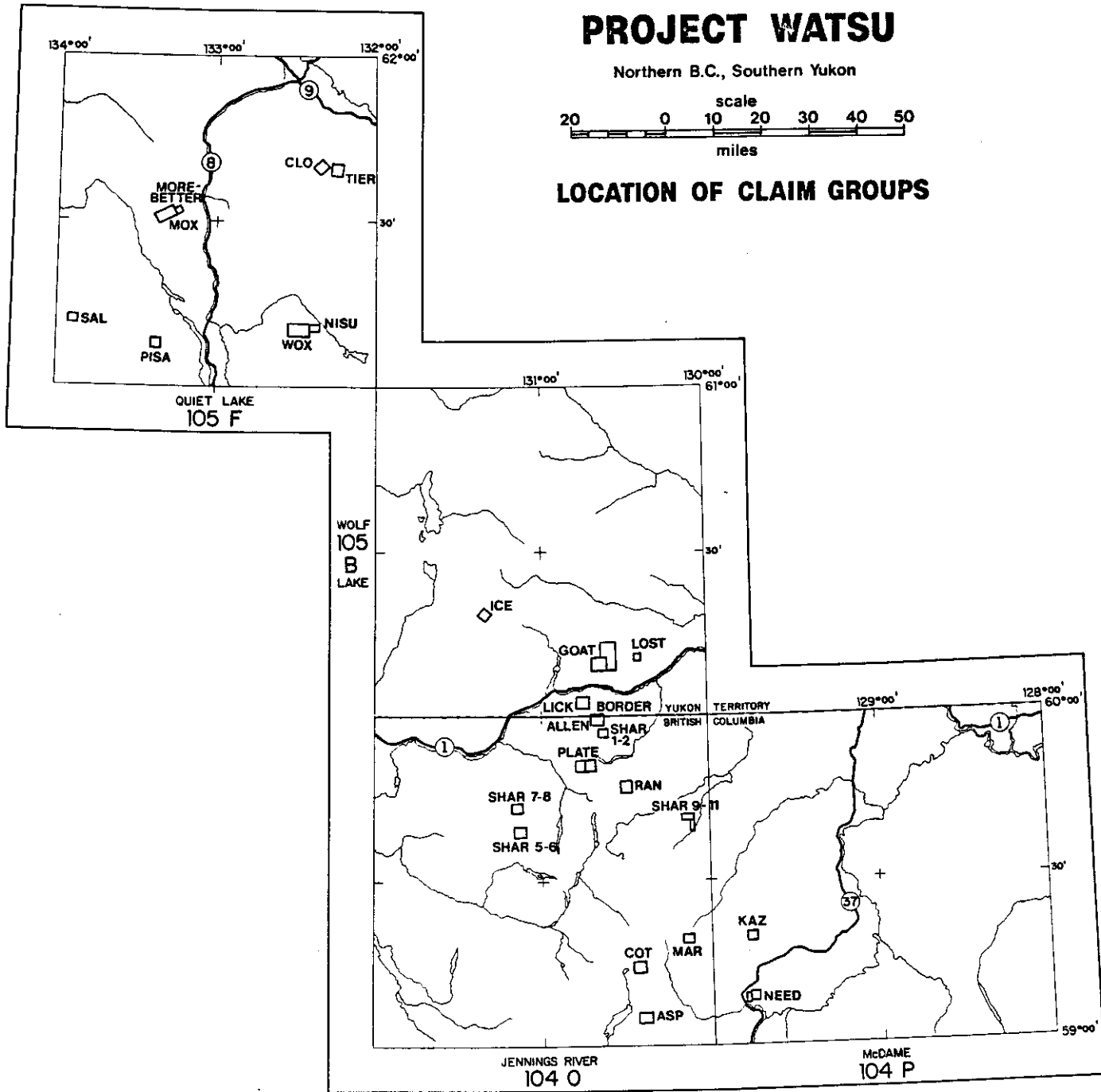
VLF-EM conductive and magnetic zones generally trend north-south and probably delineate intrusive contacts and pyrrhotitic quartzite layers. Numerous shear zones mapped in outcrop are also suggested by the VLF-EM conductors located in unexposed and flat lying areas. Strong coincident VLF-EM and magnetic anomalies on Grid 4 indicate a possible target for diamond drilling.

1.3 Recommendations

The surface mineralization found on the GOAT 37-86 claim group is of small dimension and sub-economic grade both for skarn-tungsten and Pb+Zn+Ag vein and fracture-related mineralization. Only one target which is buried exists for future work and consists of coincident VLF-EM conductor and magnetic zones located in the north-central part of the property on Grid 4. This is possibly pyrrhotitic skarn and, if so, could be of considerable tonnage.

Future work should include a Max-Min or similar geophysical survey to further delineate the anomalies on Grid 4 reflected from the VLF-EM and Mag surveys. This may determine if future diamond drilling is warranted in locating possible sulphide-rich skarn at depth.

Figure 1



2. INTRODUCTION

The GOAT 37-84 Claims were staked as part of Project WATSU (Figure 1), to cover an area where scheelite-bearing skarn float was found, adjacent to the GOAT 1-36 Claims of Canadian Occidental Petroleum Ltd. (CanadianOxy). A detailed mapping, prospecting, stream sediment and soil sampling program was carried out over the claim group during the 1980 field season (Kuehnbaum, 1980). The field work found high Pb, Zn and Ag contents in vein and fracture systems containing sphalerite. Mineralized skarns are locally enriched in molybdenum, copper, zinc, silver and tungsten. Also, low density soil sampling in 1980 outlined areas of known Pb±Zn±Ag mineralization as well as areas of potential mineralization. The GOAT 85-86 Claims were staked at the end of 1980 season to cover a galena-sphalerite showing adjacent to the northern property boundary.

During the summer of 1981, the known mineralized zones and unsampled areas were investigated. Five picketed grids were established for control over detailed soil sampling and geophysical (VLF-EM and magnetic) surveys. The results of the 1981 field work are presented in this report.

2.1 Location and Access

The GOAT 37-86 Claims are located at approximately 60°10'N Latitude, 130°38'W Longitude, within N.T.S. map-area 105/B/2E, Watson Lake Mining District (Figure 2). The claim group comprises 50 claims, covering an area of roughly 2600 acres or 10.5 km².

The settlement of Rancheria is located approximately 8 km (5 miles) south of the claims at Mile 710 on the Alaska Highway, and contains a motel, restaurant and service station.

Access to the claims is by helicopter from Rancheria or the Pine Lake airstrip, located 16.7 km (10 miles) south-southwest of the claims and 1.6 km (1 mile) north of Mile 722.5 on the Alaska Highway.

A dirt road provides access from the Alaska Highway (4 km west of Rancheria) to a Northwest Tel repeater tower which is located 5 km southwest of the south edge of the property.

The GOAT 37-86 Claims are adjacent to the east part of CanadianOxy's GOAT 1-36 Claims.

2.2 Physiography and Vegetation

Relief over the claims is 2750 feet (840 m). The main topographic feature is a roughly north-south ridge up the central part of the property (elevations as high as

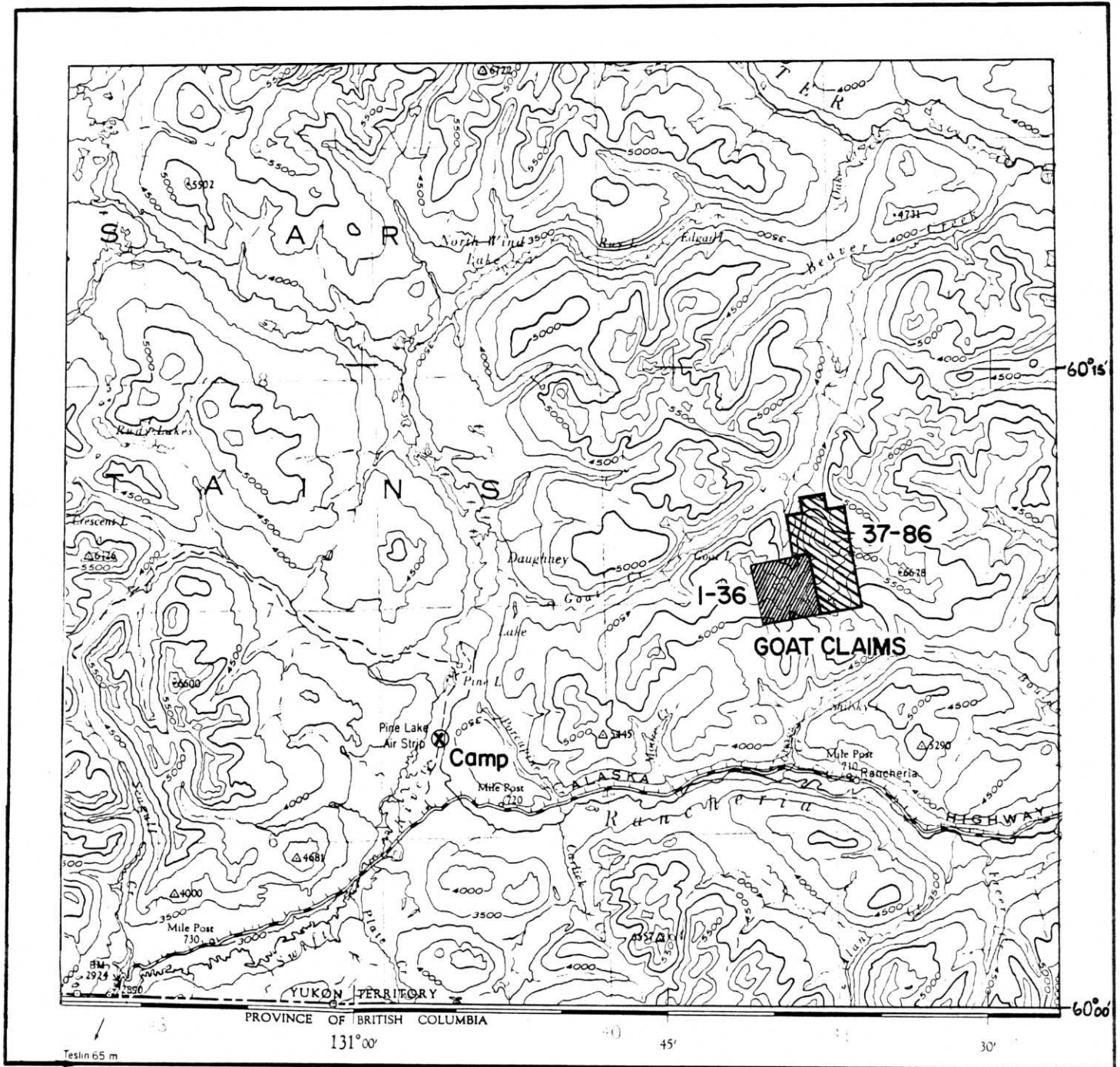


FIGURE 2

LOCATION AND ACCESS OF THE GOAT CLAIMS

Yukon Territory

NTS 105B/2E

Scale: 1:250,000

PROJECT WATSU GOAT CLAIMS

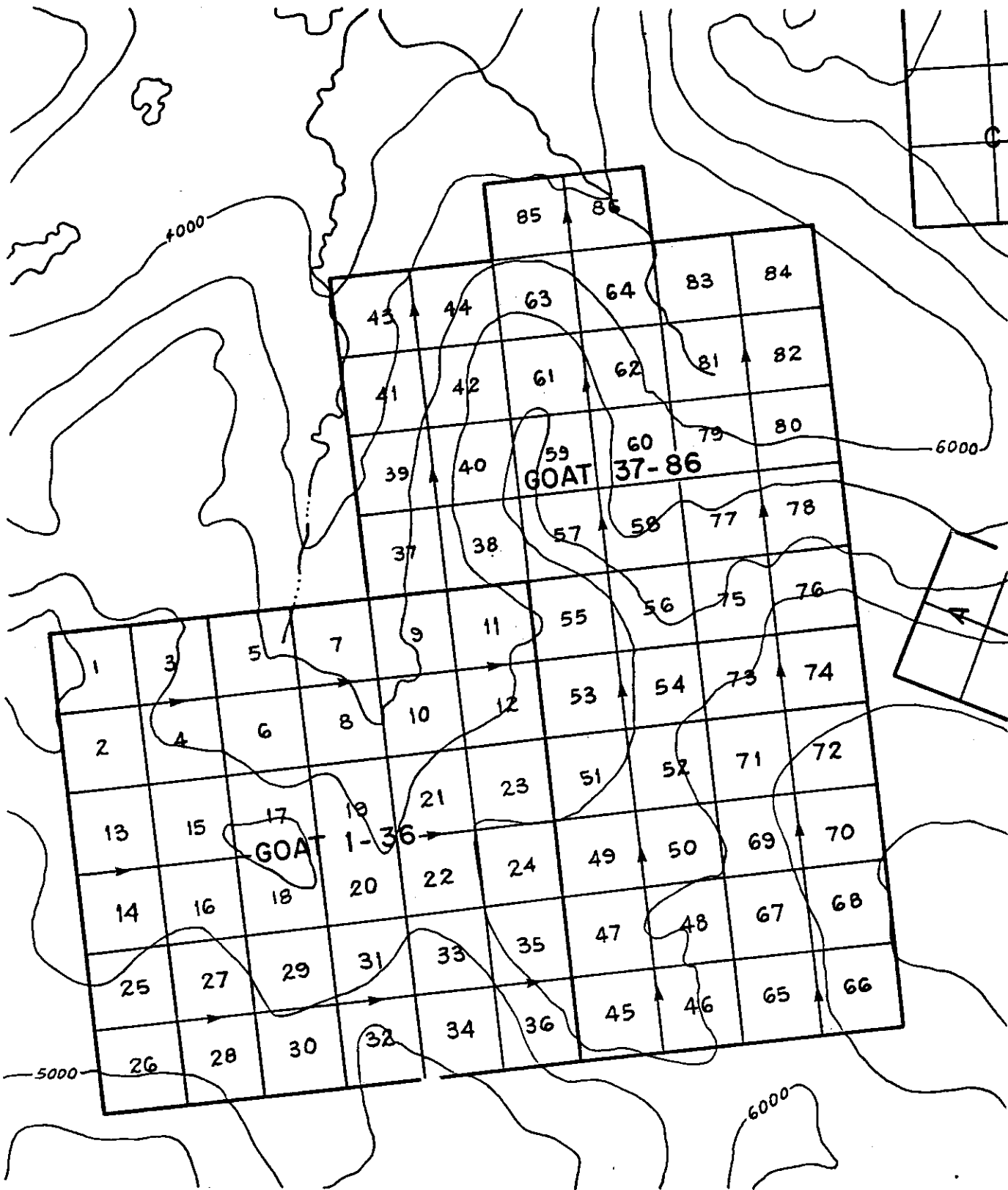
FIG. 3

WATSON LAKE MINING DISTRICT
YUKON
N.T.S. 105-B



INDEX MAP

SCALE: 1/2 MILE TO 1 INCH



6645 feet, from which spurs and subsidiary ridges emanate. Slopes are generally steep, locally inaccessible on the main ridge in the central and southern part of the group, to moderate to gentle in the north part of the claims and in the cirque valleys. The elevation falls off to as low as 3900 feet in the extreme northwest part of the claims.

Vegetation over the claims consists principally of alpine grasses and lichen down to elevations of approximately 5500 feet below which buck brush appears. At less than 4500 feet, and only in the northwest and northeast areas, balsam forests fill the valleys.

2.3 Previous Work

The Wolf Lake map-area (105B) was geological mapped between 1951 and 1959 by the Geological Survey of Canada (Poole et al., 1960) at a scale of 1:250,000.

In 1978, the Geological Survey of Canada conducted a stream sediment and water sampling program of the Wolf Lake area as part of the Uranium Reconnaissance Project. Data was released on June 15, 1979, as Open File 563. The GOAT 1-36 Claims were staked by CanadianOxy on June 25, 1979, to cover the headwaters of a stream sediment uranium anomaly (174 ppm U). On July 11, 1979, CanadianOxy carried out a reconnaissance geology and geochemistry survey of these claims, the results of which have been presented by Sacks (1979). In June 1980, CanadianOxy carried out additional surveys on the GOAT 1-36 claims (see Hartley, 1980), after which it was

decided to add on to the claim group because of skarn potential east of the property (GOAT 37-86).

In the summer of 1980, Canadian Occidental personnel complete 7.0 man-days of heavy mineral, stream sediment, soil geochemistry and radiometric surveys. Detailed geologic mapping and rock geochemistry was carried out at a scale of 1:5,000 over most of the central ridge and in stream valleys for a total of 15.5 man-days of work. Evidence of previous work was found in the form of old, unmarked claim posts situated on the central ridge (Kuehnbaum, 1980). The extent of work carried out on the ground prior to 1980 is unknown as no evidence of trenching or drilling was observed; however, due to the property's proximity to the Alaska Highway, the area has undoubtedly been prospected since World War II. Kuehnbaum (1980) reported recent prospecting (in the form of fresh broken rock) on the GOAT 37-86 Claims, possibly from a systematic exploration program of the Wolf Lake map-area carried out by Cordilleran Engineering.

2.4 Claim Status

The GOAT 37-84 Claims (Figure 3) were staked on June 19, 1980 and recorded in Watson Lake on July 4, 1980. The GOAT 85 and 86 Claims were staked on August 31, 1980, and recorded in Watson Lake on September 3, 1980. The 1980 work done on GOAT 37-84 was approved for 3 years credit to July 4, 1984. Cash in lieu of work done was paid for 3 years credit on GOAT 85-86 (September 3, 1984). Claim status is as follows:

| <u>Claim</u> | <u>Tag. No.</u> | <u>Date Staked</u> | <u>Date Recorded</u> | <u>Expiry Date</u> |
|--------------|-----------------|--------------------|----------------------|--------------------|
| GOAT 37-84 | YA55443-90 | June 19/80 | July 4/80 | July 4/84 |
| GOAT 85-86 | YA56495-96 | August 31/80 | Sept. 3/80 | Sept. 3/84 |

3. WORK COMPLETED - 1981

3.1 Grids (Plan 1)

Five chained and picketed grids were established over the GOAT 37-86 Claims as control for geophysical (VLF-EM and magnetometer) and soil sampling geochemical surveys. Because of the steep and varying topography, slope corrections were made on all lines at 30 m intervals using Suunto clinometers.

23.995 km of picketed grid covering the GOAT 37-84 Claims were put in by CanadianOxy personnel from June 10 to June 27, 1981, for a total of 45 man-days of work. All four baselines run at 340° and crosslines run 070° (250°) at 125 m intervals.

4.915 km of picketed line (Grid 5) cover the GOAT 85-86 Claim group. The baseline runs 010° and crosslines bearing 100° (280°) were established at 125 m intervals. A total of 10 man-days of work were completed on Grid 5 from July 1 to July 4.

An average of 0.6 km/day/man of line was put in.

3.2 Geochemistry

A total of 463 soil samples were collected by E. Bianchini, K. Komar, P.J. Maheux, P.M. Manojlovic, G. Tetu,

T.L. Warner and M.J. Crandall over Grids 1-4 covering GOAT 37-84 Claims. A total of 14 man-days were performed.

Seventy-nine soil samples were collected over Grid 5 by P.M. Manojlovic covering GOAT 85-86 for a total of 2 man-days of work. Samples were taken at 125 m x 60 m intervals. Samplers averaged 33 samples a day.

In addition, Crandall, Kuehnbaum, Komar, Maheux, Tetu and Watters collected 80 rock samples during the mapping and prospecting surveys. All samples were sent to Chemex Labs Ltd., North Vancouver, B.C. for geochemical analysis. Analytical results are listed in Appendix II.

3.3 Geophysics

A total of 18 man-days of geophysical surveying was completed by G. Mijac and E. Bianchini on Grids 1-4 covering the GOAT 37-84 Claims. VLF electromagnetic and magnetometer readings were taken at 15 m x 125 m intervals on the established grids. Contours were plotted at 1:2500 and interpretation completed by F. Jagodits of Excalibur International Consultants Ltd.

Two man-days of ground-geophysical surveying were performed on GOAT 85-86 (Grid 5).

The magnetometer survey averaged 2.6 km/man-day whereas G. Mijac accomplished the VLF-EM survey at a pace of 3.2 km/man-day.

3.4 Geological Mapping and Prospecting

R.M. Kuehnbaum and M.J. Crandall visited the GOAT 37-86 Claims for a 1/3 day inspection/prospecting tour on June 9, 1981. Further mapping was postponed at this time due to considerable snow cover over the exposed ridges. On July 8, 1981, Kuehnbaum prospected and mapped the east central area at 1:5000. R.H. Wallis, C.J. Richardson and M.J. Crandall revisited the GOAT 37-86 Claim group for 1/3 day for geological re-evaluation of the property. Geologic mapping and prospecting of known mineralized zones, geophysical and geochemical anomalies of the GOAT 37-84 claims was completed between July 20 and July 26, 1981 by M.J. Crandall, S.E. Watters, P.J. Maheux and G. Tetu. The GOAT 85 and 86 claims were geologically mapped on July 24 and 25 by M.J. Crandall with the assistance of P.J. Maheux. A total of 10.9 man-days of work was performed on GOAT 37-84 and 4.0 man-days of work on GOAT 85-86 for a total of 14.9 man-days of work.

Map bases (Plan 0) used for 1981 surveys were 1:5000 blow-ups from 1:50,000 N.T.S. map sheet 105/B/2E. 1:55,000 (approx.) scale airphotos obtained from E.M.R. series A25289-37 to 39 and A25264-25 to 27 were used for ground coverage and additional control was established from 1:5000 air-photo blow-ups of A25289-38.

3.5 Summary of Work Completed - 1981

Goat 37 - 84, Work completed prior to and including July 4, 1981

| Type of work | Man Days | Line Km (Area) | No. Samples | Cu | Pb | Zn | Ag | W | No. of Determinations |
|-------------------------------------|-------------|----------------|-------------|----|------------|------------|------------|---|-----------------------|
| Geology Mapping | 0.6 | | | | | | | | |
| Geochemistry | 10 | 23.995 | | | | | | | |
| i) Rock | | | 349 | | 349 | 349 | 349 | | 1047 |
| ii) Soil | | | | | | | | | |
| iii) Standards | | | 12 | | 12 | 12 | 12 | | 36 |
| Geophysics | | | | | | | | | |
| i) Magnetometer | 3 | 13.6 | | | | | | | |
| ii) VLF/EM | 2 | 13.6 | | | | | | | |
| Grid Establishment | 45 | 23.995 | | | | | | | |
| Camp Plotting | 0.5 | | | | | | | | |
| Total | 61.1 | | | | 361 | 361 | 361 | | 1083 |
| Helicopter hours (Hughes 500C GXJB) | 23.6 | | | | | | | | |

Goat 37-84, Work completed after July 4, 1981

| Type of work | Man Days | Line Km (Area) | No. Samples | Cu | Pb | Zn | Ag | W | Mo | No. of Determinations |
|-------------------------------------|-------------|---------------------|-------------|------------|------------|------------|------------|------------|-----------|-----------------------|
| Geological Mapping | 10.3 | (5Km ²) | | | | | | | | |
| Geochemistry | 4 | | | | | | | | | |
| i) Rock | | | 72 | 72 | 72 | 72 | 72 | 72 | 20 | 380 |
| ii) Soil (pits) | | | 114 | 91 | 114 | 114 | 114 | 91 | 21 | 545 |
| iii) Standards | | | 5 | 3 | 5 | 5 | 5 | 3 | - | 21 |
| Geophysics | | | | | | | | | | |
| i) Magnetometer | 8 | 10.395 | | | | | | | | |
| ii) VLF-EM | 5 | 10.395 | | | | | | | | |
| Grid Establishment | - | | | | | | | | | |
| Camp Plotting | 17.5 | | | | | | | | | |
| Total | 44.8 | | | 166 | 191 | 191 | 191 | 166 | 41 | 946 |
| Helicopter Hours (Hughes 500C GXJB) | | | 15.7 hrs. | | | | | | | |

Goat 37-84, Summary of work completed - 1981

| Type of work | Man Days | Line Km (Area) | No. of Samples | Analysis | | | | | No. of Determinations | |
|--------------------|---------------------------------|---------------------|----------------|----------|-----|-----|-----|-----|-----------------------|------|
| | | | | Cu | Pb | Zn | Ag | W | | Mo |
| Geological Mapping | 10.9 | (5Km ²) | | | | | | | | |
| Geochemistry | 14 | 23.995 | | | | | | | | |
| i) Rock | | | 72 | 72 | 72 | 72 | 72 | 72 | 20 | 380 |
| ii) Soil | | | 463 | 91 | 463 | 463 | 463 | 91 | 21 | 1592 |
| iii) Standards | | | 17 | 3 | 17 | 17 | 17 | 3 | | 57 |
| Geophysics | | | | | | | | | | |
| i) Magnetometer | 11 | 23.995 | | | | | | | | |
| ii) VLF-EM | 7 | 23.995 | | | | | | | | |
| Grid Establishment | 45 | 23.995 | | | | | | | | |
| Camp Plotting | 18 | | | | | | | | | |
| Total | 105.9 | | | 166 | 552 | 552 | 552 | 166 | 41 | 2029 |
| Helicopter Hours | (Hughes 500-C GXJB) = 39.3 hrs. | | | | | | | | | |

Goat 85-86 Work completed - 1981

| Type of work | Man Days | Line Km (Area) | No. of Samples | Cu | Pb | Zn | Ag | W | No. of Determinations |
|--------------------------------------|-------------|------------------------|----------------|----|----|----|----|---|-----------------------|
| Geological Mapping | 4 | (1.0 km ²) | | | | | | | |
| Geochemistry | 2 | 4.915 | | | | | | | |
| i) Soil | | | 79 | | 79 | 79 | 79 | | 237 |
| ii) Rock | | | 8 | 8 | 8 | 8 | 8 | 8 | 40 |
| Geophysics | | | | | | | | | |
| i) Magnetometer | 1 | 4.915 | | | | | | | |
| ii) VLF-EM | 1 | 4.915 | | | | | | | |
| Grid Establishment | 10 | 4.915 | | | | | | | |
| Total | 18 | | | 8 | 87 | 87 | 87 | 8 | 277 |
| Helicopter Hours (Hughes 500-C GXJB) | = 3.1 hours | | | | | | | | |

3.6 Personnel

| <u>NAMES/POSITION</u> | <u>ADDRESS</u> | <u>DATES ON GOAT 37-84</u> |
|--|---|---|
| Dr. R.H. Wallis, P.Eng. Chief Geologist | Canadian Occidental Petroleum Ltd. 4th Floor-180 Attwell Dr. Rexdale, Ont. M9W 6A9 | July 16 (1/3 day) |
| R.M. Kuehnbaum Project Geologist | As above | July 9 (1/3 day) July 8 |
| G. Tetu Project Geologist | As above | Grid: June 12-14, 17, 25, 27 Soils: June 16, 18 |
| M.J. Crandall Geologist | As above | Mapping: June 9 (1/3 day), July 16 (1/3 day), July 20-23 Grid: June 10-13 Camp, plotting, report: June 27, July 19, 27-31 Aug. 1-5 |
| T.L. Warner Geologist | As above | Grid: June 23-30 |
| C.J. Richardson Geologist | As above | Grid: June 12 |
| S. Watters Geologist | As above | Grid: June 13, 14, 23- 26, 30 Mapping: July 20-22 Camp: July 24 (½ day) |
| K. Komar Geologist | As above | Grid: June 10-14, 16, 20 Soils: June 30 |
| E. Bianchini Junior Assistant | As above | Soils: June 10, 30; July 1, 2 Grid: June 11, 12, 20 Mag: July 3-9, 11, 12 |
| P. Manojlovic Junior Assistant | As above | Grid: June 13, 26, 27 Soils: June 14, 28 Mag: August 5 |
| P. Maheux Junior Assistant | As above | Grid: June 11-14, 16, 17, 26, 27 Soils: June 18, 23, 24, 26, Aug. 5 Prospecting: Aug. 25 Camp: July 21, 22 (½ days) |

G. Mijac
Geophysical Technician

1303 Daimler Road
Mississauga, Ontario
L5J 3T3

Mag: July 2
VLF-EM: July 3-6, 8, 10
Aug. 5
Camp Plotting: July 7,
9, 12, 13

NAMES/POSITION

ADDRESS

DATES ON GOAT 85-86

G. Tetu
Project Geologist

Canadian Occidental
Petroleum Ltd.
4th Floor-180 Attwell Dr.
Rexdale, Ontario
M9W 6A9

Grid: July 1, 2

M.J. Crandall
Geologist

As above

Mapping: July 24, 25,
26

S. Watters
Geologist

As above

Grid: July 3, 4

K. Komar
Geologist

As above

Grid: July 1-4

E. Bianchini
Junior Assistant

As above

Mag: July 14

P. Manojlovic
Junior Assistant

As above

Grid: July 3
Soils: July 4, 5

P. Maheux
Junior Assistant

As above

Grid: July 3
Prospecting: July 25

G. Mijac
Geophysical Technician

1303 Daimler Road
Mississauga, Ontario
L5J 3T3

VLF-EM: July 11

4. GENERAL GEOLOGY

Poole et al. (1960) showed the area of the GOAT 37-86 Claims to be underlain by Jurassic-Cretaceous biotite quartz monzonite and granodiorite of the Cassiar Batholith. Detailed mapping by CanadianOxy (Kuehnbaum, 1980; this study) shows the claims are underlain by a variety of intrusive rocks, including biotite-muscovite quartz monzonite, biotite quartz monzonite with megacrystic variants, and earlier bodies and xenolithic remnants of more mafic intrusions (quartz diorite and granodiorite). Outcropping as small to very large xenoliths and/or septa within and between the granitoid rocks is a sequence of clastic and carbonate metasedimentary rocks comprising micaceous quartzite, quartzitic schist and many units of recrystallized limestone. The igneous and associated hydrothermal activity has produced a multitude of thermally metamorphosed marbles and metasomatic calc-silicate and sulphide skarns at the contacts of major intrusive bodies and small dykes, as well as abundant calc-silicate hornfels.

It was suggested by Kuehnbaum (1980) that these metasedimentary rocks are probably metamorphosed equivalents of Lower Cambrian and (?) earlier strata; unit 1 mapped by Poole et al. (1960). This unit includes biotite schist, quartzite, marble and skarn and is found in intrusive contact with the Cassiar Batholith 4 km east of the claims. Revision

of the 105 Map Sheet by Gabrielse et al. (1980) and subsequent naming of the formations has led the author to believe that the metasedimentary sequence is possibly part of the Proterozoic Windermere Group (Hadrynian Grit Unit) or the Lower Cambrian Atan Group which consists of limestone, quartzite, shale and phyllite. Both the Windermere and Atan Groups are autochthonous sedimentary rocks of the Cassiar Platform.

4.1 Table of Formations (after Kuehnbaum 1980)

TERTIARY

| <u>Unit</u> | <u>Description</u> |
|-------------|------------------------|
| 7 | Diabase, basalt (dyke) |
| | Intrusive Contact |

JURASSIC AND/OR CRETACEOUS

CASSIAR BATHOLITH

| | |
|---|---|
| 6 | 6a Biotite-muscovite quartz monzonite |
| | 6b Biotite quartz monzonite |
| | 6c Pegmatite |
| 5 | 5a Biotite-hornblende diorite/monzonite |
| | 5b Biotite quartz diorite/granodiorite |
| | Intrusive Contact |

LOWER CAMBRIAN AND/OR PROTEROZOIC

WINDERMERE OR ATAN GROUP

METASEDIMENTARY ROCKS

| | |
|---|-------------------------------------|
| 4 | 4a Pyrrhotite- or pyrite-rich skarn |
| | 4b Calc-silicate skarn |

- 3 Recrystallized limestone
- 2 Calc-silicate hornfels
- 1
 - 1a Micaceous quartzite
 - 1b Biotite-porphyroblastic quartzitic schist
 - 1c 1a or 1b with calc-silicate laminae

4.2 Description of Rock Units (Plan 1)

Individual rock samples are described in Appendix V with corresponding rock geochemistry. The units described in this section are based on the Table of Formations of Kuehmbaum (1980). For a complete description refer to Kuehnbaum, 1980.

To classify the granitic rocks, all samples of intrusive rocks were stained for K-feldspar with hydrofluoric acid - sodium cobaltinitrate. The classification of the Colorado School of Mines (Travis, 1955) was used.

All rock samples referred to in text and figures of this report have 81-WA-38000 series numbers, which refer specifically to Project Watsu and the GOAT 37-86 claims. The 81-WA prefix has usually been dropped in this report.

4.2.1 Clastic Metasedimentary Rocks - Unit 1

The micaceous quartzite (Unit 1a), occurring in thin (<1 cm) layers, is the most abundant metasedimentary unit on the property. Sacks (1979) referred to these rocks as "gneisses", probably due to the "gneissic" texture derived from the interlaminations of dark grey quartz (and minor feldspar) with biotite. The fine grained biotite imparts a

lustrous sheen and consequently a distinct schistosity is developed within this unit. Kuehnbaum (1980) indicated that chalcopyrite occurs, but is minor and rare. Pyrite and pyrrhotite are abundant and sulphides appear to be restricted to certain horizons.

The biotite-porphyroblastic quartzitic schist (Unit lb) resembles Unit la compositionally. It is distinguished by porphyroblasts of biotite (<3 mm); its phyllitic appearance imparted by the fine-grained mica, and minor quartz.

Unit lc is essentially Unit la or lb, with thin interlaminae of calc-silicate rock. It does not constitute a mappable unit, but it is differentiated from la or lb on Plan 1 where it exists. Where the calc-silicate laminae predominate, the rock was mapped as calc-silicate hornfels (Unit 2).

4.2.2 Calc-Silicate Hornfels - Unit 2

This unit denotes strata with abundant calc-silicate minerals that are interpreted to be of metamorphic origin. In contrast, skarn (Unit 4) is interpreted to have been derived from the metasomatic replacement of carbonate rocks. Two general types of hornfels occur on the property, but were not mapped separately due to uncertainties of their origin. These rocks are unmineralized and not of potentially economic importance.

The first type of hornfels is gradational from Unit 1c in that calc-silicate bearing laminae occur within a thinly banded quartz-bearing assemblage. In general, the unit is light green, and well-banded with laminae ranging from 1-3 cm thick. The calc-silicate assemblage contains diopside, quartz, epidote, calcite and minor tremolite and garnet. Thin layers of recrystallized limestone may be present. The distinct layering in this unit is attributed to thermal and/or regional metamorphism of a sequence of thin cyclic interbeds of limestone, pelitic sandstone/siltstone and carbonate-bearing pelites.

The second type of calc-silicate rock is compact, very fine-grained, siliceous and greenish in colour. It is often vaguely banded. Diopside and quartz are the predominant minerals, but epidote, amphibole or rare garnet also occur. Thin, discontinuous layers of micaceous quartzite occur within this unit.

4.2.3 Recrystallized Limestone - Unit 3

Carbonate rocks constitute a significant proportion of the metasedimentary package at GOAT 37-86. There is a repetition of units due to folding; however, the continuation of one carbonate layer from one xenolithic body to another is often uncertain. The carbonate rocks, in general, vary from 4 to 75 m of apparent thickness; the thickening is due to small-scale, tight, internal folding. Thinner layers (5 cm to 1 m) occur especially in zones of calc-silicate hornfels.

The carbonate rocks are recrystallized limestone (marble) consisting of medium-grained (± 5 mm) calcite. The purer members are white on the fresh surface and weather grey to light brown. The rock characteristically has a granulated "sugary" texture and tends to crumble easily along fractures to form loose sandy talus. Bedding is distinguished by varying grain size of the calcite or by the subtle changes in colour of the weathered surface.

The impure variety is distinguished by accessory quartz in various forms. Remnant bedding defined by quartz "eyes" grades to thick, continuous cherty laminae containing trace pyrite. Calc-silicate assemblages may occur, including coarse-grained garnet, diopside and epidote. Minor actinolite/tremolite, idocrase and tourmaline are also associated with impure recrystallized limestone especially within laminae near igneous contacts. Economic minerals are lacking in this unit, which is texturally different from the skarns (Unit 4).

4.2.4 Skarn - Unit 4

Skarn, in this report, refers to calc-silicate and sulphide-bearing assemblages resulting from metasomatic alteration of carbonate rocks by fluids probably derived from granitic magmas.

The skarns have been divided into calc-silicate skarns, and sulphide-rich skarn (normally pyrrhotite, but occasionally pyrite). Kuehnbaum (1980) discussed in detail

skarn development on the GOAT 37-86 claims.

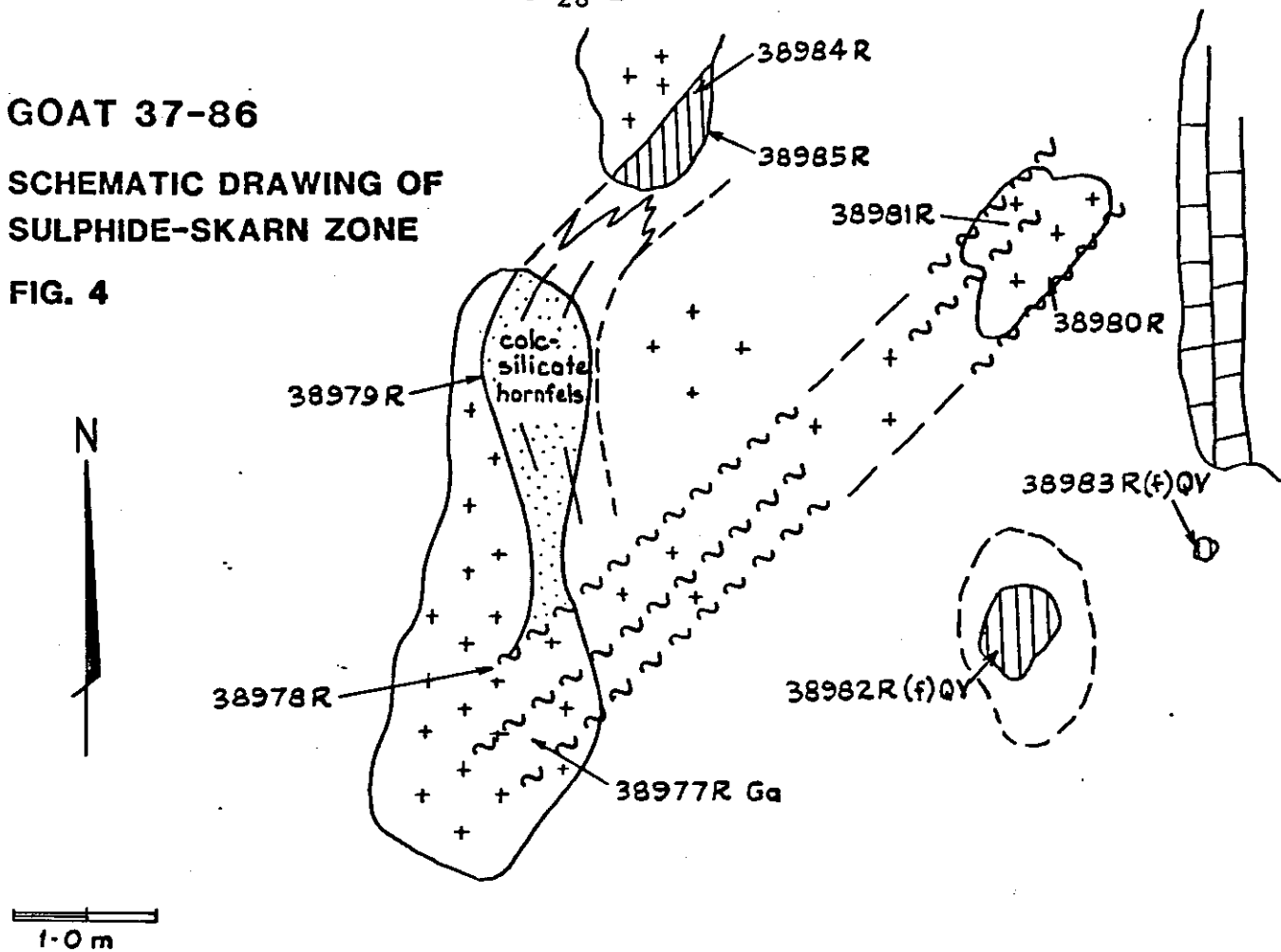
The calc-silicate skarn (Unit 4b) consists of varying combinations of red-brown, grossular garnet, diopside, quartz, calcite, epidote, actinolite/tremolite, idocrase and minor sulphide minerals. Generally, coarse-grained garnet is predominant with minor, interstitial diopside, quartz and/or calcite, but many variations exist. The rock is compact and hard and usually contains less than 5% calcite. This unit is discontinuous and cross-cuts bedding in recrystallized limestone.

Pyrrhotite and/or pyrite rich skarns are those sulphide-bearing skarns with more than approximately 10% sulphide minerals. These rocks are extremely hard, massive, compact and are coated with a brick-red limonite coating due to weathering of the sulphides. The principle constituents are medium to coarse-grained pyrrhotite (up to 90%) or pyrite, diopside, actinolite, quartz and minor garnet. Minor, but important constituents are scheelite, chalcopyrite and molybdenite.

Most sulphide-rich skarn occurs as small bodies within calc-silicate skarn, immediately adjacent to intrusive contacts. These skarns are erratically distributed over the claim group, and presence or absence of skarn on any given carbonate/intrusive contact is unpredictable. The degree of skarn development varies over the property. In the area of the northeast trending ridge, Kuehnbaum (1980) reported that

GOAT 37-86
SCHEMATIC DRAWING OF
SULPHIDE-SKARN ZONE

FIG. 4



| | Pb | Zn | Ag | W | Cu | Mo | |
|-----------|------|------|---------------------|-----|------|-----|--|
| 38977R | 118 | 1850 | 0.1 | 1 | 13 | 1 | |
| 38978R | 26 | 650 | 0.1 | 3 | 11 | 1 | |
| 38979R | 26 | 120 | 0.1 | 1 | 59 | 1 | |
| 38980R | 35 | 525 | 0.1 | 13 | 16 | 1 | |
| 38981R | 50 | 125 | 2.3 | 11 | 11 | 1 | |
| 38982R(f) | 440 | 142 | 23.0 | 48 | 170 | 155 | |
| 38983R(f) | 8 | 3700 | 0.3 | 185 | 310 | 1 | |
| 38984R | 238 | 84 | 16.5 | 40 | 350 | 200 | |
| 38985R | 1450 | 150 | 6.10 ^{02%} | 7 | 5200 | 1 | |

All values in ppm unless otherwise indicated

calc-silicate skarn predominates, varying from 2 cm to 50 cm in thickness, at quartz monzonite dyke contacts. In the area of the main central ridge, higher-grade sulphide-skarn occurs within xenolithic bodies in the quartz monzonite intrusion. Although these skarns are often significantly mineralized, they are limited in extent in all directions.

One zone is exposed on the main central ridge just south of line 11+25N, Grid 3 (see Figure 4). A sheared quartz monzonite unit in contact with a calc-silicate hornfels, but little skarn development is evident at this contact. A sulphide bearing skarn unit occurs at the quartz monzonite intrusive contact and appears to grade laterally into the calc-silicate hornfels. The skarn unit is not large, 1.0 m x 0.5 m of exposure with possible extension beneath the talus.

The skarns mapped on the GOAT 37-86 Claim group nowhere reach mineable dimensions or economic grade. The metasedimentary package is thought to have undergone regional metamorphism prior to emplacement of the Cassiar Batholith (Poole et al., 1960), as is apparent from the folding and development of schistosity. Recrystallization of the limestone would have taken place at that time, with an accompanying reduction of porosity, permeability and water content. During subsequent intrusion of granitic magma(s), hydrothermal fluids would not have been able to find favourable channelways in the recrystallized carbonate rocks, accounting for the very restricted development of skarn only within a few metres of

the contacts. In addition to the impermeability of host rocks, the intrusive rocks may have been relatively "dry". This, however, does not preclude the possibility of significant skarn development along structural channelways (e.g. fold hinges) which may have existed at the time of emplacement of magma.

4.2.5 Granitic Intrusive Rocks - Unit 5 and 6

Unit 5 represents the earliest phase or phases of intrusive activity of the Cassiar Batholith within the area of the GOAT 37-86 Claims. It outcrops principally on the very eastern part of the property on the northeasterly trending ridge where it is in roughly concordant contact with meta-sedimentary rocks. Kuehnbaum (1980) defined two varieties: Unit 5a, fine grained, massive biotite-hornblende diorite with approximately 50% biotite and hornblende, 50% plagioclase, and trace of K-feldspar and pyrite; and Unit 5b, fine to medium grained, massive biotite granodiorite to diorite composed of 45-55% plagioclase, 10-20% K-feldspar, 10-30% biotite, and 5-10% quartz. Both units also occur as large mappable xenolithic remnants within the quartz monzonite.

Unit 6 represents the later and more felsic phases of intrusion of the Cassiar Batholith within the GOAT 37-86 area.

Biotite quartz monzonite (Unit 6b) is the most common intrusive rock on the property. It is generally massive, fine to coarse grained, equigranular and homogenous,

and is composed of 30-70% plagioclase, 10-45% K-feldspar, 10-30% quartz and 5-20% biotite. Local megacrystic varieties (approximately 5% K-feldspar megacrysts) and coarse-grained equivalents of the biotite quartz monzonite occur in the south end of the property. Whether such variations represent discrete intrusions or gradational variations within a single stock is unknown.

In the southern and eastern parts of the property where abundant metasedimentary xenoliths are exposed is biotite-muscovite quartz monzonite (Unit 6a). This unit contains 5-10% biotite and 1-5% muscovite and, except for the presence of muscovite, is compositionally and texturally similar to Unit 6b.

Small dykes (20 cm to 10 m wide) of biotite-muscovite quartz monzonite cut the metasedimentary package in the east-central part of the property. Although irregular and discontinuous, most dykes define a vague northeasterly trend. Small and spotty but widespread calc-silicate skarns occur along contacts with limey rocks. Similar dykes also cut the biotite quartz monzonite.

These dykes have been included in Unit 6a and are considered to be contemporaneous with the large biotite-muscovite quartz monzonite body in the south of the claims, which is hence younger than the biotite quartz monzonite.

Small pegmatitic dyklets are widespread and numerous within the main intrusive rocks, but only rarely do they form

bodies of mappable dimensions (Unit 6c on Plan 1). They are principally thin (2-15 cm) and planar, and it is difficult to map their relative abundance and extent in areas of lichen growth or quartz monzonite. The frequency of dykes, however, appears greatest in the central area of the claim group. The pegmatites are quartz monzonitic to granitic in composition and generally contain muscovite in the absence of biotite.

Planar, thin (usually <5 cm) quartz veinlets are also widespread within the quartz monzonites. In general, they are most abundant in the central part of the property. The veinlets consist of white, fine-grained quartz, and rarely contain disseminated and cubic pyrite.

4.2.6 Mafic Dykes - Unit 7

Very thin (about 1 m) intrusions of basalt or diabase occur in two localities on the property: in the north end as sills between recrystallized limestone and micaceous quartzite; and in the south, west of Grid 3, as dykes adjacent to or within shear zones. The rock is very fine-grained, massive and black-coloured. These rocks are probably contemporaneous with Tertiary-Quaternary volcanism in the Wolf Lake area (see Gabrielse et al., 1980).

4.3 Structure

The Lower Cambrian and/or Proterozoic metasedimentary rocks have been folded about tight (isoclinal) axes, probably prior to Jurassic-Cretaceous intrusive activity. Schistosity of the micaceous quartzites and some, if not most, of the recrystallization of the carbonate rocks developed at that time. Major fold hinges trend northwest and well-exposed antiformal and synformal folds have been traced in carbonate horizons (Kuehnbaum, 1980). Tight folds in some of the thicker limestone units are suggested by the termination of quartzitic beds; however, this may be due to boudinaging. The limestone shows a great deal of internal folding by the ubiquitous crumpling of beds into minor folds which reflect larger structures. The carbonate horizons have probably been locally substantially thickened by internal folding. Large scale, more open folding, especially in the north end of the claims, is probably the result of the emplacement of the various magmatic rocks.

Jointing and fracturing are well developed in both the metasedimentary and intrusive rocks. The quartzites tend to weather rubbly. Joints, consistent with the pattern in intrusive rocks, are occasionally present in the limestone. The attitudes of joints in quartz monzonite are variable over the property. One consistent set, however has a north-northeasterly strike and dips 75°E to 75°W (generally vertical). Another prominent set strikes generally east-southeast and dips 65°S to 85°N . Another in the south end of

the property has an approximately northeast strike, and northwest 50° to vertical dip. Other joint patterns are very local.

Mappable shear or fault zones are uncommon, but their presence is marked by cataclastic quartz monzonite in the northeasterly trending shear zones in the southern part of the property. North striking fracture/shear zones were mapped in the same areas. In the northern gully, covered by GOAT 85 and 86, pyrite, galena and sphalerite were discovered in a partially quartz-carbonate filled shear zone.

4.4 Metamorphism

Kuehnbaum (1980) has suggested that prior to the emplacement of the granitic rocks, the metasedimentary rocks underwent regional metamorphism to at least the upper greenschist facies.

The degree of thermal overprinting by the intrusive rocks is probably minor since there is little or no hornfelsic texture in the quartzitic rocks and recrystallization of limestone does not appear to increase near intrusive contacts. However, calc-silicate mineral bands in the recrystallized limestone are common only near contacts with quartz monzonite. Some calc-silicate hornfels has been interpreted to be derived from the metamorphism of pelitic rock (Kuehnbaum, 1980).

Pyrite and/or pyrrhotite, widespread in trace amounts in micaceous quartzite, are thought to be an original sedimentary component of the clastic rocks perhaps remobilized during regional and/or thermal metamorphism.

Skarnification of carbonate rocks and a possible reason for its limited volumetric extent have been outlined above (see "Description of Rock-Units").

Quartz monzonite adjacent to skarn zones has commonly been altered to a fine-grained assemblage of feldspar, green calc-silicate minerals (diopside, epidote?), quartz and Fe-sulphides. Sericitized quartz monzonite was also noted.

4.5 Alteration

Surface weathering is of minor importance, and is restricted to limonite staining resulting from the oxidation/hydration of sulphide minerals in skarns, and vein-fracture mineralization, or the alteration of biotite in metasedimentary rocks (Kuehnbaum, 1980).

Alteration associated with late shear/fracture zones and vein mineralization is locally significant and is discussed in "Economic Geology".

5. ECONOMIC GEOLOGY

Mineralization of economic interest can be broadly categorized with two basic types: 1) skarn mineralization, and 2) vein- or fracture-related mineralization. These two are temporally and geochemically distinct (see "Geochemistry") The former is principally a Cu-W enrichment in carbonate rocks metasomatized during intrusion of the Cassiar Batholith; the latter is structurally controlled, hydrothermally related Zn±Pb±Ag mineralization which took place after consolidation of the intrusive rocks.

5.1 Skarn Mineralization

The separation of calc-silicate and sulphide-rich skarns is arbitrarily based on the sulphide mineral content ($\pm 10\%$). The calc-silicate skarns at quartz monzonite dyke contacts bear traces of disseminated pyrite or pyrrhotite and occurrences of economic minerals are very local and minor in quantity: trace to 0.3% molybdenite in two localities; trace to 2% chalcopyrite, and trace to 0.1% disseminated scheelite (ultraviolet lamp estimate). Of the calc-silicate skarns sampled, all contain low quantities of Ag (0.1-0.8 ppm). Copper (6-900 ppm), and tungsten (1 ppm-0.85%) are enriched in these samples; in the highest case, close to economic grades. Local enrichment of Pb (970 ppm) and Zn (9900 ppm) occurs, although contents are not of economic interest.

Sulphide-rich skarns contain 10%-90% pyrite and/or pyrrhotite (average approximately 45% in samples taken). Disseminated, fine-grained scheelite was observed in only a few localities (trace to 0.2%, UV lamp estimate). Because of discrepancies in visible scheelite content and WO_3 assays, Kuehnbaum (1980) suggested that wolframite is probably present. Chalcopyrite (about 1%) and molybdenite were noted in some areas and anomalous Cu contents range from 182-1850 ppm; tungsten content ranges from 1 ppm W - 0.96% WO_3 . Exposed sulphide skarn bodies are small and therefore not of further interest, but geophysical surveys (see below) suggest at least one buried potential target area. Local enrichment of 780 ppm Pb and 1000 ppm Zn occurs in one float sample just off the southern boundary of the property.

