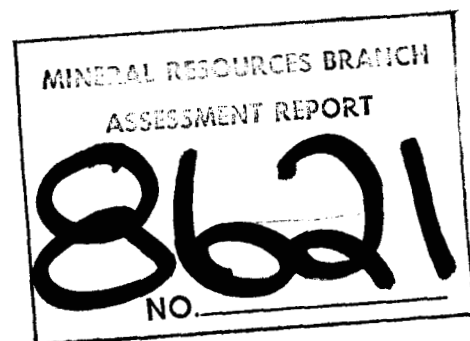


RECONNAISSANCE GEOLOGICAL AND GEOCHEMICAL REPORT
ON THE REB 1 - 8 CLAIMS
OMINECA MINING DIVISION

NTS M94C/16W, M94F/1W

57° 00' N 124° 22' W

by
Alfred Stewart
December 10, 1980



Esso Resources Canada Limited
600-1281 West Georgia Street
Vancouver, B.C.

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| 4) Silver Geochemistry | In pocket |
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RECONNAISSANCE GEOLOGICAL AND GEOCHEMICAL REPORT
ON THE REB 1 - 8 CLAIMS
OMINECA MINING DIVISION

INTRODUCTION

a) Location And Access

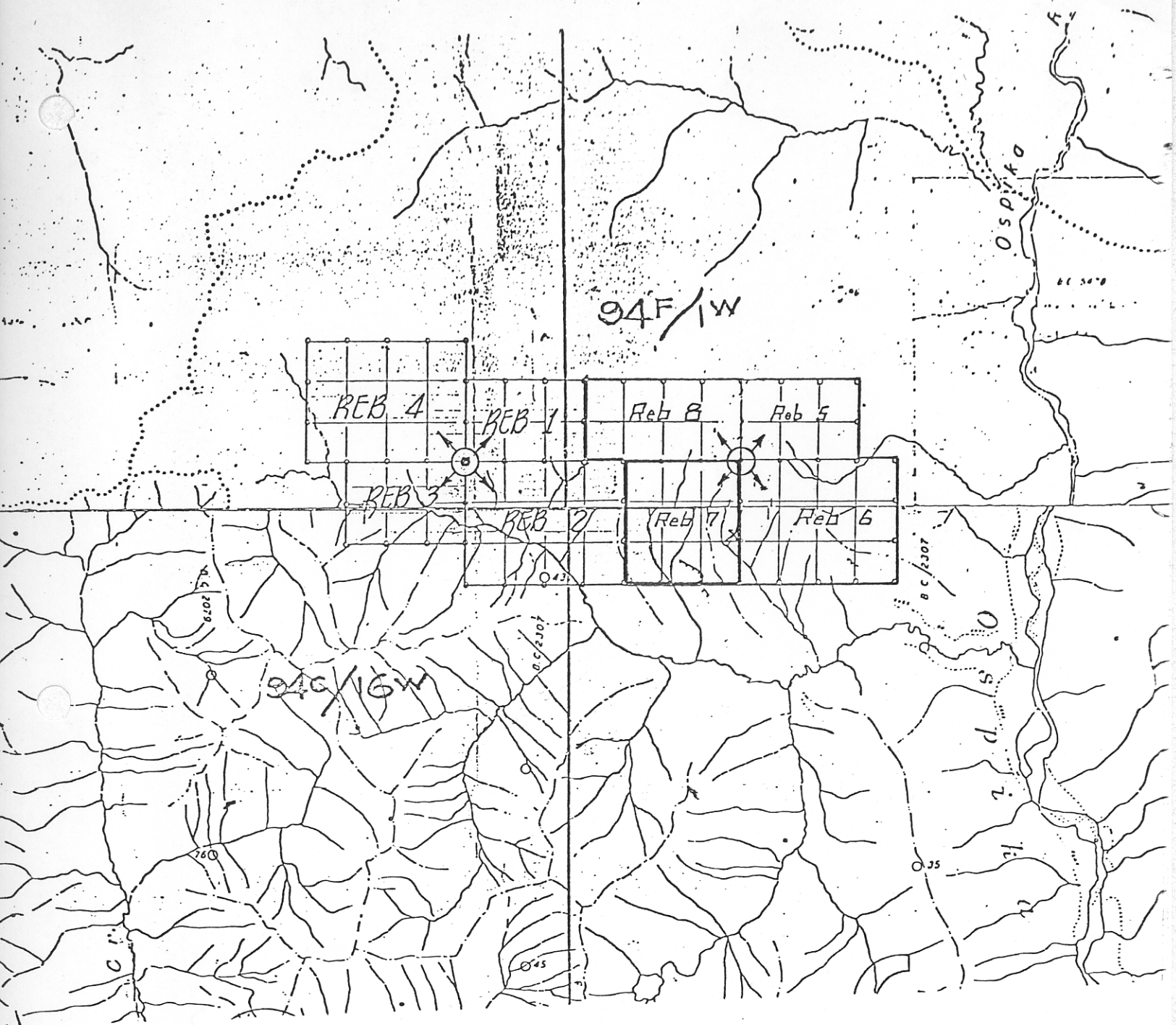
The Reb claims are located in the northern Rocky Mountains of British Columbia, on the south slope of an 1800 meter high ridge, and drained by various unnamed tributaries of the Ospika River.

The claim block latitude is 57⁰⁰' and the longitude is 124⁰²²'. Access to the property is by fixed wing from Prince George or Mackenzie to the air strip at Ingenika on Williston Lake, then by helicopter 40 km north-east to the Reb fly camp.

b) Property

| Claim | No. of | Group Name | Expiry | Owner |
|-------------|--------------|-----------------------------|-------------|-----------------------------|
| <u>Name</u> | <u>Units</u> | <u> </u> | <u>Date</u> | <u> </u> |
| REB 1 | 6 | November | Nov. 16 | Esperanza* |
| REB 2 | 12 | " | " 16 | " |
| REB 3 | 6 | " | " 16 | " |
| REB 4 | 12 | " | " 16 | " |
| REB 5 | 6 | September | Sept.30 | " |
| REB 6 | 12 | " | " 30 | " |
| REB 7 | 9 | " | " 30 | " |
| REB 8 | 8 | " | " 30 | " |

*under option to Esso Resources Canada Limited.



- 2 -

| | |
|---|-----------------------|
| 6936 79/07 | ESSO MINERALS CANADA |
| Project No. <u>2152</u> | NTS <u>94F/1W</u> |
| Lat. <u>57° 00'</u> | Long. <u>124° 22'</u> |
| Scale _____ | |
| Base Map <u>1:50,000 claim map</u> | |
| To Accompany A Report Dated <u>Dec 10, 1980</u> | |
| By <u>ALfred Stewart</u> | |
| (DIVISION OF ESSO RESOURCES CANADA) | |

c) History

The Reb property was discovered by prospectors working for Esperanza Explorations during regional reconnaissance in 1979. A gossanous stream was investigated and found to contain a 20 meter thick section of massive pyrite interbedded with black shale exposed in the creek bed. The area was staked and optioned to Esso Resources Canada in 1980.

d) Work Done

Reconnaissance geology mapping, prospecting and silt sampling were carried out between August 10 and August 18, 1980, by an Esso Resources crew headed by Alfred Stewart and Leslie Parry. The property was again visited from September 15 to September 19, 1980. Further silt sampling, soil sampling and rock chip sampling were carried out at that time.

