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# GEOPHYSICAL REPORT

ON THE

MAGNETIC SURVEYS

SPRING AND JADEX CLAIMS

KING MOUNTAIN AND KUTCH CREEK AREAS

LIARD M.D., B.C.

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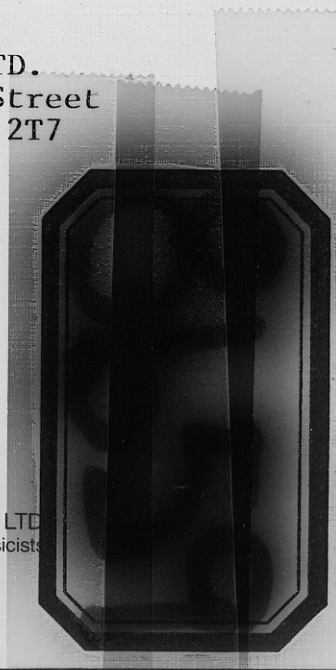
| | |
|---|---|
| SPRING CLAIMS | : 15 km SW of Wolverine Lake<br>: 58° 128° NW<br>: N.T.S. 104I-7W |
| JADEX CLAIMS | : 10 km S of Wolverine Lake<br>: 58° 128° NW<br>: N.T.S. 104I-7W |
| WRITTEN FOR | : MOHAWK OIL CO. LTD.<br>203-3401 - 33rd Street<br>Vernon, B.C.<br>V1T 7X7 |
| BY | : Michael H. Rogers<br>GEOTRONICS SURVEYS LTD.<br>403-750 West Pender Street<br>Vancouver, B.C., V6C 2T7 |
| DATED | : March 12, 1981 |



GEOTRONICS

GEOTRONICS SURVEYS LTD.
Engineering & Mining Geophysicists
VANCOUVER, CANADA

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## SUMMARY

A pair of magnetic surveys were carried out over portions of the Spring and Jadex Claims during August, 1980. This report is primarily for assessment purposes with the main report to follow.

The Spring and Jadex Claims are located near Wolverine Lake, 90 km west of Dease Lake in northwestern British Columbia. Access is by air or by road from Watson Lake or Dease Lake, respectively. The property is in the highest part of the Stikine range and at higher altitudes has characteristic alpine conditions.

Jade was first mined on the Jadex Claims in 1976 and the Spring property was acquired in 1978 and 1979. Regional and detailed geologic prospecting has gone on since 1977. The property is underlain by the Cassiar Batholith with numerous ultramafic belts which intrude into metamorphic rocks. This resulted in lenses of nephrite (jade).

The magnetic surveys are used to outline the intrusions in order to gain better geological knowledge of the area.

## CONCLUSIONS

1. The magnetic survey, as expected, showed the serpentinite's higher magnetite contact.

2. Several general zones on both claims have greater than normal magnetics.

3. Two strong magnetic anomalies on the Spring Claim (Zone D) were found and five strong anomalies were located on the

Jadex survey.

4. Two negative magnetic anomalies near magnetic highs showed up on the Spring survey.

## RECOMMENDATIONS

1. Intensive prospecting should be carried out over the specific magnetic anomalies (2 magnetic highs and 2 magnetic lows on the Spring Claims as well as the five positive magnetic anomalies on the Jadex Claims)

2. Detailed prospecting should be carried out on the general zones of magnetic highs.

3. Drilling is necessary and will depend on two pieces of information; the prospecting results and the full report of these surveys which will be submitted at a later date.

# GEOPHYSICAL REPORT

# ON THE

# MAGNETIC SURVEYS

# SPRING AND JADEX CLAIMS

# KING MOUNTAIN AND KUTCH CREEK AREAS

# LIARD M.D., B.C.

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## INTRODUCTION AND GENERAL REMARKS

This report discusses the survey procedure, compilation of data and interpretation of a pair of magnetic surveys carried out over a portion of the Spring and Jadex Claim groups in the Liard M.D., B.C. by Anthony Dickinson and a helper. Because the main reason for this report is for assessment purposes it will be kept brief and a complete report for the clients will follow.

The surveys were made over pre-existing grids from August 13 to August 31, 1980. The Spring Claim survey covered 8 km of lines while the Jadex survey was over 7.9 km of lines.

The purpose of the magnetic survey was to map rock contacts in order to aid geologic analysis.