5.2 Vein- and/or Fracture-Related Mineralization

Structurally controlled mineralization occurs throughout the property along strong shear and fracture zones and in veins. Alteration of the country rock is pervasive, especially in fracture-related zones.

At the north end of the property, galena, sphalerite and pyrite occur in a north-northwest striking shear/fracture zone within quartz monzonite adjacent to a skarn body. Small (6 cm wide) zones of mineralized fracture material occur over a 3 m wide area. Lead, zinc and silver contents vary up to 1.31% Pb, 5.64% Zn and 1.94 oz/ton Ag (Kuehnbaum, 1980).

At least eight or more small shear zones in the southern part of the property contain enriched Cu, Pb, Zn and Ag. Alteration includes abundant Mn oxide, kaolinization and limonitization of intrusive rock. Copper contents of up to 1700 ppm; lead up to 4300 ppm; zinc up to 1.66%; and silver up to 38.0 ppm are found in grab samples in this area.

Both fracture and vein material in the south part of the central ridge area contain anomalous Cu, Pb, Zn, Ag and W. The vein mineralization consists of massive pyrite but the sample (38985R) contains 5200 ppm Cu, 1450 ppm Pb and 6.10 oz/ton Ag. Also, 3700 ppm Zn and 185 ppm W is contained in another vein sample from this area (38983R) (see Figure 4).

Not all of the mineralized fracture- and vein-related zones found by Kuehnbaum (1980) were followed up in 1981. However, the indication is that this type of mineralization is widespread and subeconomic where exposed. Structural trends and conductors defined by the VLF-EM and magnetic survey (see "Geophysics") possibly define shear/fracture zones which could contain vein mineralization similar to that mapped on surface.

6. GEOCHEMISTRY

6.1 Statistical Treatment of Results

For soil samples, histograms were compiled for the abundances of each element and a free-hand, arbitrary best-fit curve was drawn through the normal population. Values higher than the intercept of this curve and the abscissa are considered anomalous. From the normal (non-anomalous) population, cumulative frequency curves were constructed and the mean (50th percentile) and probably anomalous (97th percentile) values were obtained. The histograms and cumulative frequency curves include data from both the 1980 and 1981 soil surveys to obtain the maximum sample populations. These diagrams are presented in Appendix III, Figures 5 to 10, Tables 9 to 11, inclusive. The statistical parameters are summarized in Table 1.

For rock samples, sufficient populations for statistical interpretation of results are only available for skarns using anomalous values and results from Kuehnbaum (1980) on skarns. Most of these samples contain some form of mineralization (pyrite, pyrrhotite, galena, sphalerite, chalcopyrite) or alteration (limonite, hematite, etc.). Therefore, the validity of the statistical treatment of the data is questionable. These values are summarized in Table 2.

As a check on reproducibility, a standard bulk sample from the LICK Claims, Yukon, was dried and mixed (see

TABLE 1

Metallic Elements* in Soil Samples
Summary of Mean, Probably Anomalous
Anomalous Values and Range 1980 and 1981 Data

* All values in ppm unless otherwise indicated

| | <u>Mo</u> | <u>Cu</u> | <u>W</u> | <u>Pb</u> | <u>Zn</u> | <u>Ag</u> |
|--------------------------|-----------|-----------|----------|-----------|-----------|-----------|
| Mean | 1 | 15 | 1 | 15 | 80 | 0.1 |
| Probably Anom. | 4-5 | 42-60 | 2-3 | 65-80 | 200-240 | 0.3-0.4 |
| Anomalous | >5 | >60 | >3 | >80 | >240 | >0.4 |
| Range | 1-16 | 4-82 | 1-90 | 1-640 | 8-1700 | 0.1-8.5 |
| Sample Population (n) | 100 | 100 | 100 | 551 | 551 | 551 |

TABLE 2

Metallic Elements* in Rock Samples (Skarns Only)
Anomalous Levels and Range of Values

* All values in ppm unless otherwise indicated

| | <u>Mo</u> | | <u>Cu</u> | | <u>Pb</u> | |
|------------------|-------------|-------------|-----------------|-------------|-------------|-------------|
| | <u>1980</u> | <u>1981</u> | <u>1980</u> | <u>1981</u> | <u>1980</u> | <u>1981</u> |
| Anomalous | +10 | | +160 | | +16 | |
| Range | 1ppm-0.046% | 1-75 | 36ppm- 0.89% | 6-1850 | 1-490 | 1-970 |
| No. of Analysis | 46 | 8 | 46 | 21 | 46 | 21 |
| No. of Anomalous | 10 | 2 | 29 | 13 | 5 | 4 |

| | <u>Zn</u> | | <u>Ag</u> | | <u>W</u> | |
|------------------|-------------|-------------|--------------------|-------------------|-------------------------------|-------------------------------|
| | <u>1980</u> | <u>1981</u> | <u>1980</u> | <u>1981</u> | <u>1980</u> | <u>1981</u> |
| Anomalous | +350 | | +14 | | +6 | |
| Range | 16ppm-1.54% | 2-9900 | 0.1ppm- 0.8oz/t | 0.1ppm- 6.0ppm | 1ppm- 0.38%WO ₃ | 1ppm- 0.96%WO ₃ |
| No. of Analysis | 46 | 21 | 46 | 21 | 46 | 20 |
| No. of Anomalous | 6 | 2 | 12 | 4 | 24 | 15 |

Watters, 1981). Control samples were labelled and sent to the lab with every shipment of 25-30 samples from the GOAT 37-86 Claim group. A total of 17 control samples were prepared and sent with the 542 samples analysed. Four of the control samples were splits of four original soil samples. The comparison of these analyses is listed in Table 3A. The generally accepted figure for reproducibility of results is: 1-10 ppm, 30%; 10-50 ppm, 20%; +50 ppm, 10%. Those values that do not conform are marked with an asterisk in Table 3A. The discrepancies are very close to the accepted limit and can be discounted by the split-taking procedure; the sample was not homogenized before extraction.

TABLE 3A

Comparison of Values for Split Samples - Soils

| <u>Split</u> | <u>Sample</u> | <u>Pb</u> | | <u>Zn</u> | | <u>Ag</u> | |
|--------------|---------------|-----------|-----|-----------|----|-----------|-----|
| 38030 | 38029 | 12 | 13 | 90 | 88 | 0.1 | 0.1 |
| 38151 | 38152 | 18 | 20 | 76 | 66 | 0.1 | 0.1 |
| 38211 | 28210 | 11 | 12 | 50 | 50 | 0.1 | 0.1 |
| 38239 | 38237 | 6 | 15* | 52 | 66 | 0.1 | 0.1 |

* Reproducibility outside accepted limit.

The remaining control sample analyses were statistically treated for each element (see Table 3B).

Those samples that fall within one standard deviation (σ) of the mean are considered to be homogeneous and within analytical standards of accuracy. Those control samples and adjacent samples that are different by more than

TABLE 3B
Reproducibility of Control Samples

| Sample Number | Pb | Zn | Ag |
|---------------|------|------|------------------|
| 38061 | 150* | 260 | 0.1* |
| 38089 | 140* | 290* | 0.3* |
| 38273 | 134 | 240 | 0.9 |
| 38300 | 125 | 240 | 1.0 |
| 38329 | 134 | 250 | 1.2* |
| 38360 | 130 | 230 | 1.0 |
| 38390 | 120 | 250 | 1.1 |
| 38420 | 130 | 230 | 0.6 |
| 38590 | 130 | 240 | 1.0 |
| 38650 | 128 | 240 | 1.0 ² |
| 38710 | 112* | 225 | 0.6 |
| 38740 | 120 | 250 | 0.6 |
| 38771 | 120 | 210* | 1.0 |
| μ | 129 | 143 | 0.8 |
| σ | 10 | 18 | 0.3 |

All values in ppm

Calculation of standard deviation (σ)

$$\sigma = \frac{(\sum (W-\mu)^2)^{\frac{1}{2}}}{n}$$

W = analytical values

μ = arithmetic values, mean

n = sample population (13)

* = sample outside limits of $\pm 1\sigma$

one standard deviation of the mean are either inhomogeneous (i.e. field error) or lack laboratory precision. The small population of samples used to determine the mean and standard deviation for each element is not sufficient to define meaningful limits of reproducibility.

6.2 Rock Geochemistry

Eighty (80) rock samples were collected and analysed for Cu, Pb, Zn, Ag and W (420 determinations). Statistics (Appendix III, Table 12, Figure 11) were generated for skarn rocks only and were combined with those of 1980 (Kuehnbaum, 1980). Analyses of rock samples are tabulated by lithology in Tables 4 to 8. Rock descriptions and results are presented in Appendices II and V.

6.2.1 Intrusive Rocks (Table 4)

The fresh intrusive rocks were not sampled in detail as analysis from the 1980 surveys did not show any significant metal content (Kuehnbaum, 1980). Local enrichment of metals in the granitoid rocks occurs in and around alteration zones and contacts with skarn. Maximum values of 75 ppm Cu, 325 ppm Pb, 230 ppm Zn, 0.2 ppm Ag and 42 ppm W were obtained. One sample taken in 1980 contained 0.07% WO_3 (Kuehnbaum, 1980) and was thought to contain wolframite. Another sample from that survey contained 1100 ppm Cu. Extremely fractured and altered intrusive rocks are locally enriched in Zn+Pb+Ag and are discussed under "Fracture- and Vein-Related Mineralization".

TABLE 4

Metallic Elements* in Rock Samples of Intrusive Rocks

*All values in ppm

| Sample Number | Cu | Mo | Pb | Zn | Ag | W |
|---------------|------|----|-------|------------|-------------|----------|
| 38838R | 12 | - | 19 | 54 | 0.2 | 14 |
| 38846R | 18 | - | 30 | 66 | 0.1 | 1 |
| 38852R | 25 | - | 325 | 230 | 0.1 | 25 |
| 38893R | 1 | - | 6 | 25 | 0.1 | 42 |
| 38894R | 50 | - | 5 | 50 | 0.1 | 12 |
| 38898R (f) | 30 | - | 5 | 25 | 0.1 | 1 |
| 38954R | 23 | - | 2 | 12 | 0.1 | 1 |
| 38962R | 75 | - | 8 | 83 | 0.1 | 1 |
| 38967R (f) | 27 | - | 28 | 78 | 0.2 | 23 |
| 38968 | 8 | - | 12 | 42 | 0.1 | 1 |
| 38979R | 59 | 1 | 26 | 120 | 0.1 | 1 |
| 38987R (f) | 56 | 1 | 4 | 98 | 0.2 | 1 |
| Range | 1-75 | | 2-325 | 12- 230 | 0.1- 0.2 | 1- 42 |

TABLE 4A

Metallic Elements in Rock Samples of Hybridized Intrusive Rocks

| | Cu | Mo | Pb | Zn | Ag | W(WO ₃) |
|--------|-----|-----|-----|----|------|---------------------|
| 38848R | 95 | | 16 | 24 | 0.4 | (1.12%) |
| 38984R | 350 | 200 | 138 | 84 | 16.5 | 40 |

6.2.2 Hybridized Intrusive Rocks (Table 4A)

Two samples of hybridized quartz monzonite were analyzed; one (38848R) contains 1.12% WO_3 , and the other (38984R) contains high copper (350 ppm), molybdenum (200 ppm) and silver (16.5 ppm). Disseminated pyrite occurs in the latter sample over less than 5% of the rock. Trace scheelite occurs in the high tungsten bearing sample, but wolframite may also be present.

6.2.3 Schist and Quartzite (Table 5)

A total of 11 samples from this metasedimentary package were analysed for Cu, Pb, Zn, Ag and W. Copper, lead and silver contents are low in these rocks (9-63 ppm Cu, 1-85 ppm Pb and 0.1-1.5 ppm Ag). Three samples contain slightly enriched zinc (255-440 ppm) and two other samples contain minor W (30 to 42 ppm). Mineralization is limited to disseminated pyrrhotite ± pyrite in a few quartzite samples.

6.2.4 Calc-Silicate Hornfels (Table 6)

The calc-silicate hornfels unit generally is unmineralized with the exception of disseminated pyrite and/or pyrrhotite. These rocks are not significantly enriched in Cu, Pb, Zn, Ag or W. Copper contents range from 1 to 48 ppm although two samples (38953R and 38986R) contain 200 and 180 ppm Cu. Lead, zinc and silver values are exceptionally low (1-75 ppm Pb, 15 to 130 ppm Zn and 0.1 to 1.0 ppm Ag) but tungsten is slightly enriched with contents ranging from 23 to 155 ppm in 4 of the 10 samples.

TABLE 5

Metallic Elements* in Rock Samples of Schist and Quartzite

* All values in ppm

| | Cu | Pb | Zn | Ag | W |
|-----------|------|------|--------|---------|------|
| 38633R | 28 | 10 | 17 | 1.5 | 30 |
| 38633R | 26 | 3 | 82 | 0.1 | 42 |
| 38634R | 29 | 13 | 26 | 0.1 | 1 |
| 38843R | 35 | 3 | 35 | 0.1 | 1 |
| 38845R | 18 | 1 | 48 | 0.1 | 1 |
| 38853R | 50 | 19 | 26 | 0.1 | 1 |
| 38887R | 33 | 28 | 440 | 0.1 | 1 |
| 38889R(f) | 63 | 19 | 270 | 0.1 | 1 |
| 38951R | 35 | 6 | 10 | 0.1 | 1 |
| 38975R | 9 | 85 | 255 | 0.1 | 1 |
| 38988 | 56 | 1 | 35 | 0.1 | 1 |
| Range | 9-63 | 1-85 | 10-440 | 0.1-1.5 | 1-42 |

TABLE 6

Metallic Elements* in Rock Samples of Calc-Silicate Hornfels

* All values in ppm

| | Cu | Mo | Pb | Zn | Ag | W |
|-----------|-----|----|----|-----|-----|-----|
| 38443R | 27 | - | 75 | 70 | 0.6 | 4 |
| 38836R | 1 | - | 50 | 65 | 0.8 | 110 |
| 38849R | 33 | - | 7 | 88 | 0.1 | 85 |
| 38851R | 5 | - | 6 | 15 | 0.1 | 23 |
| 38892R | 5 | - | 1 | 95 | 0.1 | 155 |
| 38950R | 48 | - | 1 | 42 | 0.1 | 1 |
| 38953R | 200 | - | 1 | 130 | 0.1 | 1 |
| 38955R | 26 | - | 1 | 60 | 0.1 | 1 |
| 38966R | 22 | - | 30 | 85 | 0.1 | 12 |
| 38986R(f) | 180 | 1 | 17 | 55 | 1.0 | 1 |

TABLE 7

Metallic Elements* in Rock Samples of Skarn

* All values in ppm unless otherwise indicated

| | | <u>Cu</u> | <u>Mo</u> | <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>W(WO₃)</u> |
|--------------|--------|-------------|-----------|------------|-------------|------------|----------------------------|
| 38635R | (f) Po | <u>400</u> | 1 | 6 | 27 | 0.1 | <u>590</u> |
| 38837R | Cs | <u>480</u> | 8 | 2 | 65 | 0.3 | <u>295</u> |
| 38840R | Cs | 15 | - | 2 | 110 | 0.1 | <u>10</u> |
| 38841R | Po | <u>450</u> | - | 1 | 7 | 0.3 | 1 |
| 37744R | (f) Cs | 10 | - | 1 | 85 | 0.1 | 1 |
| 38888R | Cs | 65 | <u>75</u> | <u>17</u> | 178 | 0.2 | 1 |
| 38891R | Cs | 6 | - | 5 | <u>330</u> | 0.2 | (<u>0.85%</u>) |
| 38895R | (f) Cs | <u>375</u> | 1 | 1 | 60 | 0.4 | <u>95</u> |
| 38897R | Po | <u>1150</u> | 1 | 1 | 2 | 0.1 | 1 |
| 38899R | (f) Po | <u>1100</u> | - | 1 | 17 | 3.2 | <u>700</u> |
| 38900R | (f) Po | <u>550</u> | 1 | <u>780</u> | <u>1000</u> | <u>6.0</u> | 16 |
| 38946R | (f) Po | 133 | - | 1 | 55 | 0.1 | 20 |
| 38947R | (f) Po | <u>1850</u> | - | 1 | 60 | <u>1.6</u> | (<u>0.96%</u>) |
| 38948R | (f) Po | <u>1250</u> | - | 3 | 105 | 0.7 | <u>100</u> |
| 38952R | Po | 182 | - | 1 | 12 | 0.1 | <u>7</u> |
| 38964R | Cs | 30 | - | 12 | 118 | 0.3 | <u>72</u> |
| 38971R | (f) Po | <u>350</u> | - | 1 | 48 | 0.1 | <u>7</u> |
| 38972R | (f) Cs | 49 | - | <u>970</u> | <u>9900</u> | 0.8 | 1 |
| 38989R | Cs | <u>900</u> | 1 | 4 | 93 | 0.4 | (<u>0.23%</u>) |
| Range | | 6-1850 | 1-75 | 1-970 | 1-990 | 0.1-6.0 | 1ppmW-0.96%WO ₃ |
| Range | | 10ppm- | 1ppm- | 1ppm- | 16ppm- | 0.1ppm- | 1ppmW- |
| 1980 Samples | | 0.89% | 0.046% | 490 | 1.54% | 0.8oz/t | 0.38%WO ₃ |

* Underscoring indicates anomalous values

Po - sulphide-rich skarn

Cs - calc-silicate skarn

6.2.5 Skarn (Table 7)

The frequency distribution (Appendix III, Table 12, Figure 11) for analytical data of GOAT 37-86 skarn rocks partly reflects the biased sampling of visibly mineralized samples over barren ones, such as in the case of enriched Cu and Mo in chalcopyrite and molybdenite-bearing rocks. No minerals bearing Pb, Zn or Ag were noted in these rocks although some are slightly enriched in these elements.

Only 8 of the 20 rocks were analyzed for molybdenum and of these, none were significantly mineralized. The highest content is 75 ppm Mo in sample 38888R, which contains small visible molybdenite flakes. This content does not compare with the 0.046% Mo found in skarn in the 1980 survey, suggesting that mineralization of this type is local and insignificant. Copper contents are relatively high, ranging from 400-1850 ppm Cu in nine samples. A maxima of 0.89% Cu was determined from a sulphide-rich skarn in 1980 and is associated with visible chalcopyrite (Kuehnbaum, 1980).

Two samples (38900R and 38972R) contain high Pb, Zn and/or Ag values. Contents range from 780 to 970 ppm Pb, 1000 to 9900 ppm Zn, and 0.8 ppm to 6.0 ppm Ag. Local, anomalous Zn+Ag+Pb occur in grab samples from the 1980 program. Contents of up to 1.54% Zn, 0.80 oz/ton Ag and 490 ppm Pb are present in sulphide-rich skarns on the GOAT 37-86 Claims (Kuehnbaum, 1980). Although geochemically interesting, these results do not meet economic grades.

Tungsten contents generally range from 1 to 20 ppm but nine samples have greater amounts, three of which assay at 0.23%, 0.85% and 0.96%; the upper two results (38891R, 38947R) represent close to economic grades for tungsten. Sample 38947R with 0.96% WO_3 also contains 1850 ppm Cu and visible chalcopyrite. It was, however, found in float and subsequently the size and/or contacts of this unit is not known. Assays from twelve skarn samples taken in 1980 range from 0.10% to 0.38% WO_3 . Visible scheelite rarely occurs in the tungsten bearing rocks and the presence of wolframite is suspected, although this mineral is very uncommon in Cordilleran skarn occurrences (Kuehnbaum, 1980). Data from 1980 to 1981 indicates that although high W values (up to 0.86% WO_3) can be found in calc-silicate skarns, the highest values most regularly occur in sulphide skarns. This is consistent with the Mactung/Cantung model, but does not preclude economic mineralization in calc-silicate rocks. Geophysical surveys have indicated a possible buried target.

6.2.6 Fracture and Vein Mineralization (Table 8)

Although a large population of fracture- and vein-related material was collected (25 samples), no statistics were generated because of the selective nature of sampling of visibly mineralized specimens. Many of these rocks contain disseminated pyrite ± pyrrhotite and are extremely altered.

Molybdenum is relatively low in most samples however, one sample (38982R) contains 155 ppm Mo. Mineralization

was not observed in this sample and pervasive alteration most likely obscures the molybdenite. Copper contents generally range from 4-170 ppm but seven samples contain from 310-5200 ppm. The maximum value comes from a pyrite-bearing quartz vein in the central ridge zone and exceeds values obtained in this area during previous surveys. It is also accompanied with high lead (1450 ppm) and silver (6.10 oz/ton); a grab sample taken from this zone in 1980 contains 8.22% Zn.

High zinc contents occur in 16 of the samples analysed, nine of which are high in Pb (118-4300ppm); five contain high silver (6.0-38.0 ppm). A maximum value of 5.4% Zn occurs in the north fracture zone (GOAT 85,86) and is accompanied by contents of 970-2700 ppm Pb and 1.1-7.5 ppm Ag from samples taken there. Galena, sphalerite and pyrite occur in this extremely altered zone and samples from previous surveys indicate contents of up to 1.31% Pb, 5.64% Zn, and 1.94 oz/ton Ag.

Samples 38961R and 38963R from southern GOAT claims, consisting of altered quartz monzonite and minor quartz veining from a shear zone, contain from 273-1050 ppm Pb, 1350-1700 ppm Cu. The fracturing, veining and alteration are part of a pervasive hydrothermal system. Samples of fracture and vein material within this southern part of the property contain values as low as 5 ppm Pb, 45 ppm Zn and 0.1 ppm Ag and maximum values of up to 4300 ppm Pb, 1.66% Zn and 38.0 ppm Ag. Float samples from slump and talus located on Grid 3 within this area vary from 3-112 ppm Pb, 220 ppm-1.02% Zn and 0.1-2.9 ppm Ag.

TABLE 8

Metallic Elements* in Rock Samples of Fracture- and Vein-Related Material

• All values in ppm unless otherwise indicated

| | | <u>Cu</u> | <u>Mo</u> | <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>W(WO₃)</u> |
|------------|----|-----------|-----------|-----------|-----------|-----------|--------------------------|
| 38842R | F* | 500 | - | 3 | 105 | 0.1 | 1 |
| 38847R | V | 11 | - | 1 | 14 | 0.1 | 1 |
| 38884R | F | 25 | - | 1150 | 1450 | 1.1 | 3 |
| 38885R | F* | 400 | - | 970 | 5.4% | 7.5 | 12 |
| 38886R | F* | 90 | - | 2700 | 1800 | 6.0 | 1 |
| 38956R | F* | 5 | - | 8 | 45 | 0.1 | 1 |
| 38957R | F* | 450 | - | 20 | 1700 | 0.1 | 1 |
| 38958R | F* | 9 | - | 8 | 103 | 0.1 | 1 |
| 38959R | V | 4 | - | 17 | 63 | 0.1 | 1 |
| 38960R | F* | 60 | - | 145 | 830 | 0.1 | 10 |
| 38961R | F* | 1700 | - | 273 | 2000 | 20.0 | 1 |
| 38963R | F* | 1350 | - | 1050 | 820 | 38.0 | 1 |
| 38965R | V | 18 | - | 4300 | 4600 | 13.6 | 7 |
| 38969R | F | 123 | - | 40 | 1.66% | 2.3 | 1 |
| 38970R | F* | 76 | - | 5 | 220 | 0.1 | 1 |
| 38973R (f) | V* | 17 | - | 112 | 7100 | 2.9 | 1 |
| 38974R (f) | F | 136 | - | 3 | 220 | 0.1 | 1 |
| 38976R (f) | F | 15 | 1 | 90 | 1.02% | 0.1 | 1 |
| 38977R | F* | 13 | 1 | 118 | 1850 | 0.1 | 1 |
| 38978R | F* | 11 | 1 | 26 | 650 | 0.1 | 3 |
| 38980R | F* | 16 | 1 | 35 | 515 | 0.1 | 13 |
| 38981R | F* | 11 | 1 | 50 | 625 | 2.3 | 11 |
| 38982R (f) | V | 170 | 155 | 440 | 142 | 23.0 | 48 |
| 38983R | V | 310 | 1 | 8 | 3700 | 0.3 | 185 |
| 38985R | V | 5200 | 33 | 1450 | 150 | 6.10oz/t | 7 |

* - altered

F - fracture-material

V - vein-material

Tungsten is relatively low within these rocks and only one sample, 38983R, contains anomalous contents of 185 ppm W.

6.3 Soil Geochemistry

During the 1981 field season, a detailed soil geochemical survey was carried out on the GOAT 37-86 Claims over the five picketed grids at 60 m x 125 m intervals. "B" horizon (alpine) soil samples were collected, partially dried in the field and shipped for analysis (see Appendix I for details). In addition, nine soil pits were sampled in an attempt to follow-up geophysical (VLF-EM and magnetic) anomalies. All samples were analysed for Pb, Zn and Ag (Appendix II); soil pit samples were also analysed for Cu, Mo and W. The soil pit profiles are shown in Appendix IV.

Contour intervals for each metal were arbitrarily chosen using the probably anomalous level as the lowest contour; and higher intervals representing the anomalous levels were used (Plans 2-4). Anomalies are outlined on the compilation map, Plan 10, and on individual soil maps. Contour intervals used to delineate the soil anomalies were chosen on the basis of trends, values and amount of dispersion. Because the dispersion of probably anomalous Ag covers a large area on the property, a higher contour value was chosen (0.8 ppm Ag) to delineate Ag anomalies. Five individual anomalies occur over the property.

6.3.1 Soil Anomalies

Soil Anomaly 1

This anomaly is located in the south part of Grid 3 and the north part of Grid 2 from approximately 1+25N to 11+25N and varies in width from 100 m to 500 m. Coincident Pb, Zn, Ag anomalies extend eastward from the southern part of the central ridge toward the valley.

Anomaly 1A. This ten-sample coincident Pb-Zn-Ag anomaly is fan-shaped and suggests mechanical derivation from the southern ridges. Values range from 82-390 ppm Pb, 370-1900 ppm Zn and 0.8-8.5 ppm Ag. The soil anomaly probably originates from the exposed shears on the ridge where grab samples were found to contain up to 4300 ppm Pb, 1.66% Zn, and 38 ppm Ag, 5250 ppm Cu, and 185 ppm W. This suggests that the source for this anomaly is structurally controlled, although it is uncertain that mineralization found to date adequately explains the soil anomaly.

Anomaly 1B. This anomaly appears to be an extension of anomaly 1A and is outlined by the 200 ppm Zn contour. Six anomalous Ag values fall within this area and range from 1.0-2.7 ppm Ag. Three soil samples contain 76-85 ppm Pb. The geology of underlying bedrock is uncertain because this area is covered with overburden. Anomalies are probably caused by slump or solifluction of minerals from the ridge. The anomaly is open to the east but tends to follow the same trend outlined by anomaly 1A.

Anomaly 1C. This northern limit of Anomaly 1 is marked by one anomalous sample containing 80 ppm Pb, 1100 ppm Zn and 1.5 ppm Ag. As in anomaly 1B, this extension of anomaly 1 is marked by the 200 ppm Zn contour. Seven samples contain from 200-1100 ppm Zn. The one coincident high Pb+Zn+Ag bearing sample falls below a known galena-sphalerite vein and fracture zone.

Soil Anomaly 2

Three Pb+Zn anomalies located on the southwest corner of GRID 4 and northwest corner of GRID 1 appear to be draped over the main central ridge and cover an area of 1100 m x 350 m. This area is principally underlain by quartz monzonite and xenoliths of metasedimentary rocks with minor skarn. Fracturing and shear zones were mapped on the ridge (Kuehnbaum, 1980).

Anomaly 2A. A northeast-trending anomaly covering an area 600 m x 200 m is outlined by the 200 ppm Zn contour and is open to the southwest. Zinc content ranges from 200-330 ppm Zn. Four samples contain 100-184 ppm Pb. Two shear zones in the vicinity contain minor Pb, Zn and Ag in the rocks (up to 880 ppm Pb, 1750 ppm Zn and 1.6 oz/ton Ag). The downslope trend of the anomaly suggests that it is a result of slumping or solifluction of the mineralization from the ridge. The extension of the trend downslope for more than 600 m, could be due to the steepness of the slope increasing the flow of ground water and hence increasing the dispersion of metals, or increasing mechanical dispersion.

Anomaly 2B. This two-sample anomaly extends downslope from the central ridge, opposite anomaly 2A. Zinc values are 345 and 700 ppm, lead values 90 and 640 ppm, and silver values 0.1 and 1.0 ppm. The anomaly probably has the same source as anomaly 2A.

Anomaly 2C. A one-sample anomaly containing 85 ppm Pb, 510 ppm Zn and 0.1 ppm Ag occurs in the southwest part of GRID 4. Its location suggests that it was caused by drainage off the exposed ridge in a similar manner to anomaly 2A. Minor skarn mineralization containing up to 0.8 oz/ton Ag and 1.54% Zn occurs upslope.

Soil Anomaly 3

Anomaly 3A and 3B. Two isolated samples located on Grid 5 (GOAT 85-86) contain 0.9 ppm and 1.2 ppm Ag. The latter sample also contains 200 ppm Zn. The area is primarily underlain by biotite quartz monzonite; however, talus and swamp cover any shear zones and/or metasedimentary xenoliths which might cause the anomaly.

Soil Anomaly 4

A three-station Pb+Zn anomaly occurs in the south part of GRID 5 and appears to result from slumping and solifluction from the general area of a mineralized zone on the north end of the ridge. Fracture material sampled on this ridge contains 178-440 ppm Zn and 75 ppm Mo in grab specimens. Further investigation is required.

Soil Anomaly 5

An isolated sample containing 210 ppm Zn occurs on the north end of GRID 5. Calc-silicate skarn was located within this area containing up to 330 ppm Zn and 0.85% WO₃.

6.3.2 Soil Pit Geochemistry

Soil pits were located to investigate geophysical conductors (VLF-EM and mag) where rock exposure was limited. Usually, 10 samples at equally spaced intervals were taken at each pit and sent for geochemical analysis. Profiles were drawn for each pit and are presented in Appendix IV.

Soil Pit 81-01 (Grid 3: L2+25N, 3+30E)

This pit was dug in the vicinity of a north-south trending VLF-EM conductor zone and near a magnetic high. A 55-cm deep pit indicates an increase in Cu and W with depth and a decrease in Mo, Ag and Pb. Copper contents increase from 28 ppm at surface to 114 ppm at 55 cm with a maximum of 119 ppm Cu at 40 cm, just above the transition of B horizon mineral soil to C horizon. Zinc content is quite consistent throughout the profile; ranging from 305-420 ppm in the mineral soil and dropping to 240 ppm Zn at 55 cm. The organic layer only contains 140 ppm Zn. Tungsten ranges from 1 - 15 ppm from the organic layer to a depth of 25 cm; it then increases to 81 ppm W at 45 cm and tails off to 16 ppm at the bottom of the pit. The distribution of these elements is indicative of remobilized Cu and W from depth or a surface-downward leaching of those metals. The elements Mo, Pb, and Ag are relatively

low throughout the profile. A Cu-W enriched skarn may underlie the conductor. A sulphide skarn sample from the pit contains 350 ppm Cu.

Soil Pit 81-02 (Grid 3: L4+95N, 4+80E)

This 57 cm-deep pit is located within a wide VLF-EM conductive zone. There are overall low contents for Cu, Mo, Pb, Ag and W. Zinc content, though low in the "A" organic horizon (25-58 ppm) ranges from 87 ppm to 122 ppm in the mineral soil. A content of 1.0 ppm Ag occurs at a depth of 45 cm.

Soil Pit 81-03 (Grid 4: L6+25S, 3+70W)

This pit lies over a magnetic high and a VLF-EM conductor. A 70 cm deep pit in a solifluxion area contains background values for Cu (12-22 ppm), Pb (14-24 ppm) and Ag (0.1 ppm). Zinc content is highest in the upper 21 cm of the pit (60-103 ppm) and ranges from 78-90 ppm at depth. Two spot highs of 27 ppm and 19 ppm tungsten occur at 28 cm and 42 cm, respectively. Because of the location and material sampled, it is thought that this poorly developed profile represents solifluxion and/or talus. From this, no conclusions can be made on the source of the VLF-EM and magnetic responses.

Soil Pit 81-04 (Grid 4: L5+00S, 2+60W)

This soil pit falls within the same broad magnetic high as soil pit 81-03. No significant variations in the elements analysed occur in the 90 cm deep pit. Zinc content is 114-115 ppm in the upper 27 cm of the pit but generally

80-95 ppm in the lower part. Apparently, talus and solifluxion material fill the profile, indicating a poor representation of the underlying bedrock geochemistry. A pyrrhotite skarn at depth may be the cause of the geophysical response.

Soil Pit 81-05 (Grid 4: L3+75S, 3+85W)

This soil pit was sampled on the extreme western edge of the grid, 150 m west of the VLF-EM conductor, to determine the relative concentration of the elements derived from the exposed central ridge. No anomalous metal counts occur in this 70 cm deep pit. Element content does not fluctuate with depth and, therefore, no conclusions can be made.

Soil Pit 81-06 (Grid 4: L5+00S, 5+40E)

This soil pit was dug at the location of a north-trending VLF-EM conductor. The element distribution remains consistent from the top to a depth of 67.5 cm. No unusual magnetic response was evident in this area.

Soil Pit 81-07 (Grid 4: L3+75S, 5+70E)

Located 125 m from Soil Pit 81-06, this pit was dug to investigate the same VLF-EM conductor. A slight increase in Cu was noted in pit 81-07 with contents ranging from 49-79 ppm over 65 cm compared to 8-14 ppm in pit 81-06. Zinc contents range from 178 ppm to 245 ppm; again, slightly higher than in pit 81-06 (78-148 ppm Zn). A sheared zone may be responsible for the conductor, but because of the low, swampy topography, it is difficult to prove.

Soil Pit 81-08 (Grid 4: L2+50S, 5+10E)

This 60 cm deep pit was dug over a VLF-EM conductor. No significant changes in the distribution of elements within the profile were encountered.

Soil Pit 81-09 (Grid 4: L1+25S, 5+00E)

This 100 cm deep pit is located just east of the VLF-EM conductor investigated by soil pit 81-08. The environment is low lying, flat and swampy; humus was found at a 1.0 m depth. All elements analysed were extremely low in content and no significant variations were evident. One soil sample at 30 cm contains 12 ppm W.

7. GEOPHYSICS

7.1 Summary of Geophysical Interpretation - by F.L. Jagodits

During the summer of 1981 ground magnetic and VLF-EM surveys were conducted over the GOAT Claims. Five specific grids were surveyed. Total field magnetic observations were made at 15 m intervals along lines which are 125 m apart. The magnetic observations were corrected for the diurnal variations of the earth's magnetic field. The station interval of the VLF-EM survey was 15 m. The VLF-EM transmitter NLK (Jim Creek, Washington, frequency: 18.6 kHz) provided the primary electromagnetic field.

The appearance of the magnetic variations perceptibly change from north to south. The majority of the magnetic features, which may reach several hundred gammas in amplitude, exhibit considerable strike length. The more significant ones can be traced along the entire length of the grid. These north-northwest striking anomalies dominate the two northerly Grids 4 and 5. The sources of the anomalies are believed to be narrow and in most instances are shallow seated, say less than 30 m.

Shorter strike length anomalies, which on the whole have lower amplitudes than in the north create a mottled appearance in the combined, southerly Grids 2 and 3. In the north of Grids 2 and 3 higher amplitude anomalies dominate, not unlike the one in Grid 4 apart from the shortened strike

length. The anomaly amplitudes are measurably reduced in the south signifying a lithological change and/or the termination of magnetic skarns. Furthermore, increased overburden thickness may also reduce the amplitudes.

It is believed that the magnetic activity in the north is caused by magnetic skarns. Two anomalous situations are noteworthy, both are in Grid 4 which are associated with VLF-EM conductors. Apart from the strike shearing which is manifested by the VLF-EM, northwest and northeast shearing is evident from the magnetics.

The VLF-EM responses depict moderately conductive features. It is suggested that current channeling, rather than induction due to metallic sulphides is the major source of the anomalies, which is further enhanced in the areas of skarns. Generally, the VLF-EM anomalies follow the magnetic trends, although the VLF anomalous responses are transgressive to the magnetics in Grid 5. The most significant VLF-EM anomaly, striking north-northeast in the northwestern part of Grid 4 correlates with a notable magnetic feature. This situation is worthy of further investigation. Another VLF feature, with considerable strike length, trending north-northwest follows a narrow, but definite magnetic feature in the central part of Grid 4, where further work may be envisaged.

Additional magnetic and VLF-EM coincidences are also evident, which are discussed in Jagodits (1981).

8. CONCLUSIONS

1. The GOAT 37-86 Claims are partly underlain by a sequence of regionally metamorphosed clastic and carbonate sedimentary rocks of the Hadrynian Grit unit (Windermere Group) or lower Cambrian Atan Group. Isoclinal folds with subvertical axial planes developed at the time of regional metamorphism as did schistosity in the quartzitic rocks and recrystallization of the carbonate rocks. The folded sequence was subsequently intruded by at least three phases of granitoid intrusive rocks of the Cassiar Batholith during Jurassic and/or Cretaceous times: diorite to granodiorite, biotite quartz monzonite, and biotite-muscovite quartz monzonite. The metasedimentary rocks occur as large xenoliths, or septa within the intrusive mass. All rocks were subsequently fractured and sheared.

2. Local, minor mineralized skarn development has occurred at carbonate/intrusive contacts. Pyrrhotite and/or pyrite commonly occur with minor chalcopyrite and scheelite. The skarns are locally enriched in Mo (up to 0.046%), Cu (up to 0.89%), Zn (up to 1.54%), Ag (up to 0.8 oz/ton) and W (up to 0.96% WO_3). Values of Pb and Sn (1980 data) are generally very low (maxima 790 ppm and 43 ppm, respectively). Follow-up work in 1981 over these zones consisted mainly of detailed assesement of each area for size and grade of mineralization. No significant changes in geochemistry resulted and all showings are limited in dimension. The outlines of the metasedimentary

rocks suggests that a possible thickening of the carbonate horizons at hinges of folds has occurred and potential for large-scale skarnification and mineralization exists at depth. Hinge locations in areas of cover are unknown.

3. Vein- and fracture-related mineralization possibly has the most economic potential. Enriched contents of Pb, Zn and Ag have been found in pyritic quartz veins and in fracture fillings within quartz monzonite and metasedimentary rocks in several localities. Samples taken in 1980 from one galena-sphalerite mineralized shear/fracture zone on the GOAT 85-86 Claims returned values up to 1.31% Pb, 5.64% Zn and 1.94% oz/ton Ag. Follow-up sampling of this area in 1981 indicated a shear zone over 3 m wide and returned values of up to 2700 ppm Pb, 7.5 ppm Ag and 5.4% ppm Zn.

Another fracture system (on Grid 3) with a sphalerite showing associated with Fe-carbonates, intense Mn alteration, pyrite, galena and minor barite at the contact of quartz monzonite and carbonate returned values up to 0.15% Pb, 0.52% Cu, 8.22% Zn and 6.10 oz/ton Ag over a 5 m x 4 m area.

4. Detailed soil sampling outlined two Pb-Zn-Ag anomalies located at the base of talus slopes just below mineralized fracture/shear zones: in the southern part of Grid 3 and the southwestern part of Grid 4. Values up to 390 ppm Pb, 1900 ppm Zn and 8.5 ppm Ag occur in soils.

5. VLF-EM conductive zones and magnetic highs generally trend north-south and probably delineate granodiorite intrusive contacts and pyrrhotitic quartzite layers. Sulphide-rich skarns are also probably the cause of some geophysical responses. Numerous shear zones mapped in outcrop are also suggested by the VLF-EM conductors located in unexposed and flat lying areas. Strong coincident VLF-EM and magnetic anomalies on Grid 4 are a possible target for diamond drilling.

Respectfully submitted.

m. j. crandall

M. J. Crandall, B.Sc.

Toronto, Ontario
December 1981

9. REFERENCES

- Gabrielse, H., Templeman-Kluit, D.J., Blusson, S.L., and Campbell, R.B., 1980, Geology, MacMillan River, Yukon-District of Mackenzie-Alaska, Sheet 105, 115, Geol. Surv. of Canada, Map 1398A.
- Hattley, C., 1980, Geology and Geochemistry of the GOAT 1-36 Claims, 105B/2 E & W. Report for Canadian Occidental Petroleum Ltd. - Minerals Division, Toronto, Ontario
- Jagodits, F.L., 1981, Report on Ground Geophysical Surveys, GOAT 37-86, Watson Lake Mining District, Yukon Territory. Report for Canadian Occidental Petroleum Ltd. - Minerals Division, Toronto, Ontario
- Kuehnbaum, R.M., 1980, Geology and Geochemistry of the GOAT 37-86 Claims, 105/B 2E. Report for Canadian Occidental Petroleum Ltd. - Minerals Division, Toronto, Ontario
- Poole, W.H. Roddick, J.A., and Green, L.H. 1960, Geology, Wolf Lake, Yukon Territory, Geol. Surv. Canada, Preliminary Series Map 10-60.
- Sacks, E.J., 1979, Geology and Geochemistry of the GOAT Claim Groups. Report for Canadian Occidental Petroleum Ltd. - Minerals Division, Toronto, Ontario
- Travis, R.B., 1955 Classification of Rocks; Quarterly of Colorado School of Mines, Vol. 50, No. 1.
- Watters, S.E., 1981, Geology and Geochemistry of the LICK Claims, 105 B, Report for Canadian Occidental Petroleum Ltd. - Minerals Division, Toronto, Ontario

AUTHOR'S QUALIFICATIONS

M. JANE CRANDALL

M. Jane Crandall graduated from Carleton University, Ottawa, Ontario, with a Bachelor of Science in Geology in 1980.

Since graduation she has worked as a mineral exploration geologist for Canadian Occidental Petroleum Ltd. to the present.

While employed with Canadian Occidental she has carried out and supervised mineral exploration projects in New Brunswick, Saskatchewan, British Columbia and the Yukon.

She is currently a member of the Prospectors' and Developers' Association.

APPENDIX I
SAMPLING AND LABORATORY PROCEDURES

A) Soil

1. 'B' horizon or talus fine material is sampled.

2. Three to four handfuls of material are collected into heavy duty, high wet-strength kraft envelopes which are dried in the field and then sent to the laboratory for analysis.

B) Sample Site Information Card

1. At each soil or stream sample site, an 80 column field data card is completed. The sampler records such information as sample number, location and type, depth of stream, sample composition, vegetation, drainage, etc. Separate cards are used for stream and soil samples in order to record pertinent information.

II Laboratory Procedures

A. Sample Preparation

i) Soils

1. Samples are sorted and dried at 50^oc for 12 to 16 hours

2. Dried material is then screened to obtain the -80 mesh (177 micron) fraction. The rest of the material is discarded.

3. -80 mesh fraction material is weighed and analysed for appropriate elements.

ii) Rocks

1. Entire sample is crushed.
2. If necessary (>250 gms.). The sample is split on a Jones splitter, the reject is retained for a short period.
3. The split fraction is pulverized in a ring grinder such that 90% passes a 200 mesh (174 micron) sieve.
4. The -200 mesh material is weighed and analysed for the appropriate elements.

B. Elemental Analyses

i) ppm Copper, Lead, Zinc, Silver, Molybdenum (Atomic Absorption)

1. A 1.0 gm portion of -80 mesh soil or stream sediment or -200 mesh rock flour or pulverized "heavies" is digested in concentrated, hot, perchloric - nitric acid (HClO_4 - HNO_3) for 2 hours.
2. Digested sample is cooled and made up to 25 mls. with distilled water.
3. Solution is mixed and solids allowed to settle.
4. Cu, Pb, Zn Ag and Mo are determined by atomic absorption, using background correction for Pb and Ag analyses.

| <u>Element</u> | <u>Bkgd. Corr.</u> | <u>Flame Type</u> | <u>Wave Length hm</u> | <u>Detection Limit</u> | <u>Chemex Standard</u> | <u>+ 1 Std. Deviation</u> |
|----------------|--------------------|-------------------|-----------------------|------------------------|------------------------|---------------------------|
| Cu | No | A | 324.7 | 1 ppm | 71 ppm | + 3 |
| Pb | Yes | A | 217.0 | 1 ppm | 59 ppm | + 1 |
| Zn | No | A | 213.8 | 1 ppm | 52 ppm | + 3 |
| Ag | Yes | A | 328.1 | 0.2 ppm | 8.5 ppm | + 0.5 |
| Mo | No | N | 313.3 | 1 ppm | 25 ppm | + 1 |

A = Air acetylene flame.

N = Nitrous oxide - acetylene flame.

ii) ppm Tungsten (W) (Colourimetric)

1. 0.5 gm of - 80 mesh soil or stream sediment, - 200 mesh rock flour or pulverized "heavies" is fused with potassium bisulfate and leached with HCl.
2. The reduced form of W is complexed with toluene 3, 4 dithiol and extracted into an organic phase.
3. The resulting colour is visually compared to similarly prepared standards. (Colourimetric method)
4. Detection limit: 2 ppm W

APPENDIX II

GEOCHEMICAL CERTIFICATES OF ANALYSIS

CONTENTS

- 1) Rock Analysis
 - a) geochemical values
 - b) assays

- 2) Soil Analysis
 - a) samples from grids
 - b) soil pits 81-01 to 81-09

- 73 -
CHEMEX LABS LTD.



212 BROOKSBANK AVE.
 NORTH VANCOUVER, B.C.
 CANADA V7J 2C1
 TELEPHONE: (604)984-0221
 TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
 C/O LITHOUSE EXPEDITING
 BOX 295
 WATSON LAKE, Y.T.
 Y0A 1C0

CERT. # : A8112128-001-A
 INVOICE # : 12112123
 DATE : 13-JUL-81
 P.O. # : NONE
 WATSU

ATTN: GOAT ROCKS

| Sample description | Prep code | Cu ppm | Pb ppm | Zn ppm | Ag ppm | W ppm | |
|--------------------|-----------|--------|--------|--------|--------|-------|----|
| 81 WA 38443 R | 205 | 27 | 75 | 70 | 0.6 | 4 | -- |
| 81 WA 38899 R | 205 | 1100 | 1 | 17 | 3.2 | 700 | -- |
| 81 WA 38946 R | 205 | 133 | 1 | 55 | 0.1 | 20 | -- |
| 81 WA 38947 R | 205 | 1850 | 1 | 60 | 1.6 | >300 | -- |
| 81 WA 38948 R | 205 | 1250 | 3 | 105 | 0.7 | 100 | -- |

Hart Bickler

Certified by



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597



• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
Y0A 1C0

CERT. # : A8112727-001-A
INVOICE # : 18112727
DATE : 13-AUG-81
P.O. # : NONE
WATSU

GOAT 37-86 ROCKS

| Sample description | Prep code | Cu ppm | Pb ppm | Zn ppm | Ag ppm | W ppm | |
|--------------------|-----------|--------|--------|--------|--------|-------|----|
| 81 WA 38840 | 205 | 15 | 2 | 110 | 0.1 | 10 | -- |
| 81 WA 38841 | 205 | 450 | 1 | 7 | 0.3 | 1 | -- |
| 81 WA 38842 | 205 | 500 | 3 | 105 | 0.1 | 1 | -- |
| 81 WA 38843 | 205 | 35 | 3 | 35 | 0.1 | 1 | -- |
| 81 WA 38844 | 205 | 10 | 1 | 85 | 0.1 | 1 | -- |
| 81 WA 38845 | 205 | 18 | 1 | 48 | 0.1 | 1 | -- |
| 81 WA 38846 | 205 | 18 | 30 | 66 | 0.1 | 1 | -- |
| 81 WA 38847 | 205 | 11 | 1 | 14 | 0.1 | 1 | -- |
| 81 WA 38950 | 205 | 48 | 1 | 42 | 0.1 | 1 | -- |
| 81 WA 38951 | 205 | 35 | 5 | 10 | 0.1 | 1 | -- |
| 81 WA 38952 | 205 | 182 | 1 | 12 | 0.1 | 7 | -- |
| 81 WA 38953 | 205 | 200 | 1 | 130 | 0.1 | 1 | -- |
| 81 WA 38954 | 205 | 23 | 2 | 12 | 0.1 | 1 | -- |
| 81 WA 38955 | 205 | 26 | 1 | 60 | 0.1 | 1 | -- |
| 81 WA 38956 | 205 | 5 | 8 | 45 | 0.1 | 1 | -- |
| 81 WA 38957 | 205 | 450 | 20 | 1700 | 0.1 | 1 | -- |
| 81 WA 38958 | 205 | 9 | 13 | 103 | 0.1 | 1 | -- |
| 81 WA 38959 | 205 | 4 | 17 | 53 | 0.1 | 1 | -- |
| 81 WA 38960 | 205 | 60 | 145 | 830 | 0.1 | 10 | -- |
| 81 WA 38961 | 205 | 1700 | 273 | 2000 | 20.0 | 1 | -- |
| 81 WA 38962 | 205 | 75 | 8 | 83 | 0.1 | 1 | -- |
| 81 WA 38963 | 205 | 1350 | 1050 | 820 | 38.0 | 1 | -- |
| 81 WA 38964 | 205 | 30 | 12 | 118 | 0.3 | 72 | -- |
| 81 WA 38965 | 205 | 18 | 4300 | 4600 | 13.6 | 7 | -- |
| 81 WA 38966 | 205 | 22 | 30 | 35 | 0.1 | 12 | -- |
| 81 WA 38967 | 205 | 27 | 28 | 78 | 0.2 | 23 | -- |
| 81 WA 38968 | 205 | 8 | 12 | 42 | 0.1 | 1 | -- |
| 81 WA 38969 | 205 | 121 | 40 | >10000 | 2.3 | 1 | -- |
| 81 WA 38970 | 205 | 76 | 5 | 220 | 0.1 | 1 | -- |

Handwritten signature

Certified by



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

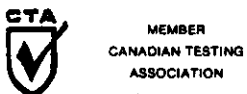
CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
30X 295
WATSON LAKE, Y.T.
Y0A 1C0

CERT. # : A8112726-001-A
INVOICE # : I8112726
DATE : 14-AUG-81
P.O. # : NONE
WATSU

GOAT 37-86 ROCKS

| Sample description | Prep code | Cu ppm | Mo ppm | Pb ppm | Zn ppm | Ag ppm | W ppm |
|--------------------|-----------|--------|--------|--------|--------|--------|-------|
| 31 WA 38971 R | 205 | 350 | -- | 1 | 43 | 0.1 | 7 |
| 31 WA 38972 R | 205 | 49 | -- | 970 | 9900 | 0.3 | 1 |
| 31 WA 38973 R | 205 | 17 | -- | 112 | 7100 | 2.9 | 1 |
| 31 WA 38974 R | 205 | 136 | -- | 3 | 220 | 0.1 | 1 |
| 31 WA 38975 R | 205 | 9 | -- | 35 | 255 | 0.1 | 1 |
| 31 WA 38976 R | 205 | 15 | 1 | 90 | >10000 | 0.1 | 1 |
| 31 WA 38977 R | 205 | 13 | 1 | 118 | 1350 | 0.1 | 1 |
| 31 WA 38978 R | 205 | 11 | 1 | 26 | 650 | 0.1 | 3 |
| 31 WA 38979 R | 205 | 59 | 1 | 26 | 120 | 0.1 | 1 |
| 31 WA 38980 R | 205 | 16 | 1 | 35 | 515 | 0.1 | 13 |
| 31 WA 38981 R | 205 | 11 | 1 | 50 | 625 | 2.3 | 11 |
| 31 WA 38982 R | 205 | 170 | 155 | 440 | 142 | 23.0 | 48 |
| 31 WA 38983 R | 205 | 310 | 1 | 3 | 3700 | 0.3 | 185 |
| 31 WA 38984 R | 205 | 350 | 200 | 138 | 84 | 16.5 | 40 |
| 31 WA 38985 R | 205 | 5200 | 33 | 1450 | 150 | >100.0 | 7 |
| 31 WA 38986 R | 205 | 180 | 1 | 17 | 55 | 1.0 | 1 |
| 31 WA 38987 R | 205 | 56 | 1 | 4 | 93 | 0.2 | 1 |
| 31 WA 38988 R | 205 | 56 | 1 | 1 | 35 | 0.1 | 1 |
| 31 WA 38989 R | 205 | 900 | 1 | 4 | 93 | 0.4 | >300 |
| 31 WA 38995 R | 205 | 375 | 1 | 1 | 60 | 0.4 | 95 |
| 31 WA 38997 R | 205 | 1150 | 1 | 1 | 2 | 0.1 | 1 |
| 31 WA 38998 R | 205 | 30 | -- | 5 | 25 | 0.1 | 1 |



Certified by *[Signature]*

CHEMEX LABS LTD.



