

Report on the  
Electromagnetic Survey  
on the

DECANO claim group, Glen Lake  
of  
JUNIPER MINES LTD.  
Similkameen Mining Division

Decano claims situated on  
Camp Creek, 12 miles west of Peachland, B.C.  
Co-ordinates at center of group  
120° 00'W                      49° 45'N

Submitted by: F. Holcapek, Geologist  
Endorsed By: R.H.D. Philp, P.Eng.

Owner: JUNIPER MINES LIMITED  
Work carried out for Juniper Mines Ltd.  
during period of Nov. 25 - Dec. 4, 1969



2224

REPORT ON THE ELECTROMAGNETIC SURVEY

CONDUCTED ON THE

GLEN LAKE PROPERTY

of

JUNIPER MINES LTD

Agilis Exploration Services Ltd

January, 1970

Vancouver, B. C.

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT

NO. **2224** MAP.....

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Maps: #1 - Glen Lake <sup>(Property)</sup> Surface Plan ————— Rear  
           #2 - E. M. Survey ————— Rear  
                   1" = 100'

# GEOPHYSICAL SURVEY REPORT

ON THE

GLEN LAKE PROPERTY

of

JUNIPER MINES LTD

## INTRODUCTION

The Glen Lake Property of Juniper Mines Ltd consists of the Decano No's 17-36 situated approximately 10 miles west of Peachland, British Columbia. The claims occupy the valley and adjoining slopes of a small creek, locally referred to as CampbCreek. Co-ordinates of the property are  $49^{\circ} 44 \frac{1}{2}'$  north latitude and  $120^{\circ} 00 \frac{1}{2}'$  west longitude.

Access to the claim group is by a gravel road either from Peachland or Princeton, a distance of approximately 12 miles from Peachland and 38 miles from Princeton. This road traverses the length of the property.

Snow is present during the winter months but never exceeds 3 feet in depth. This makes exploration work difficult but does not prohibit it.

Timber is abundant on the claim group and consists of jackpine, fir and spruce. Heavy underbrush is present along the main valley and along the lower reaches of side creeks.

Valleysides rise steeply for a short distance, then more moderately on the north side, forming the southeast flank of Mt. Kathleen. The elevation at Camp Creek in the vicinity of the Decano claims is approximately 3,600 feet.

This report summarizes all work done up to date and uses the results from the different surveys to locate target areas for future exploration work.

CLAIMS

The following claims comprise the Glen Lake property of Juniper Mines Ltd.

<u>Claim Name:</u>	<u>Record No:</u>	<u>Mining Division</u>	<u>Record Date</u>
Decano 19 - 26	12873 - 12880	Similkameen	December 3, 1965
Decano 17 - 18	12904 - 12905	Similkameen	December 7, 1965
Decano 27 - 36	12906 - 12915	Similkameen	December 7, 1965

HISTORY

The existence of copper and molybdenum mineralization in the area around Glen Lake has been known for many years. In 1965 exploration on the Brenda property showed commercial promise and subsequently claims were staked and exploration began in the vicinity of Glen Lake.

Mr. Don Agar staked the Decano claim group. Maverick Mines Ltd took an option on the property in 1965 and started an exploration program consisting of a number of dozer cuts, rotary drill holes and one diamond drill hole. The company relinquished their option.

In 1967 Juniper Mines Ltd obtained an option from the prospector and later acquired title to the mineral claims. An exploration program was initiated during the period of January 15 to February 28, 1967 consisting of geological, geochemical and magnetometer surveys.

The results of this work were used to help to interpret the recently completed electro-magnetic survey.

During December 1967 a Ronka 16 E. M. was tested on the main showings and gave good results. The strongly altered section of the favourable porphyry and the adjacent mixed granodiorite-porphyry section showed up as a negative respond of the in-phase component.

In 1968 Juniper Mines Ltd drilled 7 holes with a percussion drill for a total of 1,355 feet.

During the period of November 25 to December 4, 1969 inclusive, the old grid was re-established and extended and an electromagnetic survey was conducted.