## PROPERTY AND OWNERSHIP

The following claims are wholly owned by Mohawk Oil of Vernon, British Columbia.

| NAME | UNITS | RECORD NUMBER | YEARS OF LOCATION | RECORD DATE | ASSESSMENT DUE | SURVEYED |
|---|---|---|---|---|---|---|
| Jadex 1 | 9 | 279 | 1977 | Apr 22 | 1984 | Yes |
| Jadex 2 | 6 | 461 | 1977 | Aug 8 | 1982 | Yes |
| Jadex 3 | 2 | 462 | 1977 | Aug 8 | 1982 | Yes |
| Jadex 4 Fr | 1 | 508 | 1977 | Sept 7 | 1982 | Yes |
| Jadex 5 Fr | 1 | 509 | 1977 | Sept 7 | 1982 | Yes |
| Jadex 6 | 2 | 580 | 1978 | July 4 | 1982 | No |
| Jadex 7 | 2 | 682 | 1978 | Oct 2 | 1980 | No |
| Jadex 8 | 1 | 924 | 1979 | Aug 20 | 1983 | |
| Alpha | 2 | 680 | 1978 | Oct 2 | 1985 + | Yes * |
| Beta | 2 | 681 | 1978 | Oct 2 | 1985 + | Yes |
| Cry | 4 | 678 | 1978 | Oct 2 | 1985 + | Yes |
| B.S. 1 | 3 | 12 | 1975 | July 7 | 1988 + | Yes |
| B.S. 2 | 3 | 679 | 1978 | Oct 2 | 1987 + | Yes |
| Spring 1 | 20 | 640 | 1975 | Aug 21 | 1980 + | No |
| Spring 2 | 10 | 641 | 1978 | Aug 21 | 1980 + | No |
| Spring 3 | 1 | | 1979 | Aug 20 | 1981 + | No |

\+ Work recorded, notice of acceptance not yet received

* Subject to mineral act - Section 50 Complaint, in progress, appears to be resolving in Cry Lake's favour.

## LOCATION AND ACCESS

The Spring Claims are located 15 km southwest of Wolverine Lake and have geographical co-ordinates 58° 18' N latitide, 128° 50' W longitude. The Jadex Claims are 10 km due south of Wolverine Lake on geographical co-ordinates 58° 15' N latitude, 128° 34' W latitide.

Access is most commonly by air from Watson Lake, 210 km to the north. Yukon Air provides scheduled service several times a week from Watson Lake to Kutcho Creek airstrip where the Jadex camp is located. From the airstrip, roads have

been constructed into the Jadex Claim group but the more recently acquired Spring Claims are not completely accessable by road as yet. Heavy equipment is brought in by cat trail from Dease Lake 92 km away.

## PHYSIOGRAPHY

This property lies in the southern part of the Stikine Range of the Cassiar Mountain System. To the west of this system are the Coast Mountains while the Liard Plateau is to the east. This section of the range contains the highest elevations and alpine glaciation is extensive throughout.

The Jadex Claims contain a cluster of glaciated mountains bounded by broad U-shaped valleys. Kutcho Creek on the east and the Kehlechoa River on the west are the major drainages. The lower elevations (1200 - 1500 meters) are forested by alpine and sub-alpine spruce and fir. In the flatter areas swamps are common. Scrub bushes and alpine meadows vegetate the alpine sections of the claims and talus slopes are common at the base of the steep sections.

The Spring Claims are dominated by Kinh Mountain on the southwest with the east side of the claims being on the west slope of Little King Mountain. The elevation is slightly higher, on average, than the Jadex Claim group so more of the area has alpine characteristics and less is covered with stunted fir and spruce. The ridges and bluffs on these claims run in a northwest to southeast direction.

## HISTORY OF PREVIOUS WORK

Jade was first mined on the Jadex Claims in 1976 by Cry Lake Jade Mines Ltd. of Burnaby, B.C. Continuous expansion

of operations was made from that year although consistent high quality lenses could not maintain a good flow of material out at all times.

Regional prospecting was carried out in 1977 and 1978 and the Spring Claims were acquired as a result.

## GEOLOGY

The basement of the Stikine Range is the Cassiar Batholith, a composite batholith of felsic plutonics, which intruded folded sedimentary and volcanic igneous rocks of Palaeozoic and Mesozoic age during the Triassic and Jurassic epochs. Also found in the area and of special concern here is a belt of ultramafic rocks trending northwest. Large masses of serpentinized peridotite bodies are contained in the central part of this belt. The peridotite intruded the metasedimentary and metavolcanic rocks resulting in numerous lens of nephrite. The peridotites were in turn intruded by gabbro dykes and later faulting has resulted in numerous small sill-like masses and pods.