212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
YOA 1C0

CERT. # : A8112814-001-A
INVOICE # : I8112814
DATE : 14-AUG-81
P.O. # : NONE
WATSU

GDAT 37-36 ROCKS

| Sample description | Prep code | Mo ppm | Cu ppm | Pb ppm | Zn ppm | Ag ppm | W ppm |
|--------------------|-----------|--------|--------|--------|--------|--------|-------|
| 31 WA 38836 R | 205 | -- | 110 | 50 | 65 | 0.8 | 1 |
| 31 WA 38837 R | 205 | 8 | 480 | 2 | 55 | 0.3 | 295 |
| 31 WA 38838 R | 205 | -- | 12 | 19 | 54 | 0.2 | 14 |
| 31 WA 38848 R | 205 | -- | 95 | 16 | 24 | 0.4 | >300 |
| 31 WA 38849 R | 205 | -- | 33 | 7 | 38 | 0.1 | 85 |
| 31 WA 38851 R | 205 | -- | 5 | 6 | 15 | 0.1 | 23 |
| 31 WA 38852 R | 205 | -- | 25 | 325 | 230 | 0.1 | 25 |
| 31 WA 38853 R | 205 | -- | 50 | 19 | 26 | 0.1 | 1 |
| 31 WA 38884 R | 205 | -- | 25 | 1150 | 1450 | 1.1 | 3 |
| 31 WA 38885 R | 205 | -- | 400 | 970 | >10000 | 7.5 | 12 |
| 31 WA 38886 R | 205 | -- | 90 | 2700 | 1300 | 5.0 | 1 |
| 31 WA 38887 R | 205 | -- | 33 | 28 | 440 | 0.1 | 1 |
| 31 WA 38888 R | 205 | 75 | 65 | 17 | 178 | 0.2 | 1 |
| 31 WA 38889 R | 205 | -- | 63 | 19 | 270 | 0.1 | 1 |
| 31 WA 38891 R | 205 | -- | 6 | 5 | 330 | 0.2 | >300 |
| 31 WA 38892 R | 205 | -- | 5 | 1 | 95 | 0.1 | 155 |
| 31 WA 38893 R | 205 | -- | 1 | 6 | 25 | 0.1 | 42 |
| 31 WA 38894 R | 205 | -- | 50 | 5 | 50 | 0.1 | 12 |
| 31 WA 38900 R | 205 | 1 | 350 | 780 | 1000 | 6.0 | 15 |

Certified by *Hart Richter*





CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
YOA 1C0

CERT. # : A8112876-001-A
INVOICE # : 18112876
DATE : 18-AUG-81
P.O. # : NONE
WATSU

GOAT-ROCK

| Sample description | Prep code | Cu ppm | Mo ppm | Pb ppm | Zn ppm | Ag ppm | W ppm |
|--------------------|-----------|--------|--------|--------|--------|--------|-------|
| 38632 | 205 | 28 | -- | 10 | 17 | 1.5 | 30 |
| 38633 | 205 | 26 | -- | 3 | 82 | 0.1 | 42 |
| 38634 | 205 | 29 | -- | 13 | 26 | 0.1 | 1 |
| 38635 | 205 | 400 | 1 | 6 | 27 | 0.1 | 590 |
| 38850 | 205 | 7 | -- | 10 | 64 | 0.1 | 1 |



Certified by *Hart Bisher*



- 79 -
CHEMEX LABS LTD.

212 BROOKSBANK AVE.
 NORTH VANCOUVER, B.C.
 CANADA V7J 2C1
 TELEPHONE: (604)984-0221
 TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
 C/O LITEHOUSE EXPEDITING
 BOX 295
 WATSON LAKE, Y.T.
 Y0A 1C0

CERT. # : A8113323-001-A
 INVOICE # : I8113323
 DATE : 03-SEP-81
 P.O. # : NONE
 WATSU

GOAT 37-86 ROCKS

| Sample description | Prep code | Zn percent | WO3 percent | Ag (FA) oz/t |
|--------------------|-----------|------------|-------------|--------------|
| 81 WA 38959 | 214 | 1.66 | -- | -- |
| 81 WA 38976R | 214 | 1.02 | -- | -- |
| 31 WA 38985R | 214 | -- | -- | 5.10 |
| 31 WA 38989R | 214 | -- | 0.23 | -- |

B. Swartz

.....
 Registered Assayer, Province of British Columbia



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597



• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
30X 295
WATSON LAKE, Y.T.
Y0A 1C0

CERT. # : A8113368-001-A
INVOICE # : I8113368
DATE : 04-SEP-81
P.O. # : NONE
WATSU

GOAT 37-86 ROCKS

| Sample description | Prep code | Zn percent | W03 percent | | | | | |
|--------------------|-----------|------------|-------------|----|----|----|----|----|
| 81 WA 38848 R | 214 | -- | 1.12 | -- | -- | -- | -- | -- |
| 81 WA 38885 R | 214 | 5.40 | -- | -- | -- | -- | -- | -- |
| 81 WA 38891 R | 214 | -- | 0.85 | -- | -- | -- | -- | -- |

B. J. Swales

.....
Registered Assayer, Province of British Columbia



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597



• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
Y0A 1C0

CERT. # : A8111545-001-1
INVOICE # : I3111546
DATE : 22-JUN-81
P.O. # : NONE
WATSU-GOAT SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|-------------------------------------|----|----|
| 31WA 38000 | 201 | 26 | 54 | 0.1 | -- | -- | -- |
| 31WA 38001 | 201 | 14 | 68 | 0.1 | -- | -- | -- |
| 31WA 38002 | 201 | 20 | 68 | 0.1 | -- | -- | -- |
| 31WA 38003 | 201 | 36 | 154 | 0.1 | -- | -- | -- |
| 31WA 38004 | 201 | 6 | 23 | 0.1 | -- | -- | -- |
| 31WA 38005 | 201 | 73 | 220 | 0.4 | -- | -- | -- |
| 31WA 38006 | 201 | 40 | 166 | 0.2 | -- | -- | -- |
| 31WA 38007 | 201 | 20 | 93 | 0.1 | -- | -- | -- |
| 31WA 38008 | 201 | 46 | 36 | 0.1 | -- | -- | -- |
| 31WA 38009 | 201 | 10 | 42 | 0.1 | -- | -- | -- |
| 31WA 38010 | 201 | 12 | 43 | 0.1 | -- | -- | -- |
| 31WA 38011 | 201 | 10 | 60 | 0.1 | -- | -- | -- |
| 31WA 38012 | 201 | 7 | 54 | 0.1 | -- | -- | -- |
| 31WA 38013 | 201 | 15 | 73 | 0.1 | -- | -- | -- |
| 31WA 38014 | 201 | 14 | 54 | 0.1 | -- | -- | -- |
| 31WA 38015 | 201 | 20 | 58 | 0.1 | -- | -- | -- |
| 31WA 38016 | 201 | 55 | 110 | 0.1 | -- | -- | -- |
| 31WA 38017 | 201 | 540 | 700 | 1.0 | -- | -- | -- |
| 31WA 38018 | 201 | 22 | 102 | 0.1 | -- | -- | -- |
| 31WA 38019 | 201 | 21 | 64 | 0.1 | -- | -- | -- |
| 31WA 38020 | 201 | 16 | 74 | 0.1 | -- | -- | -- |
| 31WA 38021 | 201 | 13 | 90 | 0.1 | -- | -- | -- |
| 31WA 38022 | 201 | 12 | 64 | 0.1 | -- | -- | -- |
| 31WA 38023 | 201 | 26 | 50 | 0.1 | -- | -- | -- |
| 31WA 38024 | 201 | 35 | 130 | 0.2 | -- | -- | -- |
| 31WA 38025 | 201 | 10 | 62 | 0.1 | -- | -- | -- |
| 31WA 38026 | 201 | 12 | 64 | 0.1 | -- | -- | -- |
| 31WA 38027 | 201 | 13 | 71 | 0.1 | -- | -- | -- |
| 31WA 38028 | 201 | 19 | 74 | 0.1 | -- | -- | -- |
| 31WA 38029 | 201 | 13 | 30 | 0.1 | -- | -- | -- |
| 31WA 38030 | 201 | 12 | 30 | 0.1 | CONTROL: 1/4rd and split with 38029 | | |
| 31WA 38031 | 201 | 15 | 46 | 0.1 | -- | -- | -- |
| 31WA 38032 | 201 | 30 | 102 | 0.1 | -- | -- | -- |
| 31WA 38033 | 201 | 13 | 68 | 0.1 | -- | -- | -- |
| 31WA 38034 | 201 | 12 | 54 | 0.1 | -- | -- | -- |
| 31WA 38035 | 201 | 15 | 50 | 0.1 | -- | -- | -- |
| 31WA 38036 | 201 | 11 | 56 | 0.1 | -- | -- | -- |
| 31WA 38150 | 201 | 90 | 345 | 0.1 | -- | -- | -- |
| 31WA 38151 | 201 | 15 | 72 | 0.1 | CONTROL: 1/4rd and split with 38152 | | |
| 31WA 38152 | 201 | 20 | 56 | 0.1 | -- | -- | -- |

Hart Buchler

Certified by



MEMBER
CANADIAN TESTING
ASSOCIATION

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597



• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITERHOUSE EXPEDITING
30X 295
WATSON LAKE, Y.T.
YDA 100

CERT. # : A3111546-002-4
INVOICE # : 18111546
DATE : 22-JUN-81
P.O. # : NONE
WATSU-GOAT SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|--|----|----|
| 81WA 38153 | 201 | 18 | 50 | 0.1 | -- | -- | -- |
| 81WA 38154 | 201 | 18 | 74 | 0.1 | -- | -- | -- |
| 81WA 38155 | 201 | 36 | 158 | 0.1 | -- | -- | -- |
| 81WA 38156 | 201 | 22 | 156 | 0.1 | -- | -- | -- |
| 81WA 38157 | 201 | 14 | 52 | 0.1 | -- | -- | -- |
| 81WA 38158 | 201 | 27 | 136 | 0.1 | -- | -- | -- |
| 81WA 38201 | 201 | 12 | 54 | 0.1 | -- | -- | -- |
| 81WA 38202 | 201 | 14 | 70 | 0.1 | -- | -- | -- |
| 81WA 38203 | 201 | 9 | 48 | 0.1 | -- | -- | -- |
| 81WA 38204 | 201 | 10 | 60 | 0.1 | -- | -- | -- |
| 81WA 38205 | 201 | 8 | 34 | 0.1 | -- | -- | -- |
| 81WA 38206 | 201 | 10 | 40 | 0.1 | -- | -- | -- |
| 81WA 38207 | 201 | 12 | 54 | 0.1 | -- | -- | -- |
| 81WA 38208 | 201 | 12 | 32 | 0.1 | -- | -- | -- |
| 81WA 38209 | 201 | 16 | 60 | 0.1 | -- | -- | -- |
| 81WA 38210 | 201 | 12 | 50 | 0.1 | -- | -- | -- |
| 81WA 38211 | 201 | 11 | 50 | 0.1 | CONTROL: 1/2 rd and split with - 38210 | | |
| 81WA 38212 | 201 | 14 | 36 | 0.1 | -- | -- | -- |
| 81WA 38213 | 201 | 12 | 54 | 0.1 | -- | -- | -- |
| 81WA 38214 | 201 | 12 | 76 | 0.1 | -- | -- | -- |
| 81WA 38215 | 201 | 12 | 60 | 0.1 | -- | -- | -- |
| 81WA 38216 | 201 | 12 | 52 | 0.1 | -- | -- | -- |
| 81WA 38217 | 201 | 10 | 106 | 0.1 | -- | -- | -- |
| 81WA 38218 | 201 | 8 | 40 | 0.1 | -- | -- | -- |
| 81WA 38219 | 201 | 15 | 66 | 0.1 | -- | -- | -- |
| 81WA 38220 | 201 | 6 | 32 | 0.1 | -- | -- | -- |
| 81WA 38221 | 201 | 12 | 52 | 0.1 | -- | -- | -- |
| 81WA 38222 | 201 | 10 | 48 | 0.1 | -- | -- | -- |
| 81WA 38223 | 201 | 10 | 50 | 0.1 | -- | -- | -- |
| 81WA 38224 | 201 | 11 | 26 | 0.1 | -- | -- | -- |
| 81WA 38225 | 201 | 10 | 48 | 0.1 | -- | -- | -- |
| 81WA 38226 | 201 | 8 | 38 | 0.1 | -- | -- | -- |
| 81WA 38227 | 201 | 9 | 30 | 0.1 | -- | -- | -- |
| 81WA 38228 | 201 | 8 | 38 | 0.1 | -- | -- | -- |
| 81WA 38229 | 201 | 14 | 54 | 0.1 | -- | -- | -- |
| 81WA 38230 | 201 | 17 | 34 | 0.1 | -- | -- | -- |
| 81WA 38231 | 201 | 12 | 62 | 0.1 | -- | -- | -- |
| 81WA 38232 | 201 | 8 | 50 | 0.1 | -- | -- | -- |
| 81WA 38233 | 201 | 13 | 58 | 0.1 | -- | -- | -- |
| 81WA 38234 | 201 | 15 | 42 | 0.1 | -- | -- | -- |

Hart Bichler

Certified by





CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

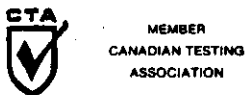
• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
Y0A 1C0

CERT. # : A8111546-003-A
INVOICE # : I8111546
DATE : 22-JUN-81
P.O. # : NONE
WATSU-GOAT SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|------------------------------------|----|----|
| 81WA 38235 | 201 | 12 | 40 | 0.1 | -- | -- | -- |
| 81WA 38236 | 201 | 30 | 78 | 0.2 | -- | -- | -- |
| 81WA 38237 | 201 | 15 | 56 | 0.1 | -- | -- | -- |
| 81WA 38238 | 201 | 40 | 158 | 0.2 | -- | -- | -- |
| 81WA 38239 | 201 | 6 | 52 | 0.1 | CONTROL: Verd and split with 38237 | | |
| 81WA 38240 | 201 | 30 | 108 | 0.4 | -- | -- | -- |
| 81WA 38241 | 201 | 20 | 80 | 0.2 | -- | -- | -- |
| 81WA 38342 | 201 | 22 | 58 | 0.1 | -- | -- | -- |
| 81WA 38037 | 201 | 27 | 60 | 0.1 | -- | -- | -- |
| 81WA 38038 | 201 | 15 | 60 | 0.1 | -- | -- | -- |



Certified by *Hart Bickler*

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597



• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
YOA 1C0

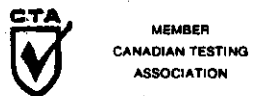
CERT. # : A8111695-001-A
INVOICE # : I8111695
DATE : 26-JUN-81
P.C. # : NONE
WATSU

GOAT SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|-------------------|----|----|
| 81-WA-38254 | 201 | 7 | 46 | 0.1 | -- | -- | -- |
| 81-WA-38255 | 201 | 42 | 120 | 0.1 | -- | -- | -- |
| 81-WA-38256 | 201 | 75 | 135 | 0.3 | -- | -- | -- |
| 81-WA-38257 | 201 | 115 | 370 | 1.3 | -- | -- | -- |
| 81-WA-38258 | 201 | 13 | 77 | 0.1 | -- | -- | -- |
| 81-WA-38259 | 201 | 35 | 58 | 0.1 | -- | -- | -- |
| 81-WA-38260 | 201 | 15 | 65 | 0.1 | -- | -- | -- |
| 81-WA-38261 | 201 | 22 | 68 | 0.1 | -- | -- | -- |
| 81-WA-38262 | 201 | 21 | 90 | 0.1 | -- | -- | -- |
| 81-WA-38263 | 201 | 24 | 85 | 0.1 | -- | -- | -- |
| 81-WA-38264 | 201 | 20 | 80 | 0.1 | -- | -- | -- |
| 81-WA-38265 | 201 | 24 | 115 | 0.1 | -- | -- | -- |
| 81-WA-38266 | 201 | 36 | 125 | 0.1 | -- | -- | -- |
| 81-WA-38267 | 201 | 24 | 89 | 0.1 | -- | -- | -- |
| 81-WA-38268 | 201 | 8 | 37 | 0.1 | -- | -- | -- |
| 81-WA-38269 | 201 | 24 | 70 | 0.1 | -- | -- | -- |
| 81-WA-38270 | 201 | 7 | 200 | 0.1 | -- | -- | -- |
| 81-WA-38271 | 201 | 15 | 50 | 0.1 | -- | -- | -- |
| 81-WA-38272 | 201 | 25 | 67 | 0.2 | -- | -- | -- |
| 81-WA-38273 | 201 | 134 | 240 | 0.9 | CONTROL: STANDARD | | |
| 81-WA-38274 | 201 | 12 | 54 | 0.1 | -- | -- | -- |
| 81-WA-38275 | 201 | 8 | 65 | 0.1 | -- | -- | -- |
| 81-WA-38276 | 201 | 30 | 470 | 1.0 | -- | -- | -- |
| 81-WA-38277 | 201 | 62 | 310 | 0.3 | -- | -- | -- |
| 81-WA-38278 | 201 | 82 | 210 | 0.8 | -- | -- | -- |
| 81-WA-38279 | 201 | 100 | 320 | 1.5 | -- | -- | -- |
| 81-WA-38280 | 201 | 50 | 250 | 0.3 | -- | -- | -- |
| 81-WA-38281 | 201 | 35 | 250 | 0.1 | -- | -- | -- |
| 81-WA-38282 | 201 | 32 | 71 | 0.2 | -- | -- | -- |
| 81-WA-38283 | 201 | 30 | 380 | 1.1 | -- | -- | -- |
| 81-WA-38285 | 201 | 76 | 350 | 1.2 | -- | -- | -- |
| 81-WA-38286 | 201 | 4 | 80 | 0.1 | -- | -- | -- |
| 81-WA-38287 | 201 | 30 | 240 | 1.2 | -- | -- | -- |
| 81-WA-38288 | 201 | 28 | 250 | 0.1 | -- | -- | -- |
| 81-WA-38289 | 201 | 72 | 330 | 0.8 | -- | -- | -- |
| 81-WA-38290 | 201 | 170 | 730 | 2.1 | -- | -- | -- |
| 81-WA-38291 | 201 | 158 | 1100 | 3.0 | -- | -- | -- |
| 81-WA-38292 | 201 | 390 | 1900 | 8.5 | -- | -- | -- |
| 81-WA-38293 | 201 | 90 | 1100 | 1.0 | -- | -- | -- |
| 81-WA-38294 | 201 | 64 | 200 | 0.5 | -- | -- | -- |

Hart Bickler

Certified by





CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
Y0A 1C0

CERT. # : A8111695-002-A
INVOICE # : I8111695
DATE : 26-JUN-81
P.C. # : NONE
WATSU

GOAT SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|--------------------|----|----|
| 81-WA-38295 | 201 | 62 | 220 | 0.5 | -- | -- | -- |
| 81-WA-38296 | 201 | 43 | 170 | 0.1 | -- | -- | -- |
| 81-WA-38297 | 201 | 10 | 48 | 0.1 | -- | -- | -- |
| 81-WA-38300 | 201 | 125 | 240 | 1.0 | CONTROL : STANDARD | | |
| 91-WA-38322 | 201 | 28 | 90 | 0.1 | -- | -- | -- |
| 91-WA-38323 | 201 | 12 | 87 | 0.1 | -- | -- | -- |
| 91-WA-38324 | 201 | 18 | 115 | 0.1 | -- | -- | -- |
| 91-WA-38325 | 201 | 6 | 55 | 0.1 | -- | -- | -- |
| 91-WA-38326 | 201 | 16 | 98 | 0.1 | -- | -- | -- |
| 91-WA-38327 | 201 | 12 | 125 | 0.1 | -- | -- | -- |
| 91-WA-38328 | 201 | 14 | 110 | 0.1 | -- | -- | -- |
| 91-WA-38329 | 201 | 134 | 250 | 1.2 | CONTROL : STANDARD | | |
| 91-WA-38330 | 201 | 14 | 79 | 0.1 | -- | -- | -- |
| 91-WA-38331 | 201 | 12 | 94 | 0.1 | -- | -- | -- |
| 91-WA-38332 | 201 | 14 | 89 | 0.1 | -- | -- | -- |
| 91-WA-38333 | 201 | 12 | 102 | 0.1 | -- | -- | -- |
| 91-WA-38334 | 201 | 18 | 120 | 0.1 | -- | -- | -- |
| 91-WA-38335 | 201 | 15 | 88 | 0.1 | -- | -- | -- |
| 91-WA-38336 | 201 | 24 | 100 | 0.1 | -- | -- | -- |
| 91-WA-38337 | 201 | 12 | 84 | 0.2 | -- | -- | -- |
| 91-WA-38338 | 201 | 16 | 90 | 0.3 | -- | -- | -- |
| 91-WA-38339 | 201 | 28 | 95 | 0.1 | -- | -- | -- |
| 91-WA-38340 | 201 | 13 | 86 | 0.1 | -- | -- | -- |
| 91-WA-38341 | 201 | 22 | 140 | 0.1 | -- | -- | -- |
| 91-WA-38342 | 201 | 16 | 93 | 0.1 | -- | -- | -- |
| 91-WA-38343 | 201 | 26 | 120 | 0.1 | -- | -- | -- |
| 91-WA-38344 | 201 | 18 | 96 | 0.2 | -- | -- | -- |
| 91-WA-38345 | 201 | 19 | 65 | 0.1 | -- | -- | -- |
| 91-WA-38346 | 201 | 13 | 92 | 0.1 | -- | -- | -- |
| 91-WA-38347 | 201 | 23 | 135 | 0.1 | -- | -- | -- |
| 91-WA-38348 | 201 | 18 | 98 | 0.1 | -- | -- | -- |
| 91-WA-38349 | 201 | 20 | 110 | 0.1 | -- | -- | -- |
| 91-WA-38350 | 201 | 24 | 105 | 0.1 | -- | -- | -- |
| 91-WA-38351 | 201 | 24 | 125 | 0.1 | -- | -- | -- |
| 91-WA-38352 | 201 | 15 | 116 | 0.1 | -- | -- | -- |
| 91-WA-38353 | 201 | 32 | 140 | 0.1 | -- | -- | -- |
| 91-WA-38354 | 201 | 22 | 107 | 0.1 | -- | -- | -- |
| 91-WA-38355 | 201 | 32 | 114 | 0.1 | -- | -- | -- |
| 91-WA-38359 | 201 | 26 | 120 | 0.1 | -- | -- | -- |
| 91-WA-38360 | 201 | 130 | 230 | 1.0 | CONTROL : STANDARD | | |



Certified by *Hart Biddle*

CHEMEX LABS LTD.



212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
30X 295
WATSON LAKE, Y.T.
YOA 1C0

CERT. # : A8111695-003-A
INVOICE # : I8111695
DATE : 26-JUN-81
P.O. # : NCNE
WATSU

GOAT SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|-------------------|----|----|
| 81-WA-38361 | 201 | 27 | 130 | 0.1 | -- | -- | -- |
| 81-WA-38362 | 201 | 23 | 130 | 0.2 | -- | -- | -- |
| 81-WA-38363 | 201 | 16 | 102 | 0.1 | -- | -- | -- |
| 81-WA-38364 | 201 | 20 | 150 | 0.1 | -- | -- | -- |
| 81-WA-38365 | 201 | 22 | 112 | 0.1 | -- | -- | -- |
| 81-WA-38366 | 201 | 42 | 110 | 0.2 | -- | -- | -- |
| 81-WA-38367 | 201 | 22 | 110 | 0.1 | -- | -- | -- |
| 81-WA-38368 | 201 | 30 | 130 | 0.1 | -- | -- | -- |
| 81-WA-38369 | 201 | 47 | 590 | 0.1 | -- | -- | -- |
| 81-WA-38370 | 201 | 22 | 110 | 0.1 | -- | -- | -- |
| 81-WA-38371 | 201 | 40 | 140 | 0.1 | -- | -- | -- |
| 81-WA-38372 | 201 | 23 | 110 | 0.2 | -- | -- | -- |
| 81-WA-38373 | 201 | 12 | 78 | 0.1 | -- | -- | -- |
| 81-WA-38374 | 201 | 11 | 85 | 0.1 | -- | -- | -- |
| 81-WA-38375 | 201 | 17 | 67 | 0.1 | -- | -- | -- |
| 81-WA-38376 | 201 | 30 | 1100 | 1.5 | -- | -- | -- |
| 81-WA-38377 | 201 | 12 | 85 | 0.1 | -- | -- | -- |
| 81-WA-38378 | 201 | 46 | 250 | 0.1 | -- | -- | -- |
| 81-WA-38379 | 201 | 10 | 72 | 0.1 | -- | -- | -- |
| 81-WA-38380 | 201 | 10 | 81 | 0.1 | -- | -- | -- |
| 81-WA-38381 | 201 | 15 | 91 | 0.1 | -- | -- | -- |
| 81-WA-38382 | 201 | 18 | 86 | 0.1 | -- | -- | -- |
| 81-WA-38383 | 201 | 25 | 125 | 0.1 | -- | -- | -- |
| 81-WA-38384 | 201 | 13 | 96 | 0.1 | -- | -- | -- |
| 81-WA-38385 | 201 | 72 | 270 | 0.9 | -- | -- | -- |
| 81-WA-38386 | 201 | 12 | 61 | 0.1 | -- | -- | -- |
| 81-WA-38387 | 201 | 52 | 280 | 0.2 | -- | -- | -- |
| 81-WA-38388 | 201 | 42 | 260 | 0.3 | -- | -- | -- |
| 81-WA-38389 | 201 | 17 | 65 | 0.1 | -- | -- | -- |
| 81-WA-38390 | 201 | 120 | 250 | 1.1 | CONTROL: STANDARD | | |
| 81-WA-38391 | 201 | 13 | 30 | 0.1 | -- | -- | -- |
| 81-WA-38392 | 201 | 15 | 106 | 0.1 | -- | -- | -- |
| 81-WA-38393 | 201 | 20 | 93 | 0.1 | -- | -- | -- |

Certified by *Hart Bickler*



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597



• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

CERT. # : AS112252-001-A
INVOICE # : I8112252
DATE : 25-JUL-81
P.O. # : NONE
WATSU

GOAT CLAIM SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|----|----|----|
| 81 WA 38448 | 201 | 15 | 131 | 0.1 | -- | -- | -- |
| 81 WA 38449 | 201 | 11 | 67 | 0.1 | -- | -- | -- |
| 81 WA 38450 | 201 | 6 | 87 | 0.1 | -- | -- | -- |
| 81 WA 38452 | 201 | 7 | 36 | 0.1 | -- | -- | -- |
| 81 WA 38453 | 201 | 6 | 65 | 0.1 | -- | -- | -- |
| 81 WA 38454 | 201 | 10 | 42 | 0.1 | -- | -- | -- |
| 81 WA 38455 | 201 | 16 | 129 | 0.1 | -- | -- | -- |
| 81 WA 38456 | 201 | 9 | 57 | 0.1 | -- | -- | -- |
| 81 WA 38457 | 201 | 9 | 50 | 0.1 | -- | -- | -- |
| 31 WA 38458 | 201 | 2 | 57 | 0.1 | -- | -- | -- |
| 81 WA 38459 | 201 | 23 | 79 | 0.1 | -- | -- | -- |
| 81 WA 38460 | 201 | 4 | 54 | 0.1 | -- | -- | -- |
| 31 WA 38461 | 201 | 3 | 69 | 0.1 | -- | -- | -- |
| 31 WA 38462 | 201 | 20 | 38 | 0.1 | -- | -- | -- |
| 31 WA 38463 | 201 | 12 | 114 | 0.1 | -- | -- | -- |
| 31 WA 38464 | 201 | 8 | 48 | 0.1 | -- | -- | -- |
| 31 WA 38465 | 201 | 78 | 65 | 0.1 | -- | -- | -- |
| 31 WA 38466 | 201 | 185 | 265 | 0.2 | -- | -- | -- |
| 31 WA 38467 | 201 | 8 | 21 | 0.1 | -- | -- | -- |
| 31 WA 38468 | 201 | 85 | 510 | 0.1 | -- | -- | -- |
| 31 WA 38469 | 201 | 13 | 125 | 0.1 | -- | -- | -- |
| 31 WA 38470 | 201 | 16 | 135 | 0.1 | -- | -- | -- |
| 31 WA 38471 | 201 | 20 | 114 | 0.1 | -- | -- | -- |
| 31 WA 38472 | 201 | 12 | 94 | 0.1 | -- | -- | -- |
| 31 WA 38473 | 201 | 13 | 117 | 0.3 | -- | -- | -- |
| 31 WA 38474 | 201 | 14 | 108 | 0.2 | -- | -- | -- |
| 31 WA 38475 | 201 | 24 | 117 | 0.1 | -- | -- | -- |
| 31 WA 38528 | 201 | 28 | 125 | 0.3 | -- | -- | -- |
| 31 WA 38529 | 201 | 3 | 42 | 0.2 | -- | -- | -- |
| 31 WA 38530 | 201 | 6 | 25 | 0.2 | -- | -- | -- |
| 31 WA 38531 | 201 | 5 | 28 | 0.1 | -- | -- | -- |
| 31 WA 38532 | 201 | 10 | 37 | 0.1 | -- | -- | -- |
| 31 WA 38533 | 201 | 20 | 138 | 0.6 | -- | -- | -- |
| 31 WA 38534 | 201 | 19 | 38 | 0.9 | -- | -- | -- |
| 31 WA 38535 | 201 | 4 | 19 | 0.3 | -- | -- | -- |
| 31 WA 38536 | 201 | 12 | 61 | 0.1 | -- | -- | -- |
| 31 WA 38537 | 201 | 12 | 39 | 0.2 | -- | -- | -- |
| 31 WA 38538 | 201 | 15 | 49 | 0.2 | -- | -- | -- |
| 31 WA 38539 | 201 | 6 | 26 | 0.1 | -- | -- | -- |
| 31 WA 38540 | 201 | 14 | 62 | 0.6 | -- | -- | -- |

Certified by *Hart Bickler*



MEMBER
CANADIAN TESTING
ASSOCIATION

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597



• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

CERT. # : A8112252-002-A
INVOICE # : I8112252
DATE : 25-JUL-81
P.O. # : NGNE
WATSU

GOAT CLAIM SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|----|----|----|
| 91 WA 38541 | 201 | 9 | 32 | 0.2 | -- | -- | -- |
| 91 WA 38542 | 201 | 15 | 70 | 0.2 | -- | -- | -- |
| 91 WA 38543 | 201 | 16 | 67 | 0.2 | -- | -- | -- |
| 91 WA 38544 | 201 | 12 | 34 | 0.2 | -- | -- | -- |
| 91 WA 38545 | 201 | 9 | 42 | 0.1 | -- | -- | -- |
| 91 WA 38546 | 201 | 3 | 14 | 0.1 | -- | -- | -- |
| 91 WA 38547 | 201 | 16 | 51 | 0.5 | -- | -- | -- |
| 91 WA 38548 | 201 | 25 | 42 | 0.2 | -- | -- | -- |
| 91 WA 38549 | 201 | 28 | 51 | 0.1 | -- | -- | -- |
| 91 WA 38550 | 201 | 1 | 15 | 0.1 | -- | -- | -- |
| 91 WA 38551 | 201 | 32 | 210 | 0.1 | -- | -- | -- |
| 91 WA 38552 | 201 | 17 | 29 | 0.1 | -- | -- | -- |
| 91 WA 38553 | 201 | 15 | 29 | 0.2 | -- | -- | -- |
| 91 WA 38554 | 201 | 16 | 21 | 0.2 | -- | -- | -- |
| 91 WA 38555 | 201 | 15 | 20 | 0.1 | -- | -- | -- |
| 91 WA 38556 | 201 | 10 | 35 | 0.1 | -- | -- | -- |
| 91 WA 38557 | 201 | 12 | 19 | 0.1 | -- | -- | -- |
| 91 WA 38558 | 201 | 6 | 35 | 0.1 | -- | -- | -- |
| 91 WA 38559 | 201 | 2 | 19 | 0.1 | -- | -- | -- |
| 91 WA 38560 | 201 | 10 | 23 | 0.1 | -- | -- | -- |
| 91 WA 38562 | 201 | 22 | 81 | 0.1 | -- | -- | -- |
| 91 WA 38563 | 201 | 8 | 35 | 0.1 | -- | -- | -- |
| 91 WA 38564 | 201 | 26 | 27 | 0.3 | -- | -- | -- |
| 91 WA 38565 | 201 | 3 | 32 | 0.1 | -- | -- | -- |
| 91 WA 38566 | 201 | 13 | 47 | 0.1 | -- | -- | -- |
| 91 WA 38567 | 201 | 52 | 190 | 0.1 | -- | -- | -- |
| 91 WA 38568 | 201 | 38 | 87 | 0.2 | -- | -- | -- |
| 91 WA 38569 | 201 | 15 | 50 | 0.3 | -- | -- | -- |
| 91 WA 38570 | 201 | 35 | 200 | 1.2 | -- | -- | -- |
| 91 WA 38571 | 201 | 9 | 45 | 0.1 | -- | -- | -- |
| 91 WA 38572 | 201 | 45 | 115 | 0.2 | -- | -- | -- |
| 91 WA 38573 | 201 | 8 | 36 | 0.1 | -- | -- | -- |
| 91 WA 38574 | 201 | 32 | 137 | 0.1 | -- | -- | -- |
| 91 WA 38575 | 201 | 18 | 46 | 0.1 | -- | -- | -- |
| 91 WA 38576 | 201 | 2 | 75 | 0.1 | -- | -- | -- |
| 91 WA 38577 | 201 | 3 | 124 | 0.1 | -- | -- | -- |
| 91 WA 38578 | 201 | 28 | 310 | 0.2 | -- | -- | -- |
| 91 WA 38579 | 201 | 15 | 96 | 0.1 | -- | -- | -- |
| 91 WA 38580 | 201 | 70 | 220 | 0.1 | -- | -- | -- |
| 91 WA 38581 | 201 | 5 | 45 | 0.1 | -- | -- | -- |



MEMBER
CANADIAN TESTING
ASSOCIATION

Certified by *Hart Bickler*



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

CERT. # : 48112252-003-A
INVOICE # : 18112252
DATE : 25-JUL-81
P.O. # : NONE
WATSU

GOAT CLAIM SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|----|----|----|
| 31 WA 38582 | 201 | 5 | 24 | 0.1 | -- | -- | -- |
| 31 WA 38583 | 201 | 26 | 105 | 0.1 | -- | -- | -- |
| 31 WA 38584 | 201 | 6 | 32 | 0.1 | -- | -- | -- |
| 31 WA 38585 | 201 | 24 | 99 | 0.1 | -- | -- | -- |
| 31 WA 38586 | 201 | 8 | 36 | 0.1 | -- | -- | -- |
| 31 WA 38587 | 201 | 13 | 152 | 0.1 | -- | -- | -- |
| 31 WA 38588 | 201 | 3 | 107 | 0.1 | -- | -- | -- |
| 31 WA 38589 | 201 | 1 | 31 | 0.1 | -- | -- | -- |
| 31 WA 38591 | 201 | 52 | 130 | 0.1 | -- | -- | -- |
| 31 WA 38592 | 201 | 82 | 215 | 0.1 | -- | -- | -- |
| 31 WA 38593 | 201 | 21 | 171 | 0.1 | -- | -- | -- |
| 31 WA 38594 | 201 | 15 | 76 | 0.1 | -- | -- | -- |
| 31 WA 38595 | 201 | 23 | 121 | 0.1 | -- | -- | -- |
| 31 WA 38596 | 201 | 13 | 110 | 0.1 | -- | -- | -- |
| 31 WA 38597 | 201 | 36 | 141 | 0.1 | -- | -- | -- |
| 31 WA 38598 | 201 | 22 | 95 | 0.1 | -- | -- | -- |
| 31 WA 38599 | 201 | 18 | 59 | 0.1 | -- | -- | -- |
| 31 WA 38600 | 201 | 6 | 14 | 0.1 | -- | -- | -- |
| 31 WA 38601 | 201 | 12 | 21 | 0.1 | -- | -- | -- |
| 31 WA 38602 | 201 | 6 | 46 | 0.1 | -- | -- | -- |
| 31 WA 38603 | 201 | 6 | 35 | 0.1 | -- | -- | -- |
| 31 WA 38604 | 201 | 6 | 21 | 0.1 | -- | -- | -- |
| 31 WA 38605 | 201 | 28 | 34 | 0.1 | -- | -- | -- |
| 31 WA 38606 | 201 | 26 | 137 | 0.1 | -- | -- | -- |
| 31 WA 38607 | 201 | 6 | 53 | 0.1 | -- | -- | -- |
| 31 WA 38608 | 201 | 12 | 137 | 0.1 | -- | -- | -- |
| 31 WA 38609 | 201 | 10 | 62 | 0.2 | -- | -- | -- |



MEMBER
CANADIAN TESTING
ASSOCIATION

Certified by *Hart Bickler*



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BJX 295
WATSON LAKE, Y.T.
YOA 100

CERT. # : A8111976-001-A
INVOICE # : 18111976
DATE : 10-JUL-81
P.O. # : NONE
CASSI GOAT 37-86SOIL

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|----|----|----|
| 81CA 38298 | 201 | 7 | 108 | 0.1 | -- | -- | -- |
| 81CA 38299 | 201 | 38 | 160 | 0.1 | -- | -- | -- |
| 81CA 38301 | 201 | 13 | 109 | 0.1 | -- | -- | -- |
| 81CA 38302 | 201 | 13 | 105 | 0.1 | -- | -- | -- |
| 81CA 38303 | 201 | 15 | 116 | 0.1 | -- | -- | -- |
| 81CA 38304 | 201 | 15 | 76 | 0.1 | -- | -- | -- |
| 81CA 38305 | 201 | 22 | 93 | 0.1 | -- | -- | -- |
| 81CA 38306 | 201 | 19 | 88 | 0.1 | -- | -- | -- |
| 81CA 38307 | 201 | 17 | 85 | 0.1 | -- | -- | -- |
| 81CA 38308 | 201 | 2 | 20 | 0.1 | -- | -- | -- |
| 81CA 38309 | 201 | 4 | 21 | 0.1 | -- | -- | -- |
| 81CA 38310 | 201 | 1 | 17 | 0.1 | -- | -- | -- |
| 81CA 38311 | 201 | 9 | 74 | 0.1 | -- | -- | -- |
| 81CA 38312 | 201 | 51 | 210 | 0.1 | -- | -- | -- |
| 81CA 38313 | 201 | 25 | 105 | 0.1 | -- | -- | -- |
| 81CA 38314 | 201 | 31 | 122 | 0.1 | -- | -- | -- |
| 81CA 38315 | 201 | 12 | 91 | 0.1 | -- | -- | -- |
| 81CA 38316 | 201 | 11 | 78 | 0.1 | -- | -- | -- |
| 81CA 38317 | 201 | 39 | 154 | 0.1 | -- | -- | -- |
| 81CA 38318 | 201 | 31 | 112 | 0.1 | -- | -- | -- |
| 81CA 38319 | 201 | 18 | 110 | 0.1 | -- | -- | -- |
| 81CA 38320 | 201 | 19 | 78 | 0.1 | -- | -- | -- |
| 81CA 38321 | 201 | 14 | 115 | 0.1 | -- | -- | -- |
| 81CA 38356 | 201 | 15 | 97 | 0.1 | -- | -- | -- |
| 81CA 38358 | 201 | 17 | 131 | 0.1 | -- | -- | -- |
| 81CA 38394 | 201 | 16 | 92 | 0.1 | -- | -- | -- |
| 81CA 38395 | 201 | 26 | 176 | 0.1 | -- | -- | -- |
| 81CA 38396 | 201 | 22 | 102 | 0.1 | -- | -- | -- |
| 81CA 38397 | 201 | 27 | 119 | 0.1 | -- | -- | -- |
| 81CA 38398 | 201 | 15 | 93 | 0.1 | -- | -- | -- |
| 81CA 38399 | 201 | 9 | 50 | 0.1 | -- | -- | -- |
| 81CA 38400 | 201 | 17 | 126 | 0.1 | -- | -- | -- |
| 81CA 38407 | 201 | 4 | 48 | 0.1 | -- | -- | -- |
| 81CA 38408 | 201 | 12 | 67 | 0.1 | -- | -- | -- |
| 81CA 38409 | 201 | 35 | 160 | 0.1 | -- | -- | -- |
| 81CA 38410 | 201 | 57 | 245 | 0.1 | -- | -- | -- |
| 81CA 38411 | 201 | 10 | 30 | 0.1 | -- | -- | -- |
| 81CA 38412 | 201 | 12 | 70 | 0.1 | -- | -- | -- |
| 81CA 38413 | 201 | 4 | 25 | 0.1 | -- | -- | -- |
| 81CA 38414 | 201 | 15 | 109 | 0.1 | -- | -- | -- |



Certified by *Hart Bisher*



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
Y0A 1C0

CERT. # : A3112124-001-A
INVOICE # : I3112124
DATE : 10-AUG-81
P.O. # : NONE
WATSU

ATTN: GOAT SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|---------------------------|----|----|
| 81 WA 38039 | 201 | 15 | 50 | 0.1 | -- | -- | -- |
| 81 WA 38040 | 201 | 43 | 115 | 0.2 | -- | -- | -- |
| 81 WA 38041 | 201 | 50 | 290 | 0.1 | -- | -- | -- |
| 81 WA 38042 | 201 | 23 | 20 | 0.1 | -- | -- | -- |
| 81 WA 38043 | 201 | 27 | 105 | 0.1 | -- | -- | -- |
| 81 WA 38044 | 201 | 14 | 75 | 0.1 | -- | -- | -- |
| 81 WA 38045 | 201 | 34 | 150 | 0.1 | -- | -- | -- |
| 81 WA 38046 | 201 | 23 | 110 | 0.1 | -- | -- | -- |
| 81 WA 38047 | 201 | 11 | 25 | 0.1 | -- | -- | -- |
| 81 WA 38048 | 201 | 32 | 130 | 0.1 | -- | -- | -- |
| 81 WA 38049 | 201 | 13 | 50 | 0.2 | -- | -- | -- |
| 81 WA 38050 | 201 | 29 | 110 | 0.2 | -- | -- | -- |
| 81 WA 38051 | 201 | 14 | 22 | 0.2 | -- | -- | -- |
| 81 WA 38052 | 201 | 28 | 190 | 0.1 | -- | -- | -- |
| 81 WA 38053 | 201 | 21 | 110 | 0.1 | -- | -- | -- |
| 81 WA 38054 | 201 | 21 | 95 | 0.1 | -- | -- | -- |
| 81 WA 38055 | 201 | 39 | 130 | 0.1 | -- | -- | -- |
| 81 WA 38056 | 201 | 12 | 50 | 0.1 | -- | -- | -- |
| 81 WA 38057 | 201 | 40 | 150 | 0.5 | -- | -- | -- |
| 81 WA 38058 | 201 | 23 | 50 | 0.1 | -- | -- | -- |
| 81 WA 38059 | 201 | 19 | 55 | 0.1 | -- | -- | -- |
| 81 WA 38060 | 201 | 34 | 120 | 0.1 | -- | -- | -- |
| 81 WA 38061 | 201 | 150 | 260 | 0.1 | CONTROL : STANDARD | | |
| 81 WA 38062 | 201 | 20 | 75 | 0.2 | -- | -- | -- |
| 81 WA 38063 | 201 | 27 | 150 | 0.2 | -- | -- | -- |
| 81 WA 38064 | 201 | 24 | 40 | 0.1 | -- | -- | -- |
| 81 WA 38065 | 201 | 33 | 100 | 0.1 | -- | -- | -- |
| 81 WA 38066 | 201 | 19 | 70 | 0.1 | -- | -- | -- |
| 81 WA 38067 | 201 | 26 | 35 | 0.1 | -- | -- | -- |
| 81 WA 38068 | 201 | 50 | 120 | 0.1 | -- | -- | -- |
| 81 WA 38069 | 201 | 18 | 90 | 0.1 | -- | -- | -- |
| 81 WA 38070 | 201 | 25 | 120 | 0.1 | -- | -- | -- |
| 81 WA 38071 | 201 | 50 | 190 | 0.1 | -- | -- | -- |
| 81 WA 38072 | 201 | 17 | 70 | 0.1 | -- | -- | -- |
| 81 WA 38073 | 201 | 40 | 100 | 0.1 | -- | -- | -- |
| 81 WA 38074 | 201 | 26 | 90 | 0.1 | -- | -- | -- |
| 81 WA 38075 | 201 | 21 | 90 | 0.1 | -- | -- | -- |
| 81 WA 38076 | 201 | 31 | 130 | 0.1 | -- | -- | -- |
| 81 WA 38077 | 201 | 20 | 90 | 0.1 | -- | -- | -- |
| 81 WA 38089 | 201 | 140 | 290 | 0.3 | CONTROL : STANDARD | | |

Hart Richter

Certified by



CHEMEX LABS LTD.



212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
Y0A 1C0

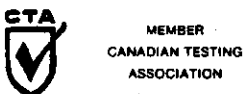
CERT. # : A8112124-002-A
INVOICE # : I8112124
DATE : 10-AUG-81
P.O. # : NONE
WATSU

ATTN: GOAT SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|---------------------------|----|----|
| 81 WA 38243 | 201 | 49 | 200 | 0.1 | -- | -- | -- |
| 81 WA 38244 | 201 | 60 | 240 | 0.1 | -- | -- | -- |
| 81 WA 38245 | 201 | 36 | 105 | 0.1 | -- | -- | -- |
| 81 WA 38246 | 201 | 20 | 75 | 0.1 | -- | -- | -- |
| 81 WA 38247 | 201 | 14 | 40 | 0.1 | -- | -- | -- |
| 81 WA 38248 | 201 | 29 | 80 | 0.5 | -- | -- | -- |
| 81 WA 38249 | 201 | 25 | 70 | 0.2 | -- | -- | -- |
| 81 WA 38250 | 201 | 32 | 140 | 0.3 | -- | -- | -- |
| 81 WA 38357 | 201 | 20 | 70 | 0.2 | -- | -- | -- |
| 81 WA 38401 | 201 | 23 | 70 | 0.4 | -- | -- | -- |
| 81 WA 38402 | 201 | 44 | 210 | 0.2 | -- | -- | -- |
| 81 WA 38403 | 201 | 15 | 70 | 0.3 | -- | -- | -- |
| 81 WA 38404 | 201 | 40 | 130 | 0.5 | -- | -- | -- |
| 81 WA 38405 | 201 | 13 | 80 | 0.1 | -- | -- | -- |
| 81 WA 38406 | 201 | 20 | 65 | 0.1 | -- | -- | -- |
| 81 WA 38415 | 201 | 12 | 75 | 0.1 | -- | -- | -- |
| 81 WA 38416 | 201 | 17 | 60 | 0.1 | -- | -- | -- |
| 81 WA 38417 | 201 | 17 | 80 | 0.1 | -- | -- | -- |
| 81 WA 38418 | 201 | 18 | 80 | 0.1 | -- | -- | -- |
| 81 WA 38419 | 201 | 18 | 80 | 0.1 | -- | -- | -- |
| 81 WA 38420 | 201 | 130 | 230 | 0.6 | CONTROL : STANDARD | | |
| 81 WA 38421 | 201 | 21 | 130 | 0.1 | -- | -- | -- |
| 81 WA 38422 | 201 | 20 | 105 | 0.2 | -- | -- | -- |
| 81 WA 38423 | 201 | 100 | 250 | 0.2 | -- | -- | -- |
| 81 WA 38424 | 201 | 70 | 220 | 0.2 | -- | -- | -- |
| 81 WA 38425 | 201 | 60 | 150 | 0.1 | -- | -- | -- |
| 81 WA 38426 | 201 | 30 | 240 | 0.1 | -- | -- | -- |
| 81 WA 38427 | 201 | 50 | 160 | 0.1 | -- | -- | -- |
| 81 WA 38428 | 201 | 40 | 85 | 0.1 | -- | -- | -- |
| 81 WA 38429 | 201 | 70 | 180 | 0.1 | -- | -- | -- |
| 81 WA 38430 | 201 | 21 | 105 | 0.1 | -- | -- | -- |
| 81 WA 38431 | 201 | 19 | 100 | 0.1 | -- | -- | -- |
| 81 WA 38432 | 201 | 19 | 100 | 0.1 | -- | -- | -- |
| 81 WA 38433 | 201 | 23 | 65 | 0.1 | -- | -- | -- |
| 81 WA 38434 | 201 | 29 | 85 | 0.1 | -- | -- | -- |
| 81 WA 38435 | 201 | 31 | 130 | 0.1 | -- | -- | -- |
| 81 WA 38436 | 201 | 45 | 130 | 0.1 | -- | -- | -- |
| 81 WA 38437 | 201 | 44 | 250 | 0.2 | -- | -- | -- |
| 81 WA 38438 | 201 | 20 | 60 | 0.2 | -- | -- | -- |
| 81 WA 38439 | 201 | 110 | 330 | 0.2 | -- | -- | -- |

[Handwritten signature]

Certified by





CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
30X 295
WATSON LAKE, Y.T.
Y0A 1C0

CERT. # : A9112124-003-A
INVOICE # : I3112124
DATE : 10-AUG-81
P.O. # : NONE
WATSU

ATTN: GOAT SOILS

| Sample description | Prep code | Pb ppm | Zn ppm | Ag ppm | | | |
|--------------------|-----------|--------|--------|--------|----|----|----|
| 81 WA 38440 | 201 | 40 | 210 | 0.4 | -- | -- | -- |
| 81 WA 38441 | 201 | 11 | 85 | 0.3 | -- | -- | -- |
| 81 WA 38442 | 201 | 170 | 330 | 0.2 | -- | -- | -- |
| 81 WA 38444 | 201 | 17 | 75 | 0.1 | -- | -- | -- |
| 81 WA 38445 | 201 | 64 | 320 | 0.1 | -- | -- | -- |
| 81 WA 38446 | 201 | 22 | 120 | 0.1 | -- | -- | -- |
| 81 WA 38447 | 201 | 22 | 190 | 0.1 | -- | -- | -- |
| 81 WA 38526 | 201 | 50 | 175 | 0.2 | -- | -- | -- |
| 81 WA 38527 | 201 | 52 | 155 | 0.1 | -- | -- | -- |

Hart Bickler

Certified by



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

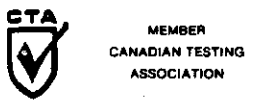
TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LIGHTHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
YCA 1C0

CERT. # : 48113159-001-4
INVOICE # : 13113159
DATE : 22-AUG-81
P.O. # : NONE
WATSON

COAL SOILS

| Sample Description | Prep Code | Pb ppm | Ag ppm | | | | |
|--------------------|-----------|--------|--------|----|---------------------------|----|----|
| 81-WA-38708 | 201 | 18 | 0.4 | -- | -- | -- | -- |
| 81-WA-38709 | 201 | 15 | 0.1 | -- | -- | -- | -- |
| 81-WA-38710 | 201 | 112 | 0.5 | -- | CONTROL - STANDARD | | |
| 81-WA-38711 | 201 | 12 | 0.1 | -- | -- | -- | -- |
| 81-WA-38712 | 201 | 15 | 0.1 | -- | -- | -- | -- |
| 81-WA-38713 | 201 | 12 | 0.1 | -- | -- | -- | -- |
| 81-WA-38714 | 201 | 22 | 0.1 | -- | -- | -- | -- |
| 81-WA-38715 | 201 | 11 | 0.1 | -- | -- | -- | -- |
| 81-WA-38716 | 201 | 12 | 0.1 | -- | -- | -- | -- |
| 81-WA-38717 | 203 | 9 | 0.1 | -- | -- | -- | -- |
| 81-WA-38718 | 201 | 12 | 0.1 | -- | -- | -- | -- |
| 81-WA-38719 | 201 | 15 | 0.1 | -- | -- | -- | -- |
| 81-WA-38720 | 201 | 24 | 0.1 | -- | -- | -- | -- |
| 81-WA-38721 | 201 | 13 | 0.1 | -- | -- | -- | -- |
| 81-WA-38722 | 201 | 14 | 0.1 | -- | -- | -- | -- |
| 81-WA-38723 | 201 | 16 | 0.1 | -- | -- | -- | -- |
| 81-WA-38724 | 201 | 13 | 0.1 | -- | -- | -- | -- |
| 81-WA-38725 | 201 | 14 | 0.1 | -- | -- | -- | -- |
| 81-WA-38726 | 201 | 16 | 0.7 | -- | -- | -- | -- |
| 81-WA-38727 | 201 | 20 | 0.1 | -- | -- | -- | -- |
| 81-WA-38728 | 203 | 10 | 0.1 | -- | -- | -- | -- |
| 81-WA-38729 | 201 | 26 | 1.2 | -- | -- | -- | -- |
| 81-WA-38730 | 201 | 30 | 2.7 | -- | -- | -- | -- |
| 81-WA-38731 | 203 | 35 | 2.5 | -- | -- | -- | -- |
| 81-WA-38740 | 201 | 120 | 0.5 | -- | CONTROL - STANDARD | | |

Certified by *Hart Biddle*



CHEMEX LABS LTD.