TECHNICAL DATA AND INTERPRETATION OF RESULTS

A) Geology

The rocks in the region of the Reb prospect are primarily Paleozoic sediments, deposited in a basin east of the Rocky Mountain trench called the Kechika Trough. Significant shale-hosted lead zinc deposits such as the Cirque and Driftpile Creek properties occur in Devonian shales, within the trough. The age of the shales in the Reb valley was not well known prior to the reconnaissance in 1980.

The geology of the Reb valley is shown on map no. 1. The section of black shales which host the pyrite showing has been mapped as part of the Road River Formation, of Ordovician or Silurian age. Numerous graptolite fossils were collected from this shale unit in the beds below the pyrite showing. The Road River Formation in general lacks the siliceous shale beds and baritic shales common in the Devonian section. The lack of siliceous shales and barite plus the graptolite occurrences in Reb valley are strong evidence that the section is part of the Road River Formation.

The Road River shales dip steeply north-eastwards, and are truncated by an overthrust section of Silurian dolomitic siltstone. Locally, near this thrust fault the Road River shales dip steeply south-westward. This is interpreted as a minor warp or drag fold due to the fault.

Two prominent gossans were noted in the reconnaissance. These are noted on the geology map with a 'G' symbol. Both are believed to be related to one continuous mineralized zone. Massive sulfides can be seen in the stream bed at the gossan on the western tributary. A continuous section 13.5 meters thick of massive pyrite, with low base metal values is exposed in this creek. This is the showing discovered by Esperanza.

Representative chip samples 4.5 meters in width were taken from the pyrite zone, from the bottom of the section and sampling upwards, consecutively numbering the samples 9968, 9969 and 9970. Sample no. 9971 represents a shale section with

numerous thin beds of pyrite, overlying the more massive section. These samples were assayed for Pb, Zn and Ag, and were also analyzed semi-quantitatively for 30 elements. The results are shown in Appendix A and B. No economically significant results were found.

The second gossan occurs in a creek bed several hundred meters east of the first. Here the creek bed is coated with thick limonite deposits, but no fresh sulfide mineralization is exposed. Prospecting elsewhere on the Reb property failed to turn up any other areas of mineralization. Two weakly gossanous creek beds were noted further north-west on the Reb 8 claim, but have not been investigated in detail.

Helicopter reconnaissance of areas further northwest and southeast of the Reb claims was carried out in September. No gossans were spotted in the next several valleys to the northwest. One travertine-gossan area was spotted immediately to the southeast of the Reb, low on a north-facing ridge directly across the main stream valley. This area was prospected and sampled without success and the results are discussed in the geochemistry section.

B) Geochemistry

Silt sampling and rock chip sampling were carried out throughout the valley on a reconnaissance basis in August. The samples were sent to Bondar Clegg Laboratories and analyzed for Cu, Pb, Zn and Ag. A second visit was made to the property and two areas of high lead geochemical values were revisited. The samples taken at that time were analyzed for Pb, Zn and Ag only, due to the lack of Cu anomalies in the silt samples.

An insufficient number of samples were taken on the property to determine threshold values statistically. Regional thresholds have been used to determine anomalous samples.

Silts:

| <u>Element</u> | <u>Threshold</u> |
|----------------|------------------|
| Cu | 50 ppm |
| Pb | 50 ppm |
| Zn | 500 ppm |
| Ag | 1 ppm |

A high zinc background, up to 500 ppm is common in silts and soils, underlain by black shales of this region. A second order anomalous population is present near artesian springs in the black shale terrain. These springs cause local limonitic soil and travertine deposits which "scavenge" zinc. Values in soils exceeding 10,000 ppm are known. Silt sample values of 1000-5000 may also result from these features.

High zinc values occurred at the extreme eastern end of the Reb valley, near the gossans on the REB 7 claim, and at the western end of the valley (see Zn Geochemistry map). Travertine-limonite deposits occur at the sample location with the 15,700 ppm Zn value, and immediately north east of the 620 ppm Zn value. The rock chip sample which gave 15,700 ppm was a travertine and is not considered significant.

Lead and silver geochemical values have proved to be more reliable indicators of mineralization regionally. Significant lead anomalies occur in the vicinity of the two

gossans. They do not occur in the silt samples below the exposed mineralization. The best values are in the silts and soils from the area of the gossanous creek shown on the insert map. No outcrop is exposed in this creek. The rock chip sample of limonite returned 480 ppm lead. The lead and zinc values from this area are both anomalous. It is possible that a section of unexposed mineralization is present here, a better section than that exposed in the creek bed.

CONCLUSIONS AND RECOMMENDATIONS

A favourable area of lead, zinc and silver geochemical anomalies has been found in black shales of the Road River Formation near a massive pyrite showing. Further work is recommended to determine the extent and cause of the anomalies. A soil grid should be established with a cut baseline to cover this area. An orthophoto base map is needed to aid in exploration, owing to the lack of suitable base maps from other sources. Reconnaissance EM is also needed to define the extent of the pyrite showing.

alfred Stewart

COST STATEMENT

AUGUST 10 - AUGUST 18, 1980

Mobilization

| | | |
|-------------------|----------------------------|------------|
| Otter Flight 206B | Netson Lake to Ingenika | \$1,226.88 |
| | Ingenika to Reb Prospect | |
| | 2.6 hrs. @ \$305/hr. | 793.00 |
| | Fuel 65 gal. @ \$1.20/gal. | 78.00 |

Demobilization

| | | |
|--------------|-------------------------------|----------|
| 206B | Reb prospect to Ingenika | |
| | 2.9 hrs. @ \$305/hr. | 884.50 |
| | Fuel 72.5 gal./ @ \$1.20/gal. | 87.00 |
| Otter Flight | Ingenika to Netson Lake | 1,226.88 |

Salaries

| | | |
|------------------|--------------------------|--------|
| Senior Geolgoist | 7 man days @ \$100/day | 700.00 |
| Junior Geologist | 7 man days @ \$81.82/day | 572.72 |
| Assistants | 14 man days @ \$50/day | 700.00 |

Camp Costs

| | |
|------------------------|--------|
| 28 man days @ \$30/day | 840.00 |
|------------------------|--------|

Analyses

| | |
|-------------------------------------|---------------|
| 50 analyses for Pb, Zn, Ag @ \$3.30 | <u>165.00</u> |
|-------------------------------------|---------------|

| | |
|----------|-------------------|
| Subtotal | <u>\$7,273.98</u> |
|----------|-------------------|

COST STATEMENT

SEPTEMBER 15 - SEPTEMBER 19, 1980

Mobilization - Sept. 16

| | | |
|-------------------|------------------------------|------------|
| Otter Flight 206B | Mackenzie to Pelly Lake | \$1,108.00 |
| | 1.7 hrs. @ \$350/hr. | 595.00 |
| | Fuel 40.8 gal. @ \$1.81/gal. | 73.85 |

Reconnaissance

| | | |
|---------------|-------------------------------|----------|
| Sept. 16 206B | 1.7 hrs. @ \$350/hr. | 595.00 |
| | Fuel 40.8 gal. @ \$1.81/gal. | 73.85 |
| Sept. 17 206B | 4.3 hrs. @ \$350/hr. | 1,505.00 |
| | Fuel 103.2 gal. @ \$1.81/gal. | 186.79 |
| Sept. 18 206B | 4.7 hrs. @ \$350/hr. | 1,645.00 |
| | Fuel 112.8 gal. @ \$1.81/gal. | 204.17 |

