

2.1388

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JAN 8 - 1974

PROJECTS  
SECTION



31D16NW0041 2.1388 GLAMORGAN

010

SCINTILLOMETER SURVEY OF NORTHERN CLAIM GROUP  
IN MONMOUTH TOWNSHIP AND WESTERN CLAIMS  
IN GLAMORGAN TOWNSHIP, ONTARIO

Claim Nos. E.O. 335122 to 335127 incl.) Northern Group,  
E.O. 347396 to 347400 incl.) Monmouth Twp.

E.O. 347401 and 347402 - Western Group  
Glamorgan Twp.

By  
Zia Hasan  
Imperial Oil Limited  
Toronto

January 3, 1974

## Introduction

In November of 1972, Imperial Oil Limited acquired by staking thirteen unpatented mining claims in Monmouth and Glamorgan Townships, Ontario for uranium exploration. The claims were staked by R.S. Brooks of Haliburton on behalf of the Company and are described as follows:

### Monmouth Township:

Northern Claim group I-E.O. 335122 to 335127 incl. = 6

Northern Claim group II-E.O. 347396 to 347400 incl. = 5

### Glamorgan Township:

Western Claim group E.O. 347401 & 347402 incl. = 2

Total 13

## General Geology

The above claims are underlain by Grenville marble and paragneisses intruded by syenitic and granitic pegmatites, some of which are uranium and thorium bearing. At some pegmatite contacts pink calcite-diopside skarn has developed containing uranium mineralization. General geology of the area has been published by Ontario Department of Mines in Maps 2173 and 2174.

## Survey

A ground scintillometer survey was conducted on the above claims using a McPhar TV1 model gamma ray scintillometer. General principles and description of the instrument is given in the Appendix. For control, a base line was cut and chained and pace and compass lines were run at every 200 feet and were tied to the east west claim lines.

Readings on Tl fast count were taken on X 100 scale and are plotted on maps in Fig. 1 to 3.

### Results

Northern claim group I has several scattered anomalies, but contains only two anomalies showing areas of X6 background radiations. Northern claim group II has several strong anomalies in claim E.O. 347400 and one anomaly in E.O. 347399. Western claim group has only one strong anomaly apparently caused by a radioactive boulder.

### Recommendations:

The anomalous areas in Northern Claim Group I and II should be geologically mapped and trenched to obtain fresh rock samples for assaying.