212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
YOA 1C0

CERT. # : A8113925-001-A
INVOICE # : I8113925
DATE : 21-SEP-81
P.O. # : NONE
WATSU

"GOAT-SOILS"

| Sample description | Prep code | Zn ppm | | | | | |
|--------------------|-----------|--------|----|----|--------------------|----|----|
| 81-WA-38708 | 214 | 272 | -- | -- | -- | -- | -- |
| 81-WA-38709 | 214 | 28 | -- | -- | -- | -- | -- |
| 81-WA-38710 | 214 | 225 | -- | -- | CONTROL : STANDARD | | |
| 81-WA-38711 | 214 | 52 | -- | -- | -- | -- | -- |
| 81-WA-38712 | 214 | 30 | -- | -- | -- | -- | -- |
| 81-WA-38713 | 214 | 115 | -- | -- | -- | -- | -- |
| 81-WA-38714 | 214 | 90 | -- | -- | -- | -- | -- |
| 81-WA-38715 | 214 | 49 | -- | -- | -- | -- | -- |
| 81-WA-38716 | 214 | 86 | -- | -- | -- | -- | -- |
| 81-WA-38717 | 214 | 34 | -- | -- | -- | -- | -- |
| 81-WA-38718 | 214 | 37 | -- | -- | -- | -- | -- |
| 81-WA-38719 | 214 | 65 | -- | -- | -- | -- | -- |
| 81-WA-38720 | 214 | 26 | -- | -- | -- | -- | -- |
| 81-WA-38721 | 214 | 40 | -- | -- | -- | -- | -- |
| 81-WA-38722 | 214 | 40 | -- | -- | -- | -- | -- |
| 81-WA-38723 | 214 | 45 | -- | -- | -- | -- | -- |
| 81-WA-38724 | 214 | 60 | -- | -- | -- | -- | -- |
| 81-WA-38725 | 214 | 44 | -- | -- | -- | -- | -- |
| 81-WA-38726 | 214 | 68 | -- | -- | -- | -- | -- |
| 81-WA-38727 | 214 | 106 | -- | -- | -- | -- | -- |
| 81-WA-38728 | 214 | 28 | -- | -- | -- | -- | -- |
| 81-WA-38729 | 214 | 40 | -- | -- | -- | -- | -- |
| 81-WA-38730 | 214 | 155 | -- | -- | -- | -- | -- |
| 81-WA-38731 | 214 | 430 | -- | -- | -- | -- | -- |
| 81-WA-38740 | 214 | 250 | -- | -- | CONTROL : STANDARD | | |

Robert Buchler

Certified by



CHEMEX LABS LTD.



212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
Y0A 1C0

CERT. # : A8112722-001-A
INVOICE # : I8112722
DATE : 13-AUG-81
P.O. # : NONE
WATSU

GCAT CLAIM SOIL PIT 81-01

| Sample description | Prep code | Cu ppm | Mo ppm | Pb ppm | Zn ppm | Ag ppm | W ppm |
|--------------------|-----------|--------|--------|--------|--------|--------|-------|
| 81 WA 38610 | 201 | 28 | 11 | 39 | 140 | 0.8 | 1 |
| 81 WA 38611 | 201 | 48 | 14 | 73 | 310 | 0.8 | 14 |
| 81 WA 38612 | 201 | 54 | 7 | 56 | 340 | 0.5 | 7 |
| 81 WA 38613 | 201 | 49 | 5 | 35 | 400 | 0.1 | 6 |
| 81 WA 38614 | 201 | 44 | 1 | 28 | 420 | 0.1 | 15 |
| 81 WA 38615 | 201 | 46 | 1 | 17 | 365 | 0.1 | 42 |
| 81 WA 38616 | 201 | 55 | 5 | 18 | 340 | 0.1 | 26 |
| 81 WA 38617 | 201 | 119 | 2 | 22 | 305 | 0.2 | 23 |
| 81 WA 38618 | 201 | 109 | 1 | 23 | 290 | 0.4 | 81 |
| 81 WA 38619 | 201 | 115 | 1 | 25 | 305 | 0.4 | 72 |
| 81 WA 38620 | 201 | 114 | 1 | 20 | 240 | 0.4 | 16 |



MEMBER
CANADIAN TESTING
ASSOCIATION

Certified by *Hart Biddle*

CHEMEX LABS LTD.



212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
YOA 1C0

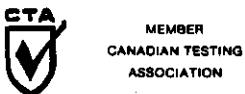
CERT. # : A8112723-001-A
INVOICE # : I3112723
DATE : 13-AUG-81
P.O. # : NONE
WATSU

GOAT CLAIM SCIL PIT 91-02

| Sample description | Prep code | Cu ppm | Mo ppm | Pb ppm | Zn ppm | Ag ppm | W ppm |
|--------------------|-----------|--------|--------|--------|--------|--------|-------|
| 81 WA 38622 | 201 | 9 | 1 | 5 | 58 | 0.1 | 1 |
| 81 WA 38623 | 201 | 18 | 1 | 3 | 25 | 0.1 | 1 |
| 81 WA 38624 | 201 | 13 | 1 | 14 | 108 | 0.1 | 1 |
| 81 WA 38625 | 201 | 11 | 1 | 13 | 115 | 0.1 | 1 |
| 81 WA 38626 | 201 | 11 | 1 | 13 | 120 | 0.1 | 4 |
| 81 WA 38627 | 201 | 10 | 1 | 13 | 105 | 0.1 | 2 |
| 81 WA 38628 | 201 | 10 | 1 | 12 | 87 | 0.1 | 2 |
| 81 WA 38629 | 201 | 12 | 1 | 14 | 117 | 1.0 | 3 |
| 81 WA 38630 | 201 | 12 | 1 | 13 | 118 | 0.1 | 2 |
| 81 WA 38631 | 201 | 11 | 1 | 14 | 122 | 0.1 | 2 |

Handwritten signature

Certified by



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597



• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
Y0A 1C0

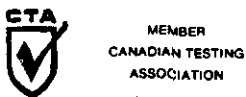
CERT. # : A8112875-001-A
INVOICE # : I8112875
DATE : 18-AUG-81
P.O. # : NONE
WATSU

GCAT 37-86 SOIL PIT 81-03 TO 09

| Sample description | Prep code | Cu ppm | Pb ppm | Zn ppm | Ag ppm | W ppm | |
|--------------------|-----------|--------|--------|--------|--------|-------|----------|
| 38590 | 201 | 10 | 130 | 240 | 1.0 | 1 | CONTROL |
| 38636 | 201 | 18 | 24 | 82 | 0.1 | 1 | ↑ |
| 38637 | 201 | 14 | 19 | 82 | 0.1 | 1 | |
| 38638 | 201 | 17 | 24 | 78 | 0.1 | 1 | |
| 38639 | 201 | 22 | 18 | 93 | 0.1 | 1 | |
| 38640 | 201 | 14 | 17 | 83 | 0.1 | 19 | SOIL PIT |
| 38641 | 201 | 13 | 20 | 90 | 0.1 | 7 | 81-03 |
| 38642 | 201 | 13 | 19 | 78 | 0.1 | 27 | -- |
| 38643 | 201 | 18 | 20 | 100 | 0.1 | 1 | -- |
| 38644 | 201 | 14 | 22 | 103 | 0.1 | 8 | -- |
| <u>38645</u> | 201 | 12 | 14 | 60 | 0.1 | 1 | ↓ |
| 38646 | 201 | 17 | 16 | 83 | 0.1 | 1 | ↑ |
| 38647 | 201 | 17 | 18 | 82 | 0.1 | 1 | |
| 38648 | 201 | 18 | 16 | 95 | 0.1 | 1 | |
| 38649 | 201 | 16 | 14 | 80 | 0.1 | 1 | |
| 38650 | 201 | 10 | 128 | 240 | 1.0 | 1 | CONT. |
| 38651 | 201 | 18 | 19 | 92 | 0.1 | 1 | ↑ |
| 38652 | 201 | 21 | 19 | 93 | 0.1 | 1 | |
| 38653 | 201 | 23 | 24 | 95 | 0.1 | 1 | |
| 38654 | 201 | 26 | 28 | 115 | 0.1 | 1 | |
| 38655 | 201 | 25 | 28 | 114 | 0.1 | 1 | SOIL PIT |
| <u>38656</u> | 201 | 25 | 25 | 114 | 0.1 | 1 | 81-04 |
| 38657 | 201 | 17 | 43 | 150 | 0.1 | 1 | ↓ |
| 38658 | 201 | 13 | 46 | 153 | 0.1 | 1 | ↑ |
| 38659 | 201 | 14 | 50 | 168 | 0.1 | 1 | |
| 38660 | 201 | 15 | 49 | 165 | 0.1 | 1 | |
| 38661 | 201 | 13 | 45 | 170 | 0.1 | 1 | |
| 38662 | 201 | 14 | 47 | 150 | 0.1 | 1 | SOIL PIT |
| 38663 | 201 | 15 | 40 | 146 | 0.1 | 1 | 81-05 |
| 38664 | 201 | 22 | 38 | 148 | 0.1 | 1 | -- |
| 38665 | 201 | 15 | 40 | 150 | 0.1 | 1 | ↓ |
| <u>38666</u> | 201 | 12 | 25 | 118 | 0.1 | 1 | ↑ |
| 38667 | 201 | 14 | 36 | 148 | 0.1 | 1 | ↑ |
| 38668 | 201 | 14 | 33 | 140 | 0.1 | 1 | |
| 38669 | 201 | 13 | 34 | 128 | 0.1 | 1 | |
| 38670 | 201 | 14 | 30 | 136 | 0.1 | 1 | |
| 38671 | 201 | 11 | 28 | 120 | 0.1 | 1 | ↑ |
| 38672 | 201 | 13 | 40 | 145 | 0.1 | 1 | |
| 38673 | 201 | 14 | 35 | 145 | 0.1 | 1 | |
| 38674 | 201 | 13 | 36 | 138 | 0.1 | 1 | |

Hart Bickler

Certified by





CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
C/O LITEHOUSE EXPEDITING
BOX 295
WATSON LAKE, Y.T.
Y0A 1C0

CERT. # : A8112875-002-A
INVOICE # : 18112875
DATE : 18-AUG-81
P.O. # : NONE
WATSU

GOAT 37-36 SOIL PIT 81-03 TO 09

| Sample description | Prep code | Cu ppm | Pb ppm | Zn ppm | Ag ppm | W ppm | |
|--------------------|-----------|--------|--------|--------|--------|-------|--------------------------|
| 38675 | 201 | 13 | 26 | 108 | 0.1 | 1 | ↑ SOIL PIT 81-06 ↓ |
| <u>38675</u> | 201 | 8 | 20 | 78 | 0.1 | 1 | |
| 38677 | 201 | 49 | 42 | 178 | 0.1 | 1 | |
| 33678 | 201 | 56 | 43 | 192 | 0.1 | 1 | |
| 33679 | 201 | 59 | 45 | 200 | 0.1 | 1 | |
| 38680 | 201 | 58 | 42 | 198 | 0.1 | 1 | |
| 33681 | 201 | 63 | 46 | 218 | 0.1 | 1 | |
| 33683 | 201 | 68 | 48 | 226 | 0.1 | 1 | |
| 38684 | 201 | 62 | 46 | 193 | 0.1 | 1 | |
| 38685 | 201 | 79 | 50 | 245 | 0.1 | 1 | |
| 38686 | 201 | 77 | 50 | 245 | 0.1 | 1 | |
| <u>38687</u> | 201 | 69 | 48 | 220 | 0.1 | 1 | |
| <u>38688</u> | 201 | 37 | 49 | 153 | 0.1 | 1 | |
| 38689 | 201 | 25 | 43 | 175 | 0.1 | 1 | |
| 38690 | 201 | 33 | 42 | 158 | 0.1 | 1 | |
| 38691 | 201 | 21 | 39 | 156 | 0.1 | 1 | |
| 38692 | 201 | 29 | 43 | 180 | 0.1 | 1 | |
| 38693 | 201 | 25 | 45 | 175 | 0.1 | 1 | |
| 38694 | 201 | 27 | 40 | 175 | 0.1 | 1 | |
| 38695 | 201 | 15 | 46 | 190 | 0.1 | 1 | |
| 38696 | 201 | 15 | 38 | 165 | 0.1 | 1 | |
| <u>38697</u> | 201 | 13 | 46 | 110 | 0.1 | 1 | |
| 38698 | 201 | 21 | 34 | 145 | 0.1 | 1 | |
| 33699 | 201 | 30 | 30 | 88 | 0.1 | 1 | |
| 38700 | 201 | 19 | 20 | 90 | 0.1 | 1 | |
| 38701 | 201 | 13 | 13 | 65 | 0.1 | 1 | |
| 38702 | 201 | 19 | 20 | 93 | 0.1 | 1 | |
| 33703 | 201 | 15 | 17 | 82 | 0.1 | 1 | |
| 38704 | 201 | 16 | 18 | 88 | 0.1 | 12 | |
| <u>33705</u> | 201 | 16 | 18 | 94 | 0.1 | 1 | |
| 38706 | 201 | 22 | 20 | 108 | 0.1 | 1 | |
| 33707 | 201 | 22 | 20 | 120 | 0.1 | 1 | |
| 38771 | 201 | 9 | 120 | 210 | 1.0 | 1 | |

Hart Bickler

Certified by



APPENDIX III

Frequency Distribution Tables, Histograms,
and Cumulative Frequency Graphs for
Soil and Rock Geochemistry

I) Soil Geochemistry

Lead

Zinc

Silver

II Rock Geochemistry

Skarns

TABLE 9

GOAT 37-86

LEAD IN SOILS

| <u>Interval</u> | <u>Frequency</u> | | <u>Total</u> | <u>Cumulative Frequency</u> | <u>Cumulative Percent</u> |
|-----------------|------------------|-------------|--------------|---------------------------------|-------------------------------|
| | <u>1980</u> | <u>1981</u> | | | |
| 0-10 | 16 | 82 | 98 | 98 | 18.6 |
| 11-20 | 29 | 186 | 215 | 313 | 59.5 |
| 21-30 | 19 | 86 | 105 | 418 | 79.5 |
| 31-40 | 10 | 36 | 46 | 464 | 88.2 |
| 41-50 | 8 | 19 | 27 | 491 | 93.3 |
| 51-60 | 6 | 9 | 15 | 506 | 96.2 |
| 61-70 | 2 | 7 | 9 | 515 | 97.9 |
| 71-80 | 2 | 9 | 11 | 526 | 100.0 |
| 81-90 | 0 | 6 | 6 | | |
| 91-100 | 0 | 2 | 2 | | |
| >100 | <u>8</u> | <u>9</u> | <u>17</u> | | |
| | 100 | 451 | 551 | | |

Values >100 ppm (1981): 110, 115, 150, 158, 170, 170, 185
390, 640

Figure 5

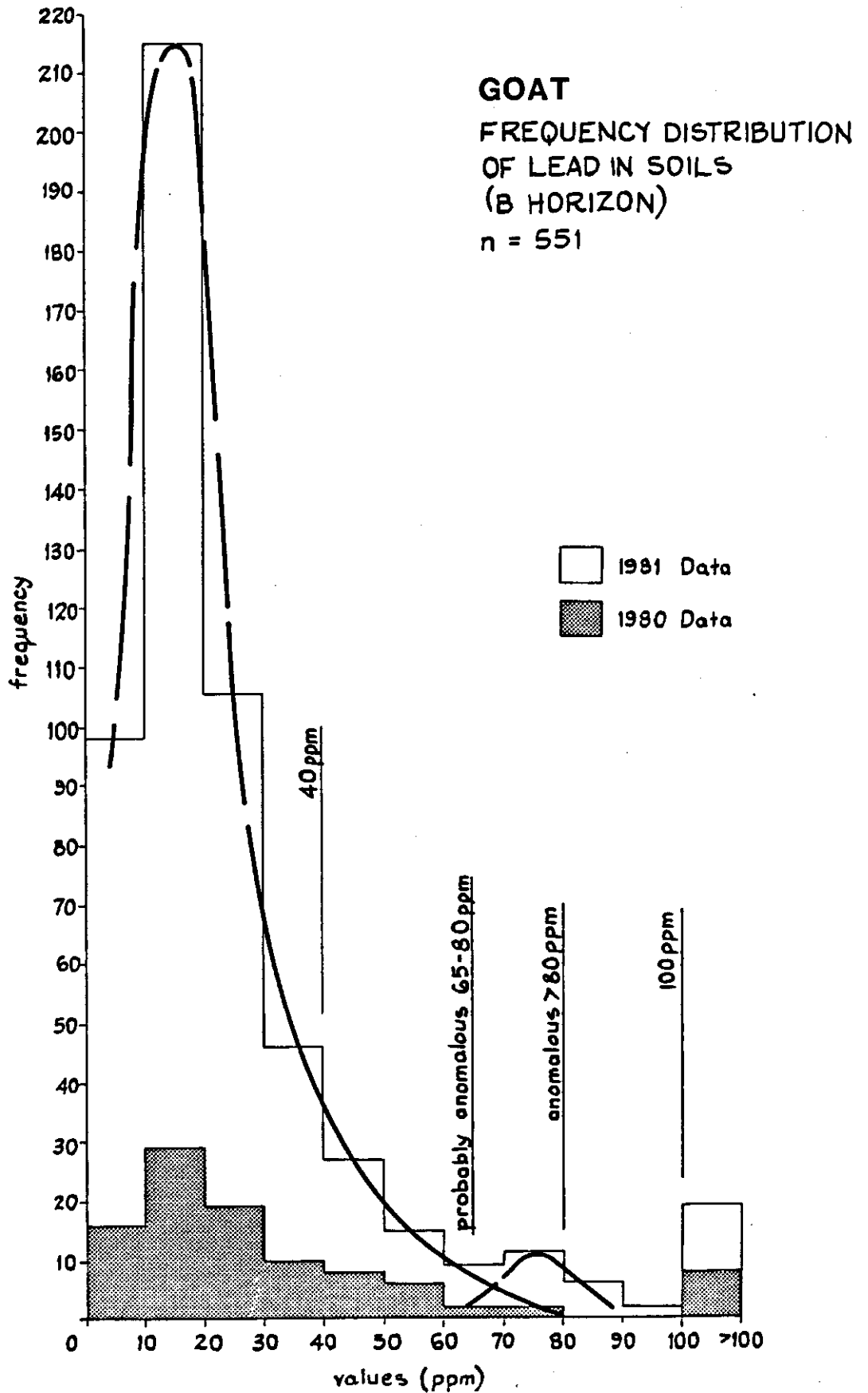


Figure 6

GOAT 37-86

CUMULATIVE FREQUENCY DISTRIBUTION
OF LEAD IN SOILS (B HORIZON-ALPINE)

n = 504

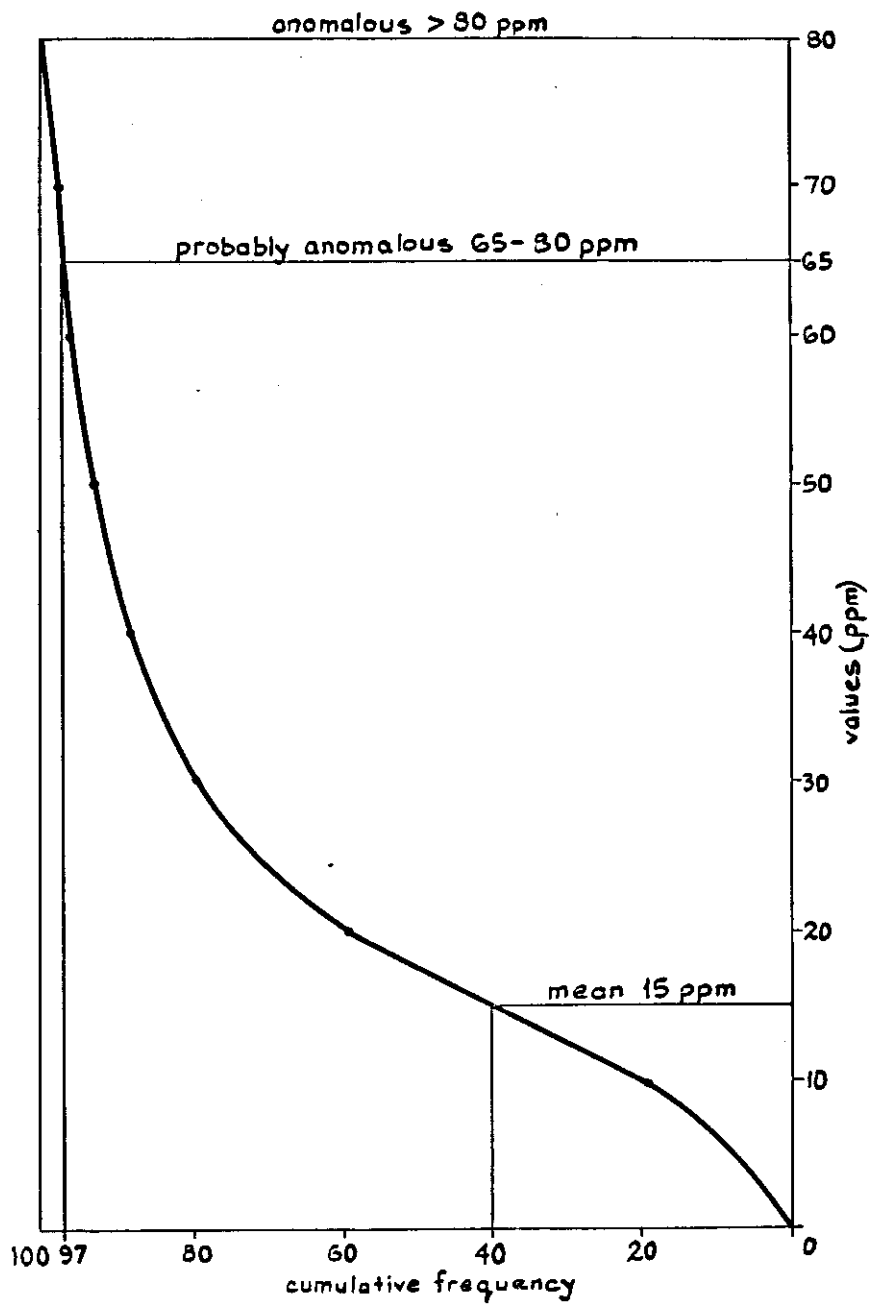


TABLE 10

GOAT 37 - 86

ZINC VALUES IN SOILS

| <u>Interval</u> | <u>Frequency</u> | | <u>Total</u> | <u>Cumulative Frequency</u> | <u>Cumulative Percent</u> |
|-----------------|------------------|-------------|--------------|---------------------------------|-------------------------------|
| | <u>1980</u> | <u>1981</u> | | | |
| 0-40 | 4 | 65 | 69 | 69 | 14.0 |
| 41-80 | 29 | 149 | 178 | 247 | 49.8 |
| 81-120 | 24 | 121 | 145 | 392 | 79.0 |
| 121-160 | 11 | 52 | 63 | 455 | 91.7 |
| 161-200 | 10 | 16 | 26 | 481 | 97.0 |
| 201-240 | 2 | 13 | 15 | 496 | 100.0 |
| 241-280 | 2 | 13 | 15 | | |
| 281-320 | 5 | 5 | 10 | | |
| 321-360 | 5 | 4 | 9 | | |
| 361-400 | 1 | 3 | 4 | | |
| >400 | 7 | 10 | 17 | | |
| | | | | | |
| Total | 100 | 451 | 551 | | |

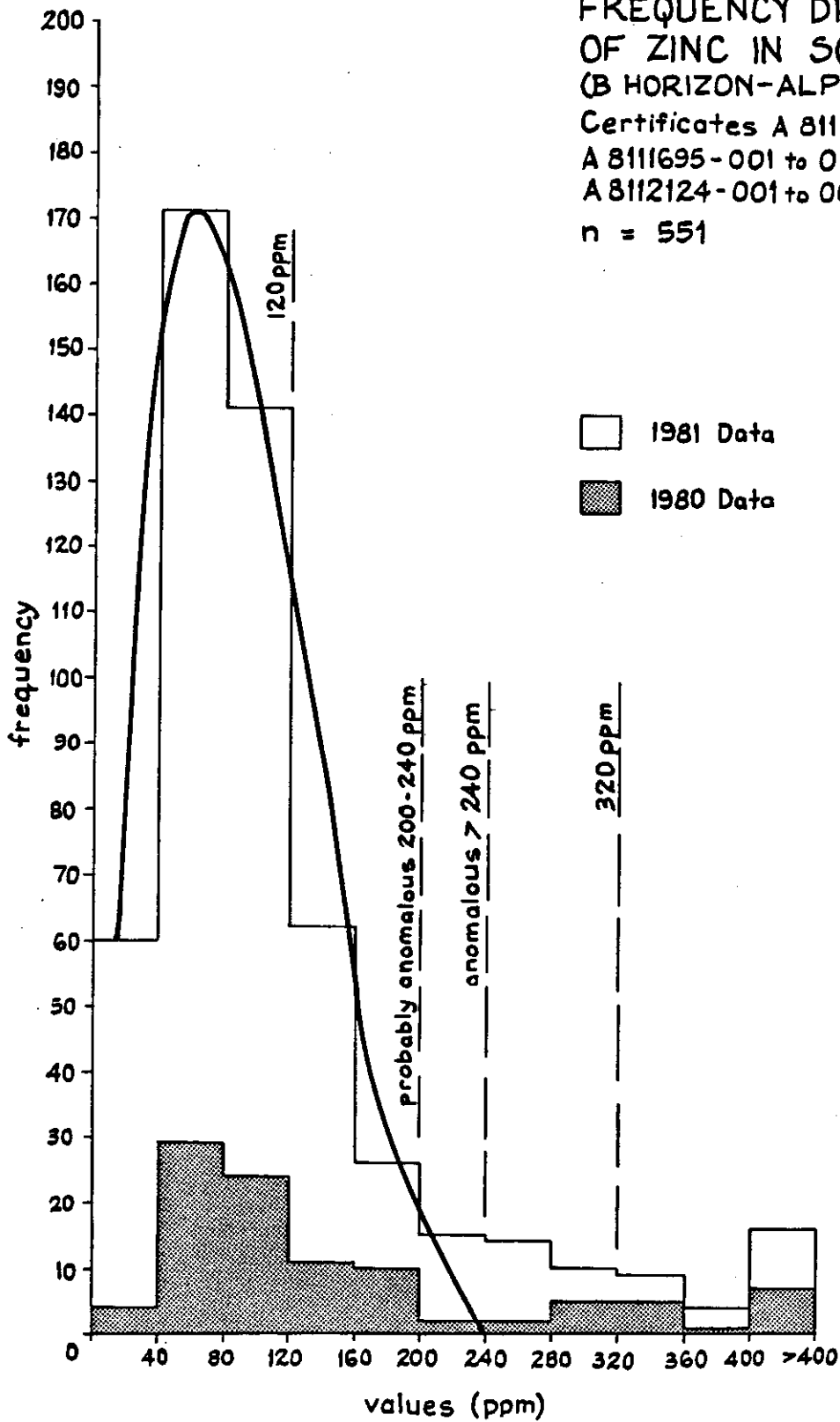
Values >400 (1981) = 510,700,470,730,1100,590,1100,430

Figure 7

GOAT 37-86

FREQUENCY DISTRIBUTION OF ZINC IN SOILS (B HORIZON-ALPINE)

Certificates A 8111546-001 to 003A, A 8111695-001 to 003A, A 8111976-001A, A 8112124-001 to 003A,
n = 551



GOAT 37-86

**CUMULATIVE FREQUENCY DISTRIBUTION
OF ZINC IN SOILS (B HORIZON-ALPINE)**

n=496

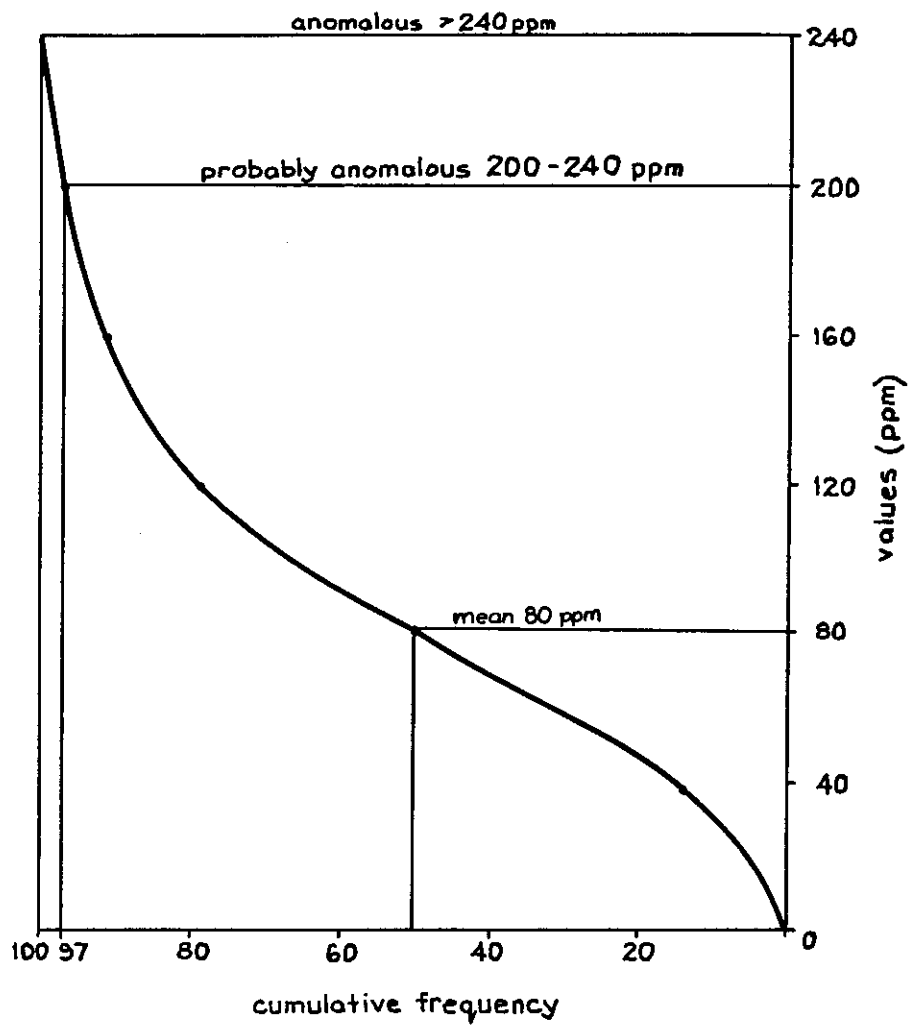


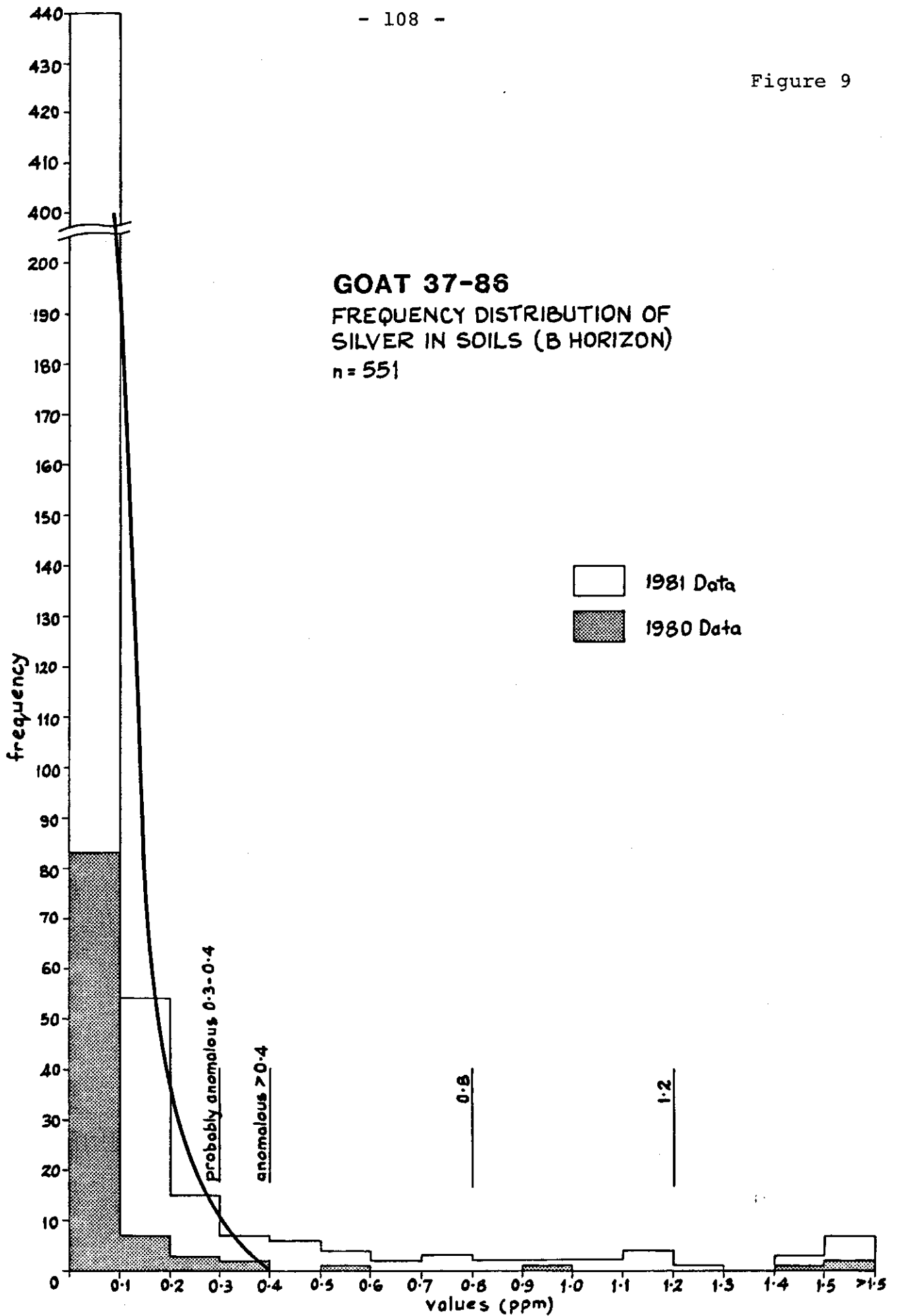
TABLE 11
GOAT 37-86

SILVER IN SOILS

| <u>Interval</u> | <u>Frequency</u> | | <u>Total</u> | <u>Cumulative Frequency</u> | <u>Cumulative Percent</u> |
|-----------------|------------------|-------------|--------------|---------------------------------|-------------------------------|
| | <u>1980</u> | <u>1981</u> | | | |
| 0.1 | 83 | 357 | 440 | 440 | 85.3 |
| 0.2 | 7 | 47 | 54 | 494 | 95.7 |
| 0.3 | 3 | 12 | 15 | 509 | 98.6 |
| 0.4 | 2 | 5 | 7 | 516 | 100.0 |
| 0.5 | 0 | 6 | 6 | | |
| 0.6 | 1 | 2 | 3 | | |
| 0.7 | 0 | 2 | 2 | | |
| 0.8 | 0 | 3 | 3 | | |
| 0.9 | 0 | 2 | 2 | | |
| 1.0 | 0 | 2 | 2 | | |
| 1.1 | 1 | 1 | 2 | | |
| 1.2 | 0 | 4 | 4 | | |
| 1.3 | 0 | 1 | 1 | | |
| 1.4 | 0 | 0 | 0 | | |
| 1.5 | 1 | 2 | 3 | | |
| >1.5 | <u>2</u> | <u>5</u> | <u>7</u> | | |
| | 100 | 451 | 551 | | |

Values > 1.5 (1981): 2.1, 3.0, 8.5, 2.7, 2.5

Figure 9



GOAT 37-86

CUMULATIVE FREQUENCY DISTRIBUTION
OF SILVER IN SOILS (B HORIZON-ALPINE)
n = 497

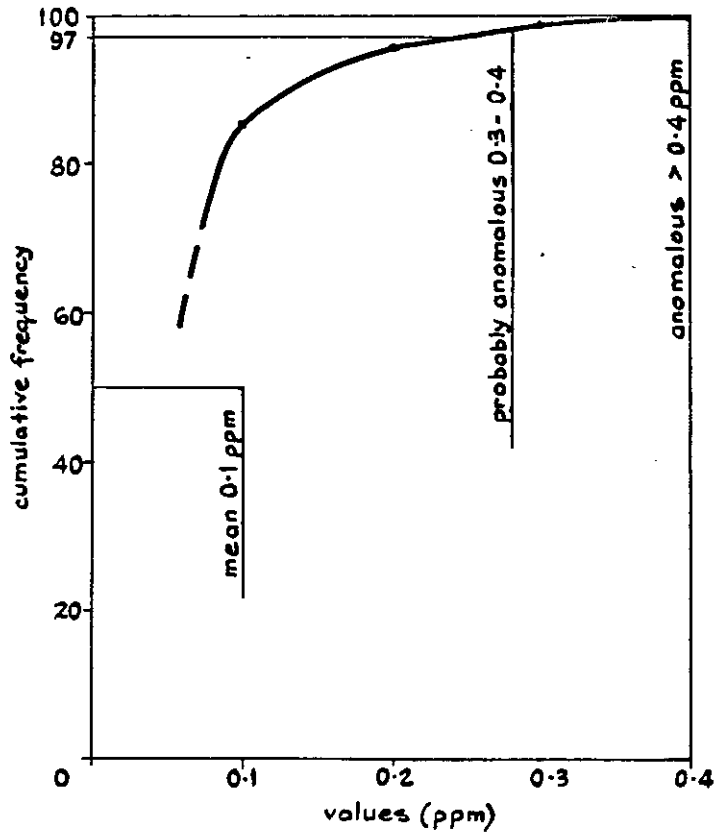


TABLE 12

Frequency Distribution - Skarns

| <u>Molybdenum</u> | | | <u>Copper</u> | | | <u>Lead</u> | | | | | |
|-------------------|------------------|-------------|-----------------|------------------|-------------|-----------------|------------------|--------------|-------------|-------------|--------------|
| <u>Interval</u> | <u>Frequency</u> | | <u>Interval</u> | <u>Frequency</u> | | <u>Interval</u> | <u>Frequency</u> | | | | |
| <u>(ppm)</u> | <u>1980</u> | <u>1981</u> | <u>Total</u> | <u>(ppm)</u> | <u>1980</u> | <u>1981</u> | <u>Total</u> | <u>(ppm)</u> | <u>1980</u> | <u>1981</u> | <u>Total</u> |
| 1- 2 | 14 | 5 | 19 | 0- 20 | 7 | 3 | 10 | 0- 4 | 30 | 14 | 44 |
| 3- 4 | 10 | | 10 | 21- 40 | 5 | 1 | 6 | 5- 8 | 8 | 2 | 10 |
| 5- 6 | 10 | | 10 | 41- 80 | 3 | 2 | 5 | 9-12 | 2 | 1 | 3 |
| 7- 8 | 1 | 1 | 2 | 81- 160 | 2 | 2 | 4 | 13-16 | 1 | | 1 |
| 9-10 | 1 | | 1 | 161- 320 | 5 | 1 | 6 | 17-20 | | 1 | 1 |
| 11-12 | | | - | 321- 640 | 10 | 6 | 16 | 21-24 | | | - |
| 13-14 | 1 | | 1 | 641-1280 | 7 | 4 | 11 | 25-28 | 1 | | 1 |
| 15-16 | 2 | | 2 | 1281-1560 | 3 | 1 | 4 | 28 | 4 | 3 | 7 |
| 16-17 | 2 | | 2 | 2560 | 4 | 1 | 5 | | | | |
| 17-18 | 2 | | 2 | | | | | | | | |
| 19-20 | | | - | | | | | | | | |
| 20 | 5 | 2 | 7 | | | | | | | | |
| <u>Total</u> | <u>46</u> | <u>8</u> | <u>54</u> | | <u>46</u> | <u>21</u> | <u>67</u> | | <u>46</u> | <u>21</u> | <u>67</u> |

- 110 -

.... Continued

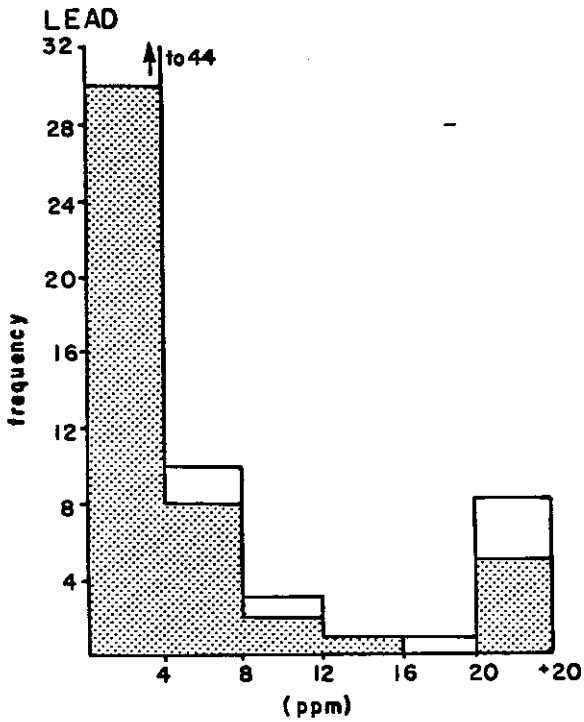
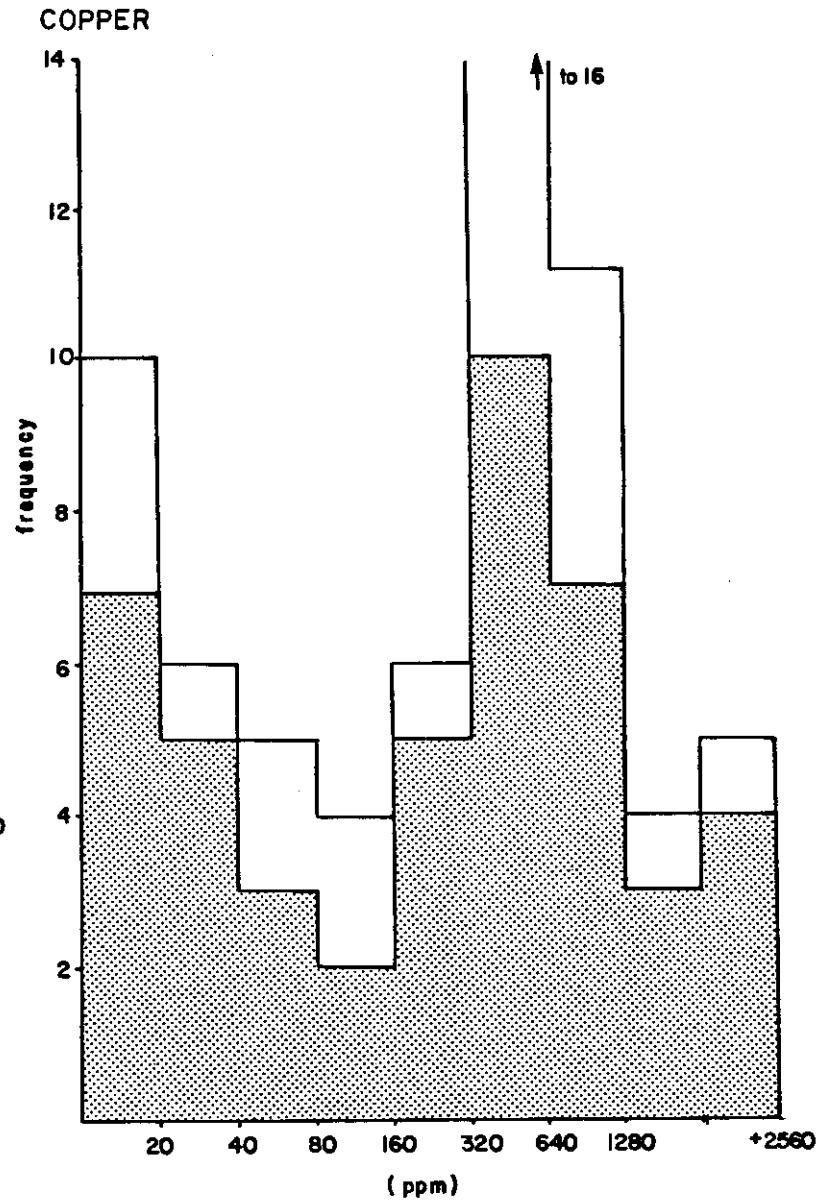
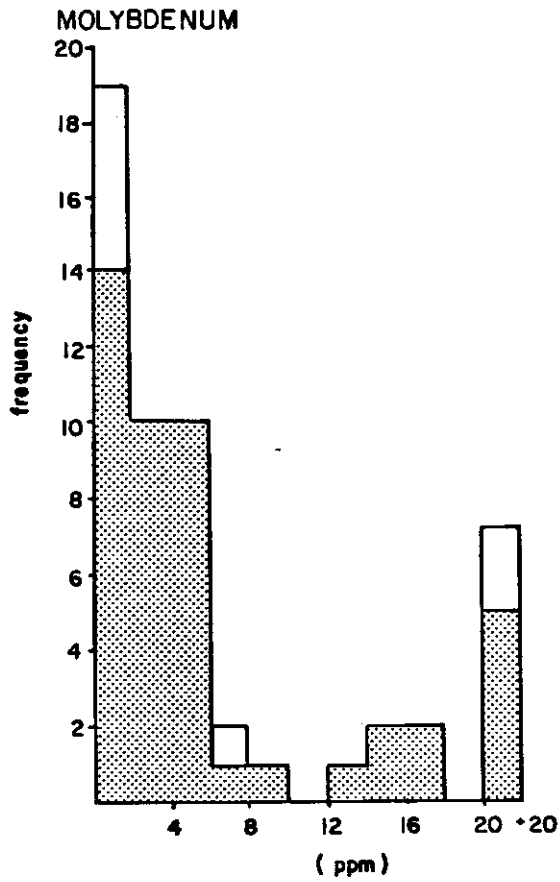
TABLE 12 - Continued
Frequency Distribution - Skarns

| <u>Tungsten</u> | | | | <u>Silver</u> | | | |
|-----------------|------------------|-------------|--------------|-----------------|------------------|-------------|--------------|
| <u>Interval</u> | <u>Frequency</u> | | | <u>Interval</u> | <u>Frequency</u> | | |
| <u>(ppm)</u> | <u>1980</u> | <u>1981</u> | <u>Total</u> | <u>(ppm)</u> | <u>1980</u> | <u>1981</u> | <u>Total</u> |
| 0- 3 | 18 | 5 | 23 | 0-0.2 | 10 | 9 | 19 |
| 4- 6 | 4 | - | 4 | 0.3-0.4 | 6 | 6 | 12 |
| 7- 12 | 2 | 4 | 6 | 0.5-0.6 | 8 | | 8 |
| 13- 25 | 2 | 2 | 4 | 0.7-0.8 | 6 | 2 | 8 |
| 26- 50 | 2 | - | 2 | 0.9-1.0 | 1 | | 1 |
| 51-100 | 2 | 3 | 5 | 1.1-1.2 | 2 | | 2 |
| 101-200 | 1 | | 1 | 1.3-1.4 | 1 | | 1 |
| 201-400 | 3 | 1 | 4 | 1.5-1.6 | 2 | 1 | 3 |
| >400 | 12 | 5 | 17 | 1.7-1.8 | 1 | | 1 |
| | | | | 1.9-2.0 | 2 | | 2 |
| | | | | >2.0 | 7 | 3 | 10 |
| Totals | 46 | 20 | 66 | | 46 | 21 | 67 |

TABLE 12 - continued

Frequency Distribution - Skarns

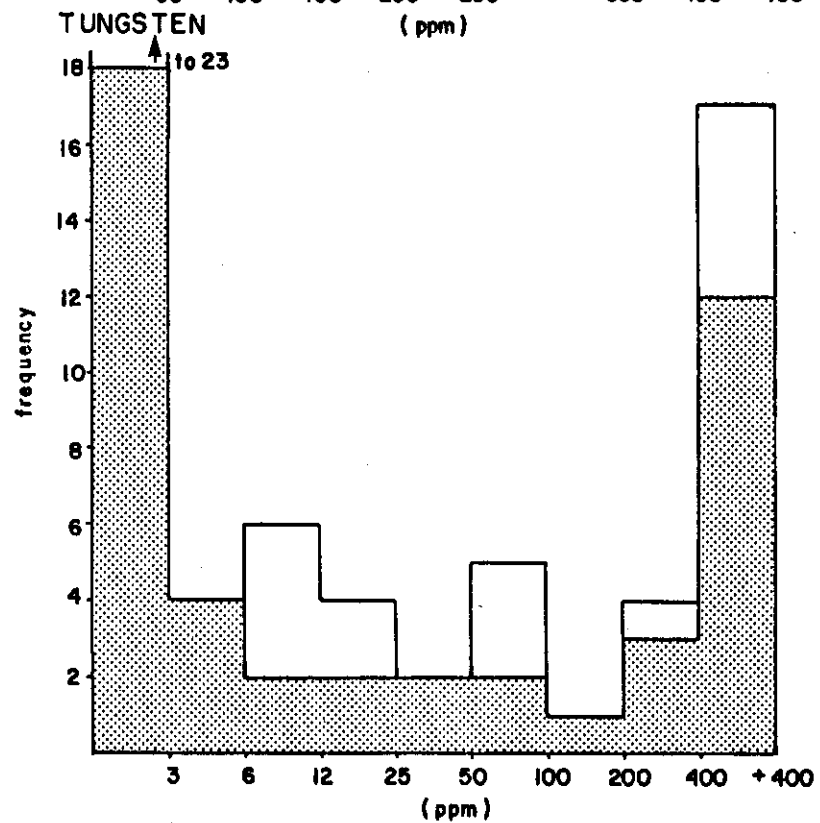
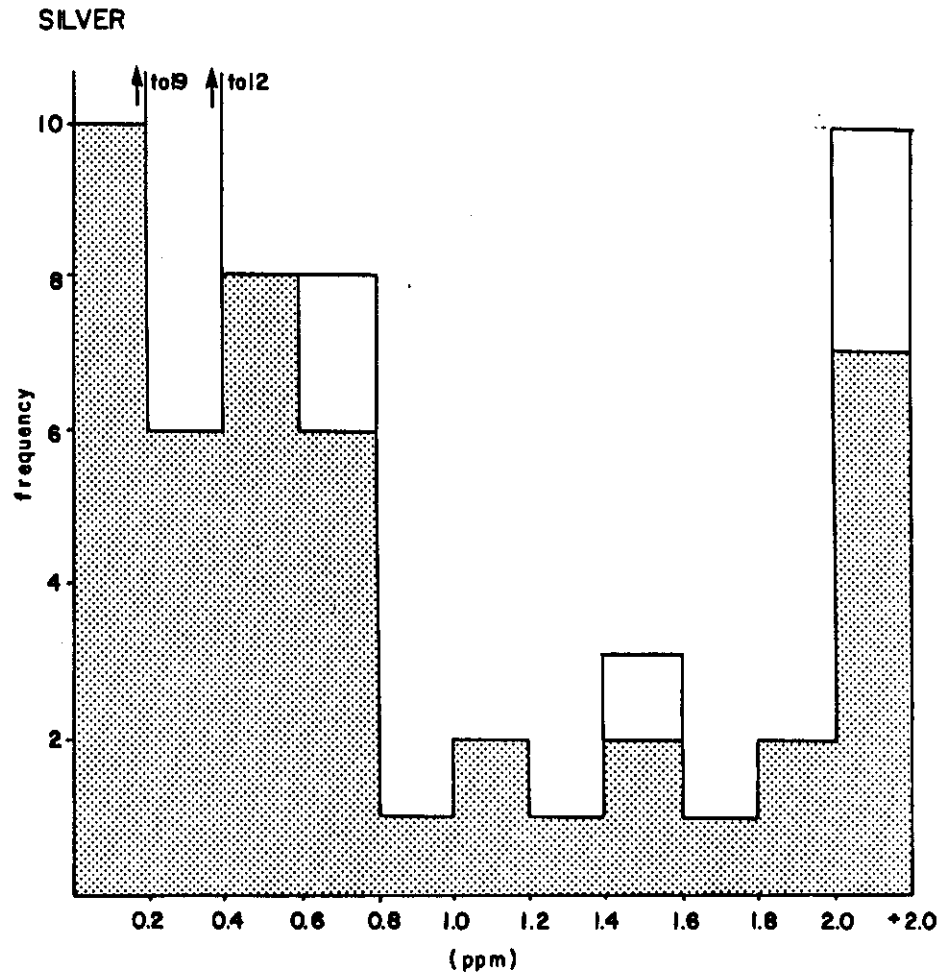
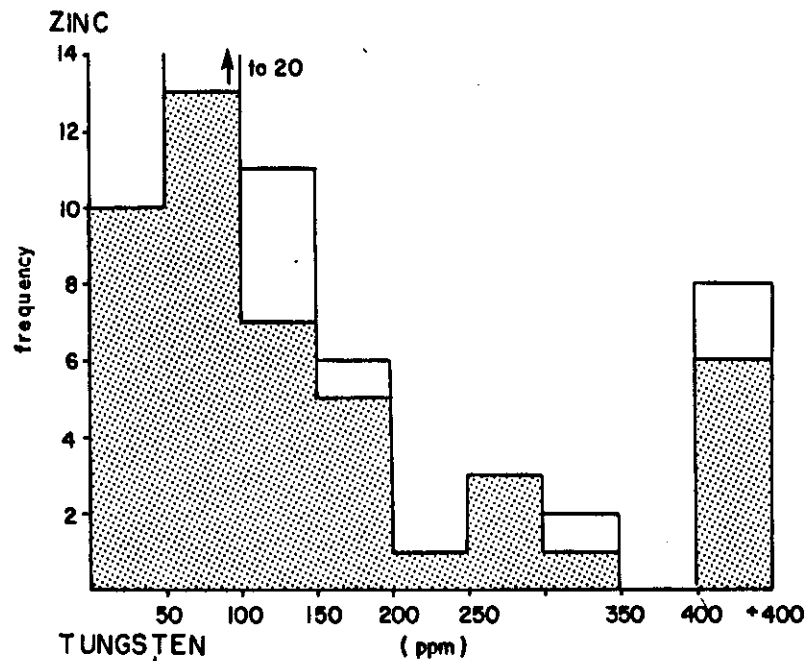
| <u>Interval</u> (ppm) | <u>Zinc</u> | | <u>Total</u> |
|--------------------------|-------------|-------------|--------------|
| | <u>1980</u> | <u>1981</u> | |
| 0-50 | 10 | 6 | 16 |
| 51-100 | 13 | 7 | 20 |
| 101-150 | 7 | 4 | 11 |
| 151-200 | 5 | | 6 |
| 201-250 | 1 | | 1 |
| 251-300 | 3 | | 3 |
| 301-350 | 1 | 1 | 2 |
| 351-400 | | | - |
| >400 | <u>6</u> | <u>2</u> | <u>8</u> |
| | 46 | 21 | 67 |