## GEOLOGY

The claims lie within a large intrusive mass belonging to the Coast intrusions of Jurassic or Lower Cretaceous Age. Map 888A of the Geological Survey of Canada shows that the intrusive mass is divided into three different intrusions. The Decano claim group lies along the western contact of the Kathleen body with the Osprey Lake body.

## LOCAL GEOLOGY

Geological mapping was done by Mr. R. H. D. Philp in 1967, covering the Decano 21, 22 and 35 claims. All trenching and roadcuts exposing bedrock are confined to these claims. No natural occurring rock outcrops have been found on the claim group.

The main rock type noted in this area is a medium to coarse grained light grey granodiorite, generally fresh in appearance. This is intruded by an altered feldspar porphyry, apparently occurring as several dikes and veins. The main porphyry dike is approximately 250 feet wide where exposed in one trench but has also been found in varying amounts for 500 feet northeast of this. The main dike has a N55° W trend and similar material has been exposed 1600 feet to the northwest of the Camp Creek exposure.

Most of the porphyry is highly altered, consisting of quartz mainly, sericite and variable amounts of pyrite. Much of the strongly altered material is vuggy and quartz is both a primary constituent and secondary in stringers and veins and as crystals lining vugs.

## MINERALIZATION

Molybdenum mineralization consisting of molybdenite and ferrimolybdenite has been found at various points throughout the altered porphyry. The molybdenite occurs along fractures and quartz veins, and more commonly as extremely fine grains within the quartz-sericite groundmass. Values are generally less than 0.1% MoS<sub>2</sub> from surface samples.

Traces of chalcopyrite have been noted in the granodiorite but no appreciable values appeared in assays of either the granodiorite or porphyry. Hematite is also common in the altered rock.

## RESULTS OF SURVEYS CONDUCTED IN 1967

### Magnetometer Survey (1967)

The purpose of the survey was to determine if the altered porphyry would appear as a magnetic low and, if so, to attempt to trace the known zones and locate any additional ones that might be present.

The survey outlined several magnetic lows. The main one corresponds to the known exposures of altered porphyry along Camp Creek and indicates an extension of this zone in a northwesterly direction. The slight increase in values to the northwest might be attributed to a thickening of overburden which appears heavy in this area.

A small magnetic low corresponds to the exposure of altered porphyry to the northwest.

A large magnetic low, approximately 450 by 200 feet occurs along line 7N between 10 + 50E and 15 + 00 E. The lowest reading here is comparable to readings over the main quartz-sericite zone and warrants further investigation.

A series of lows west of the base line between 14N and 24N correspond to a southerly flowing creek.

### Geochemical Survey (1967)

The results of this survey were inconclusive. This is attributed to the extensive glacial till cover.

## ELECTRO MAGNETIC SURVEY

Ground control for this survey was obtained by re-establishing and extending the lines put in during the 1967 field season by Brunton compass and chain. Stations were marked at 100 foot intervals along northeast trending lines. The lines were spaced at 200 feet intervals along the eastern and at 400 foot along the western part of the grid. A total of 48,800 feet of lines (3,500 feet of base line) were established.

## INSTRUMENT

A Ronka EM 16 instrument was employed. This instrument utilizes the low frequency radio stations (V. L. F. stations) which are in contact with offshore submarines, as a transmitter.

## FIELD PROCEDURE

Readings were taken using the signal of the NPG station at Seattle, frequency of 18.6 kilo-cycles. An attempt to use NPM Honolulu, 23.4 kilo-cycles for comparison failed because of excessive static.

The instrument was oriented to obtain a maximum signal strength, this orientation being kept constant throughout the survey. Both in-phase and quadrature measurements were taken. Readings were taken at 100 foot intervals along cross lines.

The actual readings were plotted at an appropriate scale and profiles constructed to be used for interpretation and to determine conductive zones. A total of approximately 490 readings were taken.

## INTERPRETATION

A limited amount of electromagnetic work, done during the 1967 field season showed that this geophysical method outlined the strongly altered porphyry dyke outcropping along Camp Creek, by giving negative readings for the in-phase component. No sharp crossovers, i. e. changes from positive to negative readings are expected since the conductivity of the zone lies in the low range, but relative changes from station to station giving trends, combined with the results of previously completed geological and magnetic surveys should help to trace the known mineralized porphyry dyke, and also indicated new areas for future investigation.