Demobilization

| | | |
|-------------------|-------------------------|--------|
| Otter Flight 206B | Pelly Lake to Mackenzie | 554.00 |
|-------------------|-------------------------|--------|

Salaries

| | | |
|------------|------------------------|--------|
| Geologist | 3 man days @ \$100/day | 300.00 |
| Prospector | 3 man days @ \$85/day | 255.00 |
| Assistants | 6 man days @ \$50/day | 300.00 |

Camp Costs

| | |
|------------------------|--------|
| 12 man days @ \$30/day | 360.00 |
|------------------------|--------|

Analyses

| | |
|-------------------------------------|--------|
| 100 samples for Pb, Zn, Ag @ \$3.30 | 330.00 |
|-------------------------------------|--------|

Report Writing & Preparation

| | |
|-----------------------|--------|
| 7 man days @ \$85/day | 595.00 |
|-----------------------|--------|

| | |
|----------|--------------------|
| Subtotal | <u>\$ 8,680.66</u> |
|----------|--------------------|

| | |
|------------|---------------------------|
| TOTAL COST | <u><u>\$15,954.64</u></u> |
|------------|---------------------------|

APPENDIX A

To: Imperial Oil Ltd.

REPORT NO. A20 - 1589

PAGE No. 1

BONDAR-CLEGG & COMPANY LTD.

DATE: Oct. 21, 1980

600 - 1281 West Georgia Street
Vancouver, B.C. V6E 3J6

Samples submitted: October 7, 1980
Results completed: October 21, 1980

CERTIFICATE OF ASSAY

OCT 23 1980

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

| MARKED | GOLD | | SILVER | | Pb | Zn | Fe | | | | |
|--------|----------------|----------------------|----------------|----------------------|---------|---------|---------|---------|---------|---------|--|
| | Ounces per Ton | Grams per Metric Ton | Ounces per Ton | Grams per Metric Ton | Percent | Percent | Percent | Percent | Percent | Percent | |
| 9968 | | | 0.24 | | 0.09 | 0.01 | 26.20 | | | | |
| 9969 | | | 0.30 | | 0.07 | <0.01 | 12.55 | | | | |
| 9970 | | | 0.24 | | 0.23 | 0.04 | 32.08 | | | | |
| 9971 | | | 0.11 | | 0.06 | <0.01 | 10.05 | | | | |

Page 10

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.


Registered Assayer, Province of British Columbia

APPENDIX B



SEMI-QUANTITATIVE ANALYSIS

No: A20 - 18

Sample No. 9968

From: ESSO(Imperial Oil)

Method: XRF

Date: November 28 19 80

No. of Elements: 32

Analyst: _____

| JOR ELEMENTS (%) | <.003 | .003-.01 | .01-.03 | .03-0.1 | 0.1-0.3 | 0.3-1.0 | 1.0-3.0 | 3.0-10.0 | > 10.0 | REMARKS |
|--|-------|----------|---------|---------|---------|---------|---------|----------|--------|---------|
| SiO ₂ | | | | | | | | | X | |
| Al ₂ O ₃ | | | | X | | | | | | |
| Total Fe (Fe ₂ O ₃) | | | | | | | | | X | |
| MgO | | | | X | | | | | | |
| CaO | | | | | | X | | | | |
| Na ₂ O | | | X | | | | | | | |
| K ₂ O | | | | | | X | | | | |
| TiO ₂ | | | X | | | | | | | |
| TRACE ELEMENTS (%) | | | | | | | | | | |
| V | | X | | | | | | | | |
| Cr | | X | | | | | | | | |
| Mn | | | X | | | | | | | |
| Co | X | | | | | | | | | |
| Ni | X | | | | | | | | | |
| Cu | | | | X | | | | | | |
| Zn | | X | | | | | | | | |
| As | | | X | | | | | | | |
| Sr | | X | | | | | | | | |
| Y | X | | | | | | | | | |
| Zr | X | | | | | | | | | |
| Nb | X | | | | | | | | | |
| Mo | X | | | | | | | | | |
| Ag | X | | | | | | | | | |
| Sn | X | | | | | | | | | |
| Sb | X | | | | | | | | | |
| Ba | | | | | X | | | | | |
| La | X | | | | | | | | | |
| Ce | X | | | | | | | | | |
| W | X | | | | | | | | | |
| Pb | | | | X | | | | | | |
| Bi | X | | | | | | | | | |
| Th | X | | | | | | | | | |
| U | X | | | | | | | | | |



SEMI-QUANTITATIVE ANALYSIS

No: A20 - 1804

Sample No. 9969

From: ESSO (Imperial Oil)

Method: XRF

Date: November 28 19 80

No. of Elements: 32

Analyst:

| MAJOR ELEMENTS (%) | <.003 | .003-.01 | .01-.03 | .03-0.1 | 0.1-0.3 | 0.3-1.0 | 1.0-3.0 | 3.0-10.0 | > 10.0 | REMARKS |
|--|-------|----------|---------|---------|---------|---------|---------|----------|--------|---------|
| SiO ₂ | | | | | | | | | X | |
| Al ₂ O ₃ | | | | | X | | | | | |
| Total Fe (Fe ₂ O ₃) | | | | | | | | X | | |
| MgO | | | | | | X | | | | |
| CaO | | | | | | | X | | | |
| Na ₂ O | | | | X | | | | | | |
| K ₂ O | | | | | | X | | | | |
| TiO ₂ | | | | X | | | | | | |
| TRACE ELEMENTS (%) | | | | | | | | | | |
| V | | | X | | | | | | | |
| Cr | | X | | | | | | | | |
| Mn | | | X | | | | | | | |
| Co | X | | | | | | | | | |
| Ni | X | | | | | | | | | |
| Cu | | | X | | | | | | | |
| Zn | | X | | | | | | | | |
| As | | | X | | | | | | | |
| Sr | X | | | | | | | | | |
| Y | X | | | | | | | | | |
| Zr | X | | | | | | | | | |
| Nb | X | | | | | | | | | |
| Mo | X | | | | | | | | | |
| Ag | X | | | | | | | | | |
| Sn | X | | | | | | | | | |
| Sb | X | | | | | | | | | |
| Ba | | | | X | | | | | | |
| La | X | | | | | | | | | |
| Ce | X | | | | | | | | | |
| W | X | | | | | | | | | |
| Pb | | | | X | | | | | | |
| Bi | X | | | | | | | | | |
| Th | X | | | | | | | | | |
| U | X | | | | | | | | | |

b) I have been practising my profession full-time in



BONDAR-CLEGG & COMPANY LTD.

