



31C15NW0055 2.11083 CLARENDON

010

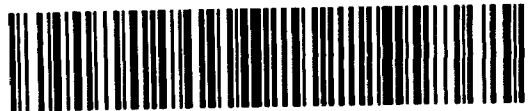
MAGNETIC AND VLF-EM SURVEYS
MOSQUE GROUP
CLARENDON TOWNSHIP
SOUTHERN ONTARIO MINING DISTRICT

BY
WAYNE JOHNSON
TARGET EXPLORATION SERVICES LTD.

FOR
UNITED REEF PETROLEUMS LTD.

RECEIVED
APR 24 1988
MINING LANDS SECTION

APRIL 15, 1988



31C15NW0055 2.11083 CLARENDON

010C

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1. INTRODUCTION

1.1. Ownership, Location, Access

The MOSQUE Group consists of 4 unpatented mineral claims, all located on crown land. The property is in Clarendon Township within the Southern Ontario Mining Division 245 km ENE of Toronto and 90 km NNW of Kingston. The group can be reached by a gravel road (Mosque Lake Road) which traverses the property and which connects with Highway 506 approximately 2 km. to the south some 4 km. west of the village of Ompah.

The claims lie along the south side of Mosque Lake so that approximately 15 per cent of the northern two claims are covered by the lake. The property lies on the boundary of NTS areas 31C-15 and 31F-2.

The claims, which are owned 100 percent by United Reef Petroleums Ltd., were recorded on March 19, 1987. A list of claims is given in the Appendix as well as in the accompanying Technical Data Statement.

The property supports a mixed vegetation including white pine and hardwood on the higher ground, and black ash and hemlock in the low ground between the ridges.

This exploration program was undertaken to evaluate an occurrence which gave 160 ppb Au from a sample collected by the author during a reconnaissance program.