## INSTRUMENTATION AND THEORY

The magnetic survey was carried out using a portable proton precession magnetometer, Model MP-2 manufactured by Scintrex Limited of Concord, Ontario. This instrument reads out directly in gammas on an LED display. It has a range of $\pm$ 20,000-100,000 gammas and a reading accuracy of $\pm$ 1 gamma. The MP-2 has an operating temperature range of $-35^{o}$ C to $+50^{o}$ C. Its gradient tolerence is up to 5,000 gammas/meter.

Only two commonly occurring minerals are strongly magnetic; magnetite and pyrrhotite, Hence, magnetic surveys are used

to detect the presence of these minerals in varying concentrations. Magnetic data are also useful as a reconnaissance tool for mapping geologic lithology and structure since different rock types have different background amounts of magnetite and/or pyrrhotite.

## SURVEY PROCEDURE

The readings were taken every 6 meters on north-south lines 30 meters apart on the Spring CLaims. On the Jadex Claims the readings were spaced 6 meters along the existing roads and on contour lines.

The magnetic diurnal change was monitored in the field by the closed loop method and double checked by a series of base stations.

## COMPILATION OF DATA

The magnetic data were plotted on Sheets 2 and 3 at a scale of 1:1,000 (1 cm = 10 meters). For ease of plotting and discussions, 50,000 gammas was subtracted from all values and contours.

The contouring was organized so that the anomalous areas have solid contour lines while the normal areas have dasned contour lines. The general contour interval was 500 gammas on the Spring Claim map and 1000 gammas on the Jadex map.

## DISCUSSION OF RESULTS

The full report will give in depth analysis correlated to the geologic mapping but for the purposes of this assessment report only general interpretation is given.

a) SPRING CLAIMS (ZONE D)

In the South of this survey the general magnetics are high and drop off to the north. A belt of low magnetic values trend 108° Az from line 7+50 E to the survey edge at line 10+80 E. North of this magnetic low belt relatively flat magnetics is found and is 1000 gammas higher, on average, than the magnetic trough. A broad 8000 gamma anomaly is found in the north section, centered at line 8+70 E, 3+70 N.

Within the magnetic high area in the south section two anomalous highs (line 8+40 E, 0+90 N and line 8+70 E, 0+12 S) are located and two anomalous lows (line 8+40 E, 0+60 N and line 8+70 E, 0+00).

b) JADEX CLAIMS

General magnetics show two broad bands of magnetic highs. The northern band contains three positive anomalies, lettered A, B and C. The most impressive anomaly is A, with an 18,000 gamma high (almost 12,000 gammas above background). In the southern high magnetic region, anomalies D and E are found. Anomaly E is the best anomaly of each survey for size with 19 readings above 10,000 gammas.

Between the high magnetic region and above the northern high area are zones of low to average magnetics without any real variation.

Respectfully submitted,
GEOTRONICS SURVEYS LTD.

Mike Rogers

Michael H. Rogers,
Geophysicist

March 12, 1981

## SELECTED BIBLIOGRAPHY

Geology Map 29-1962, Cry Lake Map Geological Survey of Canada.

Hollard, S.S., Landforms of British Columbia: A Physiographic Outline, Bulletin 48, B.C. Department of Mines and Petroleum Resources, 1976.

Homenuke, A.M., Geology of Spring Group, King Mountain Area October, 1979

Homenuke, A.M., Cry Lake Jade Mines Ltd.: 1977 Operations, February, 1978

Homenuke, A.M., Cry Lake Jade Mines Ltd.: 1978 Operations, January, 1979

Homenuke, A.M., Cry Lake Jade Mines Ltd.: 1979 Operations, January, 1980.

# GEOPHYSICIST'S CERTIFICATE

I, MICHAEL H. ROGERS, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

THAT I am a Consulting Geophysicist of Geotronics Surveys Ltd., with offices at #403-750 West Pender Street. Vancouver, British Columbia.

I further certify:

1. I am a graduate of the University of Western Ontario, (1972) and hold a B.Sc., degree in Geophysics.

2. I have practised my profession for five years both in Canada and overseas.

3. This report is compiled from data obtained from a pair of magnetic surveys carried out by Anthony Dickinson under the supervision of David G. Mark, geophysicist, during August, 1980 on the Spring and Jadex group of claims.