784 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5

PHONE: 237-3110

SEMI-QUANTITATIVE ANALYSIS

No: 820-1804

Sample No. 9970

From: ESSO(Imperial Oil)

Method: XRF

Date: November 28 19 80

No. of Elements: 32

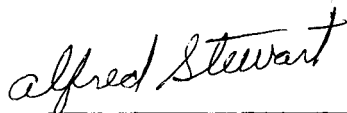
Analyst: _____

| AJOR ELEMENTS (%) | <.003 | .003-.01 | .01-.03 | .03-0.1 | 0.1-0.3 | 0.3-1.0 | 1.0-3.0 | 3.0-10.0 | > 10.0 | REMARKS |
|--|-------|----------|---------|---------|---------|---------|---------|----------|--------|---------|
| SiO ₂ | | | | | | | | | X | |
| Al ₂ O ₃ | | | | | X | | | | | |
| Total Fe (Fe ₂ O ₃) | | | | | | | | | X | |
| MgO | | | | X | | | | | | |
| CaO | | | | X | | | | | | |
| Na ₂ O | | | | X | | | | | | |
| K ₂ O | | | | | | X | | | | |
| TiO ₂ | | | X | | | | | | | |
| TRACE ELEMENTS (%) | | | | | | | | | | |
| V | | X | | | | | | | | |
| Cr | | X | | | | | | | | |
| Mn | | X | | | | | | | | |
| Co | X | | | | | | | | | |
| Ni | | X | | | | | | | | |
| Cu | | | X | | | | | | | |
| Zn | | | | X | | | | | | |
| As | | | | X | | | | | | |
| Sr | X | | | | | | | | | |
| Y | X | | | | | | | | | |
| Zr | X | | | | | | | | | |
| Nb | X | | | | | | | | | |
| Mo | X | | | | | | | | | |
| Ag | X | | | | | | | | | |
| Sn | X | | | | | | | | | |
| Sb | X | | | | | | | | | |
| Ba | | | X | | | | | | | |
| La | X | | | | | | | | | |
| Ce | X | | | | | | | | | |
| W | X | | | | | | | | | |
| Pb | | | | X | | | | | | |
| Bi | X | | | | | | | | | |
| Th | X | | | | | | | | | |
| U | X | | | | | | | | | |

STATEMENT OF QUALIFICATIONS

I, Alfred Stewart, of 1517 Burrill Avenue, North Vancouver, B.C., hereby certify the following qualifications:

- a) I obtained a B.Sc Honours degree in geology from the University of New Brunswick in 1976.
- b) I have been practising my profession full-time in Canada for four years.
- c) My experience includes seven field seasons experience in various aspects of mineral exploration, including geological mapping, geophysical and geochemical techniques.



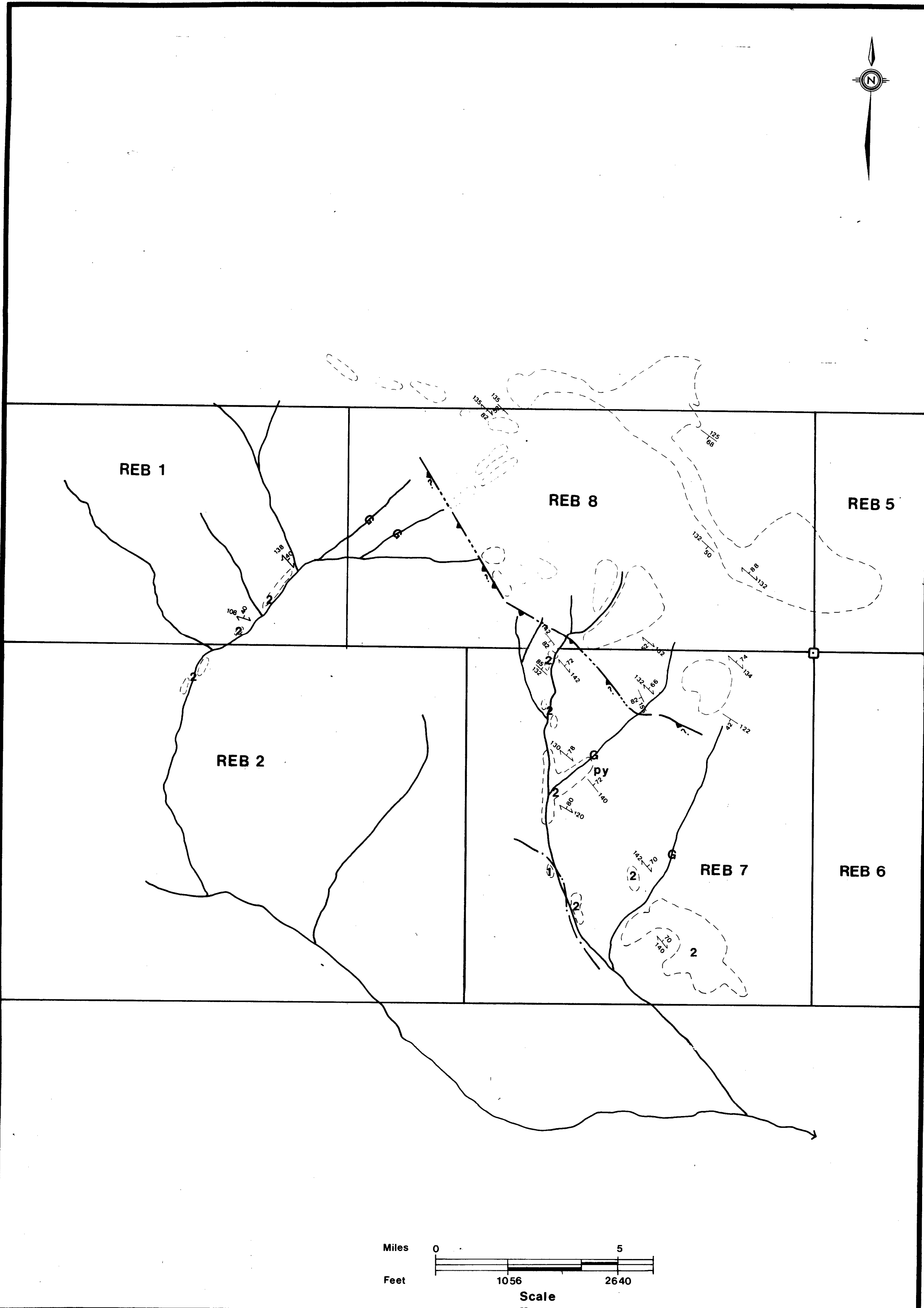
Alfred Stewart

L. A. Parry attended the University of Manitoba, Winnipeg, Manitoba between 1975 - 1980, enrolled in the Earth Science Program.

From 1978 - 1980 L. Parry was employed during the summer months by Esso Minerals Canada, as a senior field assistant.



L. Parry



LEGEND

- SILURIAN SILTSTONE**
 Buff brown weathering gray siltstone containing coarse grained dolomite clasts; gray siltstone interbedded with dolomite. This unit contains pyrite nodules.

- 2**

ORDOVICIAN ROAD RIVER FM
 Interbedded shale and dolomite
 Gray weathering black finely bedded siltstone contains pyrite nodules
 Dark brown to gray weathering black calcareous silty shale
 Black carbonaceous thin bedded shale containing graptolites. Pyrite occurs as massive beds & as disseminated grains
 Black chert with disseminated pyrite
 Massive siltstone

- 1**

 Brown mudstone interbedded with black shale; graywacke

SYMBOLS

- Outcrop
- Geological boundary, interpreted
- Thrust fault, defined interpreted
- Bedding
- Foliation
- Pyrite Showing
- Gossan
- Legal corner post
- Claim line

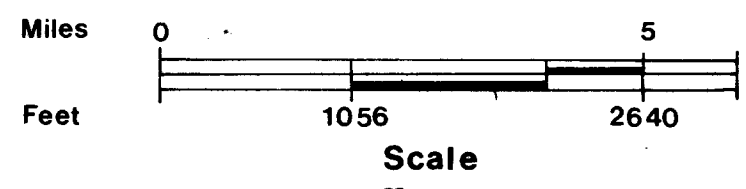
MINERAL RESOURCES BRANCH
 ASSESSMENT REPORT
8621
 NO.