Zia Hasan



A/74

## A P P E N D I X

### GENERAL DESCRIPTION AND APPLICATIONS OF TV-1

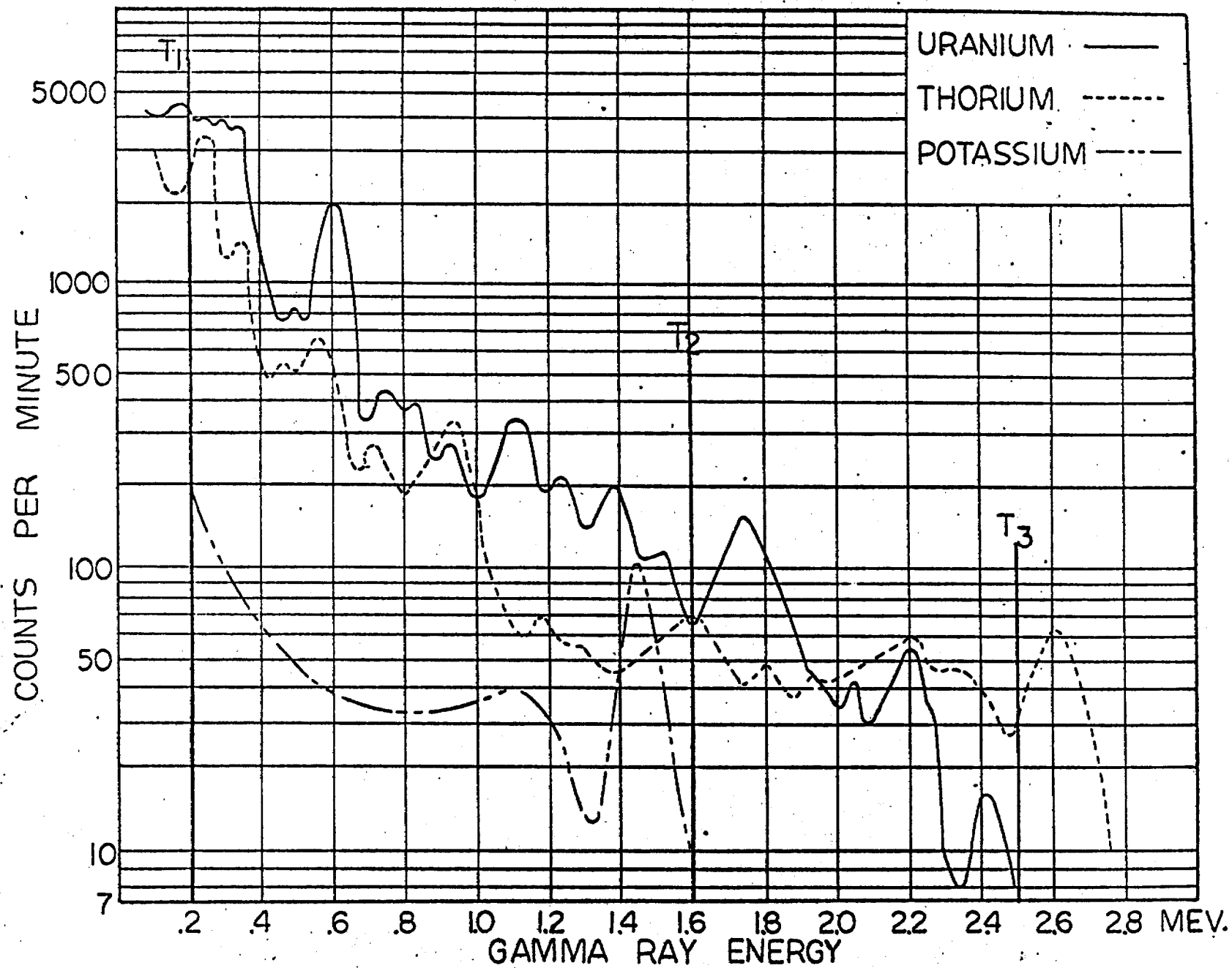
The gamma ray detecting principle lies in the sodium iodide crystal. Gamma rays entering the crystal, interact with the crystal atoms, resulting in free electrons and light emission. The optically coupled photomultiplier converts the light emission to electrical pulses. The magnitudes of the electrical pulses bear a relationship to the energy levels the intercepted gamma rays.

Various radioactive elements have characteristic gamma energy spectrums. The nature of the spectrum for a given element can be used to advantage in identifying it in the presence of other radioactive elements. Figure 1 shows spectral curves for the three main elements of interest in radioactive surveys; potassium, uranium and thorium.

Thorium emits gamma rays with energy levels exceeding 2.5 Mev. The highest energy radiation from potassium is about 1.6 Mev. The three vertical lines marked  $T_1$ ,  $T_2$ , and  $T_3$  show the location of the threshold settings of the TV-1 scintillometer after the instrument has been calibrated. Threshold  $T_3$  at 2.5 Mev. allows only those electrical pulses to be registered whose amplitudes correspond to gamma rays with energy levels above 2.5 Mev.  $T_2$  similarly responds to gamma energy levels above 1.6 Mev. When both thorium and uranium are present during a measurement, then the reading at  $T_2$  contains counts resulting from both elements whereas  $T_3$  contains counts from thorium only.

It is possible then, to subtract the count due to thorium in the  $T_2$  reading, leaving the count from uranium only. The count representing thorium in the  $T_2$  reading is a fixed multiple of the  $T_3$  reading. In the TV-1 scintillometer, this multiple is 3.5. That is, the count in  $T_2$  due to uranium is  $T_2 - 3.5 T_3$ . A thorium calibrating source and calibration procedure, provided with the instrument, ensures that this is always the case.