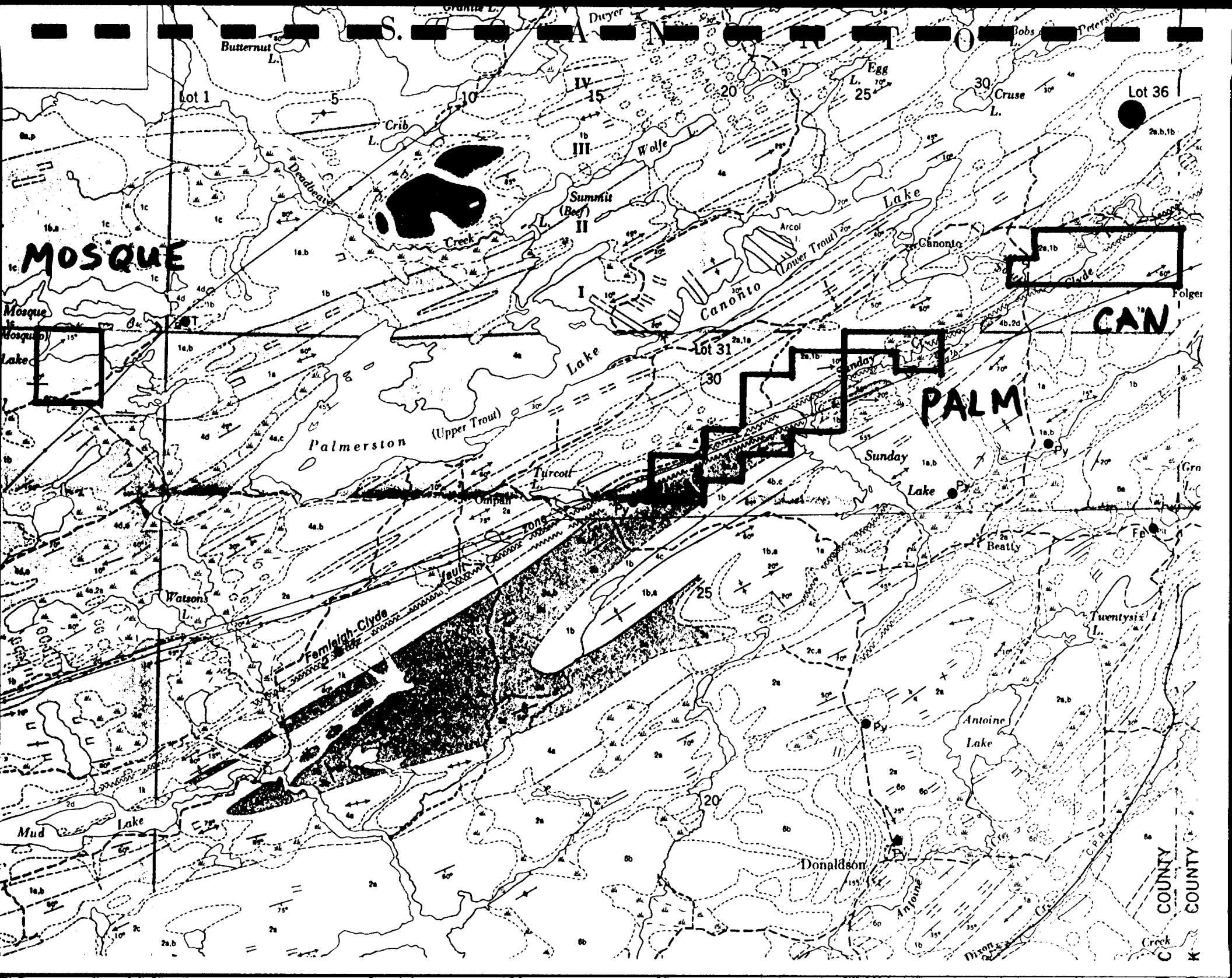
1.2. Previous Work

No previous work has been reported from the property.

1.3. Work Done

A grid comprising 6.5 miles was cut to cover all claims. This includes 1.2 miles on the ice and shore of Mosque Lake. Base line orientation is approximately 069 degrees and cross lines were cut at 400-foot intervals with picketing at 100-foot intervals. Line-cutting was done by Gestion Edward Ingham Management Inc. of Val D'Or.

Magnetic and VLF-EM surveys were done by personnel of Target Exploration Services Ltd. under the supervision of the author.



S. A. N. Bobs. Peterston

Butternut L.

Lot 1

Crib L.

IV

III

II

I

Egg L. 25

30 Cruse L.

Lot 36

MOSQUE

Mosque Lake

CAN

PALM

Palmerston (Upper Trou)

Lake

Lot 31

30

Sunday Lake

Lake

Watsons

Femleigh-Clyde

1b.a

25

Antoine Lake

Mud Lake

Donaldson

COUNTY COUNTY

C K

2. GENERAL GEOLOGY

2.1. Geology of the Hastings Basin

The property lies within a portion of the Grenville Province defined by Wynne-Edwards (1972) as the Central Metasedimentary Belt, Subzone IVB, Hastings Basin. This area is composed of a thick succession of Late Precambrian metavolcanic and metasedimentary rocks of the Grenville Supergroup which has been intruded by Late Precambrian "granitic" to gabbroic intrusive bodies.