4. I have no direct or indirect interest in the properties or securities of Mohawk Oil Co. Ltd, nor do I expect to receive any interest therein, as a result of writing this report.

Mike Rogers

Michael H. Rogers,
Geophysicist

March 12, 1981

## AFFIDAVIT OF EXPENSES

SPRING CLAIM GROUP

This is to certify that a magnetic survey was carried out over a portion of the Spring Claim Group, Wolverine Lake Area, Liard, M.D., B.C., from August 15th to 20th, 1980, to the value of the following:

FIELD:

| | |
|---|---|
| 2 Geophysical Technicians, 70 hours at $40/hour | $ 2,800.00 |
| Room and board, 6 days at $70/day | 420.00 |
| Survey supplies | 80.00 |
| Instrument rental, 2 magnetometers for 1 week at $300/week | 300.00 |
| Helicopter, 3½ hours at $400\|hour | 1,400.00 |
| Supervisor, 3 days at $200\|day | 600.00 |
| | $ 5,600.00 |

REPORT:

| | |
|---|---|
| Geophysicist, 10 hours at $40\|hour | $ 400.00 |
| Technician, 10 hours at $25\|hour | 250.00 |
| Drafting and printing | 250.00 |
| Typing, photocopying & compilation | 100.00 |
| | $ 1,000.00 |

| | |
|---|---|
| TOTAL | $ 6,600.00 |

Respectfully submitted,
GEOTRONICS SURVEYS LTD.

David G. Mark,
Manager

# AFFIDAVIT OF EXPENSES

## JADEX CLAIMS

This is to certify that a magnetic survey was carried out over a portion of the Jadex Claim Group, Wolverine Lake Area, Liard M.D., B.C., on August 28th, 1980 to the value of the following:

FIELD:

| | |
|---|---|
| 1 Geophysical Technicians, 10 hours at $40/hour | $ 400.00 |
| Board and room, 1 day at $70/day | 70.00 |
| Instrument rental, 1 day at $30/day | 30.00 |
| | $ 500.00 |

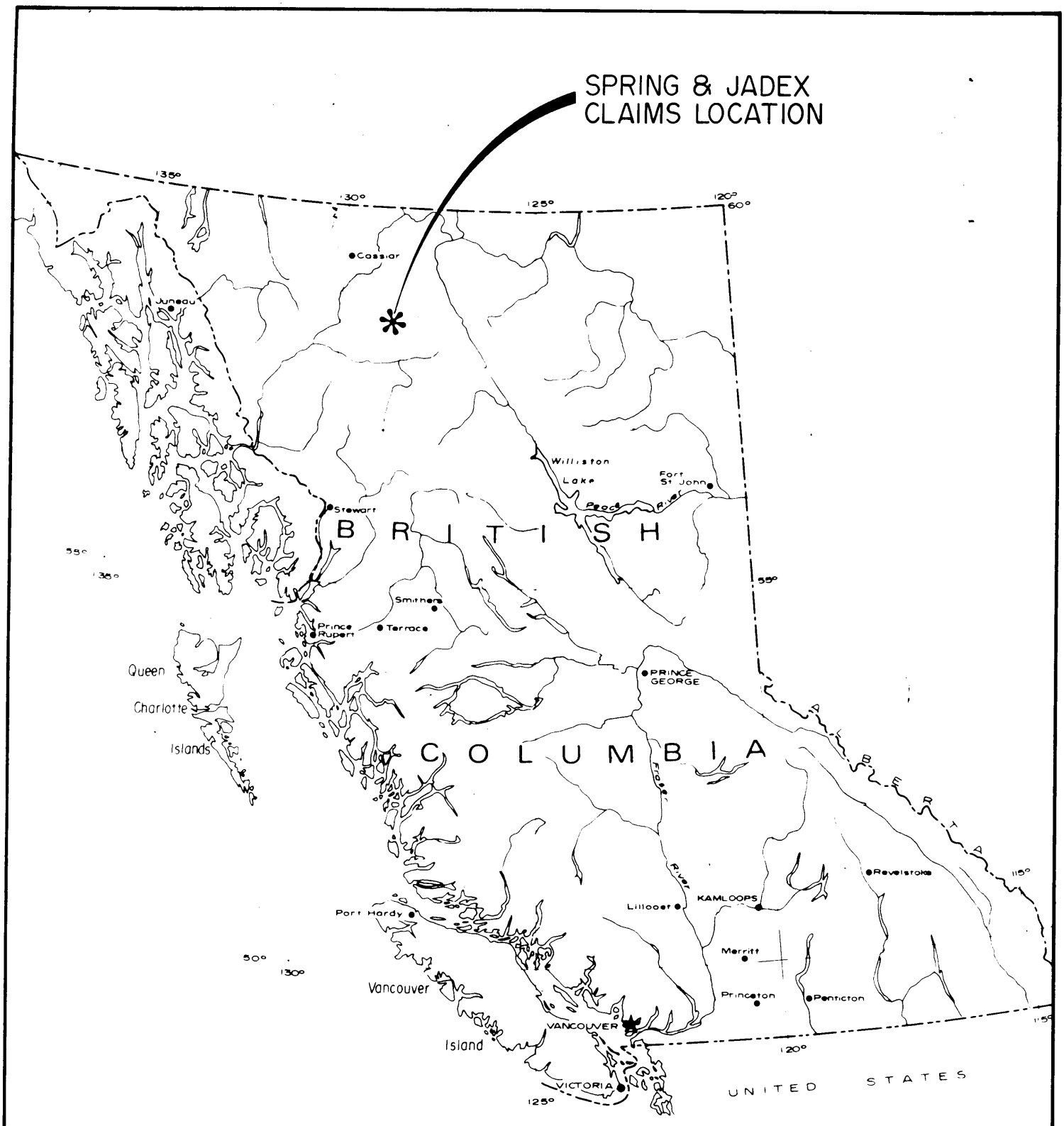
OFFICE:

| | |
|---|---|
| Geophysicist, 5 hours at $40/hour | $ 200.00 |
| Geophysical Technician, 6 hours at $25/hour | 150.00 |
| Drafting and printing | 150.00 |
| Typing, photocopying & compilation | 100.00 |
| | $ 600.00 |

| | |
|---|---|
| TOTAL | $1,100.00 |

Respecfully submitted,
GEOTRONICS SURVEYS LTD.

David G. Mark,
Manager

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MOHAWK OIL CO. LTD.

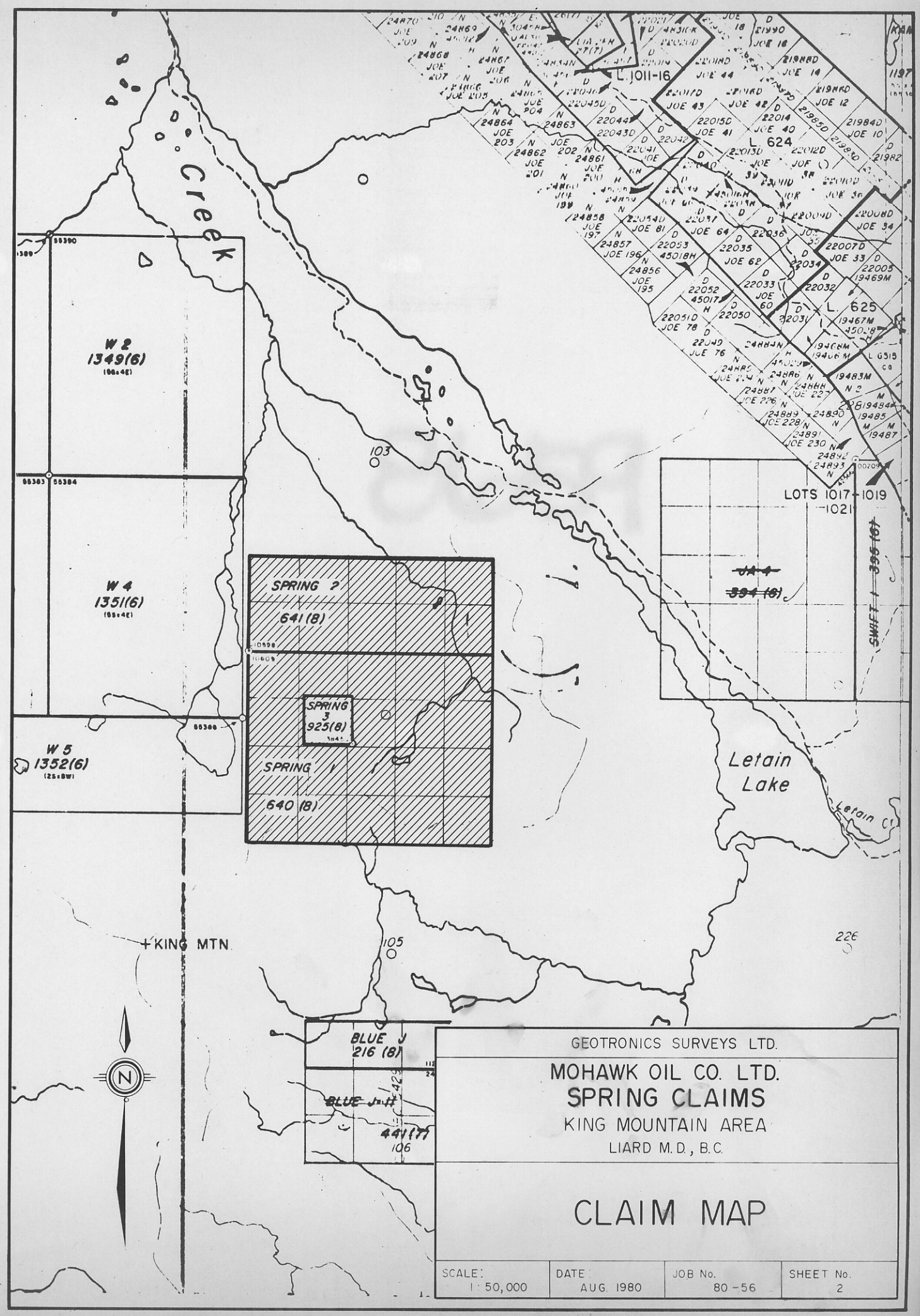
SPRING & JADEX CLAIMS

KUTCHO CREEK AREA

LIARD M. D., B.C.

# LOCATION MAP

| SCALE: | DATE: | JOB No. | SHEET No. |
|---|---|---|---|
| As shown | AUG. 1980 | 80 – 56 | 1 |


Creek
W 2
1349(6)
W 4
1351(6)
W 5
1352(6)
SPRING 2
641 (8)
SPRING 3
925(8)
SPRING 1
640 (8)
BLUE J
216 (8)
BLUE J #1
441 (7)
LOTS 1017-1019
1021
394 (6)
Letain Lake
KING MTN.
L 624
L 625
L 1011-16
103
105
106
226
N
GEOTRONICS SURVEYS LTD.
MOHAWK OIL CO. LTD.
SPRING CLAIMS
KING MOUNTAIN AREA
LIARD M.D., B.C.
CLAIM MAP
SCALE: 1:50,000
DATE: AUG. 1980
JOB No. 80-56
SHEET No. 2

GEOTRONICS SURVEYS LTD.

MOHAWK OIL CO. LTD.

# JADEX CLAIMS

KUTCHO CREEK AREA

LIARD M.D., B.C.

## CLAIM MAP

| SCALE: | DATE: | JOB No. | SHEET No. |
|---|---|---|---|
| 1: 20,000 | AUG. 1980 | 80-56 | 3 |

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8059

JADEX 8

JADEX 7

JADEX 1

JADEX 5 Fr.

JADEX 4 Fr.

KIM
(W. Ellert)

JADEX 2

JADEX 3

JADEX 6

128° 30'

5' 5'