□ 1981 Date
▒ 1980 Date

FREQUENCY DISTRIBUTION
DIAGRAMS - SKARNS

Figure II



□ 1981 Data
▨ 1980 Data

FREQUENCY DISTRIBUTION
DIAGRAMS - SKARNS

Figure 11 (cont'd)

APPENDIX 1V

Soil Pit Profiles and Geochemistry

GOAT

Soil Pit No. 81 - 2

Line 4+95N 4+80E Grid 3

no slope to gentle slope ~2°W, vegetation of few scattered scrub brush, grass and moss

| HORIZON | DEPTH (cm) | SAMPLE NUMBER | DESCRIPTION | Cu | Mo | Pb | Zn | Ag | W |
|---------|-------------|---------------|--|----|----|-----|-----|-----|---|
| A | 0 | 81-Wa-38622 | dark brown humus - partly decomposed H5 | 9 | 1 | 5 | 58 | 0.1 | 1 |
| | 5 | 81-Wa-38623 | dark brown organic layer H8 silt 9, clay 1, humic material ~80% decomposed | 18 | 1 | 3 | 25 | 0.1 | 1 |
| B | 15 | 81-Wa-38624 | dark brown, sand 5, silt 3, clay 2 | 13 | 1 | 14 | 108 | 0.1 | 1 |
| | 20 | 81-Wa-38625 | dark brown, sand 6, silt 3, clay 1 and with pebbles | 11 | 1 | 13 | 115 | 0.1 | 1 |
| | 25 | 81-Wa-38626 | grey to dark brown, sand 6, silt 3, clay 1 | 11 | 1 | 13 | 120 | 0.1 | 4 |
| | 30 | 81-Wa-38627 | same as 626 | 10 | 1 | 13 | 105 | 0.1 | 2 |
| | 35 | 81-Wa-38628 | same as 626 | 10 | 1 | 12 | 87 | 0.1 | 2 |
| | 40 | 81-Wa-38629 | same as 626 | 12 | 1 | 14 | 117 | 1.0 | 3 |
| | 45 | 81-Wa-38630 | grey coarse sand and pebbles, sand 9, silt 1 | 12 | 1 | 13 | 118 | 0.1 | 2 |
| 50 | 81-Wa-38631 | same as 630 | 11 | 1 | 14 | 122 | 0.1 | 2 | |

GOAT
Soil Pit No. 81 - 5
Line 3+75S 3+85W Grid 4

Slope 7° E, moss and grass covered

| HORIZON | DEPTH (cm) | SAMPLE NUMBER | DESCRIPTION | All values ppm | | | | | |
|---------|------------|---------------|--|----------------|----|----|-----|-----|---|
| | | | | Cu | Mo | Pb | Zn | Ag | W |
| A | 5 | 81-Wa-38666 | organic, sand 6, silt 3, organics 1 | 12 | - | 25 | 118 | 0.1 | 1 |
| | 10 | | | | | | | | |
| | 15 | 81-Wa-38665 | R.F. 10%, sand 7, silt 3 | 15 | - | 40 | 150 | 0.1 | 1 |
| AB | 20 | 81-Wa-38664 | same as 665 | 22 | - | 38 | 148 | 0.1 | 1 |
| | 25 | | | | | | | | |
| B | 30 | 81-Wa-38663 | numerous rootlets, RF 20% sand 7, silt 2, gravel 1 | 15 | - | 40 | 146 | 0.1 | 1 |
| | 35 | 81-Wa-38662 | same as 663 | 14 | - | 47 | 150 | 0.1 | 1 |
| | 40 | | | | | | | | |
| | 45 | 81-Wa-38661 | some roots, RF 30%, sand 7 silt 2, gravel 1 | 18 | - | 45 | 170 | 0.1 | 1 |
| | 50 | 81-Wa-38660 | same as 661 | 15 | - | 49 | 165 | 0.1 | 1 |
| | 55 | 81-Wa-38659 | same as 661 | 14 | - | 50 | 168 | 0.1 | 1 |
| | 60 | | | | | | | | |
| | 65 | 81-Wa-38658 | same as 661 | 13 | - | 46 | 153 | 0.1 | 1 |
| | 70 | 81-Wa-38657 | same as 661 | 17 | - | 43 | 150 | 0.1 | 1 |

Note: all RF are intrusives, ie. diorites or monzonites

GOAT
Soil Pit No. 81 - 7
Line 3+75S 5+70E Grid 4

Slope 15° NE, grass covered

| HORIZON | DEPTH (cm) | SAMPLE NUMBER | DESCRIPTION | Cu | Mo | All values ppm | Pb | Zn | Ag | W |
|---------|------------|---------------|--|----|----|----------------|-----|-----|----|---|
| A | 5 | 81-Wa-38687 | humus layer, sand 4, silt 3, organic 3 black | 69 | - | 48 | 220 | 0.1 | 1 | |
| B | 10 | 81-Wa-38686 | homogeneous B horizon, transition, sand 4, silt 3, clay 3, rootlets, brown | 77 | - | 50 | 245 | 0.1 | 1 | |
| | 15 | | | | | | | | | |
| | 20 | 81-Wa-38685 | | 79 | - | 50 | 245 | 0.1 | 1 | |
| | 25 | 81-Wa-38684 | few RF, large boulders up to 60 cm across, intrusive | 62 | - | 46 | 193 | 0.1 | 1 | |
| | 30 | | | | | | | | | |
| | 35 | 81-Wa-38683 | | 68 | - | 48 | 226 | 0.1 | 1 | |
| | 40 | 81-Wa-38681 | | 63 | - | 46 | 218 | 0.1 | 1 | |
| | 45 | 81-Wa-38680 | | 58 | - | 42 | 198 | 0.1 | 1 | |
| | 50 | | | | | | | | | |
| | 55 | 81-Wa-38679 | | 59 | - | 45 | 200 | 0.1 | 1 | |
| 60 | | | | | | | | | | |
| | 65 | 81-Wa-38677 | | 49 | - | 42 | 178 | 0.1 | 1 | |

GOAT
Soil Pit No. 81 - 9

Line 1+25S 5+00E Grid 4

Flat lying area - old creek bottom ?, grass and brush covered

| HORIZON | DEPTH (cm) | SAMPLE NUMBER | DESCRIPTION | Cu | Mo | All values ppm | Pb | Zn | Ag | W |
|---------|------------|---------------|--|----|----|----------------|-----|-----|----|---|
| A | 0 | 81-Wa-38707 | organic 4, sand 5, gravel 1 | 22 | - | 20 | 120 | 0.1 | 1 | |
| | 5 | | | | | | | | | |
| B | 10 | 81-Wa-38706 | organic 3, sand 6, gravel 1, RF 10% | 22 | - | 20 | 108 | 0.1 | 1 | |
| | 15 | | | | | | | | | |
| | 20 | 81-Wa-38705 | 20% RF, sand 7, gravel 3, rootlets | 16 | - | 18 | 94 | 0.1 | 1 | |
| | 25 | | | | | | | | | |
| | 30 | 81-Wa-38704 | same as 705 | 16 | - | 18 | 88 | 0.1 | 12 | |
| | 35 | | | | | | | | | |
| | 40 | 81-Wa-38703 | same as 705 | 15 | - | 17 | 82 | 0.1 | 1 | |
| | 45 | | | | | | | | | |
| | 50 | 81-Wa-38702 | same as 705 | 19 | - | 20 | 93 | 0.1 | 1 | |
| | 55 | | | | | | | | | |
| | 60 | 81-Wa-38701 | same as 705 | 13 | - | 13 | 65 | 0.1 | 1 | |
| | 65 | | | | | | | | | |
| | 70 | 81-Wa-38700 | 20% R F, sand 7, gravel 3 | 19 | - | 20 | 90 | 0.1 | 1 | |
| | 75 | | | | | | | | | |
| | 80 | 81-Wa-38699 | black humus, sand 5, gravel 1 solifluxed ? | 30 | - | 30 | 83 | 0.1 | 1 | |
| | 85 | | | | | | | | | |
| | 90 | 81-Wa-38698 | black humus mottled 4, sand 5 gravel 1 | 21 | - | 34 | 145 | 0.1 | 1 | |

APPENDIX V

Rock Descriptions and Geochemistry

Rock Descriptions GOAT 37-86

Sample No.

Description

81-WA-38443R
(float)

Calc-silicate hornfels
-limonite stained weathered surface, light grey to green on fresh.
-fine grained equigranular siliceous carbonate with micaceous selvages.
-euhedral pyrite up to 3 mm constitutes 2% and as disseminated pyrite <.5mm throughout. Kaolin or talc up to 5%.

| | | | | | |
|-----------|-----------|-----------|-----------|----------|-------|
| <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>Cu</u> | <u>W</u> | (ppm) |
| 75 | 70 | 0.6 | 27 | 4 | |

81-WA-38848R

-limonite coated fracture surfaces and weathered surface, manganese oxide (?) fillings in fractures and open partings. <0.1% scheelite.
-kaolinized intrusive, quartz, feldspars altered to clays, micas to limonite.

| | | | | | |
|-----------|-----------|-----------|-----------|-------|-----------------------|
| <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>Cu</u> | (ppm) | <u>WO₃</u> |
| 16 | 24 | 0.4 | 95 | | 1.12% |

81-WA-38849R

-banded diopside-calcite garnet quartz.
-(calc-silicate) very thin layers of biotite schists. Disseminated pyrrhotite.
-Some limonite along fractures.

| | | | | | |
|-----------|-----------|-----------|-----------|----------|-------|
| <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>Cu</u> | <u>W</u> | (ppm) |
| 7 | 88 | 0.1 | 33 | 85 | |

81-WA-38851R

Calcite-diopside-quartz assemblage
-medium grained calc-silicate hornfels
-limonitic weathered surface.
-pale green in colour on fresh surface.

-small limonitized pits occur throughout (5%) possibly weathered pyrite.

| | | | | | |
|-----------------------|------------------------|-------------------------|-----------------------|-----------------------|-------|
| $\frac{\text{Pb}}{6}$ | $\frac{\text{Zn}}{15}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{Cu}}{5}$ | $\frac{\text{W}}{23}$ | (ppm) |
|-----------------------|------------------------|-------------------------|-----------------------|-----------------------|-------|

81-WA-38852R

Foliated intrusive - medium grained biotite quartz monzonite
-K-spars are slightly kaolinized and limonite is pervasive on fracture surfaces.

-contains < 1% disseminated pyrite.

| | | | | | |
|-------------------------|-------------------------|-------------------------|------------------------|-----------------------|-------|
| $\frac{\text{Pb}}{325}$ | $\frac{\text{Zn}}{230}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{Cu}}{25}$ | $\frac{\text{W}}{25}$ | (ppm) |
|-------------------------|-------------------------|-------------------------|------------------------|-----------------------|-------|

81-WA-38853R

Fine grained foliated metapelitic schist with small fracture fillings < 1mm of manganese hydroxide trace pyrite

-foliation is defined by micas, muscovite, contains small layers of calc-silicate with diopside.

-limonite coated weathered surface and mica seams.

| | | | | | |
|------------------------|------------------------|-------------------------|------------------------|----------------------|-------|
| $\frac{\text{Pb}}{19}$ | $\frac{\text{Zn}}{26}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{Cu}}{50}$ | $\frac{\text{W}}{1}$ | (ppm) |
|------------------------|------------------------|-------------------------|------------------------|----------------------|-------|

81-WA-38632R
(float)

Limonite-stained banded cherty quartz with < 1% disseminated pyrite or pyrrhotite.

-Quartzite or vein material??

| | | | | | |
|------------------------|------------------------|-------------------------|------------------------|-----------------------|-------|
| $\frac{\text{Pb}}{10}$ | $\frac{\text{Zn}}{17}$ | $\frac{\text{Ag}}{1.5}$ | $\frac{\text{Cu}}{28}$ | $\frac{\text{W}}{30}$ | (ppm) |
|------------------------|------------------------|-------------------------|------------------------|-----------------------|-------|

81-WA-38633R

Intensely limonite-stained quartzite biotite schist with 1% disseminated pyrite/pyrrhotite.

| | | | | | |
|-----------------------|------------------------|-------------------------|------------------------|-----------------------|-------|
| $\frac{\text{Pb}}{3}$ | $\frac{\text{Zn}}{82}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{Cu}}{26}$ | $\frac{\text{W}}{42}$ | (ppm) |
|-----------------------|------------------------|-------------------------|------------------------|-----------------------|-------|

81-WA-38634R

Same as 38633R.

| | | | | | |
|------------------------|------------------------|-------------------------|------------------------|----------------------|-------|
| $\frac{\text{Pb}}{13}$ | $\frac{\text{Zn}}{26}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{Cu}}{29}$ | $\frac{\text{W}}{1}$ | (ppm) |
|------------------------|------------------------|-------------------------|------------------------|----------------------|-------|

81-WA-38635R
(float)

Massive pyrrhotite (80%) skarn with minor diopside, quartz
-0.1% coarse-grained blue-fluorescing scheelite

| | | | | | | |
|-----------|-----------|-----------|----------|-----------|-----------|-------|
| <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>W</u> | <u>Cu</u> | <u>Mo</u> | (ppm) |
| 6 | 27 | 0.1 | 590 | 400 | 1 | |

81-WA-38836R

Calc-silicate Hornfels

- colour banded; green/purple/black, bands 1mm to 10cm wide.
- siliceous; 10% fine grained black biotite, occur as discrete bands with up to 40% biotite.
- siliceous zones light green, possibly due to intergrowth of very fine grained diopside and quartz.
- 0.5% pyrite disseminate and as fracture filling.
- outcrop sample; colour banding at 118/75 S, calc-silicate is approximately 5 metres thick, contact with intrusive (biotite quartz monzonite) is both cross-cutting and concordant.

| | | | | | |
|-----------|-----------|-----------|----------|-----------|-------|
| <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>W</u> | <u>Cu</u> | (ppm) |
| 50 | 65 | 0.8 | 1 | 110 | |

81-WA-38837R

Quartz-Garnet-Diopside-Calcite Skarn

- approximately 5 metres wide, strike length of 40 metres at 40°/90° (?).
- limestone outcrops to south along strike extension of skarn, no limestone in main skarn zone however.
- coarse grained euhedral calcite, garnet.
- within skarn are lenses up to 2 metres by .5 metres with strong limonitic stain, after po(up to 30%), py(1-2%), cp(up to 4%) and mo(trace).
- UV lamp shows <0.1% scheelite.

| | | | | | | |
|-----------|-----------|-----------|-----------|-----------|----------|-------|
| <u>Mo</u> | <u>Cu</u> | <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>W</u> | (ppm) |
| 8 | 480 | 2 | 65 | 0.3 | 295 | |

81-WA-38838R

Biotite Quartz Monzonite

- fine grained, hypidiomorphic granular, leucocratic.
- 10% biotite, 20% quartz, 70% feldspar.

| | | | | | |
|-----------|-----------|-----------|-----------|----------|-------|
| <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>Cu</u> | <u>W</u> | (ppm) |
| 19 | 54 | 0.2 | 12 | 14 | |

81-WA-38840R

Calc-Silicate Skarn

- quartz, garnet, diopside, calcite, actinolite (brown).
- trace pyrite, trace scheelite in vuggy limonite fracture (?).
- fractures heavily limonite-stained.
- .3m wide skarn (contact between aplite dyke (?) and calc-silicate rocks).

| <u>Cu</u> | <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>W</u> | (ppm) |
|-----------|-----------|-----------|-----------|----------|-------|
| 15 | 2 | 110 | 0.1 | 10 | |

81-WA-38841R

Pyrrhotite skarn

- Nodule (?) of pyrrhotite and pyrite (?)
- 3m x .5m (flattened along foliation of calc-silicate metasediments).
- pervasive limonite and goethite (?).
- irregular fractures lined with .3mm goethite (?).

| <u>Cu</u> | <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>W</u> | (ppm) |
|-----------|-----------|-----------|-----------|----------|-------|
| 450 | 1 | 7 | 0.3 | 1 | |

81-WA-38842R

Skarn-Monzonite (?) contact

- quartz monzonite in contact with diopside quartz skarn containing pyrite and pyrrhotite.
- numerous fractures (heavily limonite/goethite-stained) which cut contact at +90°, 1mm-1cm spacing.
- minor pyrite in monzonite.
- part of small inclusion of limestone in intrusive (10m exposed in outcrop above talus).
- bright green fluorescent mineral along one fracture surface.

| <u>Cu</u> | <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>W</u> | (ppm) |
|-----------|-----------|-----------|-----------|----------|-------|
| 500 | 3 | 105 | 0.1 | 1 | |

81-WA-38843R

Banded Quartz Mica Schist

- 70% quartz, 20% mica (phlogopite?), 10% pyrrhotite.
- very fine - grained
- fractures mostly parallel foliation and heavily limonite/goethite (?) stained.
- 1m wide metasediment inclusion sandwiched between aplite to S and monzonite (?) to N.
- +7m exposed above talus.

| <u>Cu</u> | <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>W</u> | (ppm) |
|-----------|-----------|-----------|-----------|----------|-------|
| 35 | 3 | 35 | 0.1 | 1 | |

81-WA-38844R
(float)

Talus, Skarn

- garnet, quartz, actinolite.
- minor calcite + diopside (?).
- slickenside and slightly rusty surface.

| Cu | Pb | Zn | Ag | W | (ppm) |
|----|----|----|-----|---|-------|
| 10 | 1 | 85 | 0.1 | 1 | |

81-WA-38845R

Quartz mica schist

- fine - grained, rusty.
- minor disseminated pyrrhotite.
- outcrop heavily limonite/goethite (?) stained.

| Cu | Pb | Zn | Ag | W | (ppm) |
|----|----|----|-----|---|-------|
| 18 | 1 | 48 | 0.1 | 1 | |

81-WA-38846R

Altered quartz monzonite

- fine - grained.
- 2% biotite, 20% quartz, 40% Kspar, 38% plagioclase.
- white mica and limonite stain on fracture.
- 2% disseminated pyrrhotite

| Cu | Pb | Zn | Ag | W | (ppm) |
|----|----|----|-----|---|-------|
| 18 | 30 | 66 | 0.1 | 1 | |

81-WA-38847R

Quartz vein

- medium - grained translucent quartz.
- rusty weathered fractures, slightly vuggy.
- 2 parallel veins .3 and .8m wide within 3x5m outcrop
- no apparent continuation in outcrop 10m upslope.
- minor calcite in vugs.

| Cu | Pb | Zn | Ag | W | (ppm) |
|----|----|----|-----|---|-------|
| 11 | 1 | 14 | 0.1 | 1 | |

81-WA-38884R

- intrusive, relatively fresh with limonitic lenses small parallel fractures occur.
- quartz 20%, Kspar 40%, plag 30%, biotite <5% and disseminated pyrite.
- slickensided fracture surface.
- limonitized weathered surface and fracture planes.

| Pb | Zn | Ag | W | Cu | (ppm) |
|------|------|-----|---|----|-------|
| 1150 | 1450 | 1.1 | 3 | 25 | |

81-WA-38885R

In shear zone, foliated intrusive with sphalerite
-extremely limonitized fractured fine - grained
intrusive with vuggy cavities, some filled with
pyrite, galena (?) and sphalerite.
-numerous crosscutting fractures.
-blocky limonitic weathering and secondary limonite
alteration.

| Pb | Zn | Ag | W | Cu | (ppm) |
|-----|------|-----|----|-----|-------|
| 970 | 5.4% | 7.5 | 12 | 400 | |

81-WA-38886R

-shear zone - coarse to medium crystalline intrusive
with small pods of galena along fractures.
-limonitic fractures and numerous crosscutting
filled fractures.
-quartz 20%, Kspar 35%, plag 40%, biotite 5%,
mineralization <<2%.
-kaolinized weathered rim 0.5cm wide.
-limonitized fracture seams.

| Pb | Zn | Ag | W | Cu | (ppm) |
|------|------|-----|---|----|-------|
| 2700 | 1800 | 6.0 | 1 | 90 | |

81-WA-38887R

Pyrrhotite metased, biotite quartz feldspar schist.
-small lenses of pyrrhotite along foliation.
-unit grades into metaquartzite crosscut by peg-
matitic and intrusive veins and dykes, fracturing
offsets veins.
-fine - grained, limonitized foliation surfaces

| Pb | Zn | Ag | W | Cu | (ppm) |
|----|-----|-----|---|----|-------|
| 28 | 440 | 0.1 | 1 | 33 | |

81-WA-38888R

Calc - silicate skarn with garnet, diopside, calcite.
-fractured surface contains small molybdenite crystals
radiating over 1cm.
-calc - silicate unit is + 0.1cm wide and is seen in
contact with limestone.
-open crosscutting and subparallel fractures.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|----|-----|-----|---|----|----|-------|
| 17 | 178 | 0.2 | 1 | 65 | 75 | |

81-WA-38889R
(float)

- limonite coated surface.
- fresh surface is dark grey quartzite with thin lenses of pyrrhotite and/or pyrite?
- contains small secondary biotite grains
- slightly foliated but well indurated.

| Pb | Zn | Ag | W | Cu | (ppm) |
|---------------|----------------|----------------|--------------|---------------|-------|
| $\frac{19}{}$ | $\frac{270}{}$ | $\frac{0.1}{}$ | $\frac{1}{}$ | $\frac{63}{}$ | |

81-WA-38891R

- Calc - silicate skarn
- light brown (?) weathered surface, green fresh surface, small garnets, <1% scheelite.
 - small parallel fractures, diopside - calcite + garnet assemblage.
 - fine - grained equigranular minerals.
 - weathered rim is 1cm. wide

| Pb | Zn | Ag | WO ₃ | Cu | (ppm) |
|--------------|----------------|----------------|-------------------|--------------|-------|
| $\frac{5}{}$ | $\frac{330}{}$ | $\frac{0.2}{}$ | $\frac{0.85\%}{}$ | $\frac{6}{}$ | |

81-WA-38892R

- Inclusion of calc - silicate with minor diopside and garnet.
- fine - grained hornfels.
 - granular texture.
 - light brown weathered surface pale green-grey on fresh.
 - minor phlogopite.

| Pb | Zn | Ag | W | Cu | (ppm) |
|--------------|---------------|----------------|----------------|--------------|-------|
| $\frac{1}{}$ | $\frac{95}{}$ | $\frac{0.1}{}$ | $\frac{155}{}$ | $\frac{5}{}$ | |

81-WA-38893R

- coarse grained pegmatite with large platy biotite up to 0.5cm and Kspar pheno-crysts (megacrysts) quartz 20, and plag 40, biotite 10.

| Pb | Zn | Ag | W | Cu | (ppm) |
|--------------|---------------|----------------|---------------|--------------|-------|
| $\frac{6}{}$ | $\frac{25}{}$ | $\frac{0.1}{}$ | $\frac{42}{}$ | $\frac{1}{}$ | |

81-WA-38894R
(float)

- Medium - grained intrusive (see stain - granodiorite/ granite ?).
- limonite stained throughout.
 - minor pyrite + 3%, quartz 20%, Kspar 25%, plag 35%, biotite 15%.

-limonite alteration throughout.

| | | | | | |
|-----------------------|------------------------|-------------------------|-----------------------|------------------------|-------|
| $\frac{\text{Pb}}{5}$ | $\frac{\text{Zn}}{50}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{W}}{12}$ | $\frac{\text{Cu}}{50}$ | (ppm) |
|-----------------------|------------------------|-------------------------|-----------------------|------------------------|-------|

81-WA-38895R
(float)

Calc - silicate skarn with layers of pyrite.

-in part brecciated, carbonate veining.

-highly limonitized.

-garnet diopside, extremely fine-grained, well indurated.

| | | | | | | |
|-----------------------|------------------------|-------------------------|-----------------------|-------------------------|-----------------------|-------|
| $\frac{\text{Pb}}{1}$ | $\frac{\text{Zn}}{60}$ | $\frac{\text{Ag}}{0.4}$ | $\frac{\text{W}}{95}$ | $\frac{\text{Cu}}{375}$ | $\frac{\text{Mo}}{1}$ | (ppm) |
|-----------------------|------------------------|-------------------------|-----------------------|-------------------------|-----------------------|-------|

81-WA-38897R

Gossan stained boulders of massive pyrite.

-some chalcopyrite, garnet-diopside (?), quartz, bornite

-manganese alteration along fractures.

-parallel fractures.

-limonitized weathered.

| | | | | | | |
|-----------------------|-----------------------|-------------------------|----------------------|--------------------------|-----------------------|-------|
| $\frac{\text{Pb}}{1}$ | $\frac{\text{Zn}}{2}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{W}}{1}$ | $\frac{\text{Cu}}{1150}$ | $\frac{\text{Mo}}{1}$ | (ppm) |
|-----------------------|-----------------------|-------------------------|----------------------|--------------------------|-----------------------|-------|

81-WA-38898R
(float)

-fine-grained intrusive in float.

-limonite stained weathered surface and throughout.

-quartz 20, feldspar 30, plagioclase 35, biotite 10, pyrite (?) disseminated.

-boulder ± 0.2 m x 0.3 m.

-there are ±10 of these around.

-other talus is fresh intrusive.

| | | | | | |
|-----------------------|------------------------|-------------------------|----------------------|------------------------|-------|
| $\frac{\text{Pb}}{5}$ | $\frac{\text{Zn}}{25}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{W}}{1}$ | $\frac{\text{Cu}}{30}$ | (ppm) |
|-----------------------|------------------------|-------------------------|----------------------|------------------------|-------|

81-WA-38899R
(float)

Nodule-shaped highly gossaned massive pyrrhotite (?).

-highly oxidized throughout 2dm boulder.

-silver-grey on freshly broken surface with very slight bronze cast.

- soft with grey-black streak.
- platy fracture (?) with some curved surfaces some conchoidal fracture.
- non-magnetic.
- brilliant varicoloured-tarnish after a few hours.
- minor pyrite (?); <.1% scheelite.
- garnet crystal <1mm.

| Pb | Zn | Ag | W | Cu | (ppm) |
|----|----|-----|-----|------|-------|
| 1 | 17 | 3.2 | 700 | 1100 | |

81-WA-38900R
(float)

- Grid 3 L1+25N 4+20E.
- fine - grained slightly foliated skarn.
 - weathered surface is limonitized (gossan).
 - fresh surface is green to dark gray with thin lenses of pyrite and tarnished pyrite up to 2mm thick (average 1mm) plus possible chalcopyrite.
 - weathered (limonitized) pits along foliation.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|-----|------|-----|----|-----|----|-------|
| 780 | 1000 | 6.0 | 16 | 550 | 1 | |

81-WA-38946R
(float)

- Skarn.
- weathered and stained: red colour; limonitized.
 - sulphides: -disseminated Py
-disseminated Mo with some small accumulations of Mo in the vugs.
 - host rock: -fine - medium grained skarn.
 - larger grained quartz and garnet phenocrysts.
 - diopside, quartz, garnet, feldspar, calc. (?), amph?
 - specific gravity: medium due to garnet and diss. sulph.
 - colour: red, green, grey colour.

| Pb | Zn | Ag | W | Cu | (ppm) |
|----|----|-----|----|-----|-------|
| 1 | 55 | 0.1 | 20 | 133 | |

81-WA-38947R
(float)

- Rusted-Pyrite-Pyrrhotite rich skarn.
- heavily weathered and rusted brown and black; large surficial limonitization
 - specific gravity high due to sulphides.
 - massive and large grained sulphides; mainly py comprising 60% + of the sample; py, po, cp (blue tarnish); some disseminated pyrite in the country rock.
 - <.1% scheelite

medium - coarse grained country rock; qtz-calcite-garnet-(amphiboles?) which are heavily weathered.

| Pb | Zn | Ag | WO ₃ | Cu | (ppm) |
|----------|-----------|------------|-----------------|-------------|-------|
| <u>1</u> | <u>60</u> | <u>1.6</u> | <u>0.96%</u> | <u>1850</u> | |

81-WA-38948R
(float)

Rusted Skarn.

-heavily weathered and rusted on the surface; differential weathering and the rock is pitted

-specific gravity: high.

-fine - medium disseminated pyrite comprising up to 45% of the countryrock; pyrite occurs in some of the vugs and in the microfractures (po present?).

-medium grained country rock; siliceous skarn with an irregular qtz fracture +1cm which crosscuts the rock; amphiboles; biotite and very minor calcite.

-a black salt & pepper colour & appearance.

| Pb | Zn | Ag | W | Cu | (ppm) |
|----------|------------|------------|------------|-------------|-------|
| <u>3</u> | <u>105</u> | <u>0.7</u> | <u>100</u> | <u>1250</u> | |

81-WA-38950R

Grey fine - grained calc-silicate schist.

-strong limonite stain on fractures-highly fractured along and across foliation.

-from 3m long 1m wide boudin(?) within black laminated slate.

-contains irregular "blobs" of quartz.

-in part brecciated.

-70% light grey calc-silicate mineral(?), 20% brownish mica-phlogopite(?), 10% pyrite disseminated and surrounding dark greenish black grains .5cm of "?".

-metasediment is large inclusion in quartz monzonite.

| Pb | Zn | Ag | Cu | W | (ppm) |
|----------|-----------|------------|-----------|----------|-------|
| <u>1</u> | <u>42</u> | <u>0.1</u> | <u>48</u> | <u>1</u> | |

81-WA-38951R

Dark grey laminated slate with 3% pyrite(disseminated and in discontinuous layers along cleavage).

-tiny <1mm quartz vein (?) along cleavage.

-limonite stained on fractures along and across cleavage.

-block(20m x 30m) in monzonite host(length of block parallel to cleavage).

-small aplite dykes(1-several cms), subparallel to cleavage and continuous into adjacent intrusive.

-strike 145°/45°NE (cleavage).

| | | | | | |
|-----------------------|------------------------|-------------------------|------------------------|----------------------|-------|
| $\frac{\text{Pb}}{6}$ | $\frac{\text{Zn}}{10}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{Cu}}{35}$ | $\frac{\text{W}}{1}$ | (ppm) |
|-----------------------|------------------------|-------------------------|------------------------|----------------------|-------|

81-WA-38952R

Grey fine - grained calc-silicate(?) with 15-20% quartz and 10% pyrite and pyrrhotite(?).

-moderately foliated.

-limonite-stained fractures.

-part of 3m long 1m wide inclusion in quartz-monzonite.

| | | | | | |
|-----------------------|------------------------|-------------------------|-------------------------|----------------------|-------|
| $\frac{\text{Pb}}{1}$ | $\frac{\text{Zn}}{12}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{Cu}}{182}$ | $\frac{\text{W}}{7}$ | (ppm) |
|-----------------------|------------------------|-------------------------|-------------------------|----------------------|-------|

81-WA-38953R

Rusty calc-silicate rock fine - grained.

-15m from west end of 60m long rusty weathered zone of metasediments which forms inclusion in quartz-monzonite.

-non-stained limestone is lower contact with rusty calc-silicate.

-pyrite and pyrrhotite(?) +10%.

-light calc-silicate mineral +70%, phlogopite(?) +20%.

| | | | | | |
|-----------------------|-------------------------|-------------------------|-------------------------|----------------------|-------|
| $\frac{\text{Pb}}{1}$ | $\frac{\text{Zn}}{130}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{Cu}}{200}$ | $\frac{\text{W}}{1}$ | (ppm) |
|-----------------------|-------------------------|-------------------------|-------------------------|----------------------|-------|

81-WA-38954R

White aplite dyke (<.5mm grain size).

-20% quartz, 88% feldspar, 2% mafics.

-a few garnet grains(?) <.5mm.

-cuts monzonite and metasediment 38953.

-.3 - 1m wide(?).

| | | | | | |
|-----------------------|------------------------|-------------------------|------------------------|----------------------|-------|
| $\frac{\text{Pb}}{2}$ | $\frac{\text{Zn}}{12}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{Cu}}{23}$ | $\frac{\text{W}}{1}$ | (ppm) |
|-----------------------|------------------------|-------------------------|------------------------|----------------------|-------|

81-WA-38955R

Calc-silicate schist(?) quartz-rich(?).

-at west edge of shear zone.

-fine - grained quartz, calc-silicates(?) and phlogopite(?).

-limonite stained fractures along and across schistosity.

| | | | | | |
|-----------------------|------------------------|-------------------------|------------------------|----------------------|-------|
| $\frac{\text{Pb}}{1}$ | $\frac{\text{Zn}}{60}$ | $\frac{\text{Ag}}{0.1}$ | $\frac{\text{Cu}}{26}$ | $\frac{\text{W}}{1}$ | (ppm) |
|-----------------------|------------------------|-------------------------|------------------------|----------------------|-------|

81-WA-38956R

Altered quartz monzonite(?).
-medium - grained greenish grey.
-feldspars somewhat kaolinized and a few are soft and greenish blue-illite(?).
-from 1m wide shear zone.
-poorly limonite stained.
-strike of shear 70°, dip 75°NW.
-white barren quartz veins adjacent to shear.

| Pb | Zn | Ag | Cu | W | (ppm) |
|---------------|-----------------|-------------------|---------------|---------------|-------|
| $\frac{8}{8}$ | $\frac{45}{45}$ | $\frac{0.1}{0.1}$ | $\frac{5}{5}$ | $\frac{1}{1}$ | |

81-WA-38957R

Medium - grained buff quartz monzonite(?).
-kaolinized(?) feldspars.
-limonite stain on fractures and moderate strength pervasive stain through rock.
-also black coating on one fracture and fine - grained black mineral in clusters in matrix(?), gives red-brown streak.
-from deep gully-shear(?) in ridge.
-gully runs nearly N-S with near vertical walls.

| Pb | Zn | Ag | Cu | W | (ppm) |
|-----------------|---------------------|-------------------|-------------------|---------------|-------|
| $\frac{20}{20}$ | $\frac{1700}{1700}$ | $\frac{0.1}{0.1}$ | $\frac{450}{450}$ | $\frac{1}{1}$ | |

81-WA-38958R

Medium - grained quartz monzonite(?).
-highly altered, kaolinized feldspars.
-quartz veins up to a few mm with a few open cavities lined with quartz crystals.
-1m wide shear, strike 100°, dip 70°N.

| Pb | Zn | Ag | Cu | W | (ppm) |
|-----------------|-------------------|-------------------|---------------|---------------|-------|
| $\frac{13}{13}$ | $\frac{103}{103}$ | $\frac{0.1}{0.1}$ | $\frac{9}{9}$ | $\frac{1}{1}$ | |

81-WA-38959R

Quartz vein from sheared monzonite 38958.
-medium - grained translucent quartz with cube-shaped vugs-weathered-out pyrite(?).
-limonite stained.

| Pb | Zn | Ag | Cu | W | (ppm) |
|-----------------|-----------------|-------------------|---------------|---------------|-------|
| $\frac{17}{17}$ | $\frac{63}{63}$ | $\frac{0.1}{0.1}$ | $\frac{4}{4}$ | $\frac{1}{1}$ | |

81-WA-38960R

Altered quartz monzonite(?).
-from .6m wide shear zone-strike 90°, dip 70°N.
-fractures .5-3cm apart.
-slickensides on fractures.
-Mn oxide(?) on fractures and in patches up to .8cm within rock.

- 1% white mica.
- minor limonite stain.
- shear is 20m N of 38959R.

| Pb | Zn | Ag | Cu | W | (ppm) |
|-----|-----|-----|----|----|-------|
| 145 | 830 | 0.1 | 60 | 10 | |

81-WA-38961R

- Altered quartz monzonite(?).
- from discontinuous .5m wide shear parallel to 38960R and 8m to North.
- exposed over 10m but does not continue in outcrop along strike below.
- similar to 38960 but has a few narrow quartz veins(1 cm) and abundant Mn oxide(?), replacing(?) mineral along vein with quartz.
- fractures parallel shears and at 165°/vertical.
- 5% white mica in monzonite(?).

| Pb | Zn | Ag | Cu | W | (ppm) |
|-----|------|----|------|---|-------|
| 273 | 2000 | 20 | 1700 | 1 | |

81-WA-38962R

- Granodiorite-dyke(?).
- grey, fine - grained.
- 15% biotite, 10% quartz, 20% K spar, 55% plagioclase
- weakly foliated with 1cm pegmatite dykes crosscutting it.
- minor limonite stain on fractures.

| Pb | Zn | Ag | Cu | W | (ppm) |
|----|----|-----|----|---|-------|
| 8 | 83 | 0.1 | 75 | 1 | |

81-WA-38963R

- Quartz monzonite(?).
- medium - grained.
- from discontinuous 1m wide shear zone.
- minor quartz veining(1-3mm wide).
- similar to 38960,61.
- lensy veins of dark Mn oxide(?).
- Mn oxides(?) along fractures which are 1-5cm apart.

| Pb | Zn | Ag | Cu | W | (ppm) |
|------|-----|------|------|---|-------|
| 1050 | 820 | 38.0 | 1350 | 1 | |

81-WA-38964R

- Garnet quartz diopside(?) skarn.
- at monzonite limestone contact.
- minor pyrite and pyrrhotite(?)
- fractures and weathered surface rusty.
- .5m wide zone within 15x15m block in monzonite.

-steel grey platy mineral along fracture surface has black streak, hardness ±3(?) pyrolusite(?).

| <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>Cu</u> | <u>W</u> | (ppm) |
|-----------|-----------|-----------|-----------|----------|-------|
| 12 | 118 | 0.3 | 30 | 72 | |

81-WA-38965R

Quartz vein in calc-silicate inclusion(?) in monzonite.
-minor carbonate plus dark greyish-black(submetallic luster) mineral-Mn oxide?

-3% galena(grains < 1mm).

-fractures Mn oxide(?) coated.

-minor graphite(?), coarse chlorite.

| <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>Cu</u> | <u>W</u> | (ppm) |
|-----------|-----------|-----------|-----------|----------|-------|
| 4300 | 4600 | 13.6 | 18 | 7 | |

81-WA-38966R

Calc-silicate schist.

-quartz, phlogopite, diopside(?).

-fine - grained, laminate.

-rusty zones mostly along foliation minor rusty fractures crosscutting schistosity.

-4m stratigraphic thickness.

-strike 120° dip 60°NE.

-kink bands.

| <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>Cu</u> | <u>W</u> | (ppm) |
|-----------|-----------|-----------|-----------|----------|-------|
| 30 | 85 | 0.1 | 22 | 12 | |

81-WA-38967R
(float)

Aplite(?).

-fine - grained, vuggy.

-3% Molybdenite, 25% quartz, 40% K spar, 30% plag.

-moly flakes up to .5cm along fracture.

-rusty stained fractures with chlorite flakes.

-small calc-silicate(?) inclusion.

| <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>Cu</u> | <u>W</u> | (ppm) |
|-----------|-----------|-----------|-----------|----------|-------|
| 28 | 78 | 0.2 | 27 | 23 | |

81-WA-38968R

Quartz monzonite.

-fine - grained, grey.

-10% biotite, 15% quartz, 35% plagioclase, 40% K spar.

-slightly foliated, light limonite stain on fractures.

| <u>Pb</u> | <u>Zn</u> | <u>Ag</u> | <u>Cu</u> | <u>W</u> | (ppm) |
|-----------|-----------|-----------|-----------|----------|-------|
| 12 | 42 | 0.1 | 8 | 1 | |

81-WA-38969R

(?)

- dark bluish-grey mineral, brown streak.
- medium weight (lighter than ore minerals).
- pseudomorph(?).

| Pb | Zn | Ag | Cu | W | (ppm) |
|----|-------|-----|-----|---|-------|
| 40 | 1.66% | 2.3 | 121 | 1 | |

81-WA-38970R

Altered quartz monzonite(?).

- quartz-rich (25-30% quartz).
- medium - grained.
- kaolinized feldspars.
- strong limonite stain along fractures over 1m square (sample from here), elsewhere weak to moderate limonite stain.
- fractures at various angles.

| Pb | Zn | Ag | Cu | W |
|----|-----|-----|----|---|
| 5 | 220 | 0.1 | 76 | 1 |

81-WA-38971R
(float)

Sulphide skarn from soil pit 81-01.

- pyrite 70% with thin layer 1mm thick of limonite.

| Pb | Zn | Ag | Cu | W | (ppm) |
|----|----|-----|-----|---|-------|
| 1 | 48 | 0.1 | 350 | 7 | |

81-WA-38972R
(float)

L5+00N 2+25E.

- dark in colour, crystalline with white coloured grains of quartz?
- dark brown to black mineral with prismatic habit.
- dull lustre-resembles manganese coated quartz crystals.
- dark brown streak contains minor calcite and <5% disseminated pyrite.

| Pb | Zn | Ag | Cu | W | (ppm) |
|-----|------|-----|----|---|-------|
| 970 | 9900 | 0.8 | 49 | 1 | |

81-WA-38973R
(float)

L5+00N 1+80E.

- "brecciated" quartz vein in sulphide skarn.
- numerous vugs lined with pyrite cubes.
- contains black mineral that streaks brown, possibly altered by manganese oxide(?).

| Pb | Zn | Ag | Cu | W | (ppm) |
|-----|------|-----|----|---|-------|
| 112 | 7100 | 2.9 | 17 | 1 | |

81-WA-38974R
(float)

5+00N 1+90E
-Garnet diopside calcite quartz skarn.
-fine - grained with numerous subparallel and cross-cutting fractures.
-most fractures are calcite lined.

| Pb | Zn | Ag | W | Cu | (ppm) |
|---------------|-----|-----|---|-----|-------|
| $\frac{3}{3}$ | 220 | 0.1 | 1 | 136 | |

81-WA-38975R
(float)

L5+00 1+60E
-fine - grained quartzite with veins.

| Pb | Zn | Ag | W | Cu | (ppm) |
|-----------------|-----|-----|---|----|-------|
| $\frac{85}{85}$ | 255 | 0.1 | 1 | 9 | |

81-WA-38976R
(float)

5+00 1+50E
-black mineral.
-appears to be manganese coated.
-well formed crystals with habit.
-not dense.
-hardness 3 or 4.
-some vugs and open fractures.
-fractures crosscut calcite stringers.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|----|-------|-----|---|----|----|-------|
| 90 | 1.02% | 0.1 | 1 | 15 | 1 | |

81-WA-38977R

-small contact(?) zone +0.3-0.7m wide averaging 0.5m wide of black weathered - manganese oxide.
-some galena along weathered/contact rim.
-non-magnetic metal from 0.1mm to 1.5cm wide - smeared pyrite?
-host rock is a fine - grained aplitic unit, possible quartz monz, limonite, chlorite, sericite alteration throughout.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|-------------------|------|-----|---|----|----|-------|
| $\frac{118}{118}$ | 1850 | 0.1 | 1 | 13 | 1 | |

81-WA-38978R

-highly altered intrusive.
-weathered surface is black in colour possibly manganese oxide alteration.
-possibly metallic.
-handspecimen is quite dense.

- sample taken at edge of shear zone.
- outcrop is highly fractured as in sample 38977R.
- fresher surface is orange-white, mottled by kaolinized and limonitized feldspar and biotite(??).
- quartz is smoky, contains muscovite.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|----|-----|-----|---|----|----|-------|
| 26 | 650 | 0.1 | 3 | 11 | 1 | |

81-WA-38979R

- medium to coarse - grained intrusive.

Quartz
K spar
Plag
Biotite

- + coarse pegmatitic vein?
- in contact with calc-silicate skarn.
- chlorite(?) alteration pervasive.
- some limonite coating on weathered and on contact.
- pyrite cubes from 0.2mm to 1.5mm account 5% of calc-silicate + pyrrhotite(3%).
- contact has a manganese oxide rim up to 8mm.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|----|-----|-----|---|----|----|-------|
| 26 | 120 | 0.1 | 1 | 59 | 1 | |

81-WA-38980R

- fine - grained metamorphosed intrusive.
- weathered surface is dark grey with a metallic lustre (could be a manganese oxide coating).
- may contain << 1% sphalerite?
- specimen taken from same zone as 38977 but + 50' lower in slope.
- <<2% disseminated pyrite; garnet, quartz, feldspar.
- weathered rim 0.3cm wide.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|----|-----|-----|----|----|----|-------|
| 35 | 515 | 0.1 | 13 | 16 | 1 | |

81-WA-38981R

- same as 38980R.
- foliated intrusive.
- contains pyrite and tarnished pyrite cubes.
- some slickenside on this unit but attitude varies significantly over 0.2m.
- limonite stain along broken surfaces.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|----|-----|-----|----|----|----|-------|
| 50 | 625 | 2.3 | 11 | 11 | 1 | |

81-WA-38982R
(float)

- subcrop.
- Quartz veining in pyrite calc-silicate skarn.
- +10m south of 38980R.
- some slickenside on rocks but orientation (ie: attitude) varies significantly.
- limonitized fractures and along vein edge.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|-----|-----|------|----|-----|-----|-------|
| 440 | 142 | 23.0 | 48 | 170 | 155 | |

81-WA-38983R
(float)

- Calc-silicate skarn with quartz veining.
- disseminated pyrite in garnet-diopside assemblage <<2%.
- weathered surface is pink-green.
- some large well developed crystals of garnet.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|----|------|-----|-----|-----|----|-------|
| 8 | 3700 | 0.3 | 185 | 310 | 1 | |

81-WA-38984R

- Pyrite intrusive, pyrite < 5% of specimen.
- fracture openings green alteration - epidote? Sericite.
- limonite throughout.
- alteration: kaolinization of feldspars.
- limonitized vugs - pyrite 30%.
- fractures limonitized.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|-----|----|-----|----|-----|-----|-------|
| 138 | 84 | 165 | 40 | 350 | 200 | |

81-WA-38985R

- Calc-silicate skarn.
- massive and cubic pyrite and disseminated pyrite through quartz vein in skarn.
- diopside-quartz.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|------|-----|-----------|---|------|----|-------|
| 1450 | 150 | 6.10oz/tn | 7 | 5200 | 33 | |

81-WA-38986R
(float)

- limonitized boulder of calc-silicate in boulder field of fresh biotite quartz monzonites.
- meta pelite - platy muscovite and biotite interlaminated with quartz and feldspar.
- thin layers of calc-silicate with some disseminated pyrite.
- limonite pervasive through metapelite.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|----|----|-----|---|-----|----|-------|
| 17 | 55 | 1.0 | 1 | 180 | 1 | |

81-WA-38987R
(float)

- biotite granite in contact with skarn, probably metapelitic.
- large platy biotite pervasive foliation.
- minor quartz veins.
- limonite stain is throughout possibly to biotite
- weathering out.
- angular float sample in boulder field of biotite granites.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|---------------|-----------------|-------------------|---------------|-----------------|---------------|-------|
| $\frac{4}{4}$ | $\frac{98}{98}$ | $\frac{0.2}{0.2}$ | $\frac{1}{1}$ | $\frac{56}{56}$ | $\frac{1}{1}$ | |

81-WA-38988R

- limonite stained foliated metapelite with pyrrhotite and pyrite.
- biotite alligned with foliation.
- minor garnets.
- quartz feldspar matrix.
- minor quartz veining.
- mineralization occurs through 3-5% as cubes.
- runs at 160° for 30m.

| Pb | Zn | Ag | W | Cu | Mo | (ppm) |
|---------------|-----------------|-------------------|---------------|-----------------|---------------|-------|
| $\frac{1}{1}$ | $\frac{35}{35}$ | $\frac{0.1}{0.1}$ | $\frac{1}{1}$ | $\frac{56}{56}$ | $\frac{1}{1}$ | |

81-WA-38989R

- calc-silicate skarn, pyrrhotite, pyrite.
- mineralization for 15% of rock.
- diopside is main constituent.
- limonite stain over weathered and along fractures.
- outcrop is highly fractured.
- intrusive dyke in contact.

| Pb | Zn | Ag | WO ₃ | Cu | Mo | (ppm) |
|---------------|-----------------|-------------------|-------------------------|-------------------|---------------|-------|
| $\frac{4}{4}$ | $\frac{93}{93}$ | $\frac{0.4}{0.4}$ | $\frac{0.23\%}{0.23\%}$ | $\frac{900}{900}$ | $\frac{1}{1}$ | |



REPORT ON
GROUND GEOPHYSICAL SURVEYS OVER
THE EASTERN PORTION OF THE GOAT CLAIMS
YUKON TERRITORY

090977

for

Canadian Occidental Petroleum Ltd.,
Minerals Division

by

Frank L. Jaquodits, P. Eng.,
Consulting Geophysicist

December 1981

090977



TABLE OF CONTENTS

| | | |
|----|--|--------|
| 1. | Introduction | Page 1 |
| 2. | Survey Specifications and Instruments | 2 |
| | 2.1 General | 2 |
| | 2.2 Magnetic Survey | 2 |
| | 2.3 VLF-EM Survey | 2 |
| 3. | Presentation of the Data | 3 |
| | 3.1 General | 3 |
| | 3.2 Magnetic Survey | 3 |
| | 3.3 VLF-EM Survey | 3 |
| 4. | Discussion of the Results | 4 |
| | 4.1 Geologic Background | 4 |
| | 4.2 Magnetic Susceptibility Measurements | 4 |
| | 4.3 General Comments | 5 |
| | 4.4 Grid 1 | 5 |
| | 4.5 Grids 2 and 3 | 6 |
| | 4.6 Grid 4 | 7 |
| | 4.7 Grid 5 | 9 |
| 5. | Conclusions and Recommendations | 11 |
| 6. | References | 12 |
| 7. | Appendix | 13 |
| | - Statement of Work, | 14 |
| | - Writer's Declaration | 15 |



LIST OF ACCOMPANYING MAPS

| <u>DRAWING NO.</u> | <u>TITLE</u> | <u>SCALE</u> |
|---------------------------|--------------------|--------------|
| E.I.C. - 1139 (Plan 9) | Interpretation Map | 1:5000 |

Reference Maps

| <u>Plan No.</u> | <u>Title</u> | <u>Scale</u> |
|-----------------|---|--------------|
| 5 | Magnetic Survey Total Field Contours | 1:5000 |
| 6 | VLF-EM Survey Profiles of In-phase and Quadrature Components | 1:5000 |
| 7 | VLF-EM Survey Contours of Filtered In-phase Component | 1:5000 |



1. INTRODUCTION

During the summer of 1981 an integrated exploration programme was conducted by the Minerals Division of the Canadian Occidental Petroleum Ltd. over the eastern portion of the GOAT Claims which are situated in the Watson Lake Mining Division of the Yukon Territory. The purpose of the ground magnetic and VLF-EM surveys was to aid the search for skarn hosted tungsten-precious metal mineralization as well as to assist the location of mineralization controlled by faulting and/or shearing. The geophysical surveys were carried out contemporaneously with the geologic mapping and geochemical sampling. For the details of the location of the property, access and other general data the reader is referred to Reference 1. The interpretation of the geophysical data and the ensuing recommendations for further work are presented in the following.