The Hastings Basin is also characterized by the presence of the Flinton Group, a succession of clastic and carbonate metasediments preserved in narrow synclines some 3 km. southeast of the property and by low to moderate metamorphism. The Mosque property lies within an area of moderate (amphibolite facies) metamorphism.

2.2. Geology of the MOSQUE Group

2.2.1. General

The MOSQUE property as shown on the regional geology map (Smith, 1958) occurs within a 3 by 15 km. belt of predominantly gneissic rocks of possible supracrustal origin. Lithologic units are listed in Table 1, modified from Smith (1958) and Pauk and Mannard (1982).

2.2.2. Metavolcanic Rocks

Mafic gneisses, interpreted as the metamorphic equivalents of basaltic volcanic rocks are the predominant rock type on the property. They include hornblende-plagioclase schist, biotite schist, biotite-hornblende schist and amphibolite. Locally some of these lithologies are garnetiferous or pyritic.

2.2.3. Metasedimentary Rocks

Intermediate to felsic gneisses, which probably underlie about one-quarter of the property, are presumed to have originated as clastic sedimentary rocks. These include siltstone, wacke and iron formation as well as biotite-plagioclase-quartz+microcline+muscovite gneiss. The gneiss, of uncertain origin, locally includes garnet porphyroblasts

PHANEROZOIC

CENOZOIC

Quaternary

Pleistocene and Recent

Gravel, sand, clay, lake deposits

- Unconformity -

PRECAMBRIAN

LATE PRECAMBRIAN

Intermediate to Mafic Gneiss (Intrusive Rocks?)