KUTCHO

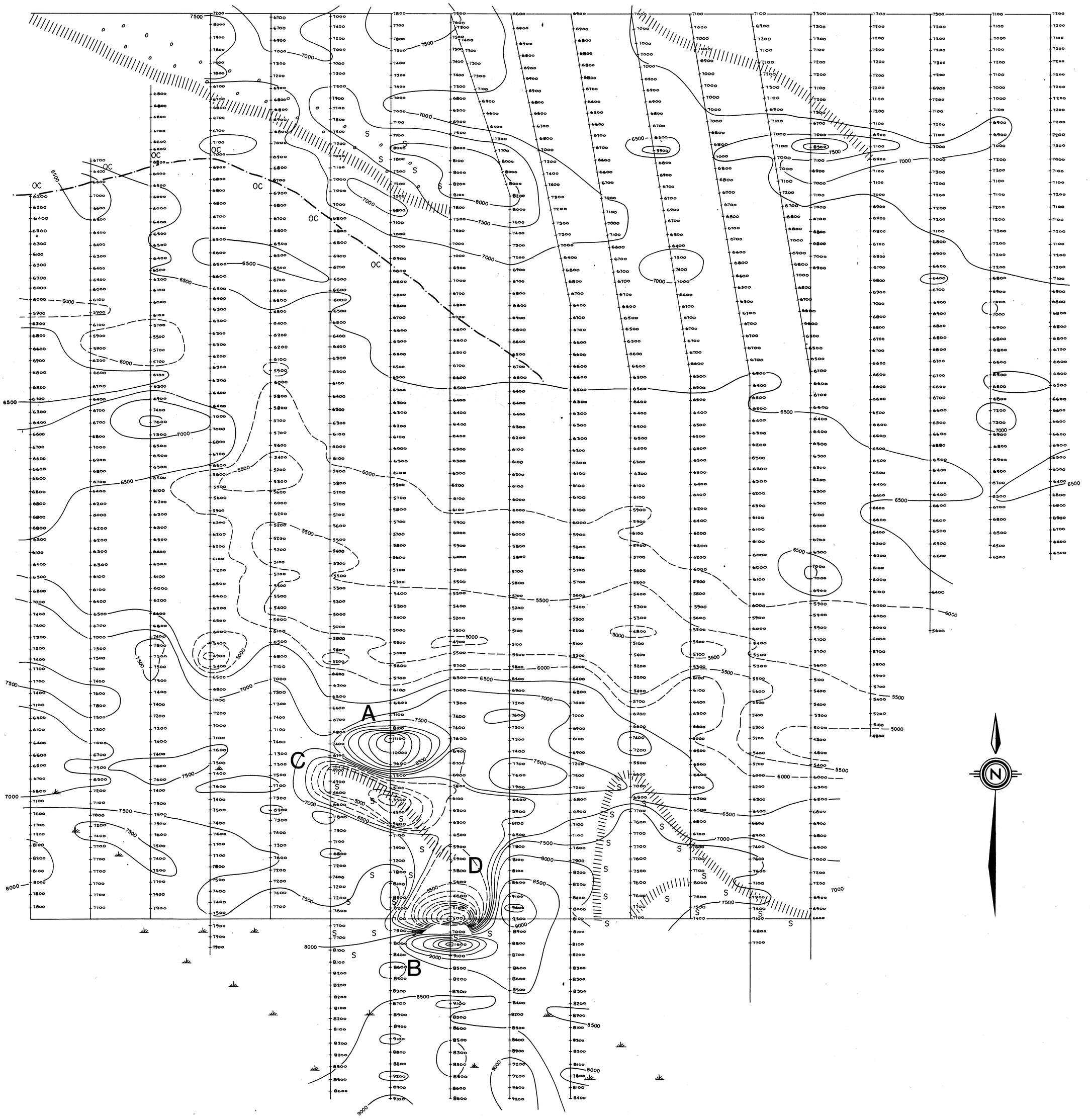
KUTCHO CREEK AIRSTRIP

CRY LAKE JADE CAMP

N

L-660 E L-690 E L-720 E L-750 E L-780 E L-810 E L-840 E L-870 E L-900 E L-930 E L-960 E L-990 E L-1020 E L-1050 E L-1080 E L-1110 E L-1140 E L-1170 E

440 N
400 N
360 N
320 N
280 N
240 N
200 N
160 N
120 N
80 N
40 N
0




## LEGEND

| | | | |
|---|---|---|---|
| | CLAIM POST | J | JADE |
| | SWAMPY | S | SERPENTINE TALUS |
| | TALUS | | |
| | CLIFF | | |
| | RIDGE LINE | | |

## LEGEND

6500 GAMMAS AND HIGHER
CONTOUR INTERVAL 500 GAMMAS

6000 GAMMAS AND BELOW
CONTOUR INTERVAL 500 GAMMAS

NOTE: 50000 GAMMAS SUBTRACTED FROM EACH VALUE FOR EACH PLOTTING

INSTRUMENT: VERTICAL COMPONENT FLUXGATE
SABRE MODEL G-110



To accompany geophysical report by Michael H. Rogers, geophysicist dated Mar.12,'81

GEOTRONICS SURVEYS LTD.

MOHAWK OIL CO. LTD.
SPRING CLAIMS
KING MOUNTAIN AREA, LIARD M.D, B.C.