ZH:rn



GAMMA-RAY SPECTRA FROM NATURAL ORES OR THEIR CONSTITUENTS

FIGURE 1

GEOPHYSICAL - GEOLOC  
TECHNICAL DATA STATEMENT



31D16NW0041 2.1388 GLAMORGAN

900 4

PROJECTS SECTION

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 GROUND SCINTILLOMETER  
Township or Area MONMOUTH & GLAMOREAN TWPS  
Claim holder(s) R. S. BROOKS  
FOR IMPERIAL OIL LIMITED  
Author of Report Z. HASAN  
Address 111 ST CLAIR AVE W, TORONTO  
Covering Dates of Survey OCT 15 to NOV 10, 1973  
(linecutting to office)  
Total Miles of Line cut 27.0

MINING CLAIMS TRAVERSED  
List numerically

(prefix)	(number)
E.O.	335122-335127 incl.
E.O.	347396-347400 incl.
E.O.	347401 & 347402

SPECIAL PROVISIONS  
CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.  
ENTER 20 days for each additional survey using same grid.

Geophysical	DAYS per claim
-Electromagnetic	_____
-Magnetometer	_____
-Radiometric	<u>40</u>
-Other	<u>dw</u>
Geological	_____
Geochemical	_____

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: Jan 3/74 SIGNATURE: Z. Hasan  
Author of Report or Agent

PROJECTS SECTION

Res. Geol. \_\_\_\_\_ Qualifications 2,873  
Previous Surveys L.D.

Checked by \_\_\_\_\_ date \_\_\_\_\_

GEOLOGICAL BRANCH \_\_\_\_\_

Approved by \_\_\_\_\_ date \_\_\_\_\_

GEOLOGICAL BRANCH \_\_\_\_\_

Approved by \_\_\_\_\_ date \_\_\_\_\_

TOTAL CLAIMS 13

OFFICE USE ONLY

If space insufficient, attach list

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

## GEOPHYSICAL TECHNICAL DATA

### GROUND SURVEYS

Number of Stations \_\_\_\_\_ Number of Readings \_\_\_\_\_

Station interval \_\_\_\_\_

Line spacing \_\_\_\_\_

Profile scale or Contour intervals \_\_\_\_\_  
(specify for each type of survey)

### MAGNETIC

Instrument \_\_\_\_\_

Accuracy - Scale constant \_\_\_\_\_

Diurnal correction method \_\_\_\_\_

Base station location \_\_\_\_\_

### 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 \_\_\_\_\_

Time domain \_\_\_\_\_ Frequency domain \_\_\_\_\_

Frequency \_\_\_\_\_ Range \_\_\_\_\_

Power \_\_\_\_\_

Electrode array \_\_\_\_\_

Electrode spacing \_\_\_\_\_

Type of electrode \_\_\_\_\_



SELF POTENTIAL

Instrument \_\_\_\_\_ Range \_\_\_\_\_

Survey Method \_\_\_\_\_

Corrections made \_\_\_\_\_

RADIOMETRIC

Instrument McPHAR TV-1 GAMMA RAY SCINTILLOMETER

Values measured TOTAL COUNTS PER SECOND

Energy windows (levels) T-1 0.2 MeV, T-2 1.6 MeV, T-3 - 2.5 MeV.

Height of instrument 2.5 FT Background Count 1500, 2000 CPS

Size of detector NaI 1" x 1 1/4" CRYSTAL

Overburden VARIABLE GLACIAL 0-5 FT  
(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 \_\_\_\_\_



Dysart Twp. (M.86)

Judley Twp. (M.84)

THE TOWNSHIP OF  
GLAMORGAN

COUNTY OF HALIBURTON  
EASTERN ONTARIO  
MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

- PATENTED LAND
- CROWN LAND SALE
- LEASES
- LOCATED LAND
- LICENSE OF OCCUPATION
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- ROADS
- IMPROVED ROADS
- KINGS HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKOG
- MINES
- CANCELLED
- TRAILS

NOTES

This Map Is Not To Be Used  
FOR SURVEY PURPOSES

Lot And Concession Lines Shown Herein, Are Projected From The Best Information Available, But Their True Position Is Not Guaranteed For Official Survey Purposes Consult The Original Survey Plans And Field Notes Of Records In The Dept. Of Lands & Forests.