Foliated diorite, quartz diorite, gabbro

- Intrusive Contact -

Metasediments

Carbonate Metasediments

Bluish dolomitic marble, tremolitic and diopsidic
marble

Intermediate to Felsic Gneisses (Clastic Metasediments?)

Siltstone, tuffaceous wacke, biotite-plagioclase-
quartz+microcline+muscovite gneiss, local garnet
porphyroblasts, sillimanite gneiss, quartz-magnetite
iron formation

Metavolcanics

Mafic gneisses (basaltic metavolcanics?)

Hornblende-plagioclase schist, biotite schist,
biotite-hornblende schist, amphibolite

 Table 1. Table of Formations

and (or) up to 20 or 30 percent sillimanite. Iron formation was not observed, but its presence is inferred on the basis of the high magnetic readings and the known occurrence of massive magnetite deposits a few kilometres along strike to the east.

Carbonate metasediments were not observed but are inferred on the basis of the regional mapping to underlie the southeastern corner of the property as well as a strip along the northern boundary of the property, mostly under Mosque Lake. Lithologies probably include bluish dolomitic marble and tremolitic and diopsidic marble. The latter rock types outcrop in a series of islands just north of the property as well as at the eastern end of the lake, where two shafts have been sunk to evaluate the talc potential of the marble.

2.2.4. Intrusive Rocks

Coarse-grained intermediate to mafic gneisses similar to those described above may be the metamorphic equivalents of diorite and gabbro. Regional mapping has suggested the presence of such rocks immediately north of Mosque Lake.

2.2.5. Structure

The dominant structural feature is a schistosity which, on the basis of the regional mapping, is shown to trend between 040 and 070 degrees.

2.2.6. Economic Geology

Reconnaissance sampling in 1985 yielded a value of 160 ppb Au from an outcrop of pyritic garnet-sillimanite-biotite schist at the eastern edge of the property.

Four rock samples were collected during the current work. These gave anomalous Cu values to 260 ppm but no anomalous Au.

Sillimanite-bearing metasediments were observed on line 36E, south of the baseline and near 5N. The economic potential of these rocks is not known but should be evaluated.

3. MAGNETOMETER SURVEY

3.1. Survey Procedure

For the magnetometer survey, the Barringer GM-122 proton magnetometer was employed. Readings were taken at 50-foot intervals on all crosslines as well as on the baseline. A total of 693 stations along 6.5 miles of grid were surveyed. Additional fill-in readings were taken as required. Drift was corrected by looping along the baseline. For the purpose of plotting, 56,000 nT was subtracted from all readings.

3.2. Results

The northern half of the property is characterized by high magnetic relief with values ranging from 1000 nT below background to 6000 nT above background. Magnetic trends range from 060 to 080 degrees. Although the cause of the anomalies is not definitely known as the property has not been mapped, quartz-magnetite iron formation is the probable cause. Magnetite has been mined near Summit Lake and Redstone Lake a few kilometres along strike to the east.

Most of the southern half of the property is magnetically uniform with only an occasional magnetic high. The exception is the southeastern corner of the property where a broad magnetic high has values 500 to 1000 nT above normal background levels. Cause of the anomaly is not known. Regional geology maps show this part of the claim group to be underlain by marble.

4. VLF-EM SURVEY

4.1. Survey Procedure

The VLF-EM survey utilized the transmitter station at Cutler, Maine (NAA) with a frequency of 24.0 kHz. The instrument employed was the VLF-2 manufactured by Phoenix Geophysics Limited. This instrument measures the orientation of the major axis of the ellipse of polarization (dip angle) as well as the magnitude of the field strength (horizontal field strength). A total of 315 stations or 5.8 line-miles were surveyed.

Readings were plotted and profiles drawn. Bedrock conductors are interpreted to be the cause of anomalies where dip-angle crossovers coincide with positive increases in horizontal field strength. Several conductors occur on the property as described below.