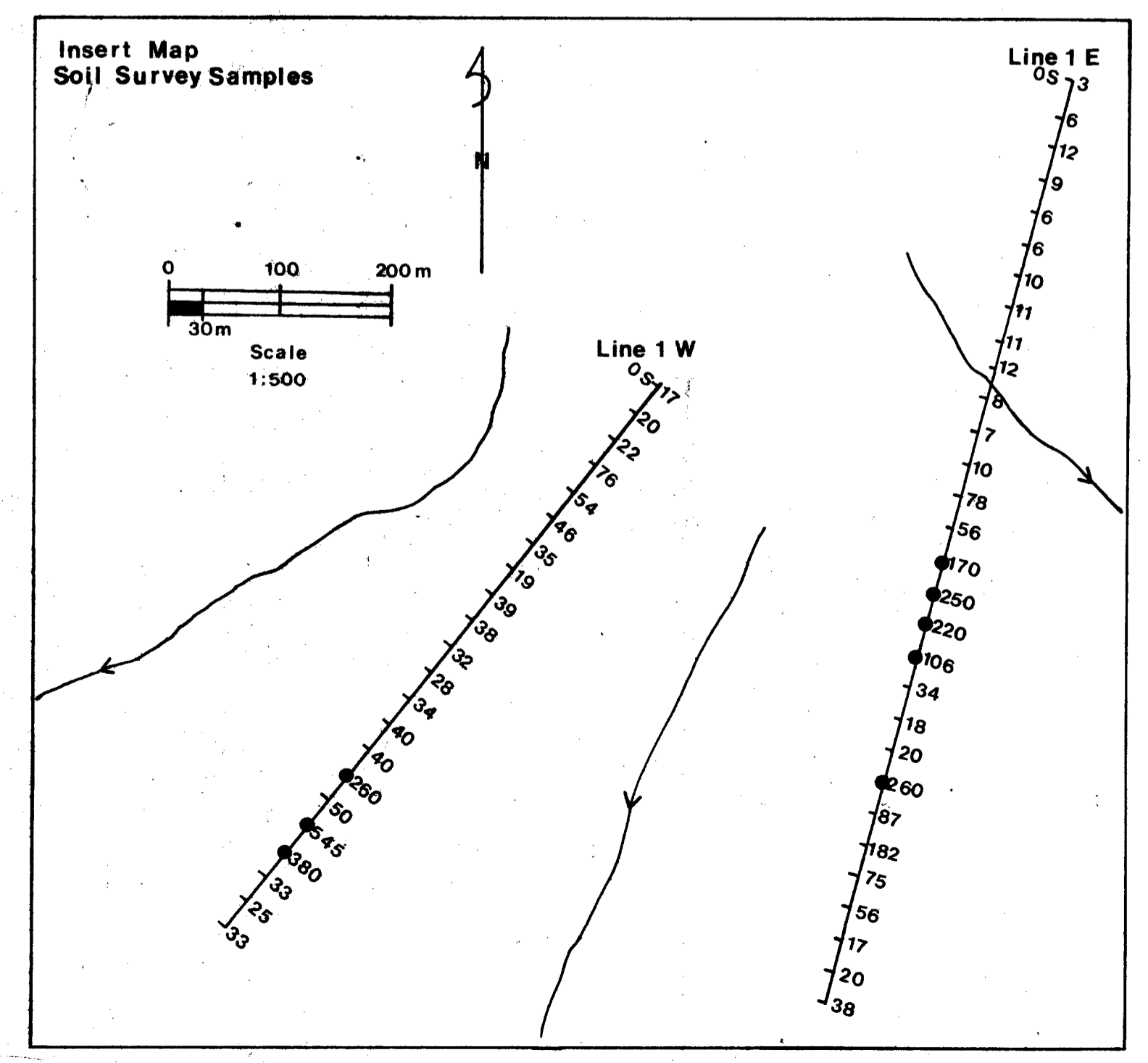
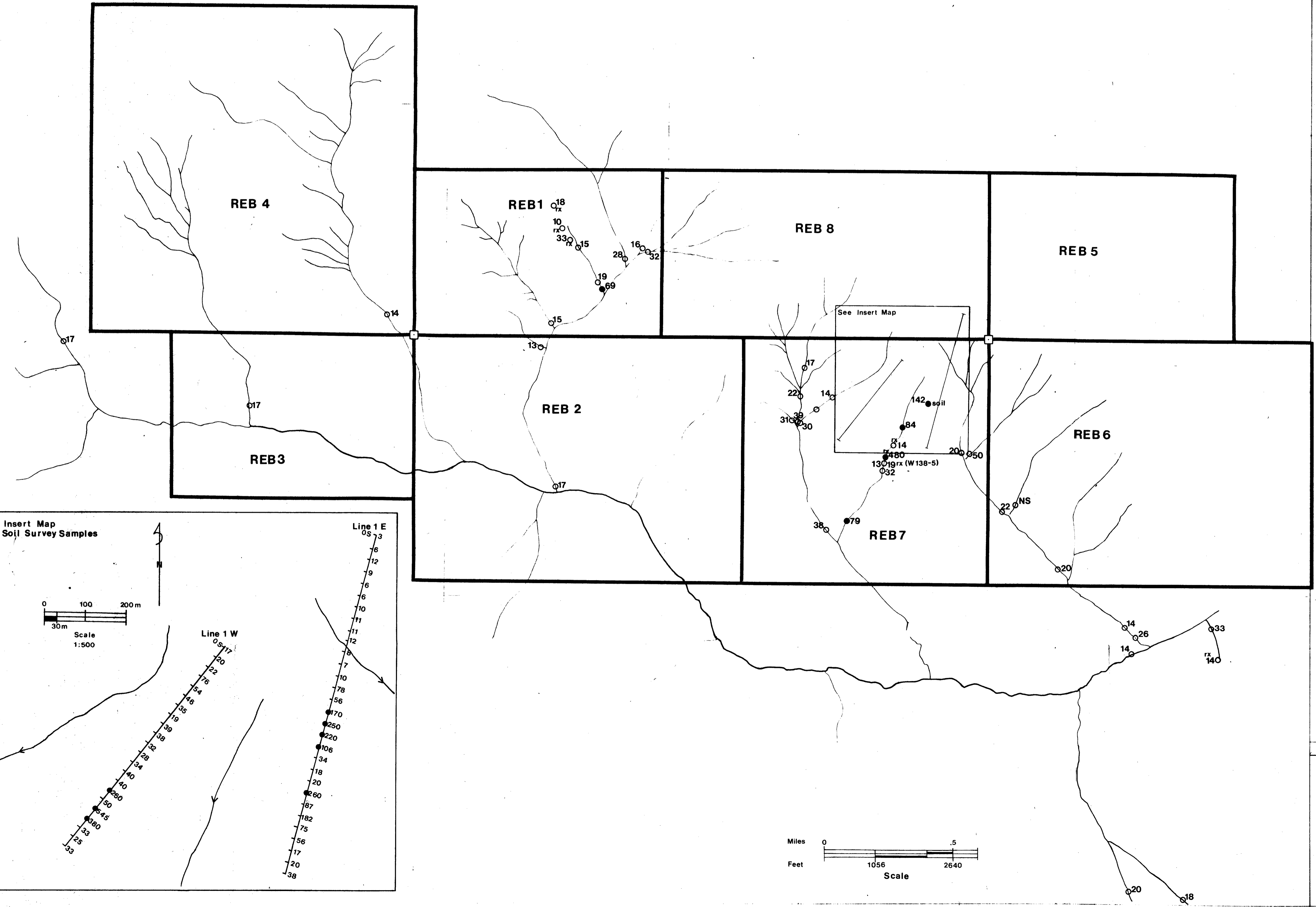
GEOLOGY