400' Surface Rights Reservation around All Lakes And Rivers.

The Acreages Shown Are The Acreages That Were Patented And Do Not Necessarily Represent The True Surveyed Acreage Of The Parcel.

Flooded Lands Shown Thus

For Status Of Summer Report Locations Shown Thus: Please Contact Dept. Of Lands & Forests.

Areas withdrawn from staking under Section 43 of the Mining Act. (R.S.O. 1970)

File	Date	Disposition
31	Oct. 71	S.R.O.

MINING LANDS  
DATE OF ISSUE  
JAN - 9 1974  
MINISTRY OF NATURAL RESOURCES

File - 2.1388

PLAN NO. - M.95

ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH

XV  
XIV  
XIII  
XII  
XI  
X  
IX  
VIII  
VII  
VI  
V  
IV  
III

XV  
XIV  
XIII  
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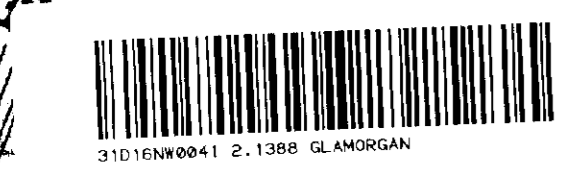
Shannon Twp. (M.153)

Monmouth Twp. (M.164)

Galway Twp. (M.94)

Cavendish Twp. (M.72)

Anstruther Twp. (M.45)



Dudley Twp. (M-84)

THE TOWNSHIP OF  
OF  
**MONMOUTH**  
COUNTY OF  
HALIBURTON

EASTERN ONTARIO  
MINING DIVISION

SCALE: 1-INCH = 40' CHAINS

LEGEND

- PATENTED LAND
- CROWN LAND SALE
- LEASES
- LOCATED LAND
- LICENSE OF OCCUPATION
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- ROADS
- IMPROVED ROADS
- KINGS HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKEG
- MINES

NOTES

This Map Is Not To Be Used  
FOR SURVEY PURPOSES

400' Surface rights reservation groups on lakes and rivers.

Original shoreline shown thus  
F.R. shoreline shown thus  
Patent Map shoreline shown thus

For signs of summer water levels shown thus  
Please contact Dept. of Lands and Forests

MINING LANDS  
CATALOGUE  
JAN - 9 1974  
MINISTRY OF NATURAL RESOURCES

File - 2.1388

7 1 8 9

PLAN NO. - M.164

MINISTRY OF NATURAL RESOURCES  
BRANCH

Glamorgan Twp. (M-95)

Cardiff Twp. (M-69)

Anstruther Twp. (M-45)