4.2. Results

4.2.1. General Comments

Three power lines which cross the property cause large, mostly off-scale, anomalies as shown on the VLF-EM profiles.

4.2.2. Conductor M-1

A moderately strong two-line anomaly on the south central part of the grid trends parallel to the baseline, that is at about 070 degrees. It shows no particular magnetic correlation and the geology in the area is not known. The area of the anomaly should be prospected and mapped.

5. CONCLUSIONS AND RECOMMENDATIONS

1. The Mosque property should be thoroughly prospected, especially in the vicinity of the anomalous gold sample, along the iron formation bands, and at VLF anomaly M-1.

2. If the results of the above work are encouraging, the property should be geologically mapped.

Respectfully submitted,



Wayne L. Johnson

6. REFERENCES

- Malczak, J., Carter, T.R., and Springer, J.S.
1985: Base Metal, Molybdenum, and Precious Metal Deposits of the Madoc-Sharbot Lake Area, Southeastern Ontario; Ont. Geol. Surv., O.F.R. 5548.
- Meen, V.B.
1944: Geology of the Grimsthorpe-Barrie Area; Ont. Dept. Mines, Vol. LI, Part IV, 1942.
- Moore, J.M., Jr., and Morton, R.L.
1986: Geology of the Marble Lake Area, Counties of Frontenac and Lennox and Addington; Ont. Geol. Surv., Rept. 238.
- Pauk, L. and Mannard, G.
1982: Precambrian Geology of the Ardoch Area, Southern Ontario; Ont. Geol. Surv., Map P.2487.
- Smith, B.L.
1958: Geology of the Clarendon-Dalhousie Area; Ont. Dept. Mines, Ann. Rept., vol. LXV, pt. 7, 1956.
- Wynne-Edwards, H.R.
1972: The Grenville Province; p.264-334 in Variations in Tectonic Styles in Canada, Geol. Ass. Canada, Spec. Paper 11, ed. R.A. Price and R.J.W. Douglas.

APPENDIX 1. LIST OF CLAIMS IN MOSQUE GROUP

Claim No.	Recording Date	Assessment Work Applied (Days, Report No.)	Expiry Date	Excess Credit
S0873270	Mar.19/87	xx (xxxxx-x)	Mar.19/xx	
S0873271	"	"	"	
S0873272	"	"	"	
S0873273	"	"	"	

APPENDIX 2

ROCK ANALYSES

BARRINGER MAGENTA304 CARLINGVIEW DRIVE
REXDALE, ONTARIO
M9W 5G2

(416) 675-3870

FILE: L7-7002
DATE: 13/10/87
MATRIX: ROCKS

UNITED REEF PETROLEUMS LTD. (ALL ROCK GEOCHEMICAL DATA) PROJ:GRENVILLE

WO NU: 87-1117

PAGE: 1

SAMPLE ID	AU PPB	AS PPM	AB PPM	CU PPM	PB PPM	BB PPM
3501	160	2.6	.4	37	3	.7
3502	250	2.5	.2	220	<1	.3
3503	1400	1.9	<.2	18	7	.2
3504	95	1.9	<.2	31	2	.4
3505	<5	1.4	.2	96	7	.8
3506	375	.4	.6	345	<1	<.2
3507	<5	1.4	.2	180	3	.3
3508	<5	11.5	.2	83	1	.4
3509	<5	1.0	<.2	15	<1	.2
3510	<5	.6	<.2	6	1	<.2

*Mosque***BARRINGER MAGENTA**304 CARLINGVIEW DRIVE
REXDALE, ONTARIO
M9W 5G2

(416) 675-3870

FILE: L7-7003
DATE: 17/12/87
MATRIX: ROCKS

ORSINA RESOURCES ALL ROCK STATISTICS

WU NU: 87-7003

PAGE:

SAMPLE ID	AU PPB	AS PPM	CU PPM	BB PPM
31152	<5	.3	24	<.2
31153	<5	<.2	15	<.2
31154	<5	.7	39	<.2
31155	<5	.5	7	<.2
31156	<5	.3	5	<.2
31157	<5	.3	27	<.2
31158	<5	.7	5	<.2
31159	20	1.6	19	<.2
31160	<5	.6	5	<.2
31161	<5	<.2	12	<.2
31162	950	.5	23	<.2
31163	<5	.3	7	<.2
31164	<5	.6	12	<.2
31165	<5	.9	3	<.2
31166	<5	.4	10	<.2
31167	<5	.3	7	<.2
31168	<5	.7	7	<.2
31169	<5	1.4	11	<.2
31170	<5	4.6	30	<.2
31171	<5	1.4	6	<.2
31172	<5	.8	8	<.2
31173	3500	1.0	84	<.2
31174	<5	1.4	7	<.2
31175	<5	.3	13	<.2
31176	<5	.7	7	<.2
31177	<5	<.2	5	<.2

Mosque

GEOLOGIST'S CERTIFICATE

To accompany report of April 15, 1988 titled "MAGNETIC AND VLF-EM SURVEYS, MOSQUE GROUP, CLARENDON TOWNSHIP, SOUTHERN ONTARIO MINING DISTRICT"

I, Wayne L. Johnson of 5 Pine St. N., Port Hope, Ontario, L1A 3G4, do hereby certify that:

1. I have a B.Sc. (Hon.) degree in Geology from Queen's University (1966) and an M.Sc. degree in Geology from the University of Western Ontario (1972);
2. I am a Fellow of the Geological Association of Canada and a member of the Canadian Institute of Mining and Metallurgy;
3. I have practised the profession of geologist continuously since 1974 as an independent consultant and contractor;
4. I have directly supervised all the field work on this property as described herein, and as such I have a personal knowledge of the facts as disclosed.

Dated at Port Hope, Ontario, this 15th day of April, 1988.



Wayne L. Johnson



File _____

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Magnetic & VLF-EM
Township or Area Clarendon
Claim Holder(s) United Reef Petroleum Ltd
400-67 Yonge St., Toronto
Survey Company Target Exploration Services Ltd
Author of Report W. Johnson
Address of Author 5 Pine St. N., Port Hope, Ont
Covering Dates of Survey March 23/87 to Apr 15/88
Total Miles of Line Cut 5.3

MINING CLAIMS TRAVERSED
List numerically
SO 873270
SO 873271
SO 873272
SO 873274
TOTAL CLAIMS 4

SPECIAL PROVISIONS
CREDITS REQUESTED
Geophysical
-Electromagnetic 40
-Magnetometer 20
-Radiometric
-Other
Geological
Geochemical

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
Magnetometer Electromagnetic Radiometric
DATE: Apr 19/88 SIGNATURE: W. Johnson
Author of Report or Agent

Res. Geol. Qualifications 2.5065

Previous Surveys
Table with columns: File No., Type, Date, Claim Holder

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations See Report Number of Readings _____
Station interval _____ Line spacing _____
Profile scale _____
Contour interval _____

MAGNETIC

Instrument _____
Accuracy – Scale constant _____
Diurnal correction method _____
Base Station check-in interval (hours) _____
Base Station location and value _____

ELECTROMAGNETIC

Instrument _____
Coil configuration _____
Coil separation _____
Accuracy _____
Method: Fixed transmitter Shoot back In line Parallel line
Frequency _____
(specify V.L.F. station)
Parameters measured _____

GRAVITY

Instrument _____
Scale constant _____
Corrections made _____
Base station value and location _____
Elevation accuracy _____

**INDUCED POLARIZATION
RESISTIVITY**

Instrument _____
Method Time Domain Frequency Domain
Parameters – On time _____ Frequency _____
– Off time _____ Range _____
– Delay time _____
– Integration time _____
Power _____
Electrode array _____
Electrode spacing _____
Type of electrode _____

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

Corrections made _____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____
(type, depth -- include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

Additional information (for understanding results) _____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____
(specify for each type of survey)

Accuracy _____
(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

General _____

ANALYTICAL METHODS

Values expressed in: per cent
p. p. m.
p. p. b.

Cu, Pb, Zn, Ni, Co, Ag, Mo, As, -(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

LEGEND

- PATENTED LAND
- CROWN LAND SALE
- LEASES
- LOCATED LAND
- LICENSE OF OCCUPATION
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- ROADS
- IMPROVED ROADS
- KING'S HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKEG
- MINES
- CANCELLED
- TRAILS
- PATENTED S.R.O.