The ratio of the in-phase to quadrature component gives in general an indication of the conductivity to be expected, but the quadrature component is strongly effected by the thickness and conductivity of overburden. Drilling on the property showed that overburden consists mainly of glacial till and can be up to 100 feet deep.

## RESULTS

Several anomalous zones were outlined:

### Zone 1:

This zone lies between Line 7N and 4S, 0 + 00W and 14E just northeast of the trenching on Camp Creek. It can be divided into westerly trending high negative zone coinciding with the main magnetic lows in this area. Percussion drilling done in 1968 shows the presence of sericite rich quartz porphyry containing pyrite and  $\text{MoS}_2$ .



Zone 2:

This zone lies over the main porphyry outcrop on line 4N, 0 + 00E. Several readings taken across line 4N, 2W, 2E and along the road gave very high negative in-phase readings with a very broad null (20% range). A magnetic low is centered at 4N, 2W.

Zone 3:

From line 34N 4E two zones of high negative in-phase readings follow the general trend of magnetic lows, northwesterly and westerly. This anomaly is not too well defined, but at 24N it lies just south of a porphyry outcrop. Drilling in this area showed the presence of sericite quartz-porphyry?

Zone 4:

From 34N, 8E to 26N, 14E a well defined anomaly, trending north-easterly parallel to a relative magnetic low. No geological information is available in this area.

Zone 5:

This zone trends north-westerly from Line 10N 15E to Line 16N 24E. No geological or magnetic information is available on this area.

Several other north-westerly trending zones are indicated but they are not as strong or well defined as the discussed ones.

CONCLUSIONS AND RECOMMENDATIONS

The electromagnetic survey outlined several zones coinciding with areas previously outlined to be favourable for future investigation.

The majority of the anomalous area strike northwesterly, that is parallel to the geological trend of the porphyry.

The grided area should be extended westerly to the claim boundary and covered with a magnetic and electromagnetic survey.

Anomalous zones should be checked on the ground by trenching or diamond drilling depending upon the thickness of overburden to see if the favourable porphyry is underlying the area.

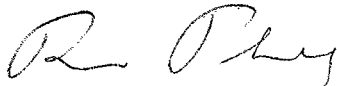
Percussion drilling and diamond drilling as a follow up to evaluate the altered zones.

Respectfully submitted,



F. Holcapek, Geologist

Endorsed by:



R. H. D. Philp, P. Eng.,

AGILIS EXPLORATION SERVICES Ltd.

January 1970

DOMINION OF CANADA:  
PROVINCE OF BRITISH COLUMBIA.

To Wit:

In the Matter of Electromagnetic Survey on the  
DECANO claims, Glen Lake area, 12 Miles West  
of Peachland, B. C.

I, Fred Holcapek

of 201-714 West Hastings St., Vancouver 1, B. C.

in the Province of British Columbia, do solemnly declare that the following personnel were employed and costs incurred in conducting the surveys during the period November 25 - December 4, 1969 inclusive.

PERSONNEL

R. Philp-P. Eng.-	Office supervision and report		
	1 day @ \$125.00 per day	125.00	
F. Holcapek-	Field-geologist, supervision and		
	instrument man-10 days @ \$75.00	750.00	
	Office- 3 days @ \$75.00 per day	225.00	
J. Holcapek-	Field- helper- 10 days @ \$30.00	300.00	
T. Conrow-	Draughting & plotting		
	45 hours @ \$5.00 per hour	225.00	\$1,625.00

DISBURSEMENTS

Motel & meals-	20 man days @ \$16.00 per day	320.00	
Truck rental, gas & mileage-	10 days @ \$15.00	150.00	
Supplies & Equipment		50.00	
Rental - Ronke E 16-	2 weeks @ \$75.00 per wk	150.00	
Misc.-telephone, prints, typing		100.00	\$770.00
10% Overhead on disbursements			77.00
			<u>\$847.00</u>
<u>Total Charges</u>			<u>\$2,472.00</u>

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City  
of Vancouver, in the  
Province of British Columbia, this H  
day of February 1970, A.D.