2. SURVEY SPECIFICATIONS AND INSTRUMENTS

2.1 General

The surveys were conducted over five grids which were laid out by Canadian Oxy Personnel. The survey lines are 125 m. apart, and the distance between the pickets is 30 m. The survey statistics are given in Table I.

2.2 Magnetic Survey

The total field observations were made every 15 m. employing the proton precession magnetometer model G816 manufactured by Geometrics of Sunnyvale, California. The variations of the earth's magnetic field were monitored by a recording base station magnetometer consisting of the micro-processor controlled recorder model MR-10 made by Canadian Mining Geophysics of Ottawa and a Geometrics G816 magnetometer. The field measurements were timed to coincide with an observation of the base station magnetometer. Following this procedure a combined day-to-day and diurnal correction can be obtained from the record of the base station magnetometer for each individual field observation. Preliminary contour maps were prepared in the field to ensure that valid data were collected.

2.3 VLF-EM Survey

The in-phase and quadrature components of the VLF magnetic field were determined at stations 15 m apart using the EM16 VLF-EM receiver manufactured by Geonics Ltd. of Mississauga, Ontario. The VLF-EM transmitter NLK (Jim Creek, Washington) transmitting at a frequency of 18.6 kHz provided the primary electromagnetic field.



TABLE I

SURVEY STATISTICS

| <u>GRID NO.</u> | <u>MAGNETICS (km)</u> | <u>VLF - EM (km)</u> |
|-----------------|-----------------------|----------------------|
| 1 | 2.95 | 2.315 |
| 2 and 3 | 11.705 | 9.705 |
| 4 | 10.37 | 9.12 |
| 5 | 4.915 | 4.415 |
| TOTAL | <u>29.94</u> | <u>25.555</u> |



3. PRESENTATION OF THE DATA

3.1 General

All of the geophysical data were plotted in the field on base maps at a scale of 1:2500. These field maps show the magnetic values at each station (less 58,000 gammas), the profiles of the in-phase and quadrature components of the VLF magnetic field and the values of the filtered in-phase components. The contouring of the magnetic data and the filtered in-phase component (VLF) were accomplished at the 1:2500 scale. For the final presentation a new base map was prepared at a scale of 1:5000 showing all five grids. The 1:2500 scale contour maps and profiles were reduced to the 1:5000 scale by xerographic process and were traced onto the new base map.

The 1:2500 scale maps are not a part of this presentation but available at the offices of Canadian Oxy.

3.2 Magnetic Survey

The magnetic survey results are presented in the form of contours of equal intensity of the corrected total magnetic field. The contour interval is 10 gammas with suitably larger interval in areas of steep magnetic gradient. Magnetic depressions are appropriately annotated.

3.3 VLF-EM Survey

The VLF-EM data are presented in two formats. The first format displays the profiles of the in-phase and quadrature components. The in-phase component values were filtered using the method described by Fraser (D. C. Fraser: Contouring of VLF-EM Data, Geophysics, Vol. 34 No. 6, December 1966). The contour map (contour interval: 5% of the filtered values forms the second presentation.



4. DISCUSSION OF THE RESULTS

4.1 Geologic Background

The detailed geology of the survey area is contained in Reference 1. The following notes are made to set the general geological framework. The studied area is underlain by the Windermere or Atan Group of Lower Cambrian and/or Proterozoic metasedimentary rocks. This sequence was intruded by the rocks of the Cassiar Batholith of Jurassic and/or Cretaceous age. The latest intrusion is represented by Tertiary diabase (basalt?) dykes. The skarn hosted mineralization is associated with the intrusion of the Cassiar Batholith. The batholith is composed of biotite-muscovite quartz monzonite, biotite-quartz monzonite, pegmatite and diorite/granodiorite. Most of the mapped geology is outside of the survey grids and of that information only the mapped faults are shown on the Interpretation Map to facilitate correlation with interpreted structures.

Outcrops of skarn falling within the survey grids together with the location of mineralized outcrops are also indicated on the Interpretation Map.

4.2 Magnetic Susceptibility Measurements

The magnetic susceptibility of 16 rock samples were determined using the Scintrex SM5 susceptibility meter to obtain a measure of the possible susceptibility contrasts. The results are shown in Table II. The percentage of magnetite was computed using a nominal value of 3000×10^{-6} cgs/percent magnetite by volume which is in good agreement with values cited in the literature. From the description of the samples it was suspected that the rocks of the Cassiar Batholith save the diorite and granodiorite are essentially non-magnetic. This suspicion was confirmed. It was reported that the Cambrian and/or Proterozoic quartzites may contain pyrrhotite which could be a source of the magnetic anomalies. Unfortunately only one sample was available which



very slightly magnetic. As expected, the susceptibility of the skarn is variable. The largest susceptibility, 2.8×10^{-3} cgs was registered on a skarn sample with pyrrhotite, but a sample bearing the same description registered only 0.1×10^{-3} cgs susceptibility which is the same as that of the overwhelming majority of the country rocks. Mineralized samples (Zn) from fractures and one sample from a vein (Pb-Zn-Ag) were also investigated and were found to have very low susceptibility. This limited investigation is obviously not valid in the strictest sense of a statistical study, nevertheless it leads to the conclusion that the magnetic activity in this instance ought to be created by the magnetic skarns and by the intermediate composition rocks i.e. granodiorite and diorite. The anomalous patterns should provide the clues for an attempt to distinguish between the two sources. The meagre evidence of a single non-magnetic pyrrhotite bearing quartz sample is not sufficient to rule out entirely the pyrrhotite bearing quartzites as sources of magnetic activity.

4.3 General Comments

Two kinds of magnetic features are recognized. The first kind of features are represented by anomalies, which more often than not are narrow, having considerable strike length but varying in amplitudes. Magnetic units, which display more or less uniform magnetic characteristics apart from the enclosed anomalies of the first kind noted above form the second recognizable magnetic expression. The geologic significance of the units together with the VLF-EM interpretation will be discussed on a grid by grid basis. The VLF-EM conductors were graded as fair, mediocre and poor depending on the amplitude and the behaviour of the quadrature component.

4.4 Grid 1

This small grid in the west central map area may be divided into two magnetic units. Raised background characterizes Unit 1-1 in the west. Diorite and/or granodiorite of the Cassiar Batholith is predicted here as the source of



the increased magnetic background. Narrow anomalies in Unit 1-2 are believed to be caused by magnetic skarns dipping generally to the west. The intense magnetic low in the northeastern part of the grid remains enigmatic. It is unlikely that the anomaly reflects the contact between Cassiar Batholith rocks, or between the intrusive and metasediments. But it may be construed as a part of a magnetic anomaly to the east yet unsurveyed.

The VLF-EM anomalies are subdued and only four poor conductors are noted lacking line-to-line continuity. Based on the geophysical evidence, the investigation of the anomalies presumed to represent magnetic skarns would have low priority in an overall follow-up programme.

4.5 Grids 2 and 3

The outcrops are restricted to the northern part of Grid 3, and to the north and to the west of the grid. In the north of Grid 3 a complex mixture of the Cassiar Batholith and the older metasediments were mapped. The only cohesive units are the two bands of recrystallized limestone. But significantly outcrops of pyrrhotite or pyrite-rich skarn as well as calc-silicate skarn were mapped.

The character of the magnetic patterns over the combined Grids 2 and 3 changes drastically from the north to the south. In the north, where Unit 3-1 is outlined, intense magnetic anomalies suggest more abundant skarn development. The small outcrop pyrrhotite or pyrite-rich skarn (Geologic Unit 4a) correlate with an elliptical anomaly which is terminated by northeast trending shear zone in the north. Anomaly A3.1 is one of the most intense anomalies of the survey, showing partial correlation with a unit of recrystallized limestone. Correlation with a fair VLF conductor (V3.1) up-grades the anomaly. It is suggested that anomaly A3.1 is caused by magnetic skarn and further investigation will be recommended. Anomaly A3.2 is less significant but it partially correlates with recrystallized limestone. The VLF-EM conductor (V3.2) to the west is not as close to the magnetic anomaly as one would hope, however the association is significant. The priority of the target would be lower than that



of A3.1. The magnetic skarn denoted by Anomaly A3.1 is vertical or steeply dipping to the west. Shallow westerly dip is recognized at A3.2. Other individual anomalies noted within Unit 3-1 are believed to signify magnetic skarns.

Magnetic Unit 3-2 and its equivalent Unit 2-2 in Grid 2 are noted because of the lower magnetic background. Narrow, magnetic anomalies with amplitudes of 10 to 20 gammas may indicate minor skarns within the non-magnetic intrusive and/or metasediments which cannot be separated on the basis of magnetic evidence. Anomaly A3.3 indicating a magnetic skarn of considerable strike length transects Units 3-3. The unit is characterized by short strike length anomalies of increased amplitudes. Skarns are the suggested source of magnetic activity. The ill-defined Unit 3-4 is open to the southwest. Although recognizable change takes place here, not much can be said about the unit. In the southern part of Unit 2-2 magnetic activity increases again where two more significant anomalies A2.2 and A2.3 are noted. Both anomalies have associated VLF-EM responses, V2.1 and V2.2 respectively. Both anomalies are believed to represent magnetic skarns, but the short strike length of Anomaly A2.3 detracts from its significance. Anomaly 2.1 is a local, but intense magnetic feature to which no further interest is attached. Magnetic Unit 2-1 on the western limit of Grid 2 is outlined on the basis of increased skarn activity.

VLF conductors V2.3, V3.3 V3.4 and V3.5 may be traced across several lines. The north-northeast striking conductors are interpreted to represent shearing and/or faulting.

4.6 Grid 4

The numerous north-northwesterly striking anomalies, which can be traced along the entire length of the grid create a character which distinguishes the grid from the grids to the south. The similarity between the characteristics of the northern part of Grid 3 and Grid 4 suggests that the continuation of these north-northwest striking anomalies can be expected between the two grids.



The extensive Unit 4-1 encloses the north-northwest striking anomalies, which are predicted to represent magnetic skarns, within the non-magnetic intrusive and/or metasedimentary rocks. Before discussing the significance of individual anomalies short notes about the other delineated units are in order.

Lack of magnetic activity in the northwest corner of the grid forms the basis for the demarkation of this area, which may continue towards north where a similar unit is found in Grid 5. Unit 4-3 in the east of the grid exhibits somewhat increased magnetic activity, which includes Anomaly A4.5. The last of these areas lacking magnetic activity is Unit 4-4. All of these units are interpreted to be underlain by the non-magnetic rocks of the intrusive and/or the older metamorphics.

The most significant of the individual anomalies outlined is the north-northeast striking Anomaly A4.1 with the associated VLF-EM conductor V4.1. It would appear that this event is younger than those denoted by the north-northwest anomalies as the latter ones appear to be cut by Anomaly A4.1. This magnetic body, steeply dipping to the west is believed to be located at a shallow depth. Further work will be recommended here. Of the other north-northwest striking events Anomalies A4.2 and A4.6 are selected for further discussion. The more worthy Anomaly is A4.2 which is located near units of recrystallized limestone mapped just south of L-5+00S, where the amplitude of the anomaly is decreased. The amplitude of the anomaly increases towards north and south, where along L-11+25S calc-silicate skarn is mapped near a branch of A4.2. The lead-zinc mineralization noted just south of L-10+00S and the VLF conductor V4.2 associated with A4.2 are factors increasing the events significance. The central part of Anomaly A4.6 is west of a remarkable magnetic depression, which would suggest a flatly dipping body. Zinc-silver mineralization is mapped near the anomaly north of L-7+50S, which may be



associated with skarn development described by A4.6.

Although VLF-EM support is lacking at A4.4, the merit of the anomaly is enhanced by the lead-tungsten mineralized outcrop which is over the most intense part of the anomaly at L-3+75S. In spite of the considerable strike length, Anomaly A4.3 is one of the less remarkable of the skarn anomalies. It is noted because of the correlating lead-zinc mineralization on L-5+00S. The anomaly will be considered as a low priority target. The shape of the anomaly, which is unusual in this environment brings the attention to Anomaly A4.8. It is an intense feature, which is believed to be caused by local concentration of magnetite in a skarn zone. However a magnetic plug of the Cassiar Batholith may also be responsible for the anomaly. In any event further investigations will not be recommended here. In contrast with the VLF conductors of Grids 2 and 3, the conductors of Grid 4 are mainly associated with magnetic anomalies except V4.3 and V4.5 which are transgressive to the magnetic trends, denoting shears. The conductors associated with the magnetic anomalies are interpreted to be caused by conduction along the contacts of the skarns, which may be enhanced by the mineralization.

4.7 Grid 5

This most northerly grid is similar in magnetic character to Grid 4. Three magnetic units are delineated. The eastern one third of the grid is denoted as Unit 5-1 where the north-northwest, long strike length anomalies are abundant. The west central area of relative magnetic inactivity is outlined as Unit 5-2 which may be considered as a continuation of Unit 4-2 to the south. The unit which may extend towards the west into Unit 5-1 in the southern part of the grid is interpreted to signify non-magnetic rocks of the Cassiar Batholith and/or the older metasediments. Unit 5-3 in the extreme east of the grid contains numerous narrow, but shorter strike length anomalies, which are believed to represent magnetic skarns.

Anomaly 5.1 is the most noteworthy. In the central part of the anomaly, north of L-2+50S, lead-zinc-silver mineralization was mapped which up-grades



the anomaly. Anomalies A5.1 and A5.2 are associated with relatively intense magnetic lows on the east suggesting flat dips towards the west in contrast with Anomaly A5.3 where steep dip is suggested. Two VLF-EM conductors, V5.1 and V5.2 are transgressive to the magnetic trends indicating conductive shear zones.



TABLE II

MAGNETIC SUSCEPTIBILITY MEASUREMENTS

| <u>SAMPLE NO.</u> | <u>MAGNETIC SUSCEPTIBILITY x 10⁻³</u> | <u>PERCENTAGE OF MAGNETITE</u> | <u>SAMPLE DESCRIPTION</u> |
|-------------------|--|------------------------------------|----------------------------------|
| 38632 | 0.1 | 0.03 | Biotite-quartz schist |
| 38633 | 0.1 | 0.03 | Biotite-quartz schist |
| 38635 | 0.8 | 0.37 | Skarn with pyrrhotite and copper |
| 38840 | 0 | 0 | Skarn |
| 38841 | 0.2 | 0.07 | Skarn with pyrrhotite |
| 38887 | 0.1 | 0.03 | Metasediment with pyrrhotite (?) |
| 38894 | 0 | 0 | Fine grained quartz monzonite |
| 38898 | 0 | 0 | Fine graine quartz monzonite |
| 38897 | 2.6 | 0.9 | Skarn with pyrrhotite |
| 38948 | 0.1 | 0.03 | Skarn with pyrrhotite |
| 38962 | 0.3 | 0.1 | Granodiorite (dyke?) |
| 38965 | 0.1 | 0.03 | Vein, Pb-Zn-Neg |
| 38968 | 0 | 0 | Quartz monzonite |
| 38969 | 0.1 | 0.03 | Fracture, Zn |
| 38976 | 0.1 | 0.03 | Fracture, Zn |
| 38980 | 0.1 | 0.03 | Fracture, Zn |

TABLE III
LOCATIONS OF FURTHER INTEREST

| <u>IDENTIFICATION</u> | <u>ANOMALY NO.</u> | <u>VLF-EM</u> | <u>SETTING</u> | <u>PRIORITY</u> |
|-----------------------|--------------------|---------------------|--|-----------------|
| 2.1 | A2.3 | V2.2 | Short strike length, but intense magnetic anomaly, terminated by NW shear zones. | 2 |
| 2.2 | A2.2 | V2.1 | The feature is open to the north and the south, but on strike of a Cu-Pb-Zn-Ag mineralization. | 3 |
| 3.1 | A3.1 | V3.1 | Intense magnetic anomaly, suggest a steeply dipping body, which may continue towards the north. | 1 to 2 |
| 3.2 | A3.2 | V3.2 | Gently dipping magnetic skarn near outcrop of calc-silicate skarn | 3 |
| 4.1 | A4.1 | V4.1 | NNE striking magnetic skarn at a shallow depth. The associated VLF conductor is of good quality. | 1 |
| 4.2 | A4.2 | V4.2 V4.5 | Long anomaly of varying amplitude. The northern and southern ends are recommended for further work. | 2 |
| 4.3 | A4.4 | - | The anomaly correlates with P6-W mineralization at L3+75S, where further investigation is recommended. | 2 |
| 4.4 | A4.6 | Minor Conductors | The anomaly is noted because of the closeness of Zn-Ag mineralized outcrop N of L7+50S where the further investigation is recommended. | 3 |
| 4.5 | A4.3 | - | A long anomaly near Pb-Zn occurrence at L5+00S. | 3 |
| 5.1 | A5.1 | - | The anomaly widens where Pb-Zn-Ag mineralization was mapped. | 3 |

5. CONCLUSIONS AND RECOMMENDATIONS

Based on the limited number of magnetic susceptibility measurements it may be concluded that the vast majority of the Cassiar Batholith rocks and the older metamorphics are essentially non-magnetic. In consequence, it is predicted that the magnetic anomalies which are individually outlined on the Interpretation Map are caused by magnetic skarns. It was reported that quartzites with pyrrhotite also occur, however the only sample available gave very low susceptibility. In addition to the individual anomalies magnetic units were outlined based on the varying magnetic characteristics. The governing factors for the delineation of the units turned out to be the rate of occurrence of the magnetic anomalies caused by the skarn and/or the lack of thereof. The one exception is Unit 1-1 where granodiorites are postulated.

Several magnetic skarn anomalies were selected as worthy of further attention. The selection was made on the basis of amplitude and strike length of the anomaly, its relationship to known mineralized outcrops, and the correlation with VLF-EM anomalies. The anomalies, their setting and priority are given in Table III. It is envisaged that situations with first and second priority will need further attention.

Prior to drilling of these situations it is recommended that the anomalies of interest should be investigated with ground magnetic and VLF-EM surveys over ideally established local grids. The survey line and station interval of these grids should be such that it takes into account the rapidly varying character of the magnetic skarns. It is also recommended that the horizontal loop em (Max-Min II) method should be tested using short inter-connecting cables (25 m and 50 m) to achieve the required resolution.

Respectfully submitted,



Frank L. Jagodits, P. Eng.,
Consulting Geophysicist.



FLJ:sb



**EXGALIBUR
INTERNATIONAL
CONSULTANTS LTD.**

6. REFERENCES

1. Crandall, M.S. (1981) Geology and Geochemistry of the Goat 37-86 Claims, Claim Sheet No. 105-B-2E, Watsu Lake Mining District, Yukon Territory, Canadian Occidental Petroleum Ltd., Minerals Division.



7. APPENDIX



STATEMENT OF WORK

| | | |
|---|--|--|
| E. Bianchini Junior Assistant | Canadian Occidental Petroleum Ltd., 4th Floor-180 Atwell Dr., Rexdale, Ont., M9W 6A9. | Magnetics: July 3-9, 11,12,14 10 days |
| P. Manojlovic Junion Assistant | " | Magnetics: August 5, 1981 1 day |
| G. Mijac | 1303 Daimler Rd., Mississauga, Ont., L5J 3T3. | Magnetics: July 2, VLF-EM: July 3-13 12 days |
| R.D. Marcroft Drafting | 10 Hurontario St., Mississauga, Ont. L5G 3G7 | Nov. 25 - Dec. 20 4.8 days |
| S. Blunt Typing | Excalibur International Consultant Ltd. | Dec. 15, 1981 1 day |
| F. J. Jagodits Consulting Geophysicist | 19 Orangewood Cr., Agincourt, Ont., M1W 1C5. | Interpretation and reporting Dec. 1981 5 days |



CERTIFICATE

I, Francis Loui Jagodits, of the Borough of Scarborough, County of York, Province of Ontario, do hereby certify that:

1. I am a geophysical engineer residing at 19 Orangewood Crescent, Agincourt, Ontario.
2. I am a graduate of the Technical University of Sopron, Hungary with Dipl. Eng. degree in geophysical engineering (1956).
3. I am a member of the Society of Exploration Geophysicists, the European Association of Exploration Geophysicists, the Canadian Geophysical Union and Fellow of the Geological Association of Canada.
4. I am a professional engineer, registered in the Province of Ontario.
5. I have no direct or indirect interest, nor do I expect to receive any interest directly or indirectly in the property or securities of Canadian Occidental Petroleum Ltd.
6. The statements made in this report are based on study of published and unpublished private reports.
7. Permission is granted to use in whole or in part for assessment and qualifications requirements but not for advertising purposes.

Dated at Scarborough,

This 23rd day of December, 1981.



A handwritten signature in cursive script, appearing to read "Francis L. Jagodits".

Francis L. Jagodits, Dipl. Eng. P. Eng.,



**EXCALIBUR
INTERNATIONAL
CONSULTANTS LTD.**

Project Watsu - 1981

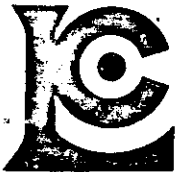
GOAT 37-84

Geochemical Costs
(3 copies of invoice attached)



Total geochemical costs for GOAT 37-86 were \$2,814.40.
Pro-rated costs for GOAT 37-84 are \$1,061.00.

090977



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
 NORTH VANCOUVER, B.C.
 CANADA V7J 2C1
 TELEPHONE: (604)984-0221
 TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD
 MINERALS DIVISION
 STE 311- 215 CARLINGVIEW DR.
 REXDALE, ONT
 M9W 5X8

Invoice # : 18111546
 Date : 22-JUN-81
 P.O. # : NONE
 Project WATSU-GOAT SOIL

Invoice for analytical work reported on certificate(s) A3111546-001 to -003

| Quantity | Analysed for code description | unit price | amount |
|----------|----------------------------------|---------------|--------|
| 90 | 004 - Pb ppm | | |
| | 005 - Zn ppm | | |
| | 006 - Ag ppm | 3.25 | 292.50 |

Sample preparation and other charges :

| | | | |
|----|--------------------------------|------|-------|
| 90 | 201 - soil + sediment -30 mesh | 0.60 | 54.00 |
|----|--------------------------------|------|-------|

TOTAL \$ 346.50

Discount (20 %) \$ 69.30

Please pay this amount ----> \$ 277.20

=====

TERMS -- NET 30 DAYS

1.5 % per month (18 % per annum) charged on overdue accounts



MEMBER
 CANADIAN TESTING
 ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD
MINERALS DIVISION
STE 311- 215 CARLINGVIEW DR.
REXDALE, ONT
M9W 5X8

Invoice # : 18111550
Date : 25-JUN-81
P.O. # : NONE
Project WATSU-GOAT RECO

Invoice for analytical work reported on certificate(s) A8111550-001

| Quantity | Analysed for code description | unit price | amount |
|----------|----------------------------------|---------------|--------|
| 1 | 312 - Pb percent | | |
| | 316 - Zn percent | | |
| | 383 - Ag (FA) oz/t | | |
| | 396 - Au (FA) oz/t | 18.50 | 18.50 |

Sample preparation and other charges :

| | | | |
|---|-------------------------|------|------|
| 1 | 207 - Assay - PULVERIZE | 3.50 | 3.50 |
|---|-------------------------|------|------|

| | | |
|-----------------|----|-------|
| TOTAL | \$ | 22.00 |
| Discount (20 %) | \$ | 4.40 |

Please pay this amount ----> \$ 17.60

ERMS -- NET 30 DAYS
.5 % per month (18 % per annum) charged on overdue accounts



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD
MINERALS DIVISION
STE 311- 215 CARLINGVIEW DR.
REXDALE, ONT
M9W 5X8

Invoice # : 18111695
Date : 26-JUN-81
P.O. # : NONE
Project WATSU

Invoice for analytical work reported on certificate(s) A8111695-001 to -003

| Quantity | code | description | unit | price | amount |
|----------|----------|-------------|------|-------|--------|
| 113 | 004 - Pb | ppm | | | |
| | 005 - Zn | ppm | | | |
| | 006 - Ag | ppm | | 3.25 | 367.25 |

Sample preparation and other charges :

| | | | | |
|-----|--------------------------------|--|------|-------|
| 113 | 201 - soil + sediment -80 mesh | | 0.60 | 67.80 |
|-----|--------------------------------|--|------|-------|

| | | |
|-----------------|----|--------|
| TOTAL | \$ | 435.05 |
| Discount (20 %) | \$ | 87.01 |

Please pay this amount ----> \$ 348.04
=====

ERMS -- NET 30 DAYS
.5 % per month (18 % per annum) charged on overdue accounts



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD
MINERALS DIVISION
STE 311- 215 CARLINGVIEW DR.
REXDALE, ONT
M9W 5X8

Invoice # : 18111976
Date : 10-JUL-81
P.O. # : NONE
Project CASSI GOAT 37-8

Invoice for analytical work reported on certificate(s) A8111976-001

| Quantity | Analysed for code | description | unit price | amount |
|----------|-------------------|-------------|------------|--------|
| 40 | 004 - Pb | ppm | | |
| | 005 - Zn | ppm | | |
| | 006 - Ag | ppm | 3.25 | 130.00 |

Sample preparation and other charges :

| | | | |
|----|--------------------------------|------|-------|
| 40 | 201 - soil + sediment -80 mesh | 0.60 | 24.00 |
|----|--------------------------------|------|-------|

| | |
|-----------------|-----------|
| TOTAL | \$ 154.00 |
| Discount (20 %) | \$ 30.80 |

Please pay this amount ----> \$ 123.20
=====

TERMS -- NET 30 DAYS
.5 % per month (18 % per annum) charged on overdue accounts



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD
MINERALS DIVISION
STE 311- 215 CARLINGVIEW DR.
REXDALE, ONT
M9W 5X8

Invoice # : I8112124
Date : 19-JUL-81
P.O. # : NONE
Project WATSU

Invoice for analytical work reported on certificate(s) A8112124-001 to -003

| Quantity | Analysed for code | description | unit price | amount |
|----------|-------------------|-------------|------------|--------|
| 96 | 004 - Pb | ppm | | |
| | 005 - Zn | ppm | | |
| | 006 - Ag | ppm | 3.25 | 312.00 |

Sample preparation and other charges :

| | | | |
|----|--------------------------------|------|-------|
| 96 | 201 - soil + sediment -80 mesh | 0.60 | 57.60 |
|----|--------------------------------|------|-------|

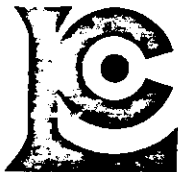
| | |
|-----------------|-----------|
| TOTAL | \$ 369.60 |
| Discount (20 %) | \$ 73.92 |

Please pay this amount ----> \$ 295.68

ERMS -- NET 30 DAYS
.5 % per month (18 % per annum) charged on overdue accounts



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD
MINERALS DIVISION
STE 311- 215 CARLINGVIEW DR.
REXDALE, ONT
M9W 5X8

Invoice # : I8112128
Date : 18-JUL-81
P.O. # : NONE
Project WATSU

Invoice for analytical work reported on certificate(s) A8112128-001

| Quantity | Analysed for code | description | unit price | amount |
|----------|-------------------|-------------|------------|--------|
| 5 | 002 - Cu | ppm | | |
| | 004 - Pb | ppm | | |
| | 005 - Zn | ppm | | |
| | 006 - Ag | ppm | | |
| | 018 - W | ppm | 7.75 | 38.75 |

Sample preparation and other charges :

| | | | | |
|---|---------------------------|--|------|-------|
| 5 | 205 - Rock geochem - RING | | 2.00 | 10.00 |
|---|---------------------------|--|------|-------|

| | | |
|-----------------|----|-------|
| TOTAL | \$ | 48.75 |
| Discount (20 %) | \$ | 9.75 |

Please pay this amount ----> \$ 39.00
=====

ERMS -- NET 30 DAYS
.5 % per month (18 % per annum) charged on overdue accounts

0909.7



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.
REXDALE, ONT.
M9W 6A9

Invoice # : 18112252
Date : 25-JUL-81
P.O. # : NONE
Project WATSU

Invoice for analytical work reported on certificate(s) A8112252-001 to -003

| Quantity | Analysed for code description | unit price | amount |
|----------|----------------------------------|---------------|--------|
| 107 | 004 - Pb ppm | | |
| | 005 - Zn ppm | | |
| | 006 - Ag ppm | 3.25 | 347.75 |

Sample preparation and other charges :

| | | | |
|-----|--------------------------------|------|-------|
| 107 | 201 - soil + sediment -80 mesh | 0.60 | 64.20 |
| | | | ----- |

TOTAL \$ 411.95
Discount (20 %) \$ 82.39

Please pay this amount ----> \$ 329.56
=====

ERMS -- NET 30 DAYS
.5 % per month (18 % per annum) charged on overdue accounts



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

Invoice # : 18112573
Date : 05-AUG-81
P.O. # : NONE
Project WATSU - GLAC

Invoice for analytical work reported on certificate(s) A8112573-001

| Quantity | Analysed for code description | unit price | amount |
|----------|----------------------------------|---------------|--------|
| 1 | 339 - W03 percent | 8.00 | 8.00 |

Sample preparation and other charges :

| | | | |
|---|----------------|------|------|
| 1 | 214 - Bag pulp | 0.00 | 0.00 |
|---|----------------|------|------|

TOTAL \$ 8.00
Discount (20 %) \$ 1.60

Please pay this amount ----> \$ 6.40
=====

TERMS -- NET 30 DAYS

.5 % per month (18 % per annum) charged on overdue accounts

COPY



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

Invoice # : IB112722
Date : 13-AUG-81
P.O. # : NONE
Project WATSU

6047

Invoice for analytical work reported on certificate(s) AB112722-001

| Quantity | Analysed for code description | unit price | amount |
|----------|----------------------------------|---------------|--------|
| 11 | 002 - Cu ppm | | |
| | 003 - Mo ppm | | |
| | 004 - Pb ppm | | |
| | 005 - Zn ppm | | |
| | 006 - Ag ppm | | |
| | 018 - W ppm | 8.50 | 93.50 |

Sample preparation and other charges :

| | | | |
|----|--------------------------------|------|------|
| 11 | 201 - soil + sediment -80 mesh | 0.60 | 6.60 |
|----|--------------------------------|------|------|

TOTAL \$ 100.10
Discount (20 %) \$ 20.02

Please pay this amount ----> \$ 80.08
=====

TERMS -- NET 30 DAYS

.0 % per month (24 % per annum) charged on overdue accounts

COPY



MEMBER
CANADIAN TESTING



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

Invoice # : 18112723
Date : 13-AUG-81
P.O. # : NJNE
Project WATSU *6-91*

Invoice for analytical work reported on certificate(s) A8112723-001

| Quantity | Analysed for code description | unit price | amount |
|----------|----------------------------------|---------------|--------|
| 10 | 002 - Cu ppm | | |
| | 003 - Mo ppm | | |
| | 004 - Pb ppm | | |
| | 005 - Zn ppm | | |
| | 006 - Ag ppm | | |
| | 018 - W ppm | 8.50 | 85.00 |

Sample preparation and other charges :

| | | | |
|----|--------------------------------|------|------|
| 10 | 201 - soil + sediment -80 mesh | 0.60 | 6.00 |
|----|--------------------------------|------|------|

TOTAL \$ 91.00
Discount (20 %) \$ 18.20

Please pay this amount ----> \$ 72.80
=====

TERMS -- NET 30 DAYS

.0 % per month (24 % per annum) charged on overdue accounts

COPY



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

Invoice # : 18112726
Date : 14-AUG-81
P.O. # : NONE
Project WATSU - *Geot*

Invoice for analytical work reported on certificate(s) A8112726-001

| Quantity | Analysed for code description | unit price | amount |
|----------|----------------------------------|---------------|--------|
| 6 | 002 - Cu ppm | | |
| | 004 - Pb ppm | | |
| | 005 - Zn ppm | | |
| | 006 - Ag ppm | | |
| | 018 - W ppm | 7.75 | 46.50 |
| 16 | 002 - Cu ppm | | |
| | 003 - Mo ppm | | |
| | 004 - Pb ppm | | |
| | 005 - Zn ppm | | |
| | 006 - Ag ppm | | |
| | 018 - W ppm | 8.50 | 136.00 |

Sample preparation and other charges :

| | | | |
|----|---------------------------|------|-------|
| 22 | 205 - Rock geochem - RING | 2.00 | 44.00 |
|----|---------------------------|------|-------|

TOTAL \$ 226.50

Discount (20 %) \$ 45.30

Please pay this amount ----> \$ 181.20
=====

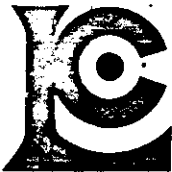
ERMS -- NET 30 DAYS

.0 % per month (24 % per annum) charged on overdue accounts

COPY



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

Invoice # : 18112727
Date : 13-AUG-81
P.O. # : NONE
Project WATSU - GOAT

Invoice for analytical work reported on certificate(s) A8112727-001

| Quantity | Analysed for code description | unit price | amount |
|----------|----------------------------------|---------------|--------|
| 29 | 002 - Cu ppm | | |
| | 004 - Pb ppm | | |
| | 005 - Zn ppm | | |
| | 006 - Ag ppm | | |
| | 018 - W ppm | 7.75 | 224.75 |

Sample preparation and other charges :

| | | | |
|----|---------------------------|------|-------|
| 29 | 205 - Rock geochem - RING | 2.00 | 58.00 |
|----|---------------------------|------|-------|

| | | |
|-----------------|----|--------|
| TOTAL | \$ | 282.75 |
| Discount (20 %) | \$ | 56.55 |

Please pay this amount ----> \$ 226.20
=====

ERMS -- NET 30 DAYS
•0 % per month (24 % per annum) charged on overdue accounts

COPY



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: .043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

Invoice # : 18112814

Date : 14-AUG-81

P.O. # : NONE

Project WATSU *GOAT*

Invoice for analytical work reported on certificate(s) A8112814-001

| Quantity | Analysed for code description | unit price | amount |
|----------|----------------------------------|---------------|--------|
| 16 | 002 - Cu ppm | | |
| | 004 - Pb ppm | | |
| | 005 - Zn ppm | | |
| | 006 - Ag ppm | | |
| | 018 - W ppm | 7.75 | 124.00 |
| 3 | 003 - Mo ppm | | |
| | 002 - Cu ppm | | |
| | 004 - Pb ppm | | |
| | 005 - Zn ppm | | |
| | 006 - Ag ppm | | |
| | 018 - W ppm | 8.50 | 25.50 |

Sample preparation and other charges :

| | | | |
|----|---------------------------|------|-------|
| 19 | 205 - Rock geochem - RING | 2.00 | 38.00 |
|----|---------------------------|------|-------|

TOTAL \$ 187.50

Discount (20 %) \$ 37.50

Please pay this amount ----> \$ 150.00

COPY

ERMS -- NET 30 DAYS
1.0 % per month (12 % per annum) charged on overdue accounts



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

Invoice # : 18112875

Date : 18-AUG-81
P.O. # : NONE ~~40M~~
Project WATSU

Invoice for analytical work reported on certificate(s) A8112875-001 to -002

| Quantity | Analysed for code description | unit price | amount |
|----------|----------------------------------|---------------|--------|
| 73 | 002 - Cu ppm | | |
| | 004 - Pb ppm | | |
| | 005 - Zn ppm | | |
| | 006 - Ag ppm | | |
| | 018 - W ppm | 7.75 | 565.75 |

Sample preparation and other charges :

| | | | |
|----|--------------------------------|------|-------|
| 73 | 201 - soil + sediment -80 mesh | 0.60 | 43.80 |
|----|--------------------------------|------|-------|

| | |
|-----------------|-----------|
| TOTAL | \$ 609.55 |
| Discount (20 %) | \$ 121.91 |

Please pay this amount ----> \$ 487.64
=====

TERMS -- NET 30 DAYS

1.0 % per month (24 % per annum) charged on overdue accounts

COPY



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

Invoice # : I8112876
Date : 18-AUG-81
P.O. # : NONE
Project WATSU - GOAT

Invoice for analytical work reported on certificate(s) A8112876-001

| Quantity | Analysed for code | description | unit price | amount | |
|----------|-------------------|-------------|------------|--------|-------|
| 4 | 002 | - Cu | ppm | | |
| | 004 | - Pb | ppm | | |
| | 005 | - Zn | ppm | | |
| | 006 | - Ag | ppm | | |
| | 018 | - W | ppm | 7.75 | 31.00 |
| 1 | 002 | - Cu | ppm | | |
| | 003 | - Mo | ppm | | |
| | 004 | - Pb | ppm | | |
| | 005 | - Zn | ppm | | |
| | 006 | - Ag | ppm | | |
| | 018 | - W | ppm | 8.50 | 8.50 |

Sample preparation and other charges :

| | | | |
|---|---------------------------|------|-------|
| 5 | 205 - Rock geochem - RING | 2.00 | 10.00 |
|---|---------------------------|------|-------|

| | | |
|-----------------|----|-------|
| TOTAL | \$ | 49.50 |
| Discount (20 %) | \$ | 9.90 |

Please pay this amount ----> \$ 39.60
=====

TERMS -- NET 30 DAYS
2.0 % per month (24 % per annum) charged on overdue accounts

COPY



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

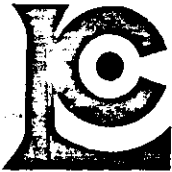
Invoice # : 18113159
Date : 22-AUG-81
P.O. # : NONE
Project WATSU -GLAT

Invoice for analytical work reported on certificate(s) A8113159-001

| Quantity | Analysed for code description | unit price | amount |
|--|----------------------------------|---------------|---------------------------------------|
| 25 | 004 - Pb ppm | | |
| | 006 - Ag ppm | 2.50 | 62.50 |
| Sample preparation and other charges : | | | |
| 21 | 201 - soil + sediment -60 mesh | 0.50 | 12.60 |
| 4 | 203 - -35 mesh sieve + ring | 1.50 | 6.00 |
| | | | ----- |
| | | | TOTAL \$ 81.10 |
| | | | Discount (20 %) \$ 16.22 |
| | | | ----- |
| | | | Please pay this amount ----> \$ 64.88 |
| | | | ===== |

TERMS -- NET 30 DAYS
2.0 % per month (24 % per annum) charged on overdue accounts

COPY



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

Invoice # : I8113328
Date : 04-SEP-81
P.O. # : NONE
Project WATSU - GOAT

Invoice for analytical work reported on certificate(s) A8113328-001

| Quantity | Analysed for code description | unit price | amount |
|----------|----------------------------------|---------------|--------|
| 2 | 316 - Zn percent | 5.00 | 10.00 |
| 1 | 383 - Aq (FA) oz/t | 6.00 | 6.00 |
| 1 | 339 - W03 percent | 8.00 | 8.00 |

Sample preparation and other charges :

| | | | |
|---|----------------|------|------|
| 4 | 214 - Bag pulp | 0.00 | 0.00 |
|---|----------------|------|------|

| | | |
|-----------------|----|-------|
| TOTAL | \$ | 24.00 |
| Discount (20 %) | \$ | 4.80 |

Please pay this amount ----> \$ 19.20
=====

TERMS -- NET 30 DAYS
2.0 % per month (24 % per annum) charged on overdue accounts



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

Invoice # : 18113368
Date : 04-SEP-81
P.O. # : NONE
Project WATSU - 60A1

Invoice for analytical work reported on certificate(s) A8113368-001

| Quantity | Analysed for code description | unit price | amount |
|--|----------------------------------|---------------|---------------------------------------|
| 2 | 339 - W03 percent | 8.00 | 16.00 |
| 1 | 316 - Zn percent | 5.00 | 5.00 |
| Sample preparation and other charges : | | | |
| 3 | 214 - Bag pulp | 0.00 | 0.00 |
| | | | TOTAL \$ 21.00 |
| | | | Discount (20 %) \$ 4.20 |
| | | | ----- |
| | | | Please pay this amount ----> \$ 16.80 |
| | | | ===== |

ERMS -- NET 30 DAYS
•0 % per month (24 % per annum) charged on overdue accounts



MEMBER
CANADIAN TESTING
ASSOCIATION



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

Invoice # : I8113925
Date : 21-SEP-81
P.O. # : NONE
Project WATSU *6071*

Invoice for analytical work reported on certificate(s) A8113925-001

| Quantity | Analysed for code description | unit price | amount |
|--|----------------------------------|---------------|--------|
| 25 | 005 - Zn ppm | 1.75 | 43.75 |
| Sample preparation and other charges : | | | |
| 25 | 214 - Bag pulp | 0.00 | 0.00 |

TOTAL \$ 43.75
Discount (20 %) \$ 8.75

Please pay this amount ----> \$ 35.00
=====

TERMS -- NET 30 DAYS
1.0 % per month (24 % per annum) charged on overdue accounts

PROJECT WATSU

1981

HELICOPTER COSTS

(copies attached, three)



| | |
|--|---------------------|
| Total of number of hours flown on Watsu project = | 273.5 |
| Total costs of helicopter | \$102,530.00 |
| " " " fuel | <u>12,345.00</u> |
| Total | <u>\$114,875.00</u> |
| Therefore, rate per hour = $114,875 \div 273.5$ | \$ 420/hour |
| Number of hours flown on GOAT Claims = | 15.7 |
| Therefore, flying costs on GOAT Claims = $15.7 \times 420/h.r =$ | \$ 6,594 |

090977

DAILY FLIGHT REPORT

675 AVIATION BOULEVARD N.E.
INTERNATIONAL AIRPORT
CALGARY, ALBERTA T2E 7G1

No 4038



CHARTERER Canadian Occidental Ltd SHORT TERM CHARTER
 ADDRESS 311-315 Carleton Place Dr. LONG TERM CHARTER DATE July 4 19 81
Revelo Ont. AIRCRAFT C - CX58
 PILOT A. C. White ENGINEER _____ PHONE 675-2812 PROJECT No. _____

| ITINERARY - REMARKS - DESCRIPTION OF JOB, ETC. | ZONE | HOURS | PAX. | FREIGHT |
|--|------|------------|------|---------|
| <u>East Coast</u> | | <u>1.8</u> | | |
| <u>Mustar Lake Recon.</u> | | <u>2.1</u> | | |
| | | . | | |
| | | . | | |
| | | . | | |
| | | . | | |
| | | . | | |
| | | . | | |
| | | . | | |
| | | . | | |
| | | . | | |

| | | | | | |
|---|------------|-------|---|--|--------------------|
| REMARKS AND CREW EXPENSES CHARGEABLE TO CHARTERER | | | | | |
| WEATHER | | | FUEL & OIL | | TOTAL REVENUE TIME |
| CEILING | VISIBILITY | TEMP. | <input checked="" type="checkbox"/> OIL <input type="checkbox"/> GAS <input type="checkbox"/> TURBO | | <u>3.9</u> |
| | | | SUPPLIED BY CANWEST: <u>2</u> HRS. _____ GALS. | | |
| | | | SUPPLIED BY CHARTERER: _____ HRS. _____ GALS. | | <u>109.1</u> |

THE CARRIAGE OF PASSENGERS, BAGGAGE AND GOODS INCLUDING EXTERNAL LOADS BY CANWEST IS SUBJECT TO THE TERMS, CONDITIONS AND LIMITATIONS OF LIABILITY SET FORTH IN ITS TARIFF FILED WITH THE A.T.C. AN EXTRACT OF WHICH IS AVAILABLE FOR EXAMINATION AT THE OFFICE OF CANWEST AVIATION LTD.

BY SIGNING THIS FLIGHT REPORT, I CERTIFY THAT I AM THE AUTHORIZED REPRESENTATIVE OF THE CHARTERER AND THE CHARTERER HEREBY AGREES TO PAY FOR ALL FLYING TIME SIGNED FOR BY ME, AS LAID OUT IN THE CARRIER'S TARIFF.
 AGREED TO AND SIGNED FOR CHARTERER BY:
S. J. [Signature]
 Pilot's Signature A. C. White

TO CHARTERER DAILY

DAILY FLIGHT REPORT

675 AVIATION BOULEVARD N.E.
INTERNATIONAL AIRPORT
CALGARY, ALBERTA T2E 7G1

No 4040



CHARTERER Canadian Occidental LTD SHORT TERM CHARTER
LONG TERM CHARTER DATE July 6 19 81
ADDRESS 150 Astwood Drive - 4th Floor AIRCRAFT C - GX 5R
Resdale Ont. PHONE 6752812 PROJECT No. _____
PILOT T. C. White ENGINEER _____ PURCHASE ORDER _____

| ITINERARY - REMARKS - DESCRIPTION OF JOB, ETC. | | | ZONE | HOURS | PAX. | FREIGHT |
|---|------------|-------|---|------------|------------------------|---------|
| <u>Coast Chain</u> | | | | <u>1.3</u> | | |
| <u>Letter across Creek Recon.</u> | | | | <u>2.9</u> | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| REMARKS AND CREW EXPENSES CHARGEABLE TO CHARTERER | | | | . | | |
| | | | | . | | |
| WEATHER | | | FUEL & OIL | | TOTAL REVENUE TIME | |
| <u>Clear</u> | | | <input checked="" type="checkbox"/> OIL <input type="checkbox"/> GAS <input type="checkbox"/> TURBO SUPPLIED BY CANWEST: _____ Hrs. _____ Gals. SUPPLIED BY CHARTERER: _____ Hrs. _____ Gals. | | <u>4.2</u> | |
| CEILING | VISIBILITY | TEMP. | | | TOTAL TIME ON CONTRACT | |
| | | | | | <u>120.9</u> | |

THE CARRIAGE OF PASSENGERS, BAGGAGE AND GOODS INCLUDING EXTERNAL LOADS BY CANWEST IS SUBJECT TO THE TERMS, CONDITIONS AND LIMITATIONS OF LIABILITY SET FORTH IN ITS TARIFF FILED WITH THE A.T.C. AN EXTRACT OF WHICH IS AVAILABLE FOR EXAMINATION AT THE OFFICE OF CANWEST AVIATION LTD.

BY SIGNING THIS FLIGHT REPORT, I CERTIFY THAT I AM THE AUTHORIZED REPRESENTATIVE OF THE CHARTERER AND THE CHARTERER HEREBY AGREES TO PAY FOR ALL FLYING TIME SIGNED FOR BY ME, AS LAID OUT IN THE CARRIER'S TARIFF.
 AGREED TO AND SIGNED FOR CHARTERER BY:
B. J. J. J.
 Pilot's Signature
T. C. White

TO CHARTERER DAILY

DAILY FLIGHT REPORT

675 AVIATION BOULEVARD N.E.
INTERNATIONAL AIRPORT
CALGARY, ALBERTA T2E 7G1

No 4042



CHARTERER Canadian Occidental LTD SHORT TERM CHARTER LONG TERM CHARTER DATE July 8 19 81
 ADDRESS 100 STANWELL DRIVE 4th Floor AIRCRAFT C - GXJB
Roxdale Ont. PHONE 675-2812 PROJECT No. _____
 PILOT R. C. White ENGINEER _____ PURCHASE ORDER _____

| ITINERARY - REMARKS - DESCRIPTION OF JOB, ETC. | | | ZONE | HOURS | PAX. | FREIGHT |
|---|------------|-------|--|------------|------------------------|---------|
| <u>Best Adam</u> | | | | <u>1.1</u> | | |
| <u>Little Moose Creek Recon.</u> | | | | <u>2.8</u> | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| REMARKS AND CREW EXPENSES CHARGEABLE TO CHARTERER | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| WEATHER | | | FUEL & OIL | | TOTAL REVENUE TIME | |
| <u>CLD 92.</u> | | | <input type="checkbox"/> OIL <input type="checkbox"/> GAS <input type="checkbox"/> TURBO SUPPLIED BY CANWEST: _____ HRS. _____ GALS. SUPPLIED BY CHARTERER: _____ HRS. _____ GALS. | | <u>3.9</u> | |
| CEILING | VISIBILITY | TEMP. | | | TOTAL TIME ON CONTRACT | |
| | | | | | <u>126.8</u> | |

THE CARRIAGE OF PASSENGERS, BAGGAGE AND GOODS INCLUDING EXTERNAL LOADS BY CANWEST IS SUBJECT TO THE TERMS, CONDITIONS AND LIMITATIONS OF LIABILITY SET FORTH IN ITS TARIFF FILED WITH THE A.T.C. AN EXTRACT OF WHICH IS AVAILABLE FOR EXAMINATION AT THE OFFICE OF CANWEST AVIATION LTD.

BY SIGNING THIS FLIGHT REPORT, I CERTIFY THAT I AM THE AUTHORIZED REPRESENTATIVE OF THE CHARTERER AND THE CHARTERER HEREBY AGREES TO PAY FOR ALL FLYING TIME SIGNED FOR BY ME, AS LAID OUT IN THE CARRIER'S TARIFF.

AGREED TO AND SIGNED FOR CHARTERER BY:

G. J. Watson
Pilot's Signature

TO CHARTERER DAILY



DAILY FLIGHT REPORT

675 AVIATION BOULEVARD N.E.
INTERNATIONAL AIRPORT
CALGARY, ALBERTA T2E 7G1

No 4052

CHARTERER CANADIAN OCCIDENTAL LTD SHORT TERM CHARTER
 LONG TERM CHARTER DATE July 10 19 81
 ADDRESS 190 ATTWELL DR. 4th Floor AIRCRAFT C - QX50
Bridge Out PHONE 675-2319 PROJECT No. _____
 PILOT Lee C White ENGINEER _____ PURCHASE ORDER _____

| ITINERARY - REMARKS - DESCRIPTION OF JOB, ETC. | | | ZONE | HOURS | PAX. | FREIGHT |
|---|------------|-------|---|-------|------------------------|---------|
| Rov. Chain | | | | 1.8 | | |
| Cat Chain | | | | 1.0 | | |
| Wind Chain | | | | 3.8 | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| REMARKS AND CREW EXPENSES CHARGEABLE TO CHARTERER | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| WEATHER | | | FUEL & OIL | | TOTAL REVENUE TIME | |
| <u>Clear</u> | | | <input type="checkbox"/> OIL <input type="checkbox"/> GAS <input type="checkbox"/> TURBO SUPPLIED BY CANWEST: _____ Hrs. _____ Gals. | | 6.6 | |
| CEILING | VISIBILITY | TEMP. | SUPPLIED BY CHARTERER: _____ Hrs. _____ Gals. | | TOTAL TIME ON CONTRACT | |
| | | | | | 134.4 | |

THE CARRIAGE OF PASSENGERS, BAGGAGE AND GOODS INCLUDING EXTERNAL LOADS BY CANWEST IS SUBJECT TO THE TERMS, CONDITIONS AND LIMITATIONS OF LIABILITY SET FORTH IN ITS TARIFF FILED WITH THE A.T.C. AN EXTRACT OF WHICH IS AVAILABLE FOR EXAMINATION AT THE OFFICE OF CANWEST AVIATION LTD.

BY SIGNING THIS FLIGHT REPORT, I CERTIFY THAT I AM THE AUTHORIZED REPRESENTATIVE OF THE CHARTERER AND THE CHARTERER HEREBY AGREES TO PAY FOR ALL FLYING TIME SIGNED FOR BY ME, AS LAID OUT IN THE CARRIER'S TARIFF.