NOTES


This Map Is Not To Be Used
FOR SURVEY PURPOSES

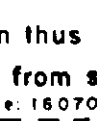
Lot And Concession Lines Shown Hereon
Projected From The Best Information Available
But Their True Position Is Not Guaranteed
For Official Survey Purposes Consult
Original Survey Plans And Field Note
Records In The Ministry of Natural Resources

400' surface rights reservation along the
shores of all lakes and rivers.

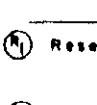


Flooded Lands Shown Thus: 

Flooding Rights Reserved On Cross Lake
And Fawn Lake To Elevation 110.5'.
File: 126113.

Original Survey Line Of Frontenac Road
Thus: 

Islands in Clarendon Lake shown thus: 
Surface Rights Only withdrawn from status
File: 160708.

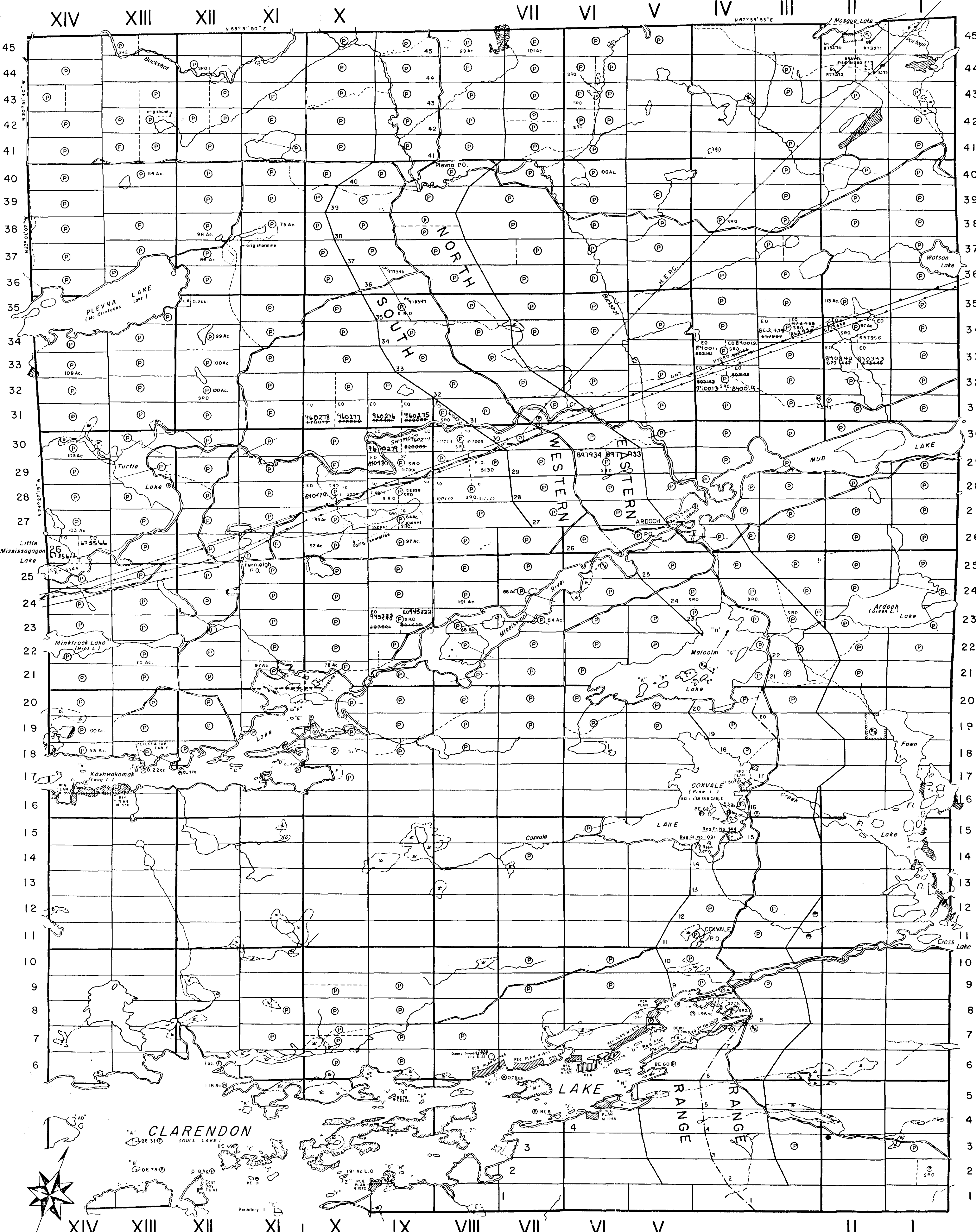
AREAS WITHDRAWN FROM STAKING
S.R. - SURFACE RIGHTS M.R. - MINING

Section	Order No.	Date	Disposition
	Reserved for Public Use		SR
	M.N.R. Reservation		SR
	Reservation		SR/MR

DATE OF ISSUE

APR 1977
SOUTHERN ONTARIO
MINING DIVISION

PLAN NO.-M.77



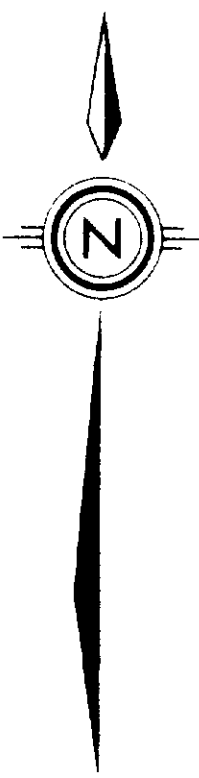
Palmerston Twp. (M. 139)

CLARENDON
(GULL LAKE)



1.109)

Olcen Twp. (M. 136)