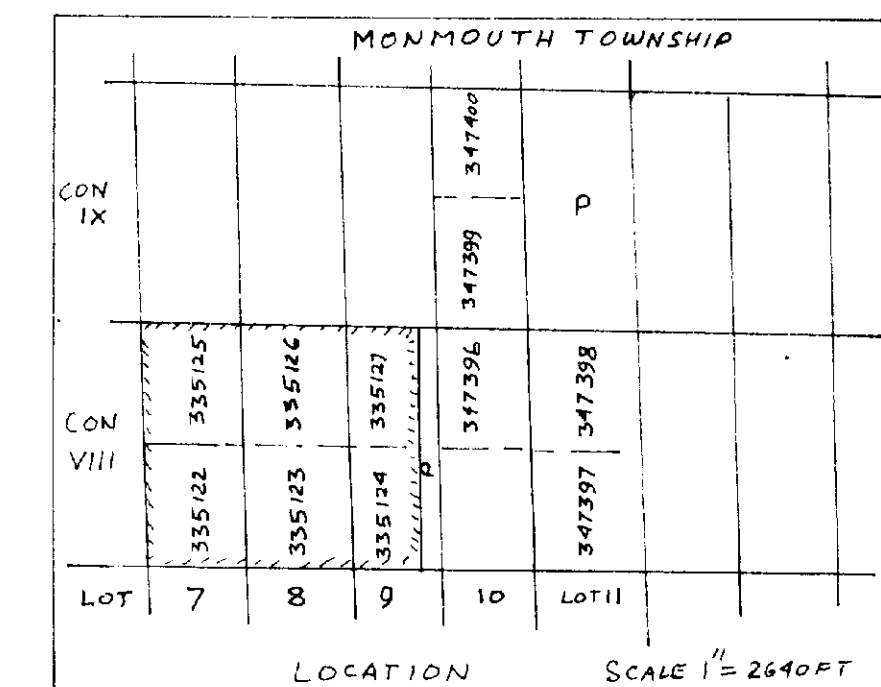