AGREED TO AND SIGNED FOR CHARTERER BY:

Lee C White
Pilot's Signature

TO CHARTERER DAILY



DAILY FLIGHT REPORT

675 AVIATION BOULEVARD N.E.
INTERNATIONAL AIRPORT
CALGARY, ALBERTA T2E 7G1

No. 4053

CHARTERER Canadian Occidental LTD SHORT TERM CHARTER
 LONG TERM CHARTER DATE July 11 19 84
 ADDRESS 180 STWILL DR. 4th floor AIRCRAFT C - Gx5B
Rev Date Ont. PHONE 675-2312 PROJECT No. _____
 PILOT Les C White ENGINEER _____ PURCHASE ORDER _____

| ITINERARY - REMARKS - DESCRIPTION OF JOB, ETC. | | | ZONE | HOURS | PAX. | FREIGHT |
|---|------------|-------|--|------------|------------------------|--------------|
| <u>Cost claims</u> | | | | <u>1.0</u> | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| REMARKS AND CREW EXPENSES CHARGEABLE TO CHARTERER | | | | . | | |
| | | | | . | | |
| WEATHER | | | FUEL & OIL | | TOTAL REVENUE TIME | |
| <u>clear</u> | | | <input checked="" type="checkbox"/> OIL <input type="checkbox"/> GAS <input type="checkbox"/> TURBO SUPPLIED BY CANWEST: _____ Hrs. _____ Gals. | | <u>1.0</u> | |
| CEILING | VISIBILITY | TEMP. | SUPPLIED BY CHARTERER: _____ Hrs. _____ Gals. | | TOTAL TIME ON CONTRACT | <u>135.4</u> |

THE CARRIAGE OF PASSENGERS, BAGGAGE AND GOODS INCLUDING EXTERNAL LOADS BY CANWEST IS SUBJECT TO THE TERMS, CONDITIONS AND LIMITATIONS OF LIABILITY SET FORTH IN ITS TARIFF FILED WITH THE A.T.C. AN EXTRACT OF WHICH IS AVAILABLE FOR EXAMINATION AT THE OFFICE OF CANWEST AVIATION LTD.

BY SIGNING THIS FLIGHT REPORT, I CERTIFY THAT I AM THE AUTHORIZED REPRESENTATIVE OF THE CHARTERER AND THE CHARTERER HEREBY AGREES TO PAY FOR ALL FLYING TIME SIGNED FOR BY ME, AS LAID OUT IN THE CARRIER'S TARIFF.

AGREED TO AND SIGNED FOR CHARTERER BY:

Chris Richardson
Pilot's Signature

TO CHARTERER DAILY

DAILY FLIGHT REPORT

675 AVIATION BOULEVARD N.E.
INTERNATIONAL AIRPORT
CALGARY, ALBERTA T2E 7G1

No 4056



CHARTERER CANADIAN OCCIDENTAL LTD SHORT TERM CHARTER DATE July 14 1981
 ADDRESS 180 ATTWELL DR 4th Floor. LONG TERM CHARTER AIRCRAFT CX58
Rexdale Ont. PHONE 675-2312 PROJECT No. _____
 PILOT L. C. White ENGINEER _____ PURCHASE ORDER _____

| ITINERARY - REMARKS - DESCRIPTION OF JOB, ETC. | | | ZONE | HOURS | PAX. | FREIGHT |
|---|------------|-------|---|-------|------------------------|---------|
| PLATE CLAIMS | | | | 1.0 | | |
| GOAT CLAIMS | | | | .9 | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| REMARKS AND CREW EXPENSES CHARGEABLE TO CHARTERER | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| WEATHER | | | FUEL & OIL | | TOTAL REVENUE TIME | |
| <u>clear</u> | | | <input checked="" type="checkbox"/> OIL <input type="checkbox"/> GAS <input type="checkbox"/> TURBO | | 1.9 | |
| CEILING | VISIBILITY | TEMP. | SUPPLIED BY CANWEST: _____ HRS. _____ GALS. | | TOTAL TIME ON CONTRACT | 140.8 |
| | | | SUPPLIED BY CHARTERER: _____ HRS. _____ GALS. | | | |

THE CARRIAGE OF PASSENGERS, BAGGAGE AND GOODS INCLUDING EXTERNAL LOADS BY CANWEST IS SUBJECT TO THE TERMS, CONDITIONS AND LIMITATIONS OF LIABILITY SET FORTH IN ITS TARIFF FILED WITH THE A.T.C. AN EXTRACT OF WHICH IS AVAILABLE FOR EXAMINATION AT THE OFFICE OF CANWEST AVIATION LTD.

BY SIGNING THIS FLIGHT REPORT, I CERTIFY THAT I AM THE AUTHORIZED REPRESENTATIVE OF THE CHARTERER AND THE CHARTERER HEREBY AGREES TO PAY FOR ALL FLYING TIME SIGNED FOR BY ME, AS LAID OUT IN THE CARRIER'S TARIFF.
 AGREED TO AND SIGNED FOR CHARTERER BY:
Chris Richardson
 Pilot's Signature
L. C. White

TO CHARTERER DAILY



DAILY FLIGHT REPORT

675 AVIATION BOULEVARD N.E.
INTERNATIONAL AIRPORT
CALGARY, ALBERTA T2E 7G1

No. 4058

CHARTERER Canadian Occidental Ltd SHORT TERM CHARTER
 LONG TERM CHARTER DATE July 16 19 81
 ADDRESS 180 Atwell Dr 4th Floor AIRCRAFT C - C158
Rivdale Ont PHONE 675-2312 PROJECT No. _____
 PILOT Les C White ENGINEER _____ PURCHASE ORDER _____

| ITINERARY - REMARKS - DESCRIPTION OF JOB, ETC. | ZONE | HOURS | PAX. | FREIGHT |
|---|------|-------|------|---------|
| PLATE CLAIM | | 1.0 | | |
| RAN CLAIM | | 2.0 | | |
| LOSS CLAIM | | 1.0 | | |
| LOCK CLAIM | | 1.0 | | |
| GEAR CLAIM | | 1.0 | | |
| REMARKS AND CREW EXPENSES CHARGEABLE TO CHARTERER | | | | |

| | | | | |
|--------------|------------|---|---|------------------------|
| WEATHER | | FUEL & OIL | | TOTAL REVENUE TIME |
| <u>clear</u> | | <input type="checkbox"/> OIL <input type="checkbox"/> GAS <input type="checkbox"/> TURBO SUPPLIED BY CANWEST: _____ HRS. _____ GALS. | | 5.0 |
| CEILING | VISIBILITY | TEMP. | SUPPLIED BY CHARTERER: _____ HRS. _____ GALS. | TOTAL TIME ON CONTRACT |
| | | | | 152.5 |

THE CARRIAGE OF PASSENGERS, BAGGAGE AND GOODS INCLUDING EXTERNAL LOADS BY CANWEST IS SUBJECT TO THE TERMS, CONDITIONS AND LIMITATIONS OF LIABILITY SET FORTH IN ITS TARIFF FILED WITH THE A.T.C. AN EXTRACT OF WHICH IS AVAILABLE FOR EXAMINATION AT THE OFFICE OF CANWEST AVIATION LTD.

BY SIGNING THIS FLIGHT REPORT, I CERTIFY THAT I AM THE AUTHORIZED REPRESENTATIVE OF THE CHARTERER AND THE CHARTERER HEREBY AGREES TO PAY FOR ALL FLYING TIME SIGNED FOR BY ME, AS LAID OUT IN THE CARRIER'S TARIFF.

AGREED TO AND SIGNED FOR CHARTERER BY:

Chris Richardson
Pilot's Signature

TO CHARTERER DAILY



DAILY FLIGHT REPORT

675 AVIATION BOULEVARD N.E.
INTERNATIONAL AIRPORT
CALGARY, ALBERTA T2E 7G1

No 4062

CHARTERER Canadian Presidential LTD SHORT TERM CHARTER
LONG TERM CHARTER DATE July 20 19 81
ADDRESS 180 ATINELL DR. 4th Floor AIRCRAFT C - Ax 58
Raw Dale Ont. PHONE 675-2312 PROJECT No. _____
PILOT Pos C White ENGINEER _____ PURCHASE ORDER _____

| ITINERARY - REMARKS - DESCRIPTION OF JOB, ETC. | | | ZONE | HOURS | PAX. | FREIGHT |
|---|------------|-------|---|-------|------------------------|---------|
| Best claim | | | | 1.0 | | |
| Raw claim | | | | 1.3 | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| REMARKS AND CREW EXPENSES CHARGEABLE TO CHARTERER | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| WEATHER | | | FUEL & OIL | | TOTAL REVENUE TIME | |
| <u>Clear</u> | | | <input type="checkbox"/> OIL <input type="checkbox"/> GAS <input type="checkbox"/> TURBO SUPPLIED BY CANWEST: _____ HRS. _____ GALS. | | 2.3 | |
| CEILING | VISIBILITY | TEMP. | SUPPLIED BY CHARTERER: _____ HRS. _____ GALS. | | TOTAL TIME ON CONTRACT | |
| | | | | | 163.0 | |

THE CARRIAGE OF PASSENGERS, BAGGAGE AND GOODS INCLUDING EXTERNAL LOADS BY CANWEST IS SUBJECT TO THE TERMS, CONDITIONS AND LIMITATIONS OF LIABILITY SET FORTH IN ITS TARIFF FILED WITH THE A.T.C. AN EXTRACT OF WHICH IS AVAILABLE FOR EXAMINATION AT THE OFFICE OF CANWEST AVIATION LTD.

BY SIGNING THIS FLIGHT REPORT, I CERTIFY THAT I AM THE AUTHORIZED REPRESENTATIVE OF THE CHARTERER AND THE CHARTERER HEREBY AGREES TO PAY FOR ALL FLYING TIME SIGNED FOR BY ME, AS LAID OUT IN THE CARRIER'S TARIFF.
 AGREED TO AND SIGNED FOR CHARTERER BY:

 Pilot's Signature
Pos C White

TO CHARTERER DAILY



DAILY FLIGHT REPORT
 675 AVIATION BOULEVARD N.E.
 INTERNATIONAL AIRPORT
 CALGARY, ALBERTA T2E 7G1

No 4063

CHARTERER Consolidated International LTD SHORT TERM CHARTER
 LONG TERM CHARTER DATE July 21 19 81
 ADDRESS 180 ATTWELL DR. 4th Floor AIRCRAFT C - QX TB
Rexdale Ont PHONE 675-2812 PROJECT No. _____
 PILOT R. S. White ENGINEER _____ PURCHASE ORDER _____

| ITINERARY - REMARKS - DESCRIPTION OF JOB, ETC. | | | ZONE | HOURS | PAX. | FREIGHT |
|---|------------|-------|--|-------|------------------------|---------|
| Goat claim | | | | 1.0 | | |
| Pax claim | | | | 3.2 | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| REMARKS AND CREW EXPENSES CHARGEABLE TO CHARTERER | | | | . | | |
| | | | | . | | |
| | | | | . | | |
| WEATHER | | | FUEL & OIL | | TOTAL REVENUE TIME | |
| <u>CLR</u> | | | <input checked="" type="checkbox"/> OIL <input type="checkbox"/> GAS <input type="checkbox"/> TURBO SUPPLIED BY CANWEST: _____ HRS. _____ GALS. | | 4.2 | |
| CEILING | VISIBILITY | TEMP. | SUPPLIED BY CHARTERER: _____ HRS. _____ GALS. | | TOTAL TIME ON CONTRACT | |
| | | | | | 167.2 | |

THE CARRIAGE OF PASSENGERS, BAGGAGE AND GOODS INCLUDING EXTERNAL LOADS BY CANWEST IS SUBJECT TO THE TERMS, CONDITIONS AND LIMITATIONS OF LIABILITY SET FORTH IN ITS TARIFF FILED WITH THE A.T.C. AN EXTRACT OF WHICH IS AVAILABLE FOR EXAMINATION AT THE OFFICE OF CANWEST AVIATION LTD.

BY SIGNING THIS FLIGHT REPORT, I CERTIFY THAT I AM THE AUTHORIZED REPRESENTATIVE OF THE CHARTERER AND THE CHARTERER HEREBY AGREES TO PAY FOR ALL FLYING TIME SIGNED FOR BY ME, AS LAID OUT IN THE CARRIER'S TARIFF.

AGREED TO AND SIGNED FOR CHARTERER BY:

[Signature]

Pilot's Signature

[Signature]

TO CHARTERER DAILY



DAILY FLIGHT REPORT

675 AVIATION BOULEVARD N.E.
INTERNATIONAL AIRPORT
CALGARY, ALBERTA T2E 7G1

No 4065

CHARTERER Canadian Occidental LTD SHORT TERM CHARTER
 ADDRESS 180 STWELL DR 4th Floor LONG TERM CHARTER DATE July 28 19 91
Rockdale Ont. AIRCRAFT C - Cx 58
 PILOT R. C. White ENGINEER _____ PHONE 675-2312 PROJECT No. _____

ITINERARY - REMARKS - DESCRIPTION OF JOB, ETC.

ZONE HOURS PAX. FREIGHT

Best obsrv
Local obsrv

2
8

REMARKS AND CREW EXPENSES CHARGEABLE TO CHARTERER

WEATHER

FUEL & OIL

clear
CEILING VISIBILITY TEMP.

OIL GAS TURBO
 SUPPLIED BY CANWEST: _____ HRS. _____ GALS.
 SUPPLIED BY CHARTERER: _____ HRS. _____ GALS.

TOTAL REVENUE TIME

1.6

TOTAL TIME ON CONTRACT

169.9

THE CARRIAGE OF PASSENGERS, BAGGAGE AND GOODS INCLUDING EXTERNAL LOADS BY CANWEST IS SUBJECT TO THE TERMS, CONDITIONS AND LIMITATIONS OF LIABILITY SET FORTH IN ITS TARIFF FILED WITH THE A.T.C. AN EXTRACT OF WHICH IS AVAILABLE FOR EXAMINATION AT THE OFFICE OF CANWEST AVIATION LTD.

BY SIGNING THIS FLIGHT REPORT, I CERTIFY THAT I AM THE AUTHORIZED REPRESENTATIVE OF THE CHARTERER AND THE CHARTERER HEREBY AGREES TO PAY FOR ALL FLYING TIME SIGNED FOR BY ME, AS LAID OUT IN THE CARRIER'S TARIFF.

AGREED TO AND SIGNED FOR CHARTERER BY:

Pilot's Signature

B. Jet
R. C. White

TO CHARTERER DAILY



CANWEST AVIATION LTD.

675 AVIATION BOULEVARD N.E.
CALGARY INTERNATIONAL AIRPORT
CALGARY, ALBERTA, CANADA T2E 7G1

TELEPHONE: (403) 275-5850 TELEX: 03-821913

7.

July 15, 1991

- Canadian Occidental Petroleum Ltd.
511 - 215 Carlindale Drive
CALGARY, AB
T2M 6X0

Re: Helicopter Charter -
Helicopter: C-200B

| | | |
|---------------------|--|--------------------|
| 1/05/01- 1/06/00 | As per attached flight reports 4005 - 4007 | |
| | 65.6 hrs. @ \$195/hr. | \$12,792.00 |
| | Oil: 85.6 x \$2.00/hr. | 171.20 |
| | TOTAL | <u>\$12,963.20</u> |



CANWEST AVIATION LTD.

675 AVIATION BOULEVARD N.E.
CALGARY INTERNATIONAL AIRPORT
CALGARY, ALBERTA, CANADA T2E 7G1
TELEPHONE: (403) 275-5850 TELEX: 03-821913

7.

July 15,

Canadian Occidental Petroleum Ltd.
311 - 215 Carlinview Drive
WEXDLE, ON
M9W 5N8

Re: Helicopter Charter -
Helicopter: C-CX18

01/07/01-
01/07/30

As per contract -

availability for Jul

\$15,000.00

TOTAL

\$15,000.00



CANWEST AVIATION LTD.

675 AVIATION BOULEVARD N.E.
CALGARY INTERNATIONAL AIRPORT
CALGARY, ALBERTA, CANADA T2E 7G1
TELEPHONE: (403) 275-5850 TELEX: 03-821913

7:20

July 15, 1991

Canadian Occidental Petroleum Ltd.
215 - 215 Carlingview Drive
REXDALE, ON
M9L 5X8

Re: Helicopter Charter -
Helicopter: C-6XJB

1/05/27-
1/05/31

To invoice for ferry flight from Calgary to
Destruction Bay as per attached flight reports
4001 - 4001

12.4 x \$135

\$2,412.00

Fuel: 12.4 hrs. x 21 gph x \$2.50

651.00

Oil: 12.4 hrs. x \$2./hr.

24.80

TOTAL

\$3,087.80



CANWEST AVIATION LTD.

675 AVIATION BOULEVARD N.E.
 CALGARY INTERNATIONAL AIRPORT
 CALGARY, ALBERTA T2E 7G1
 TELEPHONE: (403) 275-5850 TELEX: 03-821913

No 6.3
 June 17, 1981

INVOICE

Canadian Occidental Petroleum Ltd.
 Suite 311 - 215 Carlingview Drive
 WEXDALE, ON
 M9M 5X9

Helicopter C-GXJB

Re: Helicopter Charter

| DATE | FLIGHT/PASSENGER DETAILS | FUEL & OIL | TOTAL FLIGHT HOURS HOURS - MINUTES | RATE | TOTAL |
|---------------|--------------------------|------------|---------------------------------------|-------|--------------------|
| 5/01- 6/30 | As per contract | | | | \$16,000.00 |
| | | | | TOTAL | <u>\$16,000.00</u> |



CANWEST AVIATION LTD.
 675 AVIATION BOULEVARD N.E.
 CALGARY INTERNATIONAL AIRPORT
 CALGARY, ALBERTA, CANADA T2E 7G1
 TELEPHONE: (403) 275-5850 TELEX: 03-821913

9.10

September 17, 1981

Canadian Occidental Ltd.
 188 Attwell Drive, 4th Floor
 Rexdale, ON
 M9W 6A8

Re: Helicopter Charter
 Helicopter: C-540

August 12 - 30, 1981

As per attached flight reports 2097 - 2102 and 2058 and 2054

70.0 hours @ \$165.00/hr

\$11,550.00

Oil: 33.9 x \$2.00/hr

118.70

70.5 hrs. x \$377

\$11,668.70

WATSON

85.

COPY



CANWEST AVIATION LTD.

675 AVIATION BOULEVARD N.E.
CALGARY INTERNATIONAL AIRPORT
CALGARY, ALBERTA, CANADA T2E 7G1
TELEPHONE: (403) 275-5850 TELEX: 03-821913

8.15

August 21, 1981

- Canadian Occidental Ltd.
150 Attwell Drive, 4th Floor
Edmonton, AB
T6Y 3A8

Re: Helicopter Charter -
Contract: 8-19

/01 -
/11

As per attached flight reports, nos. 4005 - 4140
and 4051 - 4070 and 4072 - 4102

110.2 hrs. @ 8185.00/hr

Oil: 110.2 hrs. @ 32.00/hr

922,358.00

232.40

TOTAL

922,591.40

Robt M. Watson
WATSON
[Signature]

[Signature]



CANWEST AVIATIC
675 AVIATION BOULEVAR,
CALGARY INTERNATIONAL AIRPORT
CALGARY, ALBERTA, CANADA T2E 7G1
TELEPHONE: (403) 275-5850 TELEX: 03-821913

1.11
August 24, 1981

- Canadian Occidental Ltd.
180 Attwell Drive, 4th Floor
Bordale, ON
M9W 6A0

Re: Helicopter Charter -
Helicopter: C-212

As per contract
availability for August

818,300.00

WATBU

Time Saver

INVOICE

No 007753

F
R
O
M
YUKON AVIATION PRODUCTS
BOX 367
WATSON LAKE, YUKON YOA 1C0
Ph. (403) 536-7591

DATE

TERMS

June 3, 1951

Net 30 days

F
O
B

SHIPPED TO - If other than Invoice to

T
O
Canadian Occidental

Pine Lake Strip

YOUR ORDER NO.

OUR ORDER NO.

DATE SHIPPED

SHIPPED VIA

NO. CARTONS

SALESMAN

Watsu Project

4 3912

June 4/81

Inv. #1208
Christy's

88

SM

QUANTITY

DESCRIPTION

3960

Gallons JP-4

88

Lined drums

NOTICE

NO CREDIT FOR
DAMAGED DRUMS

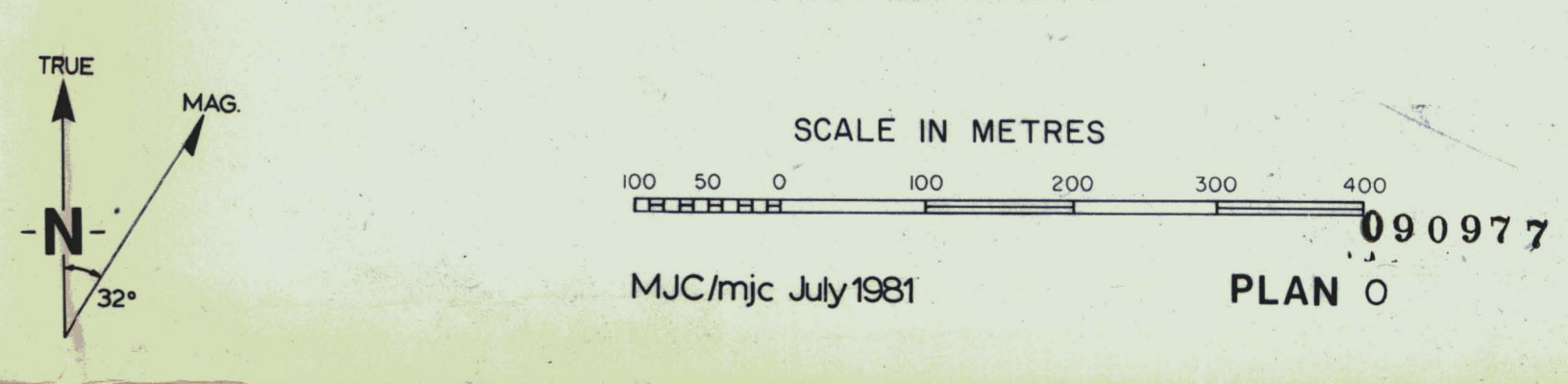
B. Jet (Watsu)

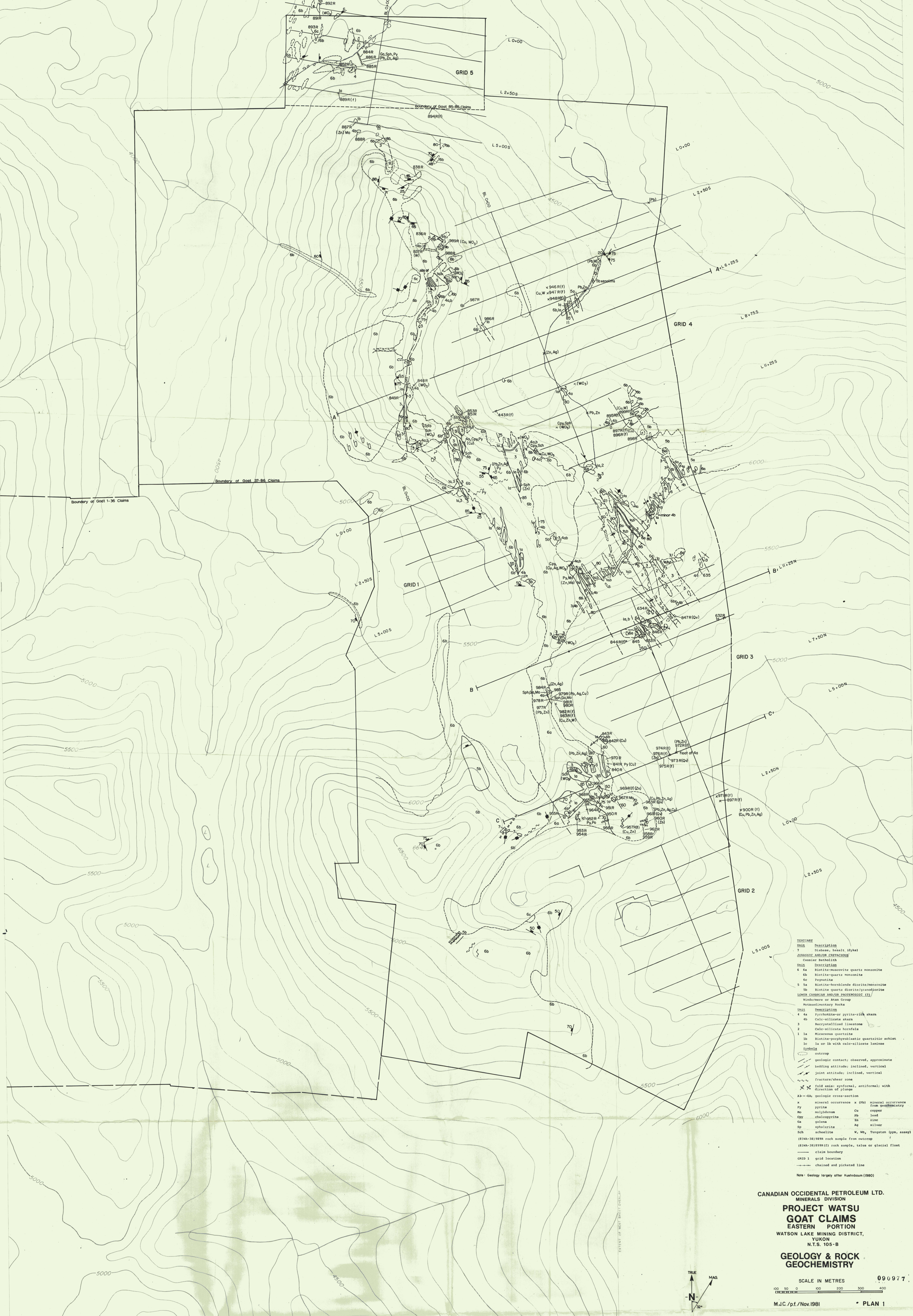
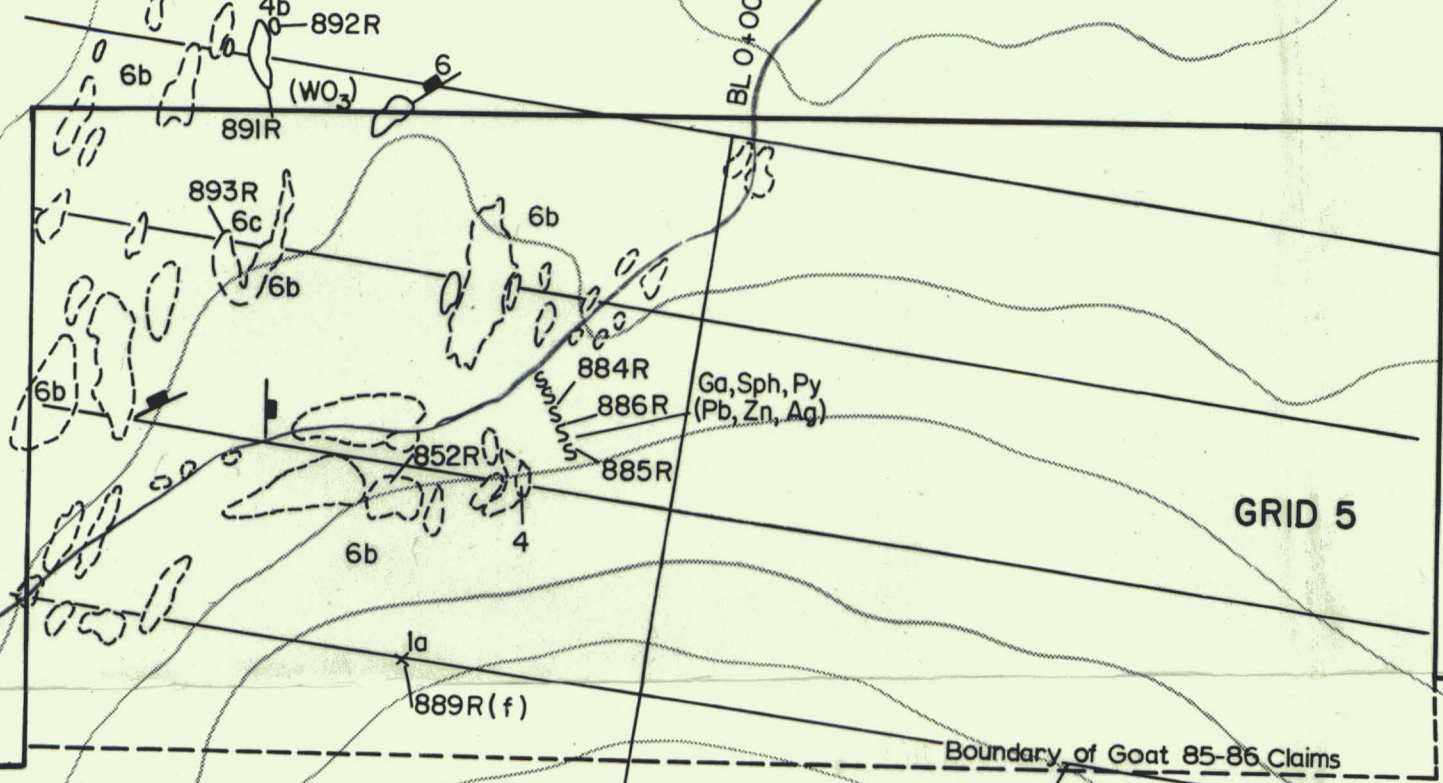
PACKING SLIP



- LEGEND
- Claim post location
 - Claim post - assumed location
 - Claim boundary
 - - - Assumed claim boundary
 - Direction of staking
 - Chained and picketed lines
 - (GOAT)72 Claim name
 - YA55476 tag number
 - GRID 1 Location of grid and number

CANADIAN OCCIDENTAL PETROLEUM LTD.
 MINERALS DIVISION
**PROJECT WATSU
 GOAT CLAIMS**
 EASTERN PORTION
 WATSON LAKE MINING DISTRICT,
 YUKON
 N.T.S. 105-B
BASE MAP





TERTIARY

Unit Description

7 Diabase, basalts (dike)

JURASSIC AND/OR CRETACEOUS

Cassiar Batholith

Unit Description

6a Biotite-muscovite quartz monzonite

6b Biotite-quartz monzonite

6c Pegmatite

5a Biotite-hornblende diorite/monzonite

5b Biotite quartz diorite/granodiorite

LOWER CAMBRIAN AND/OR PROTEROZOIC (?)

Windsore or Atan Group

Metasedimentary Rocks

Unit Description

4a Pyrochloite- or pyrite-rich shalm

4b Calc-silicate shalm

3 Metacrystalline limestone

2 Calc-silicate hornfels

1a Micaceous quartzite

1b Biotite-porphyrroblastic quartzitic schist

1c 1a or 1b with calc-silicate laminae

Symbols

○ outcrop

— geologic contact; observed, approximate

— bedding attitude; inclined, vertical

— joint attitude; inclined, vertical

~ fracture/shear zone

× fold axis: synclinal, antiformal; with direction of plunge

AB-4A: geologic cross-section

x mineral occurrence x (Pb) mineral occurrence from secondary

Py pyrite Cu copper

Mo molybdenum Pb lead

Opv chalcocopper Zn zinc

Sp sphalerite Ag silver

Sch scheelite W, Mo, Tungsten (ppm, assay)

(BMA-3) 889 rock sample from outcrop

(BMA-3) 899 rock sample, talus or glacial float

— claim boundary

— GRID 1 grid location

— chained and picketed line

Note: Geology largely after Kuusbaan (1980)

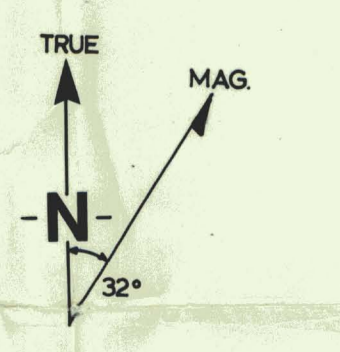
CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
PROJECT WATSON
GOAT CLAIMS
EASTERN PORTION
WATSON LAKE MINING DISTRICT,
YUKON
N.T.S. 105-B

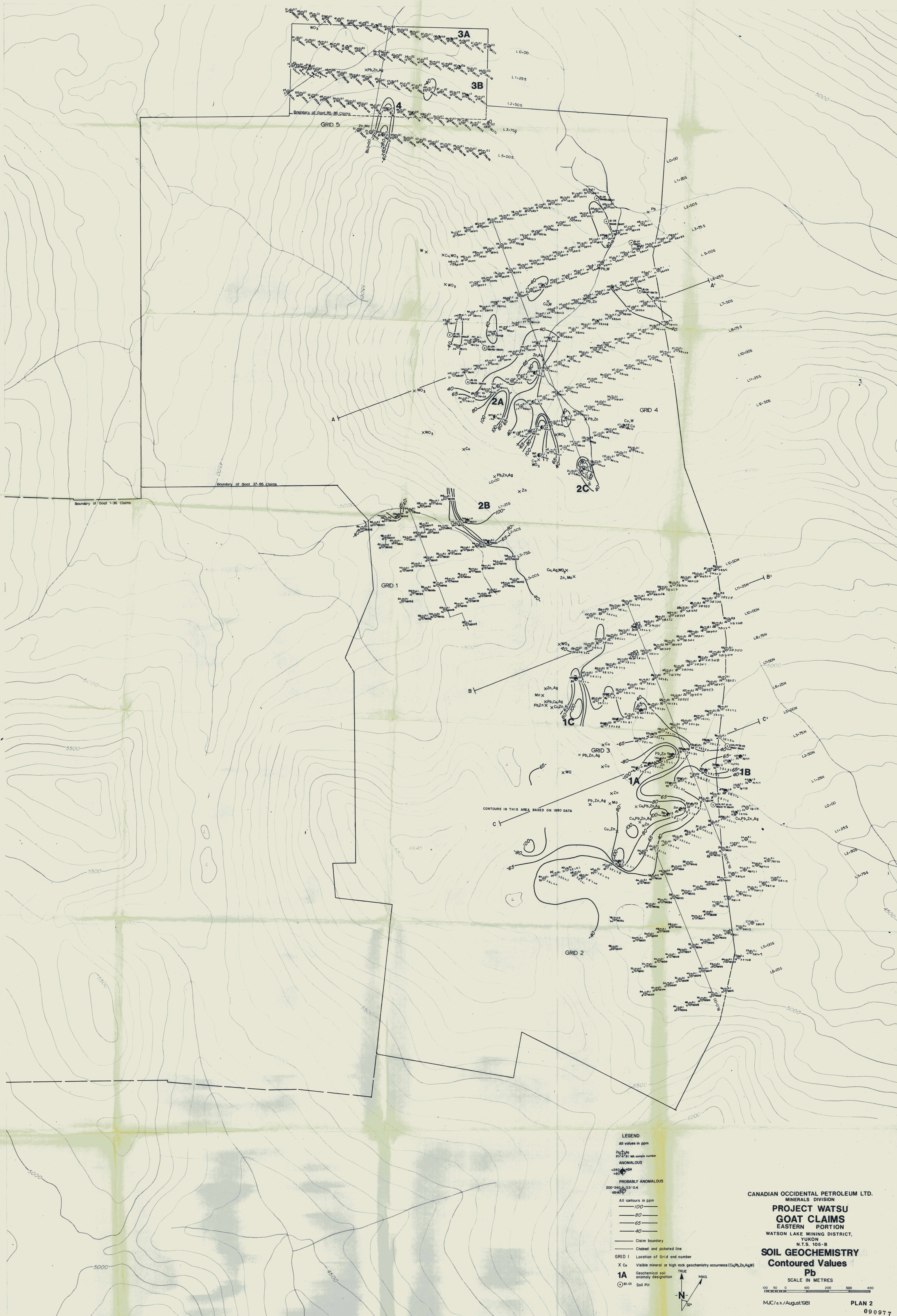
GEOLOGY & ROCK
GEOCHEMISTRY

SCALE IN METRES 090977

0 50 100 200 300 400

M.J.C./p.f./Nov.1981 PLAN 1





LEGEND

All values in ppm

200-400 0.3-0.4

ANOMALOUS

>240 0.04

PROBABLY ANOMALOUS

200-400 0.3-0.4

60-80

All contours in ppm

100

80

65

40

Claim boundary

Chained and picketed line

GRID I Location of Grid and number

X Cu Visible mineral or high rock geochemistry occurrence (Cu, Pb, Zn, Ag, W)

1A Geochemical soil anomaly designation

○ 01-01 Soil Pit

CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
PROJECT WATSU
GOAT CLAIMS
EASTERN PORTION
WATSON LAKE MINING DISTRICT,
YUKON
N.T.S. 105-B
SOIL GEOCHEMISTRY
Contoured Values
Pb

SCALE IN METRES

100 50 0 100 200 300 400

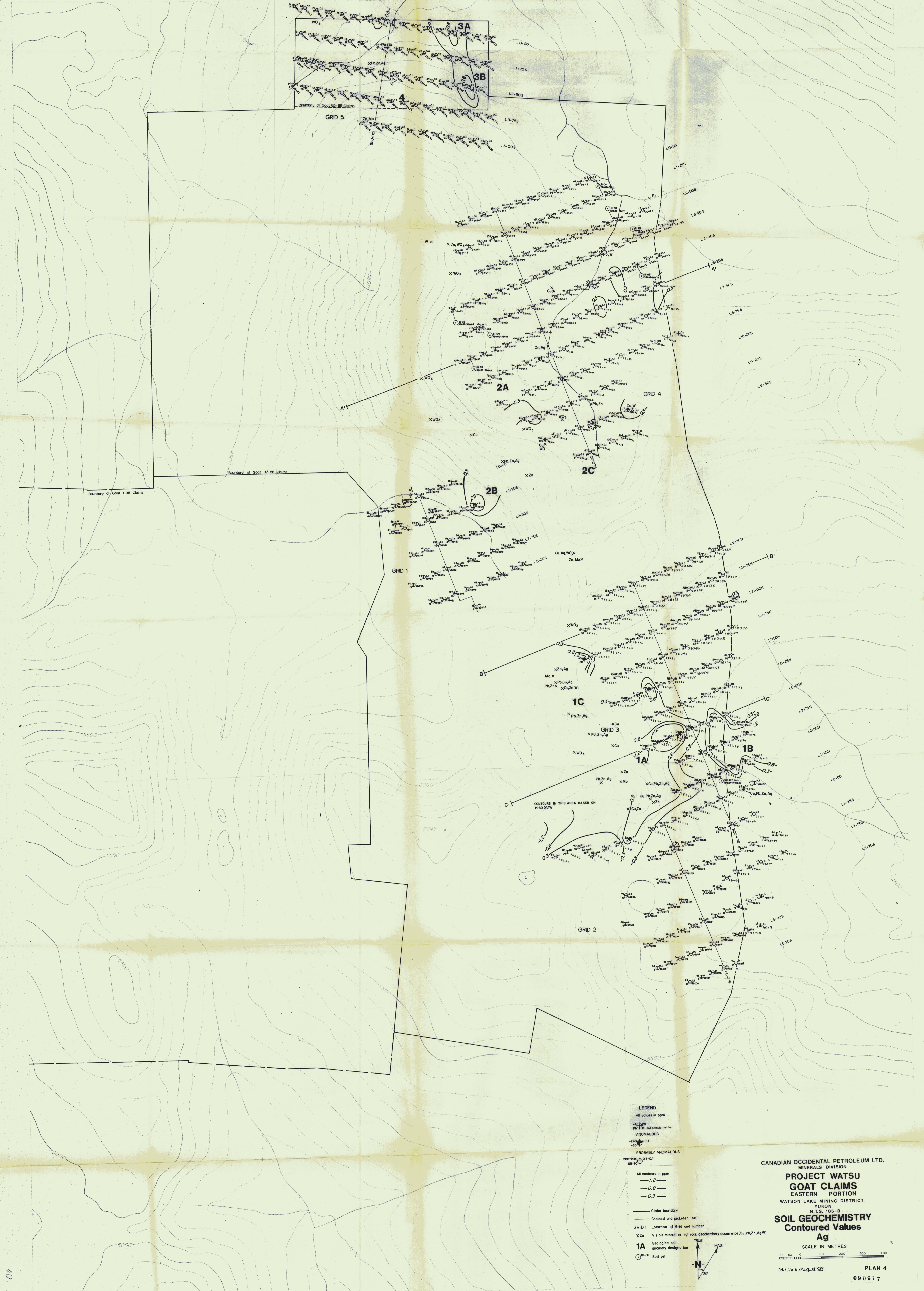
MJC/a.n./August 1981

PLAN 2
090977

CU

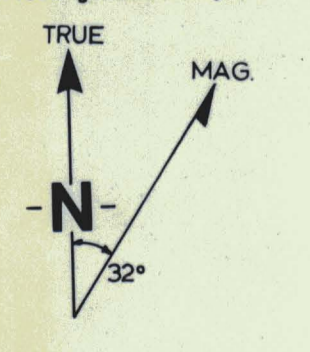
LB-9000-2
417101-04-C

GOAT EAST SHEET (AUGUST 1980)



LEGEND
 All values in ppm
 Zn, Ag
 Pb, Bi) with sample number
 ANOMALOUS
 >240-0.4
 >80
 PROBABLY ANOMALOUS
 800-240, 0.3-0.4
 60-80

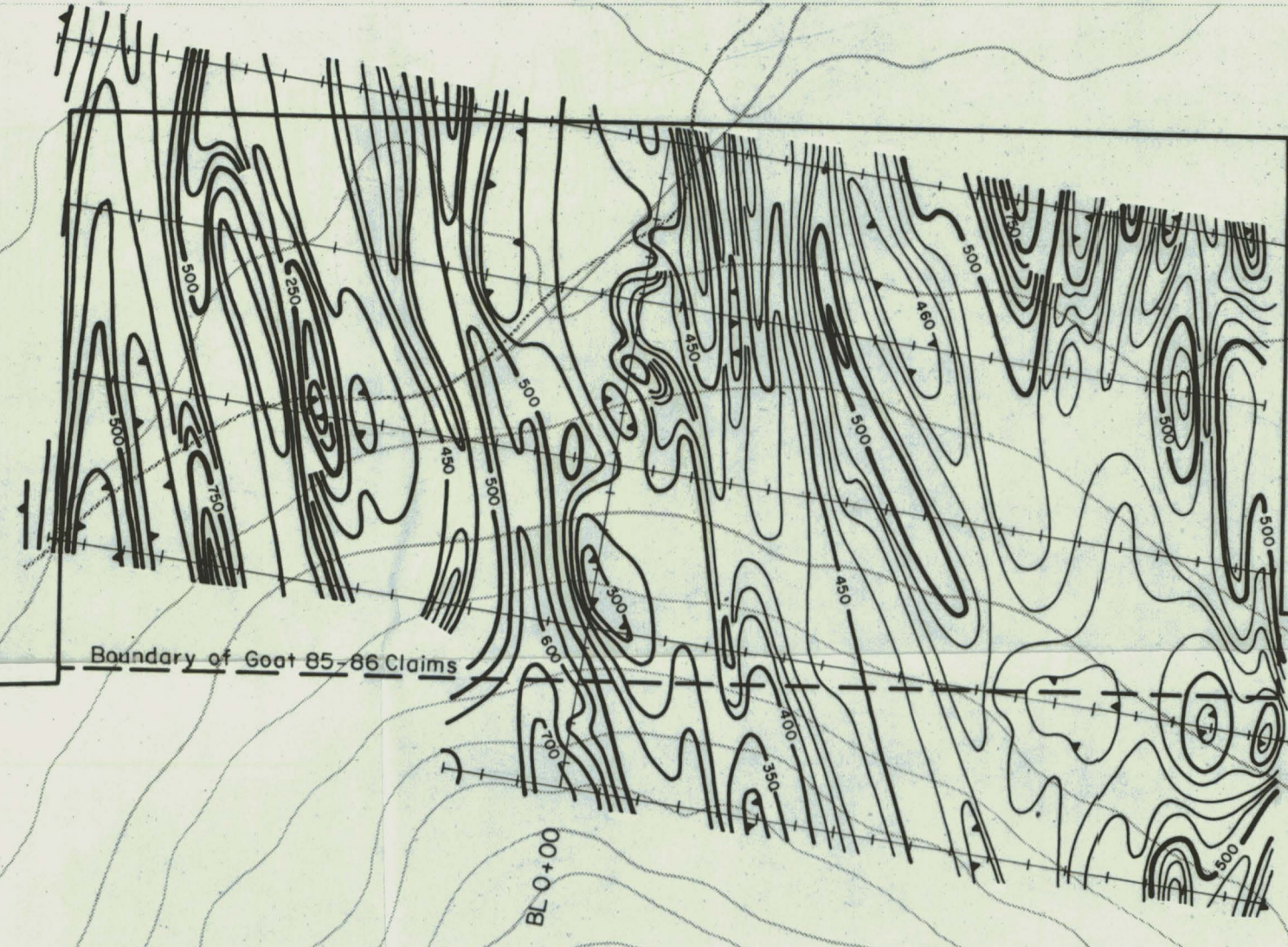
All contours in ppm
 — 1.2 —
 — 0.8 —
 — 0.3 —
 — Claim boundary
 — Chained and picketed line
 GRID 1 Location of Grid and number
 X Cu Visible mineral or high rock geochemistry occurrence (Cu, Pb, Zn, Ag, W)
 Geological soil anomaly designation
 1A
 Soil pit



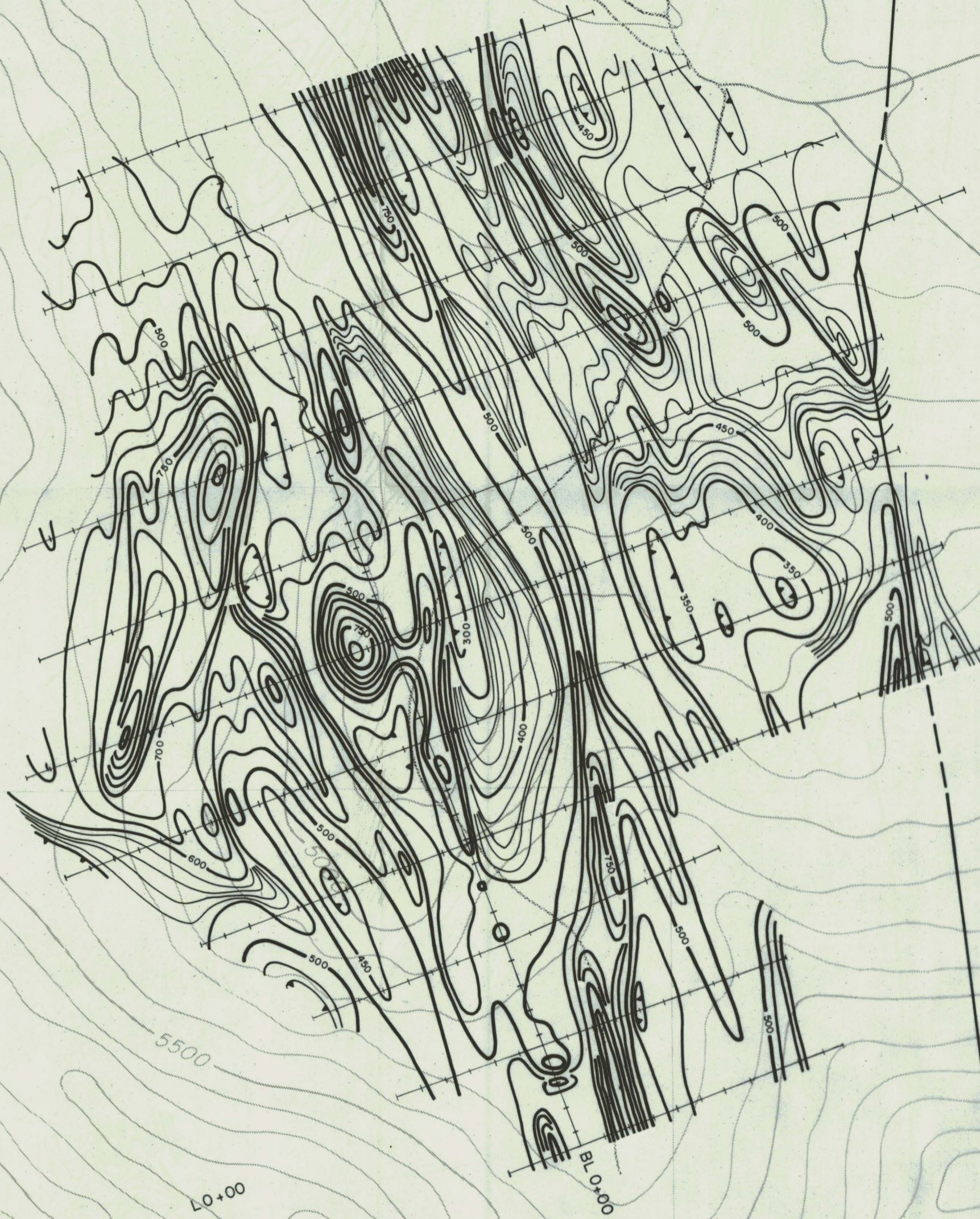
CANADIAN OCCIDENTAL PETROLEUM LTD.
 MINERALS DIVISION
PROJECT WATSU
GOAT CLAIMS
 EASTERN PORTION
 WATSON LAKE MINING DISTRICT,
 YUKON
 N.T.S. 105-B
SOIL GEOCHEMISTRY
Contoured Values
Ag