*F. Holcapek*

*Joan Surver*

A Commissioner for taking Affidavits within British Columbia or  
A Notary Public in and for the Province of British Columbia. Sub-Mining Recorder

In the Matter of

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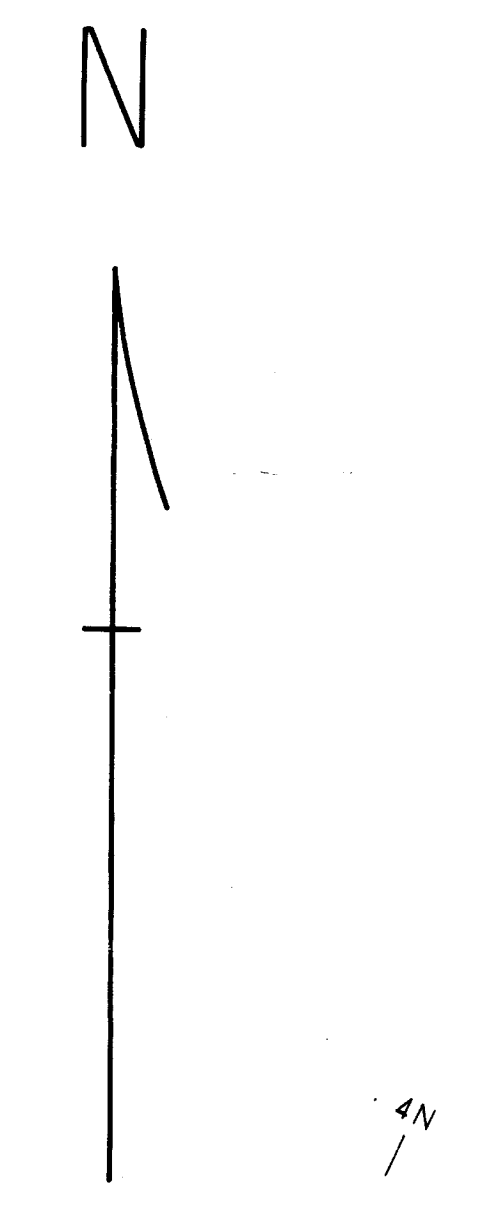
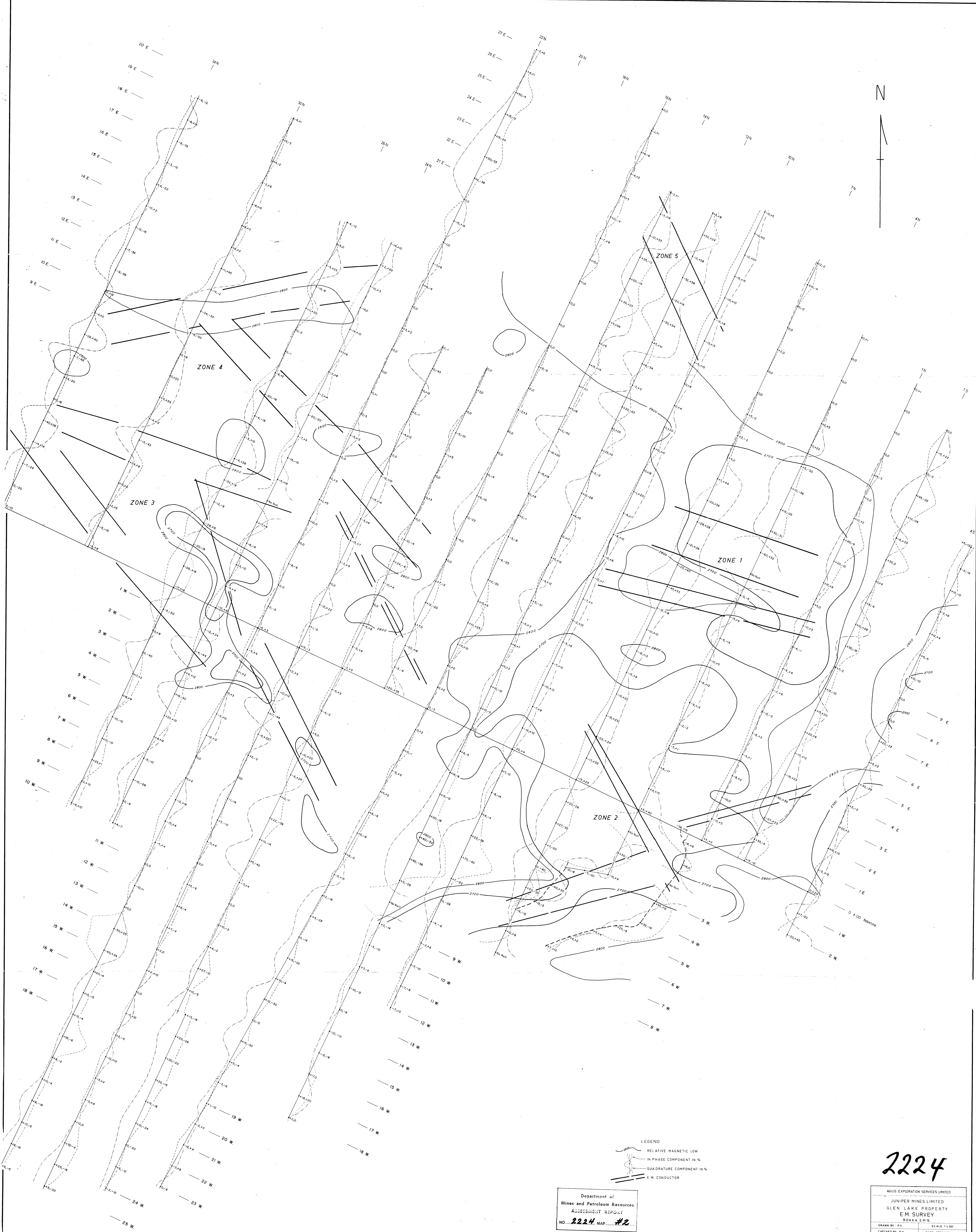
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**Statutory Declaration**