ESSO MINERALS CANADA

REB PROPERTY

Project No. 2152 Mining Division Omineca
 Latitude 57°00' Longitude 125°22'
 NTS M 94C&F Scale 1:12,672
 To Accompany A Report By: A. Stewart
 Dated: Nov. 1980 Map No. 1





- SYMBOLS**
- Claim Line
 - Legal Corner Post
 - Sample Location
 - Soil Survey Line
 - Sample Type
 - Rock Chip
 - Soil
 - Silt
 - ANOMALY**

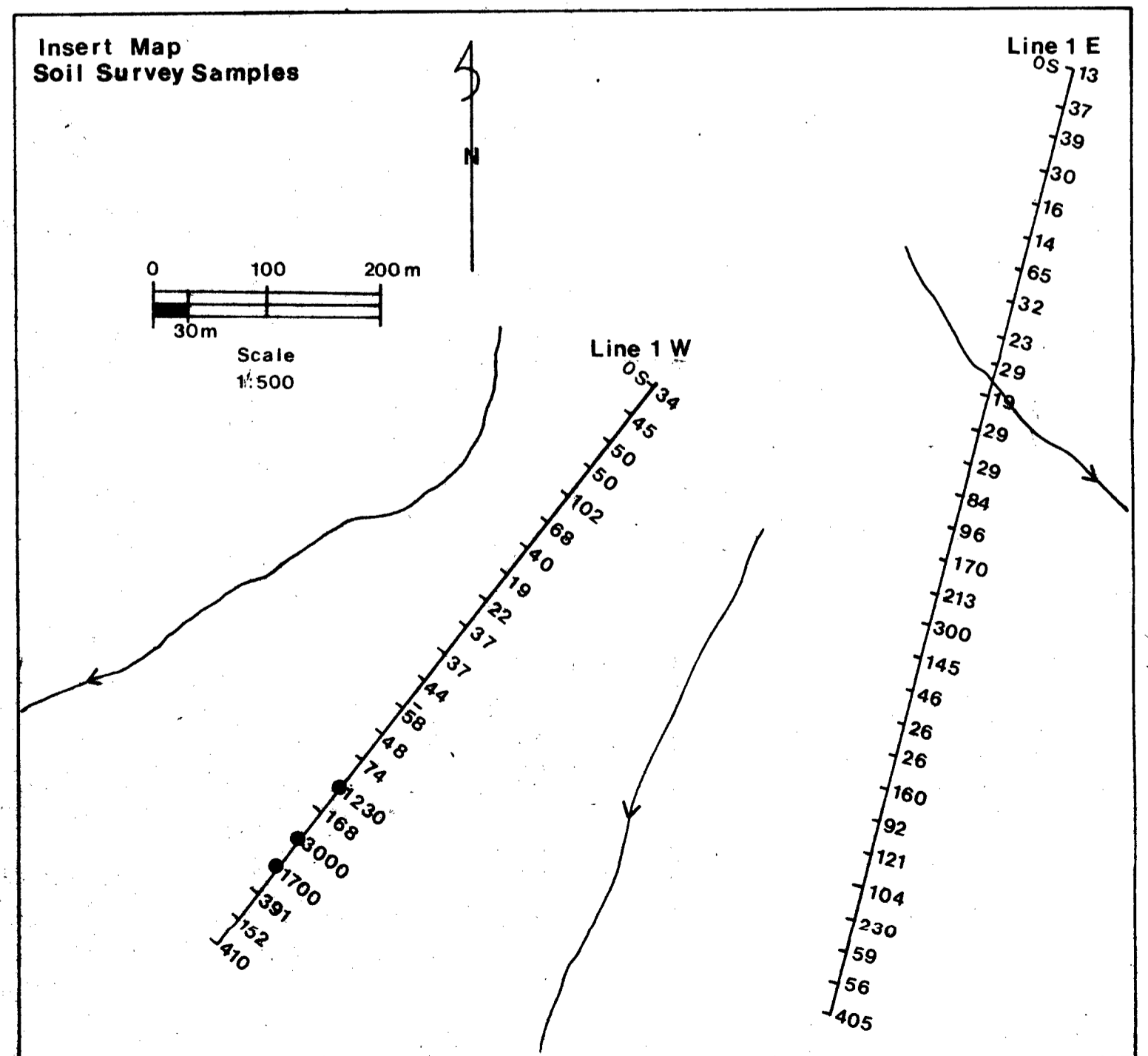
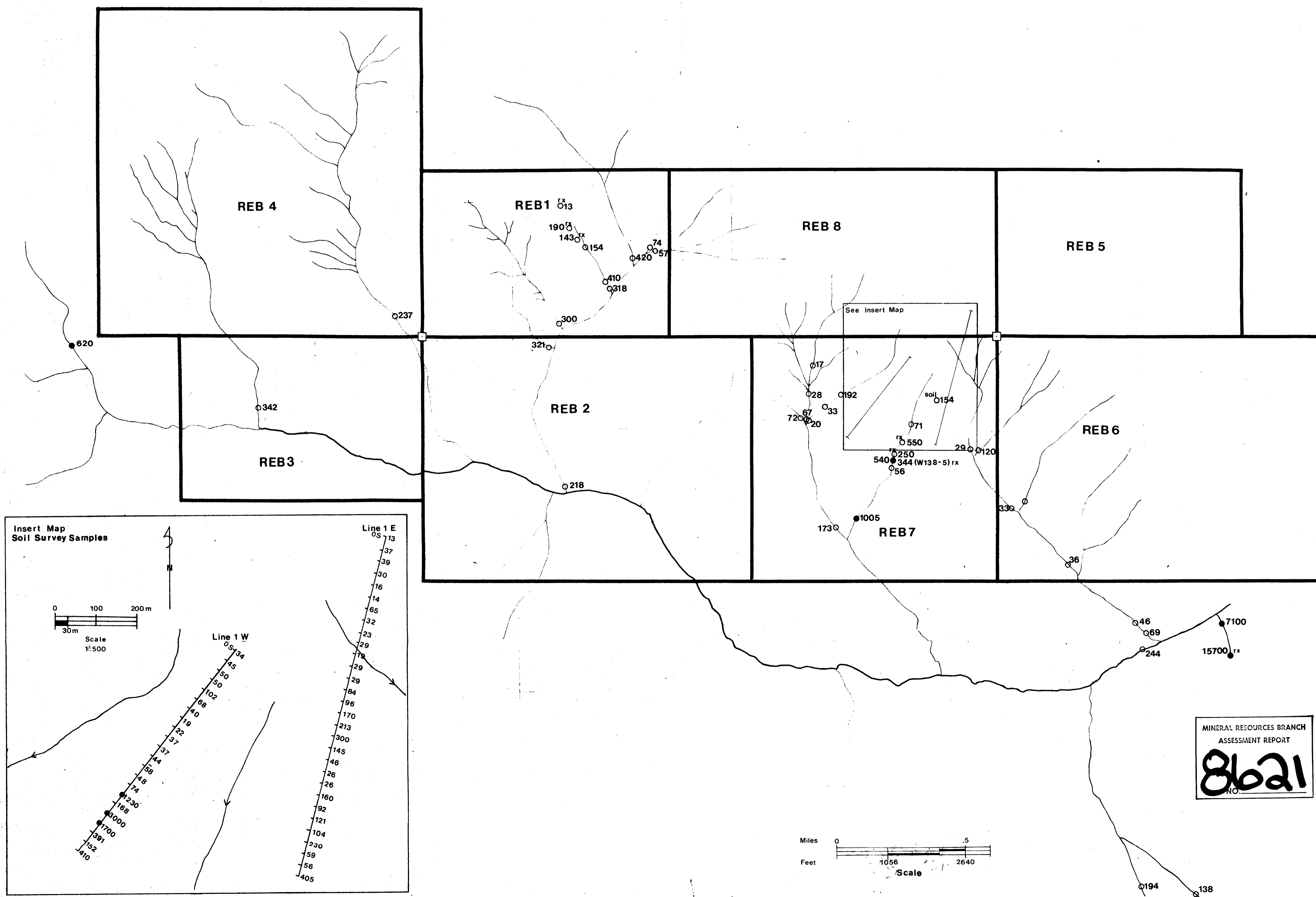
GEOCHEMISTRY
Lead ppm.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8621
NO.