16N

12N

8N

4N

0

4S

8S

12S

16S

0

4E

8E

12E

16E

20E

24E

28E

32E

36E

MOSQUE

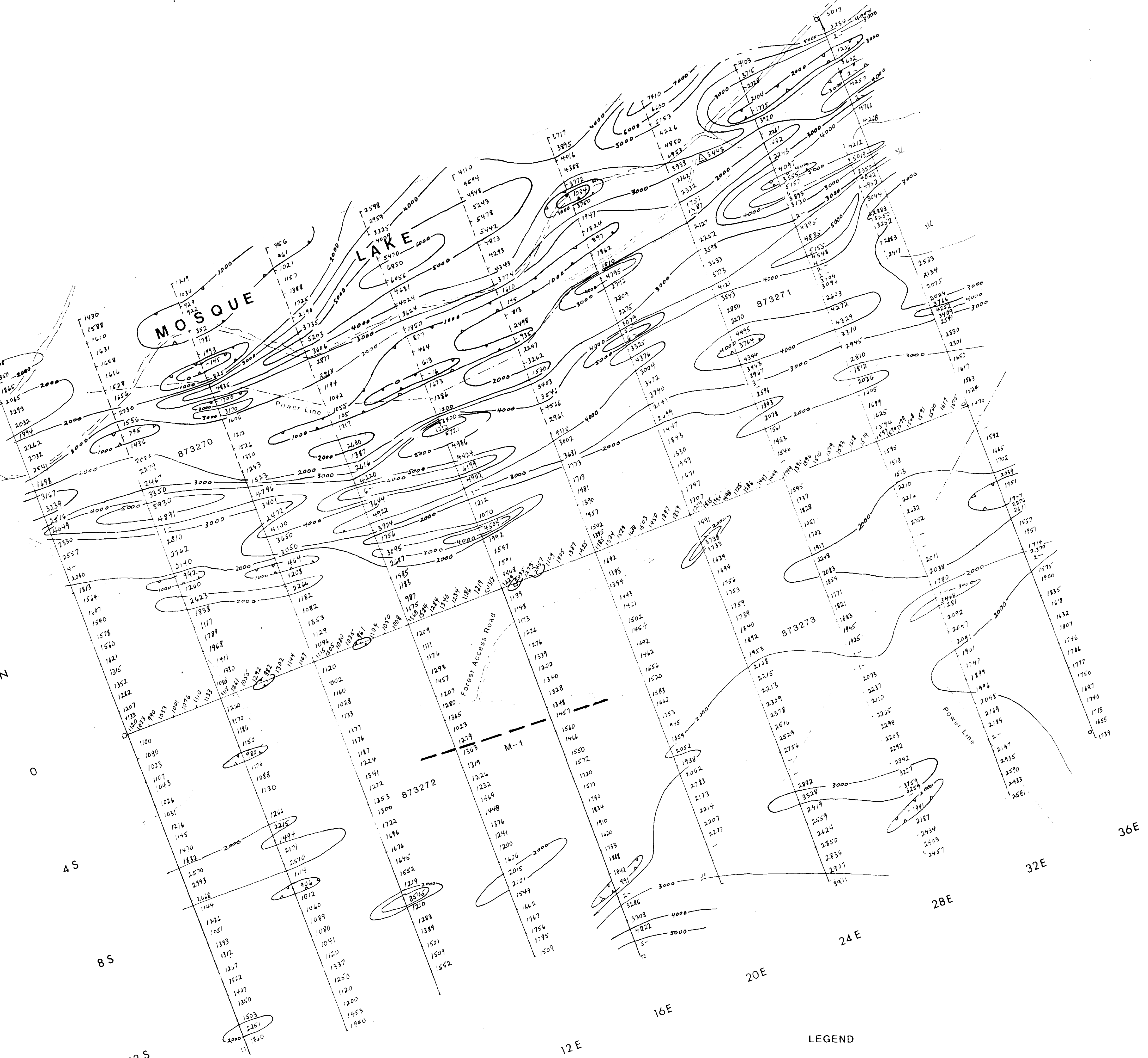
LAKE

M-1

873272



873273

873271



LEGEND

CONTOUR INTERVAL:

1,000 nT 
100 nT 

DEPRESSION 

BASE VALUE: 56,000nT

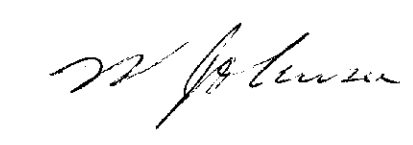
BASE STATION 

EM CONDUCTOR 

INSTRUMENT: BARRINGER GM-122
PROTON MAGNETOMETER

2.11083

dup



UNITED REEF PETROLEUMS LIMITED

GRENVILLE PROJECT

MOSQUE GROUP

MAGNETOMETER SURVEY

0 400 800 FEET

BY: WJ, DJ

DATE: MAY 15, 1987

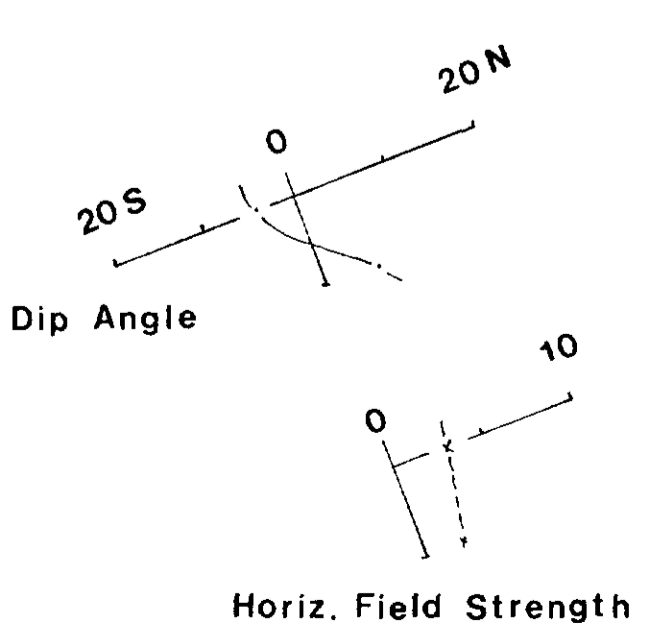
TARGET EXPLORATION SERVICES LTD.



31C15N0855 2.11083 CLARENDON



220



Station: Cutler
Instrument: Phoenix VLF-2
X 3507 ROCK SAMPLE

2.11083 *W. Johnson*

UNITED REEF PETROLEUMS LIMITED	
GRENVILLE PROJECT	
MOSQUE GROUP	
VLF - EM SURVEY	
0 400 800 FEET	
BY: WJ. DJ	DATE: MAY 15, '87
TARGET EXPLORATION SERVICES LTD.	