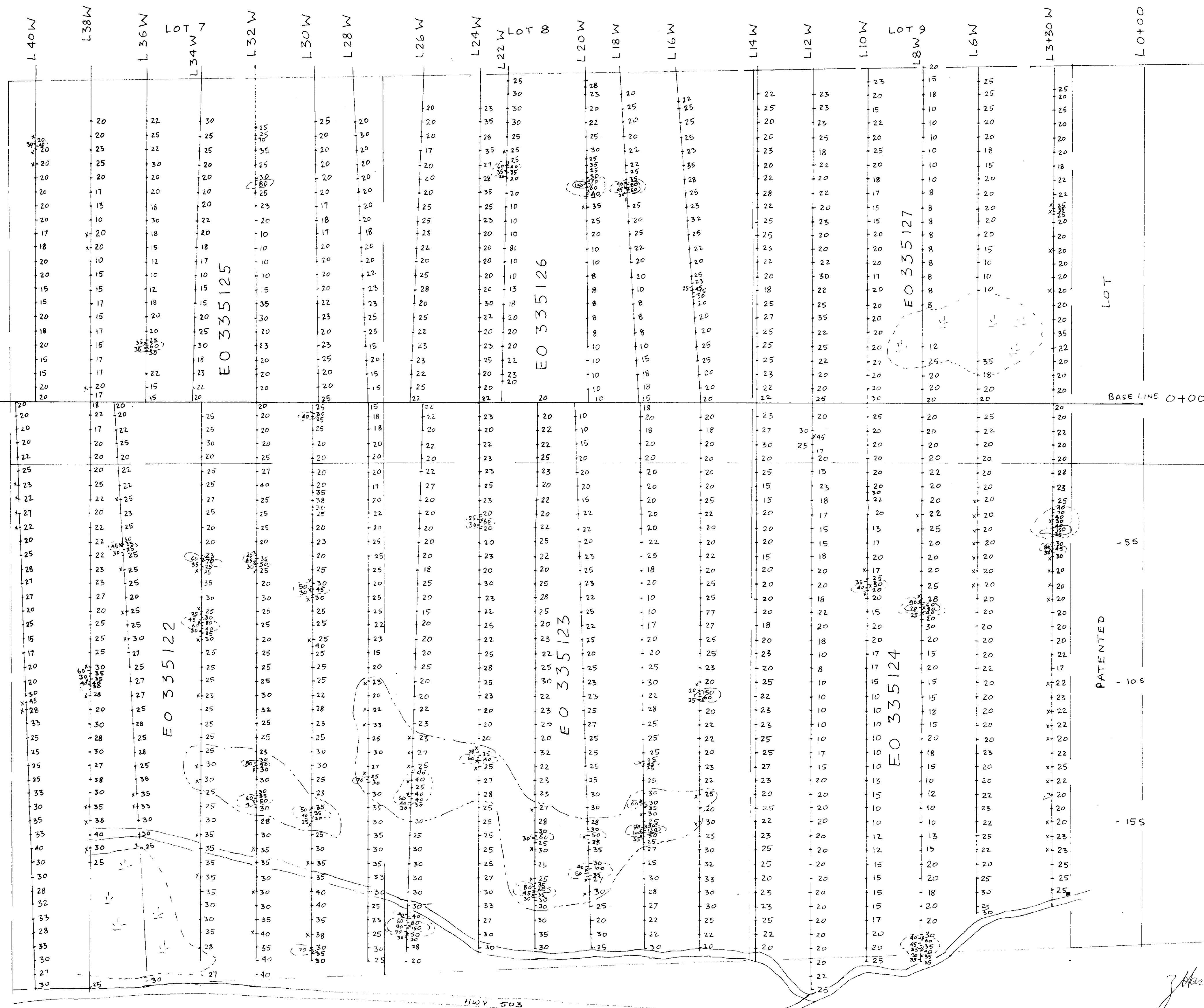