ESSO MINERALS CANADA

REB PROPERTY

Project No. 2152 Mining Division Omineca
 Latitude 57°00' Longitude 125°22'
 N.T.S. M94 C & F Scale 1:12,672
 To Accompany A Report By A. Stewart
 Dated Nov. '80 Map No. 2

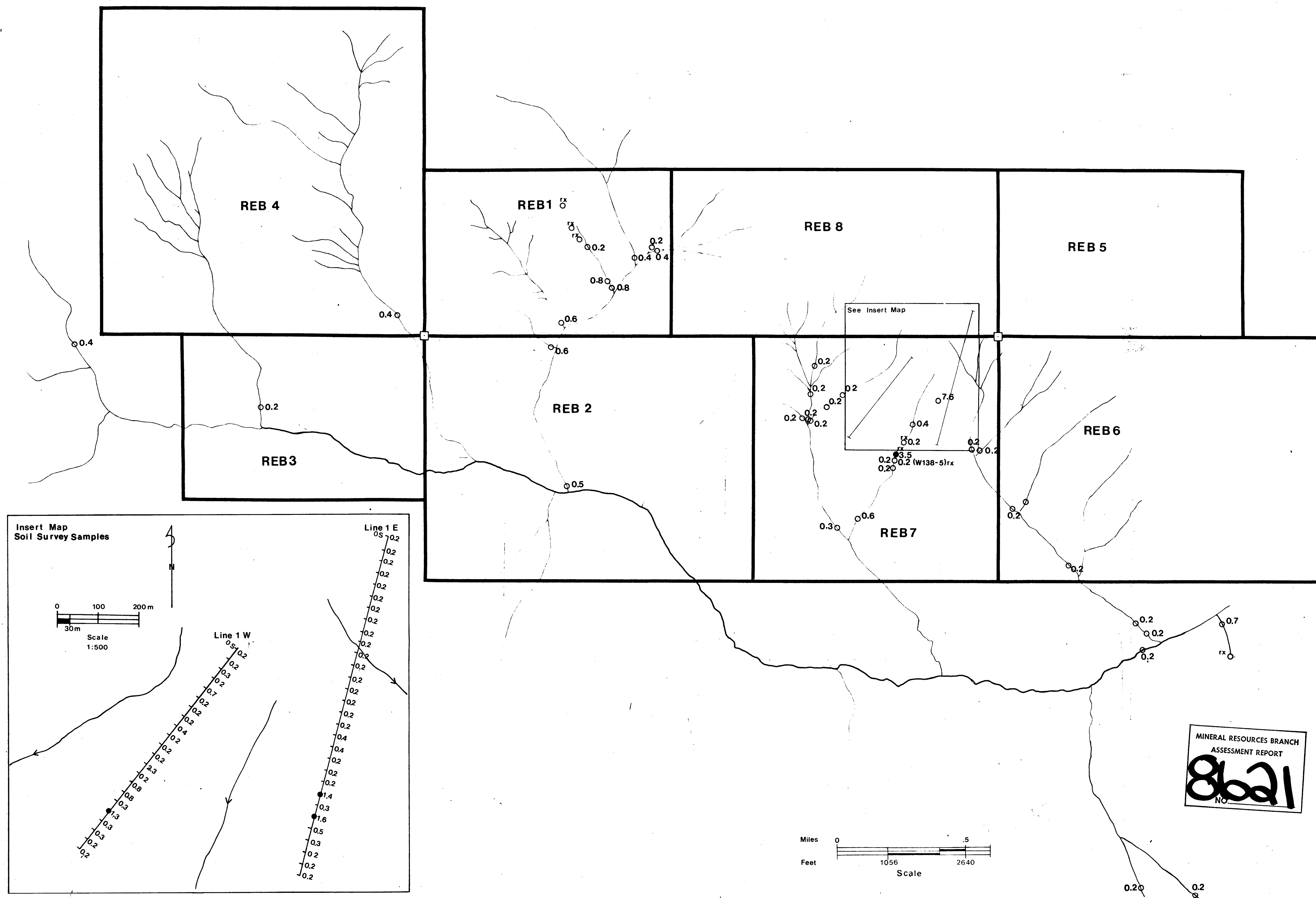


- SYMBOLS**
- Claim Line
 - Legal Corner Post
 - Sample Location
 - Soil Survey Line
 - Sample Type
 - Rock Chip
 - Soil
 - Silt
 - ANOMALY**

GEOCHEMISTRY
Zinc p.p.m.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8621

| ESSO MINERALS CANADA | |
|--------------------------------------|-------------------------|
| REB PROPERTY | |
| Project No. 2152 | Mining Division Omineca |
| Latitude 57°00' | Longitude 125°22' |
| N.T.S. M94 C & F | Scale 1:12,672 |
| By Accompanying Report By A. Stewart | |
| Dated Nov. '80 | |
| Map No. 3 | |



SYMBOLS

- Claim Line
- Legal Corner Post
- Sample Location
- Soil Survey Line
- Sample Type
 - Rock Chip
 - Soil
 - Silt
- ANOMALY**