(CANADA EVIDENCE ACT)

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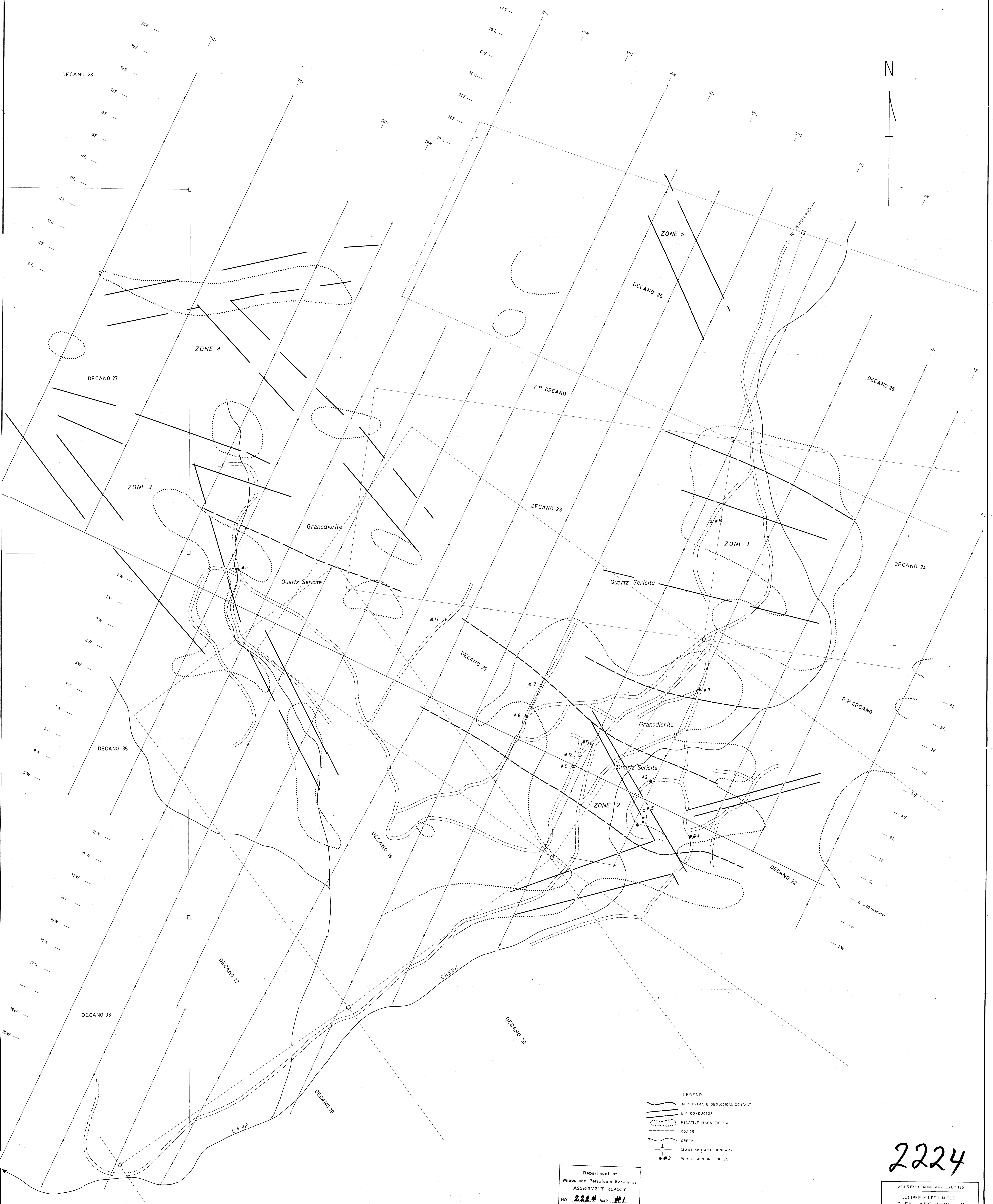
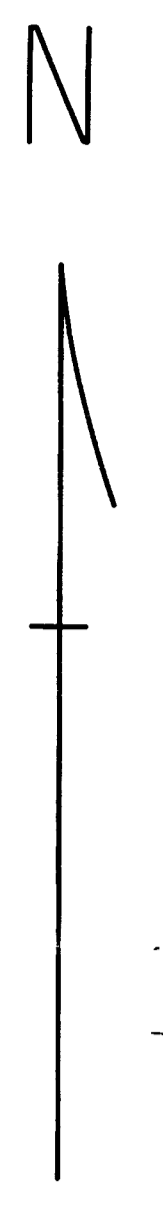
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LEGEND  
 ——— RELATIVE MAGNETIC LOW  
 ~~~~~ IN PHASE COMPONENT IN %  
 ~~~~~ QUADRATURE COMPONENT IN %  
 ——— E.M. CONDUCTOR

Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 2224 MAP #2

2224  
 ADJIS EXPLORATION SERVICES LIMITED  
 JUNIPER MINES LIMITED  
 GLEN LAKE PROPERTY  
 EM SURVEY  
 RONKA EM 15  
 DRAWN BY: P.Y. SCALE 1" = 50'  
 CHECKED BY: P.H. DATE: FEBRUARY 1973



- LEGEND
- APPROXIMATE GEOLOGICAL CONTACT
  - E.M. CONDUCTOR
  - RELATIVE MAGNETIC LOW
  - ROADS
  - CREEK
  - CLAIM POST AND BOUNDARY
  - PERCUSSION DRILL HOLES

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 2224 MAP #1

2224

AGILIS EXPLORATION SERVICES LIMITED  
JUNIPER MINES LIMITED  
GLEN LAKE PROPERTY  
SURFACE PLAN  
WITH GENERALIZED GEOLOGY, MAGNETIC AND E.M. ANOMALIES  
DRAWN BY: P.V. DATE: FEBRUARY '79  
CHECKED BY: F.H. SCALE: 1"=100'