FIG. 1  
 IMPERIAL OIL LIMITED  
 MONMOUTH PROSPECT  
 SCINTILLO METER SURVEY  
 BY MCPHAR TV-1  
 NORTHERN CLAIM GROUP I  
 MONMOUTH TOWNSHIP  
 -20 READING ON T1 SCALE EAST COUNT  
 AT X100 CPS

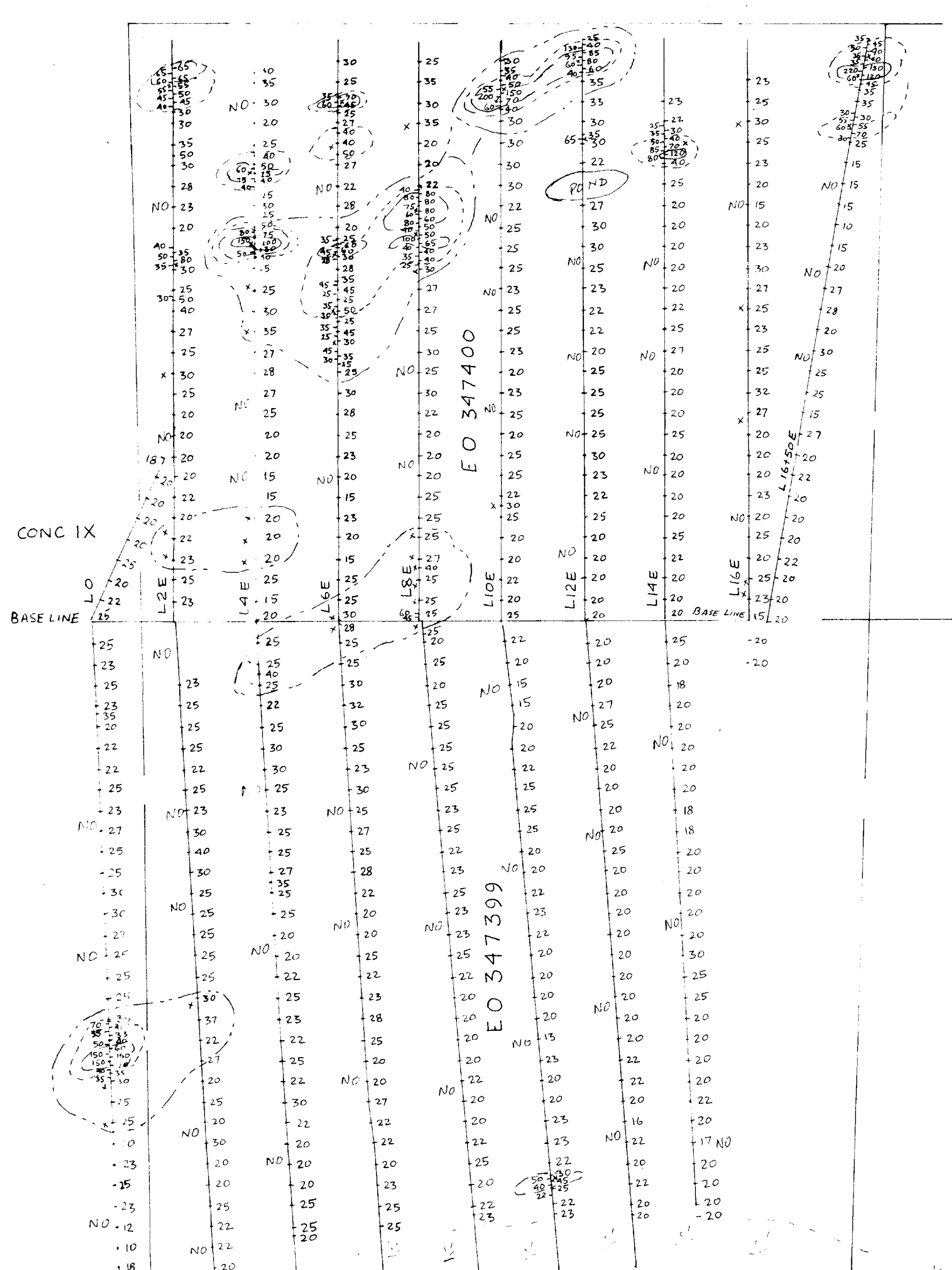
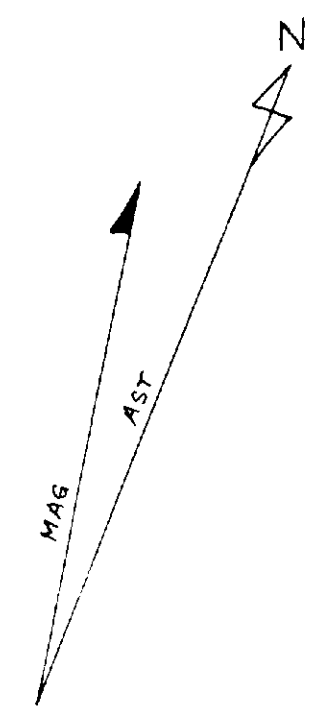
(x6) AREAS OF ANOMALOUS RADIO ACTIVITY  
 (x3) BACKGROUND OF 2000 CPS  
 (x2) SWAMP  
 x SMALL OUTCROP  
 x LARGE OUTCROP  
 ○ AREA OF OUTCROP