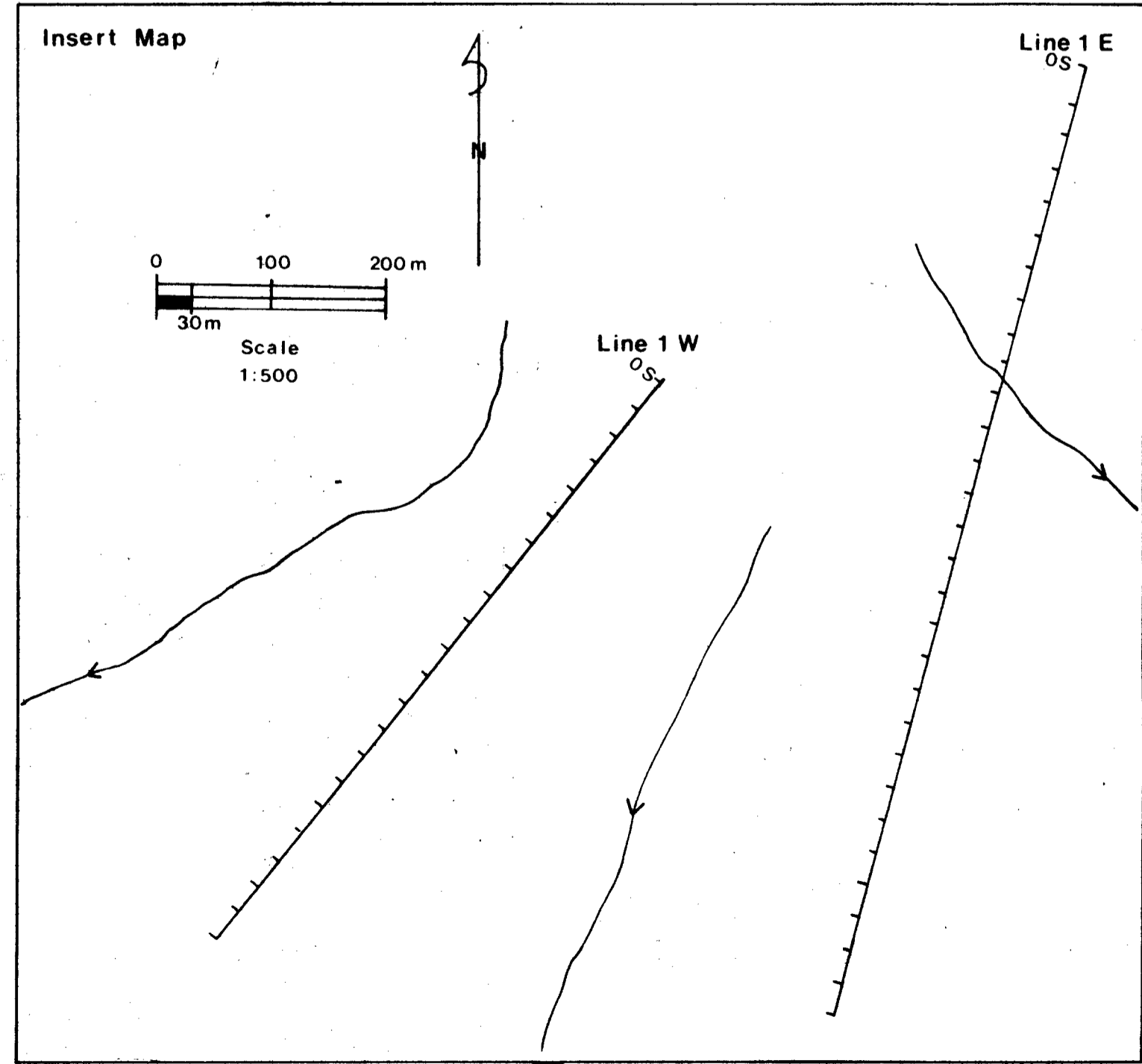
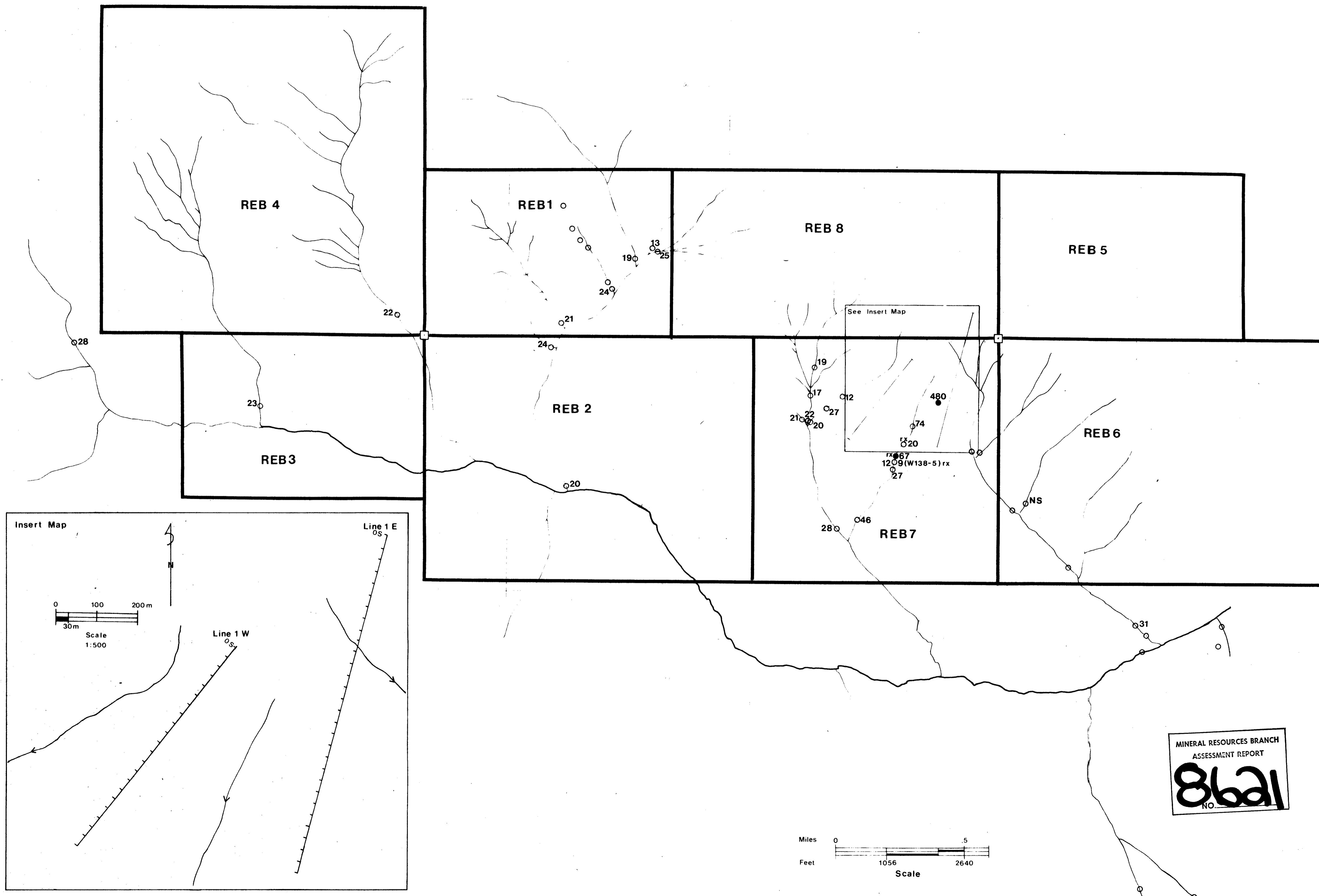
GEOCHEMISTRY
Silver p.p.m.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8621
NO

ESSO MINERALS CANADA

REB PROPERTY

Project No. 2152 Mining District Omineca
 Lat. 57°00' Longitude 125°22'
 N.T.S. M94 C & F Scale 1:12,672
 To: Accompany A. Report By A. Stewart
 Dated Nov. '80
 Map No. 4



SYMBOLS

- Claim Line
 - Legal Corner Post
 - Sample Location
 - Soil Survey Line
 - Sample Type
 - Rock Chip
 - Soil
 - Silt
- ANOMALY**

GEOCHEMISTRY
Copper p.p.m.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8621
NO. 8621

ESSO MINERALS CANADA
REB PROPERTY

Project No. 2152 Mining District Omineca
 Easting 57°00' Longitude 125°22'
 N.T.S. M94 C & F Scale 1:12,672
 To Accompany A Report By A. Stewart
 Dated Nov. '80 Map No. 5