# MAGNETIC SURVEY
# DATA & CONTOURS

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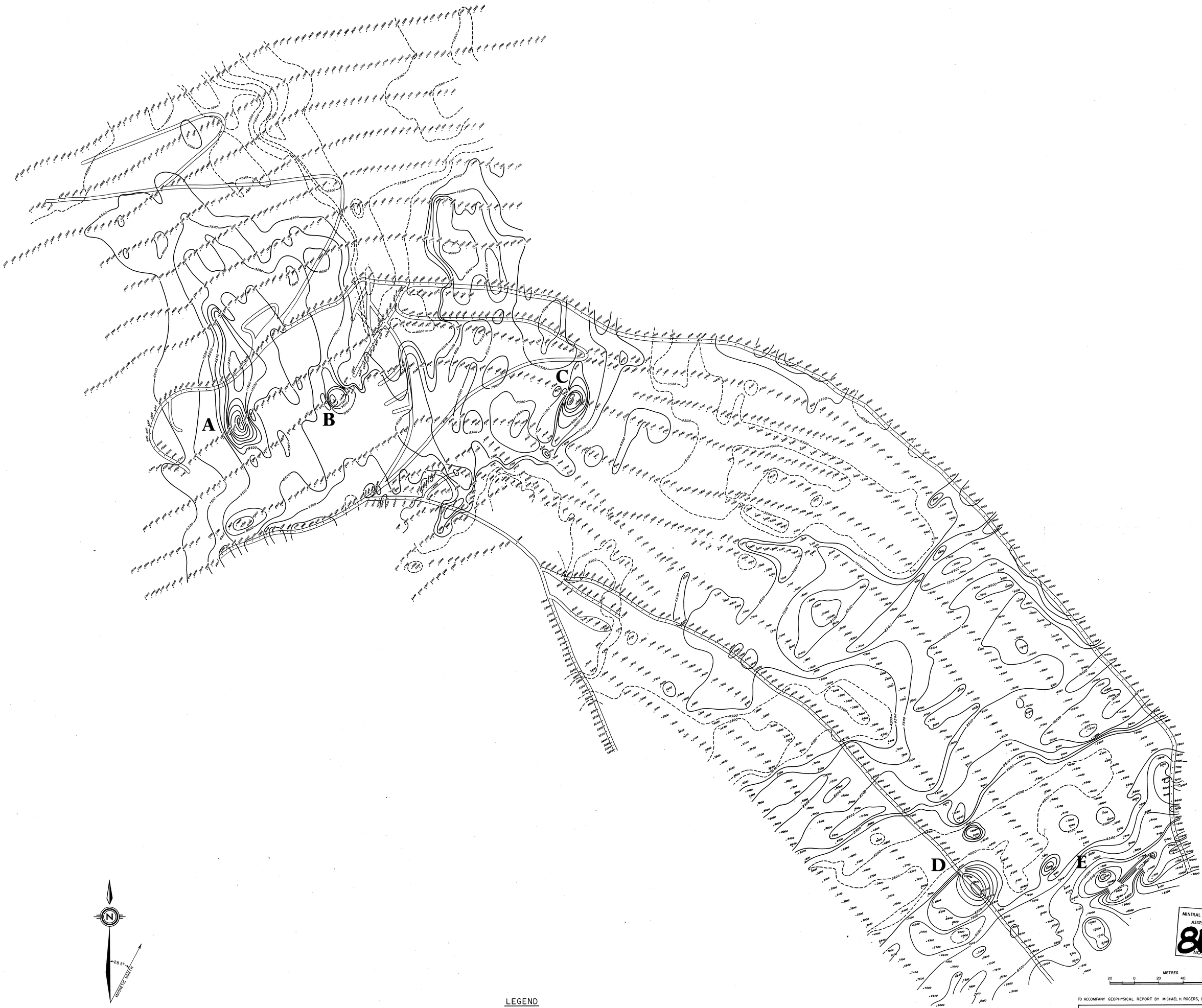





LEGEND

6500 GAMMAS AND HIGHER
CONTOUR INTERVAL 1000 GAMMAS

4500 GAMMAS AND BELOW
CONTOUR INTERVAL 1000 GAMMAS

NOTE

50,000 GAMMAS SUBTRACTED FROM EACH VALUE FOR EASE OF PLOTTING

INSTRUMENT

VERTICAL COMPONENT FLUXGATE
SABRE MODEL G-110



METRES
20 0 20 40 60 80

TO ACCOMPANY GEOPHYSICAL REPORT BY MICHAEL H. ROGERS, GEOPHYSICIST, DATED MARCH 12, 81

GEOTRONICS SURVEYS LTD.

MOHAWK OIL CO. LTD.
JADEX CLAIMS
KUTCHO CREEK AREA, LIARD M.D., B.C.

# MAGNETOMETER SURVEY
## DATA & CONTOURS

| DRAWN BY: | DATE: | JOB No. | SCALE: | SHEET No. |
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| J.W. | AUG 1980 | 80-56 | 1:1000 | 5 |