SCALE IN METRES
 0 100 200 300 400
 MJC/s.h./August 1981
 PLAN 4
 090977

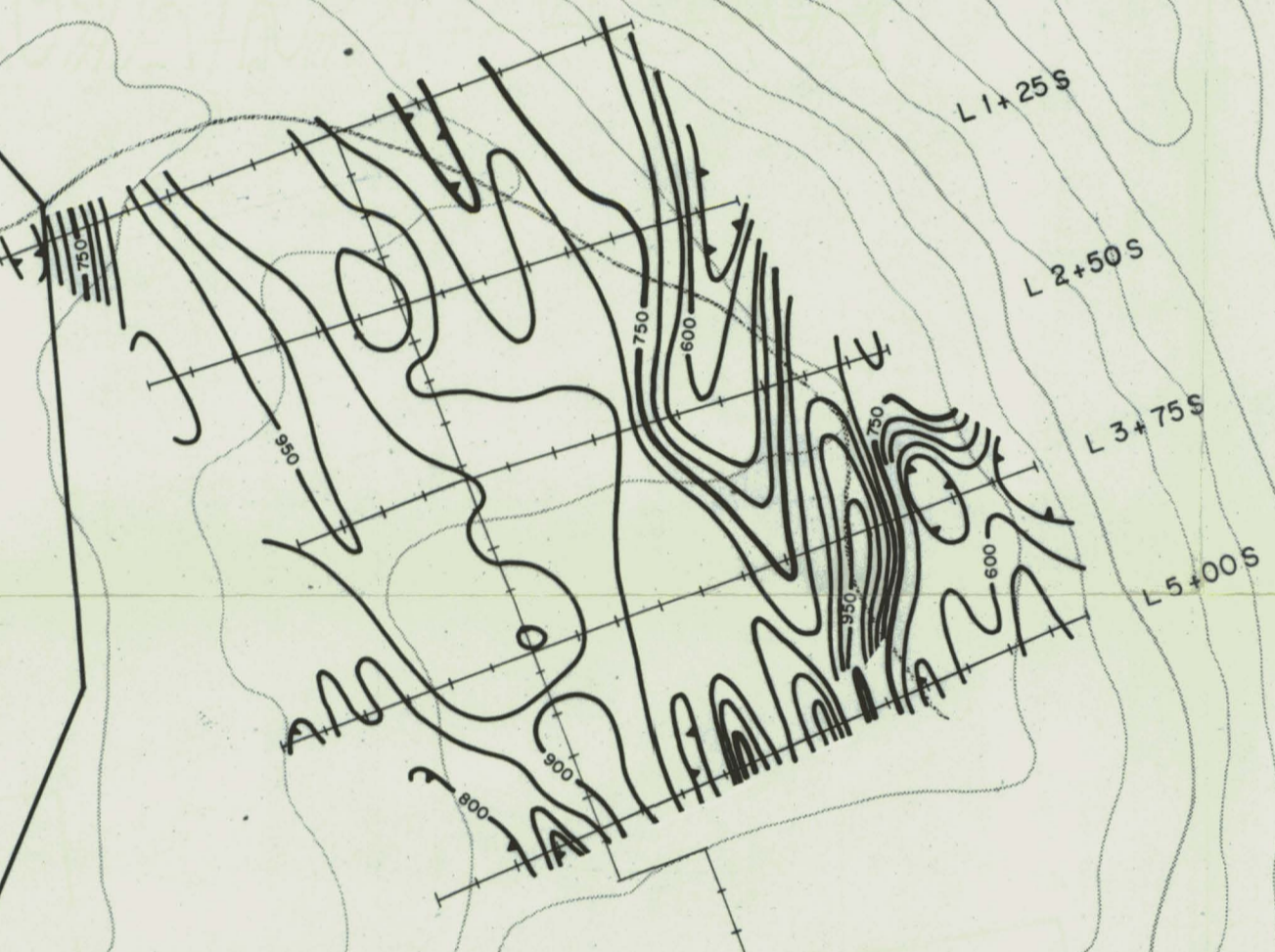
GRID 5



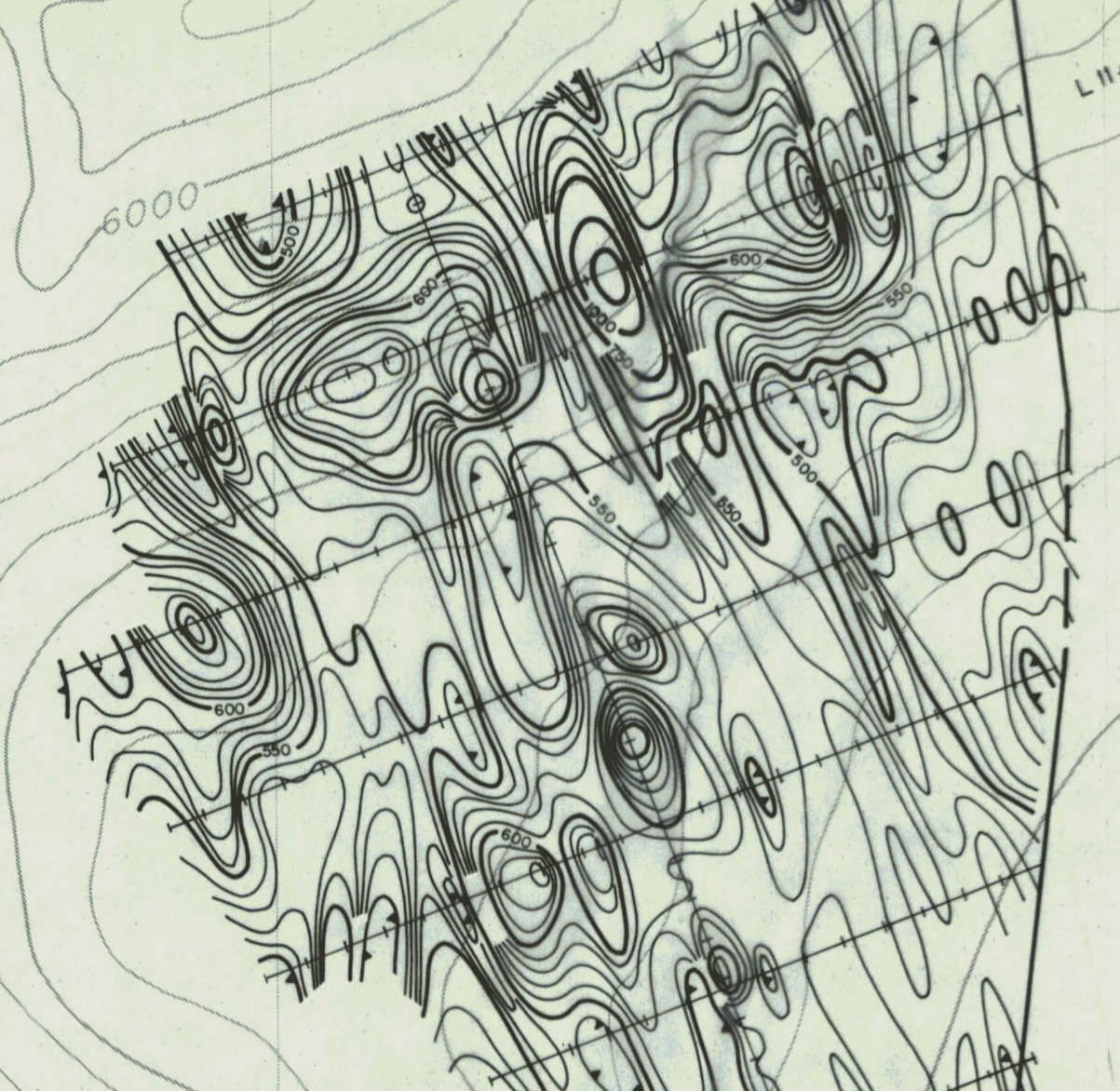
GRID 4



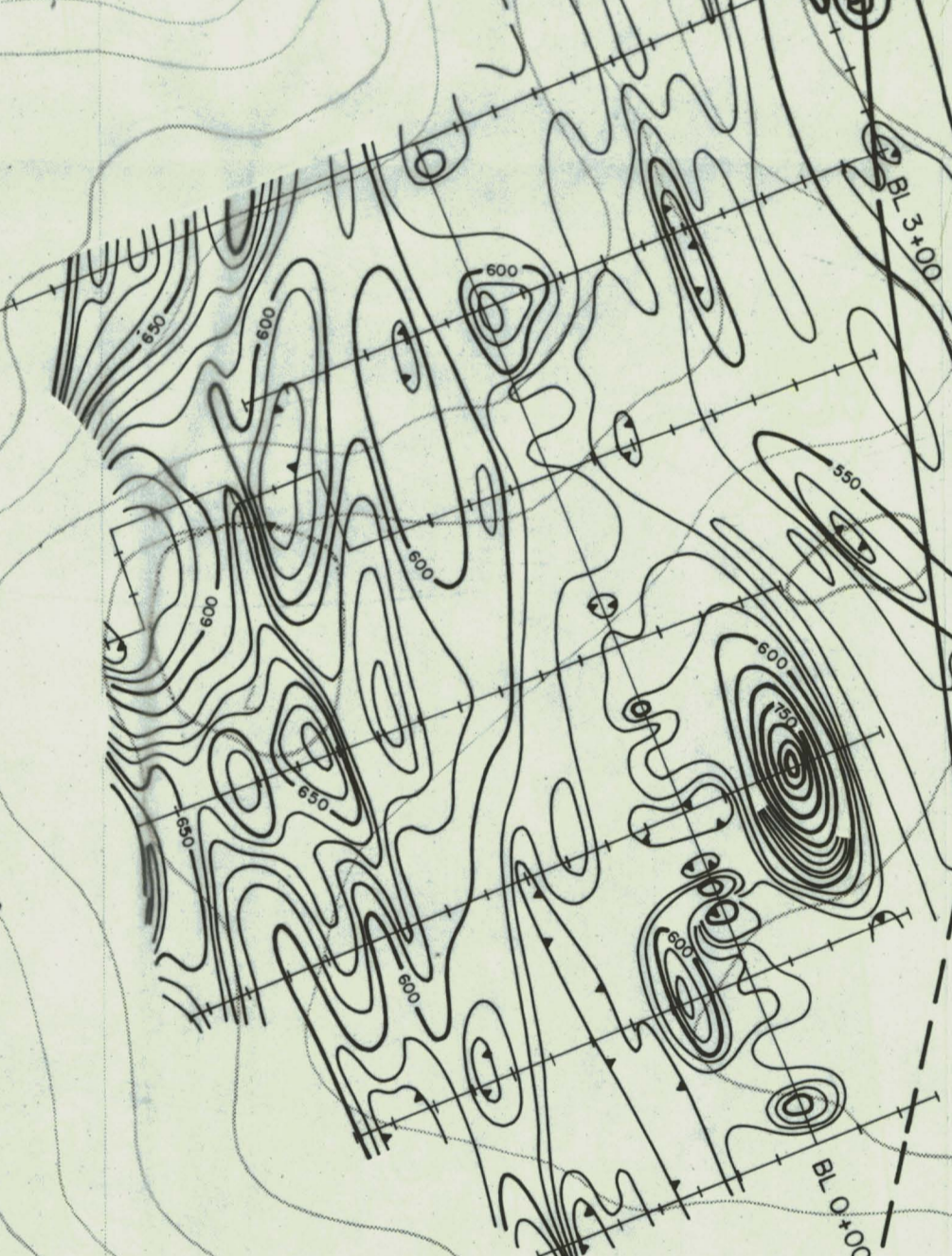
GRID 1



GRID 3



GRID 2

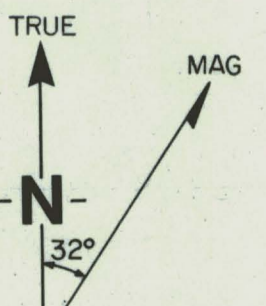
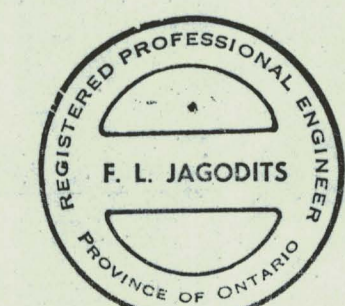


LEGEND

- Instrument Geometrics GB16
- Base station recorder CMG - MR 10
- Values above base level of 50,000 nT
- Contour interval 10 gammas
- 250 gamma contour [Symbol]
- 50 gamma contour [Symbol]
- 10 gamma contour [Symbol]
- Depression [Symbol]

EXTENT OF WEST SHEET OUTLINE

John J. Feran, P. Eng.



CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
PROJECT WATSU
GOAT CLAIMS
EASTERN PORTION
WATSON LAKE MINING DISTRICT,
YUKON
N.T.S. 105-B

MAGNETIC SURVEY
Total Field Contours

SCALE IN METRES 1:5,000
0 50 100 200 300 400
METRES

PLAN 5
090977

GRID 5

Boundary of Goat 85-86 Claims

GRID 4

Boundary of Goat 37-86 Claims

Boundary of Goat 1-36 Claims

GRID 1

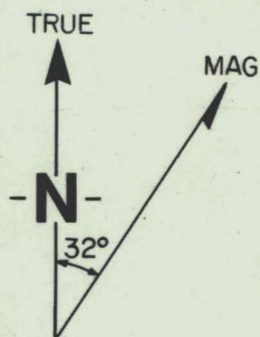
GRID 3

GRID 2

LEGEND

- Instrument Geonics EM16
- Transmitter NLK, Jim Creek, Wash, 18.6kHz
- Contours of Fraser filtered in-phase VLF data
- Contour interval + 5
- 0 & + 25 contour - - - - -
- + 5 contour - - - - -

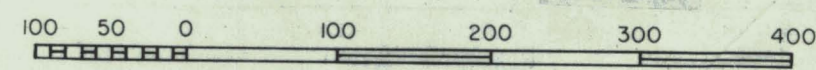
Japadi & Son, P. Eng.



CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
PROJECT WATSU
GOAT CLAIMS
EASTERN PORTION
WATSON LAKE MINING DISTRICT,
YUKON
N.T.S. 105-B

VLF-EM SURVEY
Contours of Filtered In-phase Component

SCALE IN METRES 1:5,000



090977
PLAN 7

Dwg No. E.I.C.



LEGEND

- Limit of magnetic unit and identification 4-1
- Outline of magnetic body and identification 4-2
- Interpreted shear zone G
- Mapped shear and/or fault G
- Axis of VLF-EM conductor, fair, mediocre and poor with identification V4-1
- Locality of prospective interest (4-1)

Outcrop of skarn -

- 4a - pyrrhotite or pyrite rich 4a
- 4b - calc-silicate skarn 4b

Mineralized outcrop -

- Cu - copper, Pb - lead, Zn - zinc, Ag - silver, xCu
- W - tungsten, Co - cobalt, Sph - sphalerite,
- Cpy - chalcocite

CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION

**PROJECT WATSU
GOAT CLAIMS
EASTERN PORTION**

WATSON LAKE MINING DISTRICT,
YUKON
N.T.S. 105-B

INTERPRETATION MAP

SCALE IN METRES 1:5,000

0 100 200 300 400
METRES

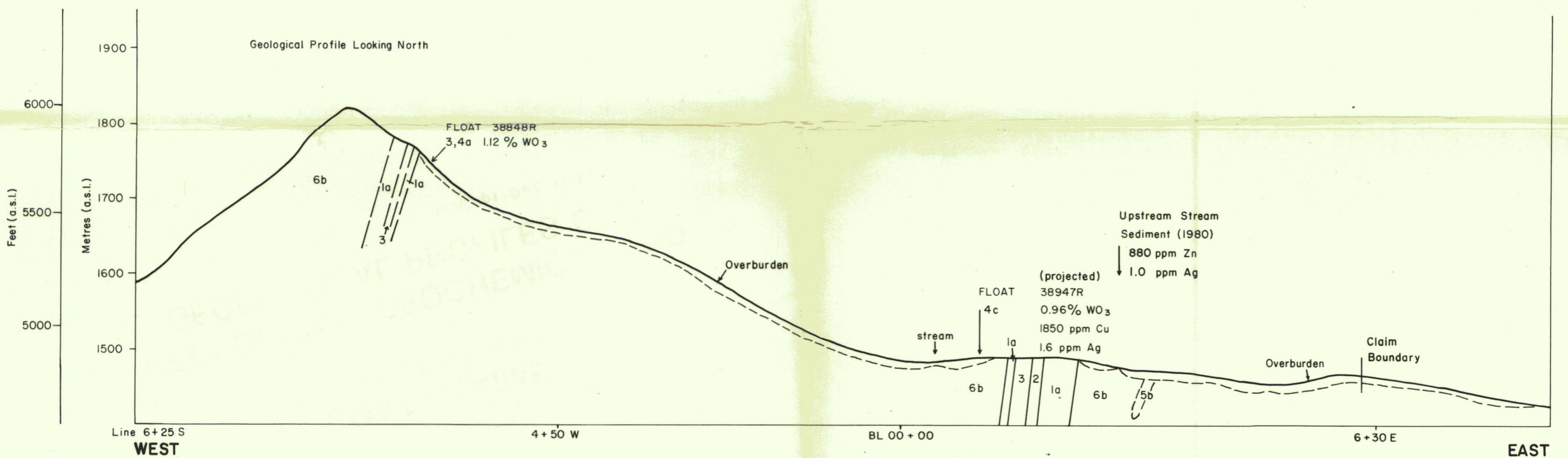
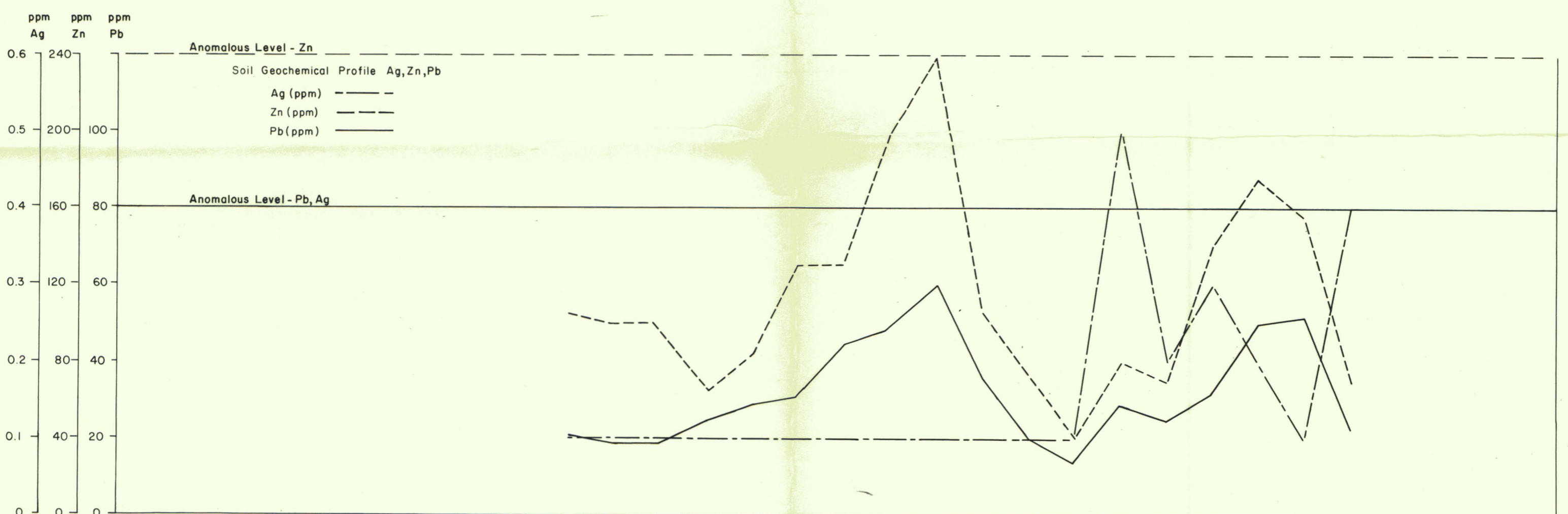
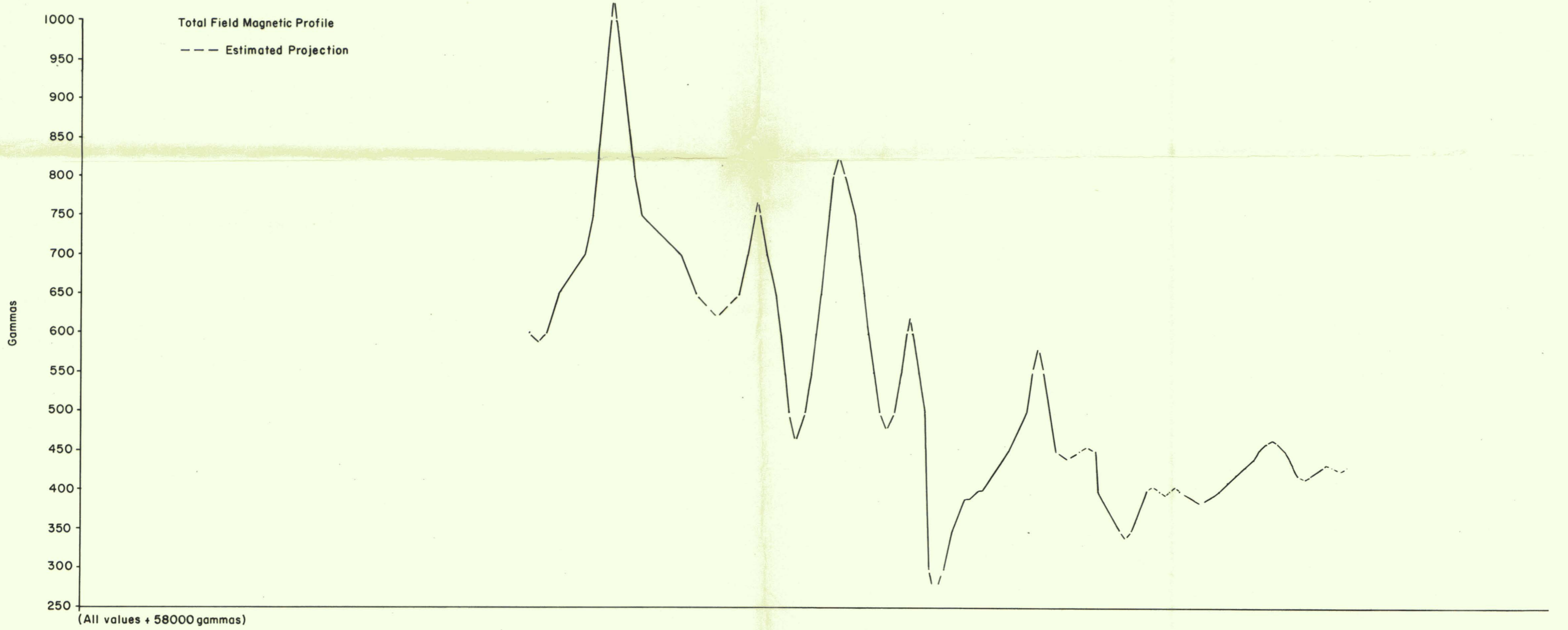
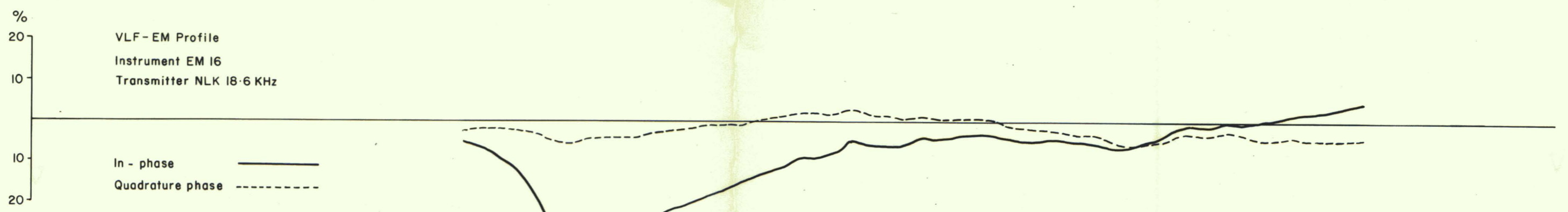
PLAN 8

Dwg. No. E.I.C. - 1139 **090977**

WT-D-9009-F
CART

A

A₁



- LEGEND**
- JURASSIC AND/OR CRETACEOUS
- Cassiar Batholith
- 6 6a Biotite-muscovite-quartz monzonite
 - 6 6b Biotite-quartz monzonite
 - 5 Hornblende - biotite diorite, monzonite
- LOWER CAMBRIAN AND (?) EARLIER
- Windsorware & Alan Group Metasedimentary Rocks
- 4 4a Pyrrhotite-rich skarns
 - 4 4b Calc-silicate skarns
 - 3 Recrystallized limestone
 - 2 Calc-silicate hornfels
 - 1 Micaceous quartzite, quartzitic schist
- geologic boundary
- 38977R rock sample

CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION

**PROJECT WATSU
GOAT CLAIMS**

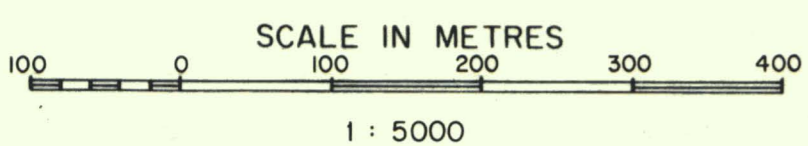
WATSON LAKE MINING DISTRICT,
YUKON
N.T.S. 105-B

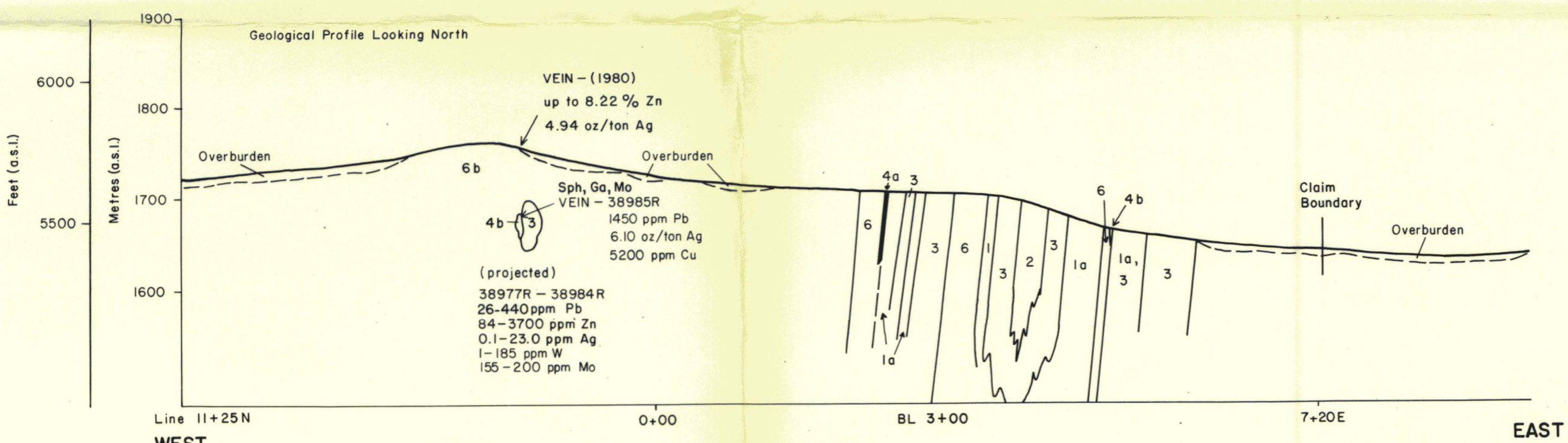
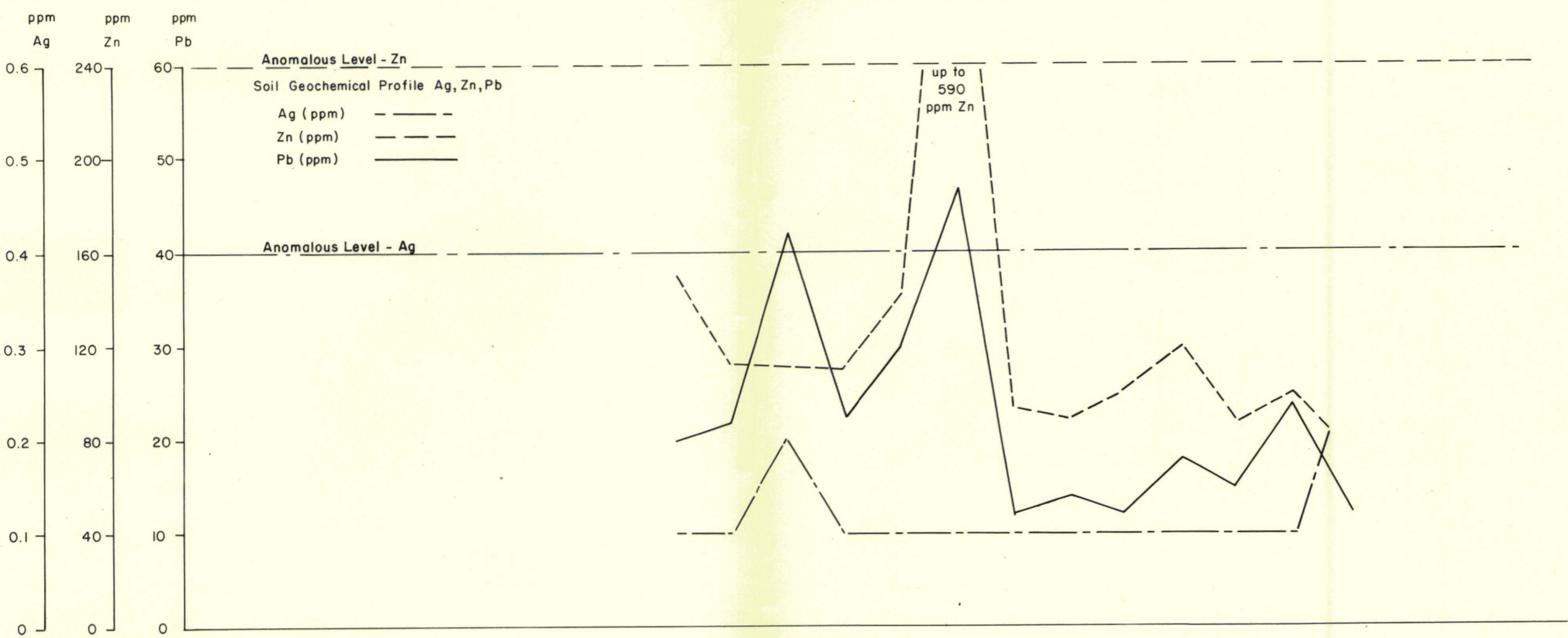
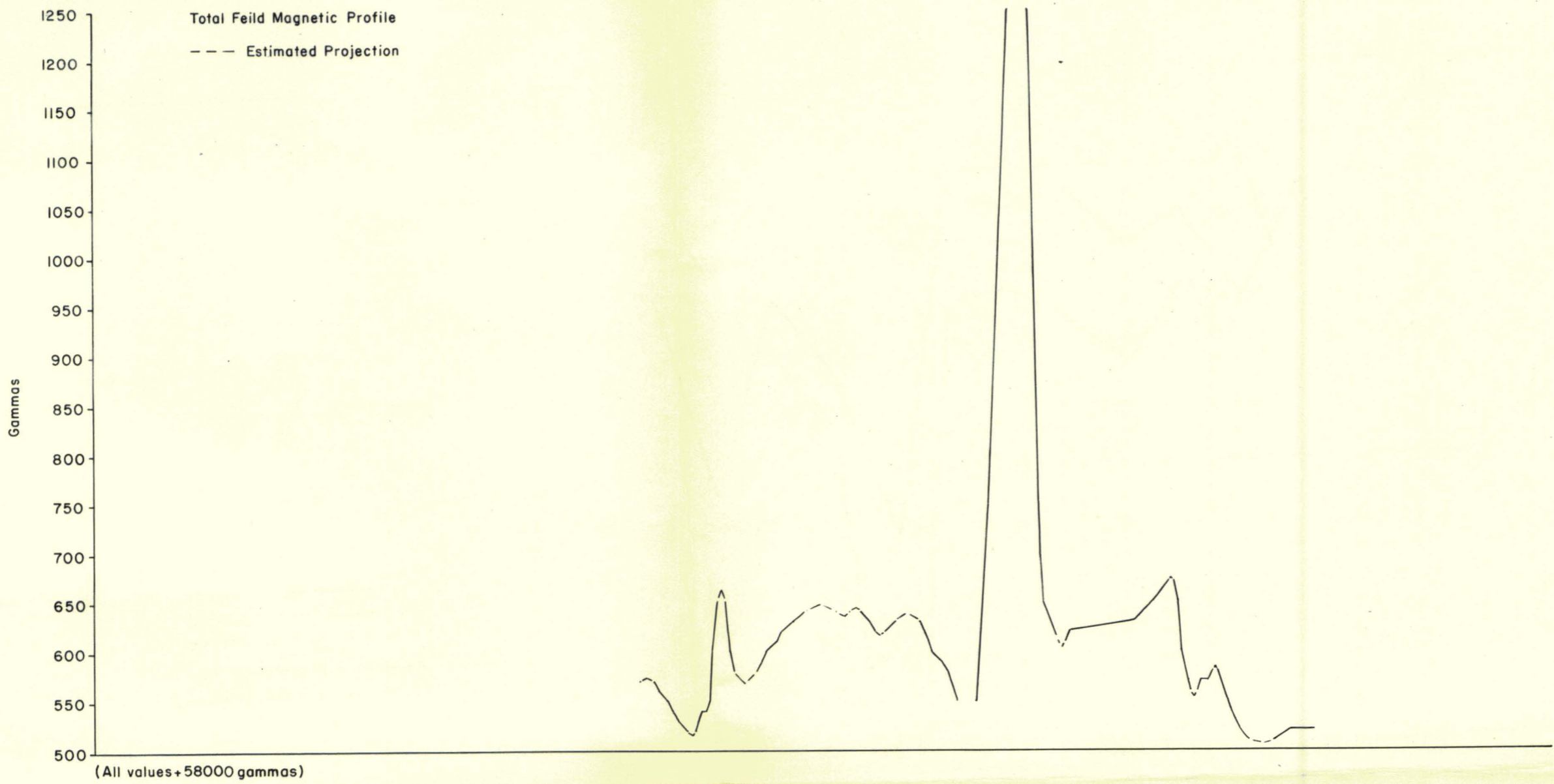
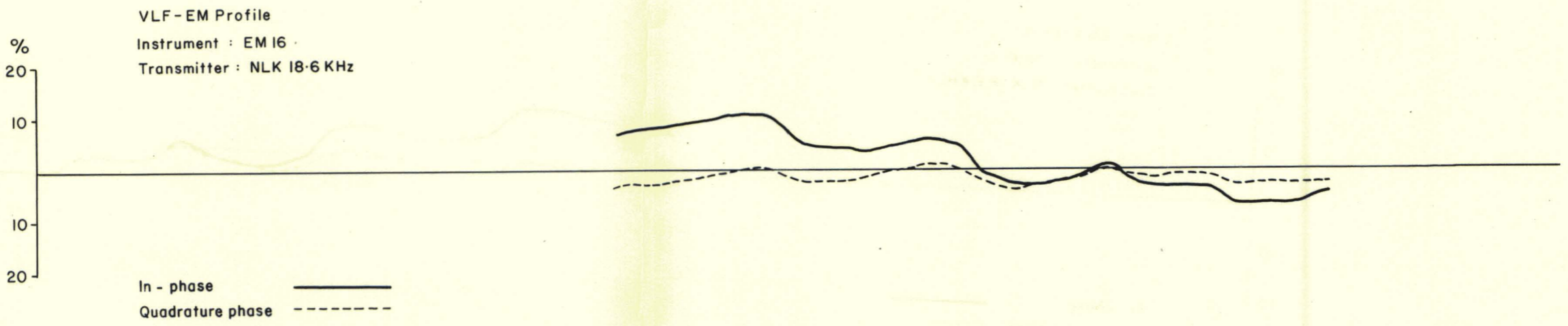
**GEOLOGICAL GEOCHEMICAL AND
GEOPHYSICAL PROFILES A-A₁**

PLAN 9A

090977

MJC/pf/Dec.1981





LEGEND

JURASSIC AND/OR CRETACEOUS
Cassiar Batholith

6a Biotite-muscovite-quartz monzonite
6b Biotite-quartz monzonite
5 Hornblende - biotite diorite, monzonite

LOWER CAMBRIAN AND (?) EARLIER
Windsere or Atan Group
Metasedimentary Rocks

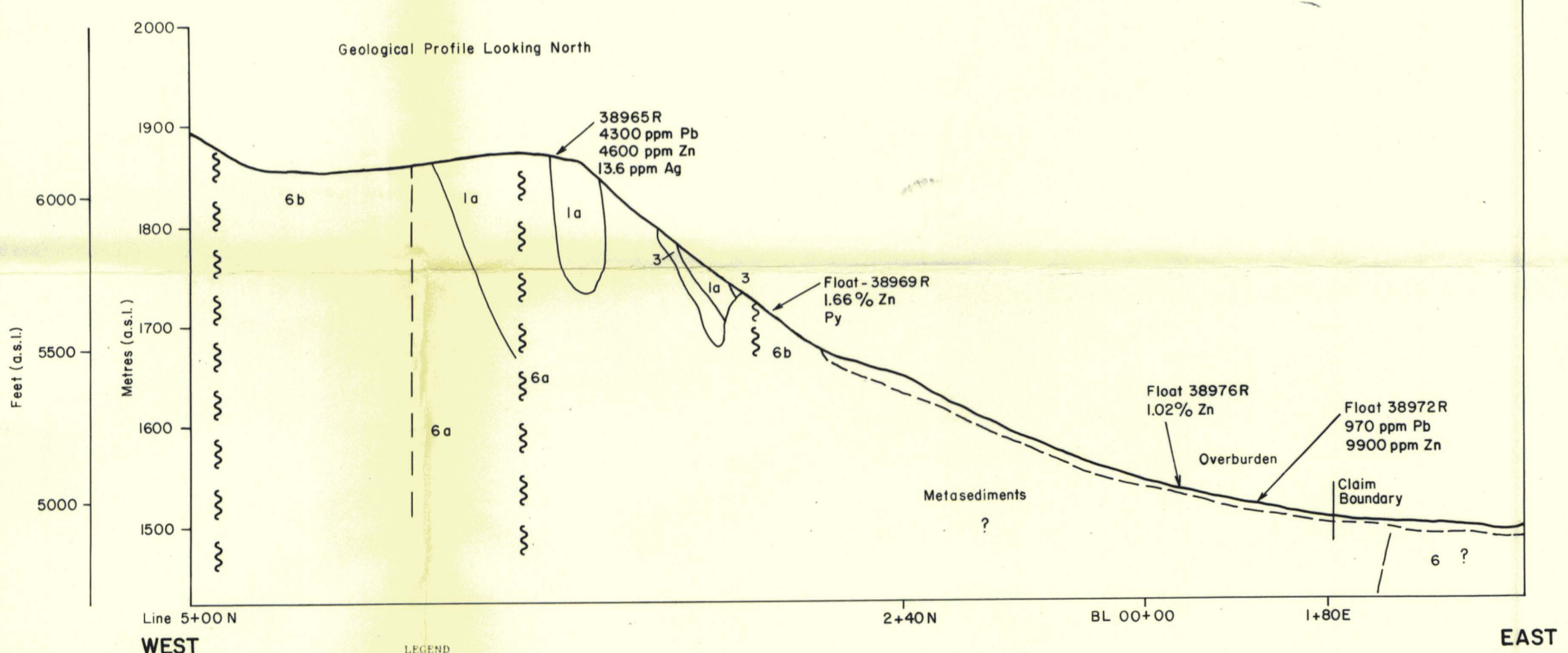
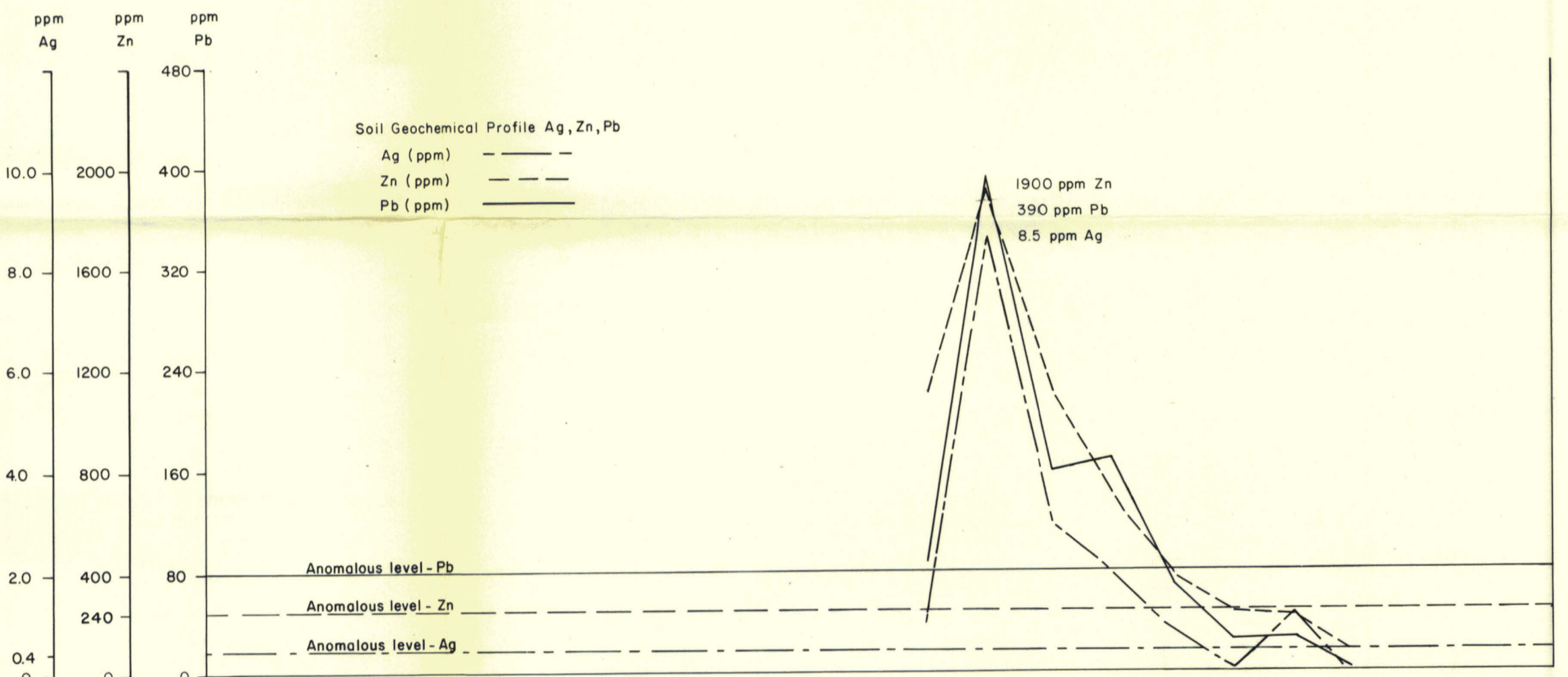
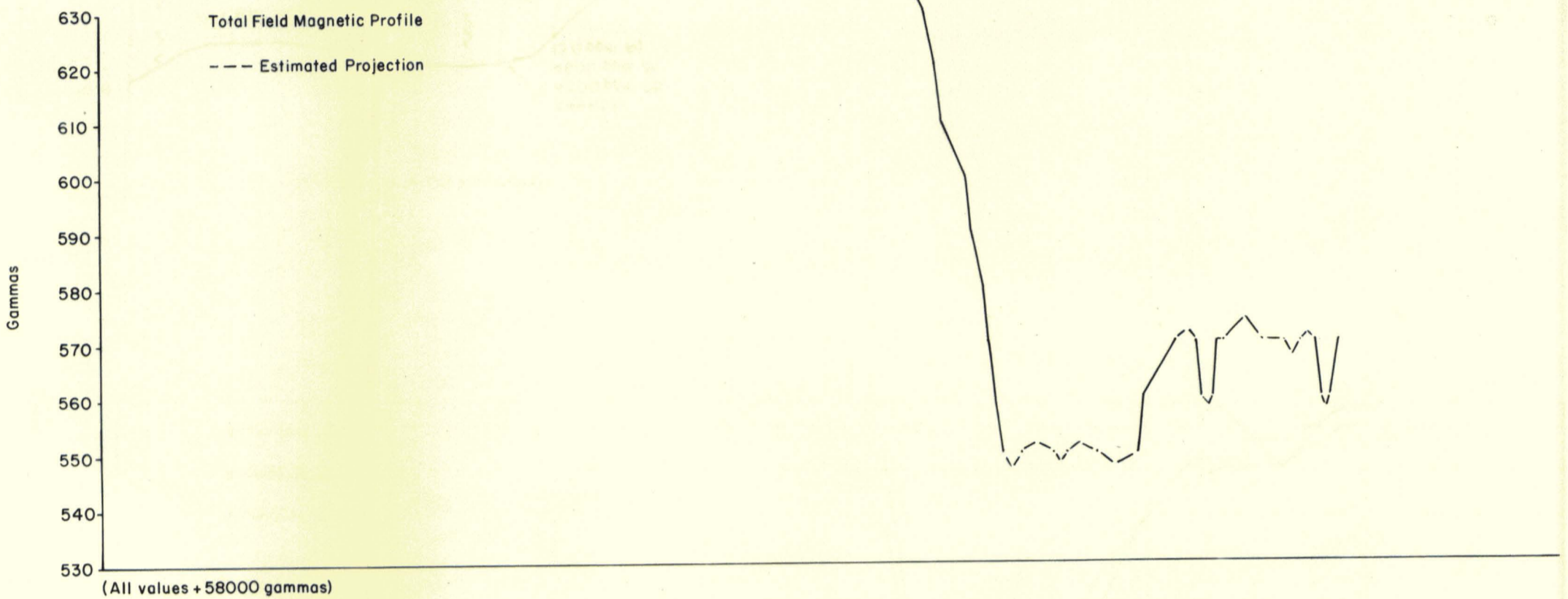
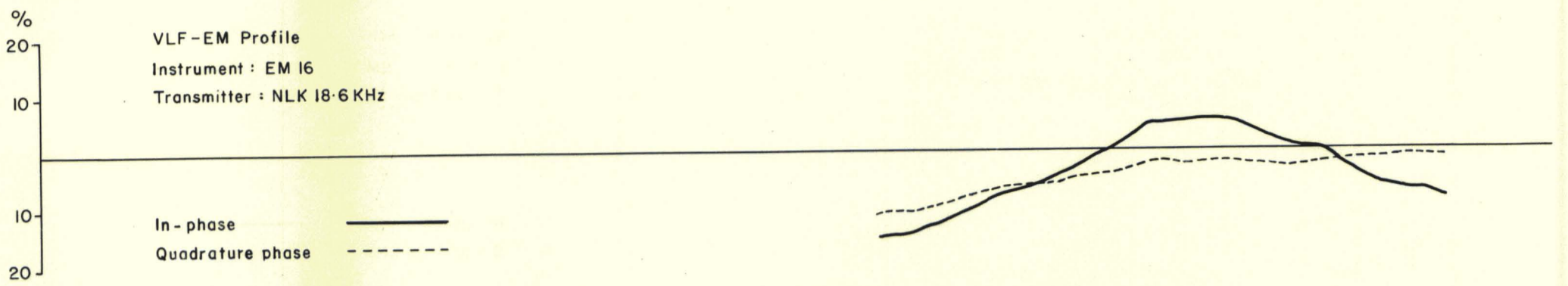
4a Pyrrhotite-rich skarns
4b Calc-silicate skarns
3 Recrystallized limestone
2 Calc-silicate hornfels
1 Micaceous quartzite, quartzitic schist

6a galena
Sph sphalerite
Py pyrite

geologic boundary
38977R rock sample

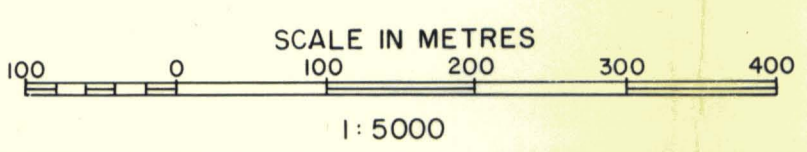
SCALE IN METRES
100 0 100 200 300 400
1:5000

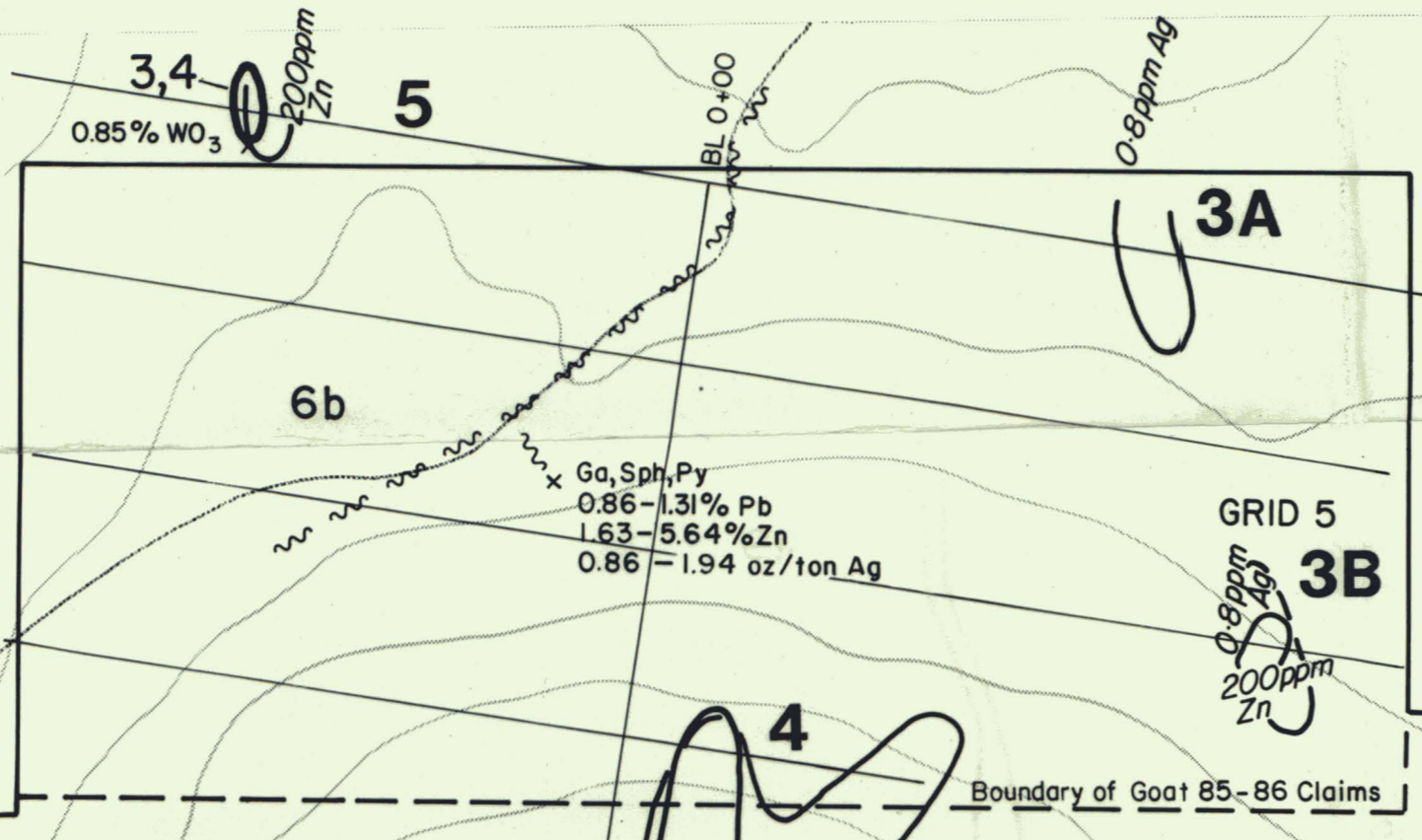
CANADIAN OCCIDENTAL PETROLEUM LTD
MINERALS DIVISION
**PROJECT WATSU
GOAT CLAIMS**
WATSON LAKE MINING DISTRICT,
YUKON
N.T.S. 105-B
**GEOLOGICAL, GEOCHEMICAL AND
GEOPHYSICAL PROFILES B-B₁**
090977
PLAN 9B MJC/pf/Dec.1981



- LEGEND
- JURASSIC AND/OR CRETACEOUS
- Cassiar Batholith
- 6 6a Biotite-muscovite-quartz monzonite
 - 6 6b Biotite-quartz monzonite
 - 5 Hornblende - biotite diorite, monzonite
- LOWER CAMBRIAN AND (?) EARLIER
- Windermere or Atan Group
Metasedimentary Rocks
- 4 4a Pyrrhotite-rich skarns
 - 4 4b Calc-silicate skarns
 - 3 Recrystallized limestone
 - 2 Calc-silicate hornfels
 - 1 Micaceous quartzite, quartzitic schist

CANADIAN OCCIDENTAL PETROLEUM LTD
MINERALS DIVISION
PROJECT WATSU
GOAT CLAIMS
WATSON LAKE MINING DISTRICT,
YUKON
N.T.S. 105-B
GEOLOGICAL GEOCHEMICAL AND
GEOPHYSICAL PROFILES C-C₁





LEGEND

| TERTIARY | | mineral occurrence x (Pb) | | mineral occurrence from geochemistry | |
|--|--|---------------------------|--------------|--------------------------------------|---------------------------|
| Unit | Description | | | | |
| 7 | Diabase, basalt (dyke) | Py | pyrite | Cu | copper |
| JURASSIC AND/OR CRETACEOUS | | | | | |
| Cassiar batholith | | | | | |
| UNIT | | Geochemical Soil Anomaly | | | |
| Unit | Description | | | | |
| 6 | Biotite-muscovite quartz monzonite | 65 ppm Pb | soil contour | | |
| 6b | Biotite-quartz monzonite | 200 ppm Zn | soil contour | | |
| 5 | Biotite-hornblende diorite/monzonite | 0.8 ppm Ag | soil contour | | |
| 5b | Biotite quartz diorite/granodiorite | | | x | selected high rock values |
| LOWER CAMBRIAN AND/OR PROTEROZOIC (?) | | | | | |
| Windermere or Atan Group | | | | | |
| Metasedimentary Rocks | | | | | |
| UNIT | | Geochemical Soil Anomaly | | | |
| Unit | Description | | | | |
| 4 | Pyrrhotite- or pyrite-rich skarn | | | | |
| 4a | Calc-silicate skarn | | | | |
| 3 | Re-crystallized limestone | | | | |
| 2 | Calc-silicate hornfels | | | | |
| 1 | Micaceous quartzite | | | | |
| 1a | Biotite-porphyrroblastic quartzitic schist | | | | |
| 1b | Biotite-porphyrroblastic quartzitic schist | | | | |
| 1c | 1a or 1b with calc-silicate laminae | | | | |
| Symbols | | | | | |
| | geologic contacts; observed, approximate | | | | |
| | fracture/shear zone | | | | |
| | geologic cross-section | | | | |

CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
PROJECT WATSU
GOAT CLAIMS
EASTERN PORTION
WATSON LAKE MINING DISTRICT,
YUKON
N.T.S. 105-B

COMPILATION MAP

SCALE IN METRES
0 50 100 200 300 400

M.J.C./m.j.c./Nov.1981 PLAN 10
090977