SCALE 1" = 200 FT

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LOT 10



MONMOUTH TOWNSHIP											
CONC IX											
CONC VIII	335122	335123	335124	335125	335126	335127	335128	335129	335130	335131	335132
LOT	7	8	9	10	11	12					

LOCATION SCALE 1" = 2640 FT

*J. J. J.*

FIG 2 2/1388

**IMPERIAL OIL LIMITED**  
**MONMOUTH PROSPECT**  
 SCINTILLOMETER SURVEY USING  
 MCPHAR TV-1  
 NORTHERN CLAIM GROUP II  
 MONMOUTH TOWNSHIP

- 20 READING ON T-1 SCALE  
 FAST COUNT AT 1000 CPS

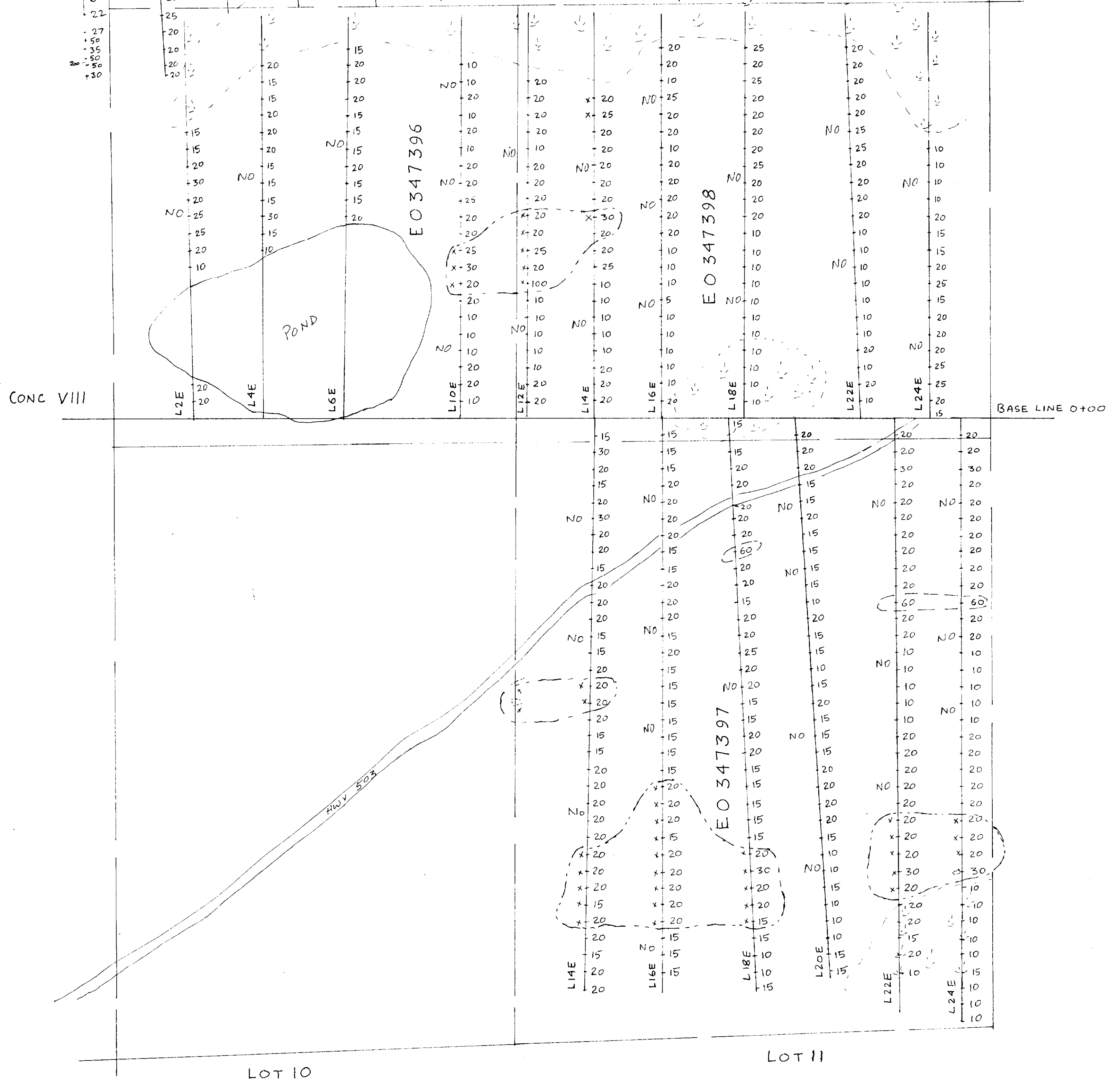
○ X6 AREAS OF ANOMALOUS RADIOACTIVITY  
 ○ X3 X BACKGROUND OF 2000 CPS  
 ○ X2

○ X SMALL OUTCROP  
 ○ LARGE OUTCROP  
 ○ AREA OF OUTCROP  
 NO NO OUTCROP

SWAMP

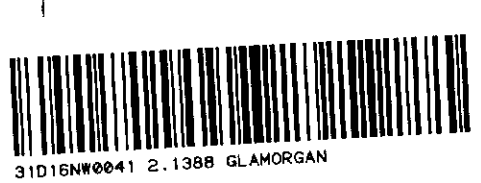
SCALE: 1" = 200 FT

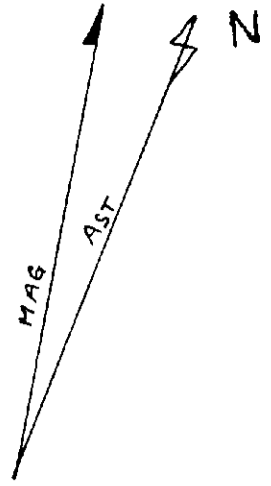
LOT 11



LOT 10

LOT 11





LOT 28

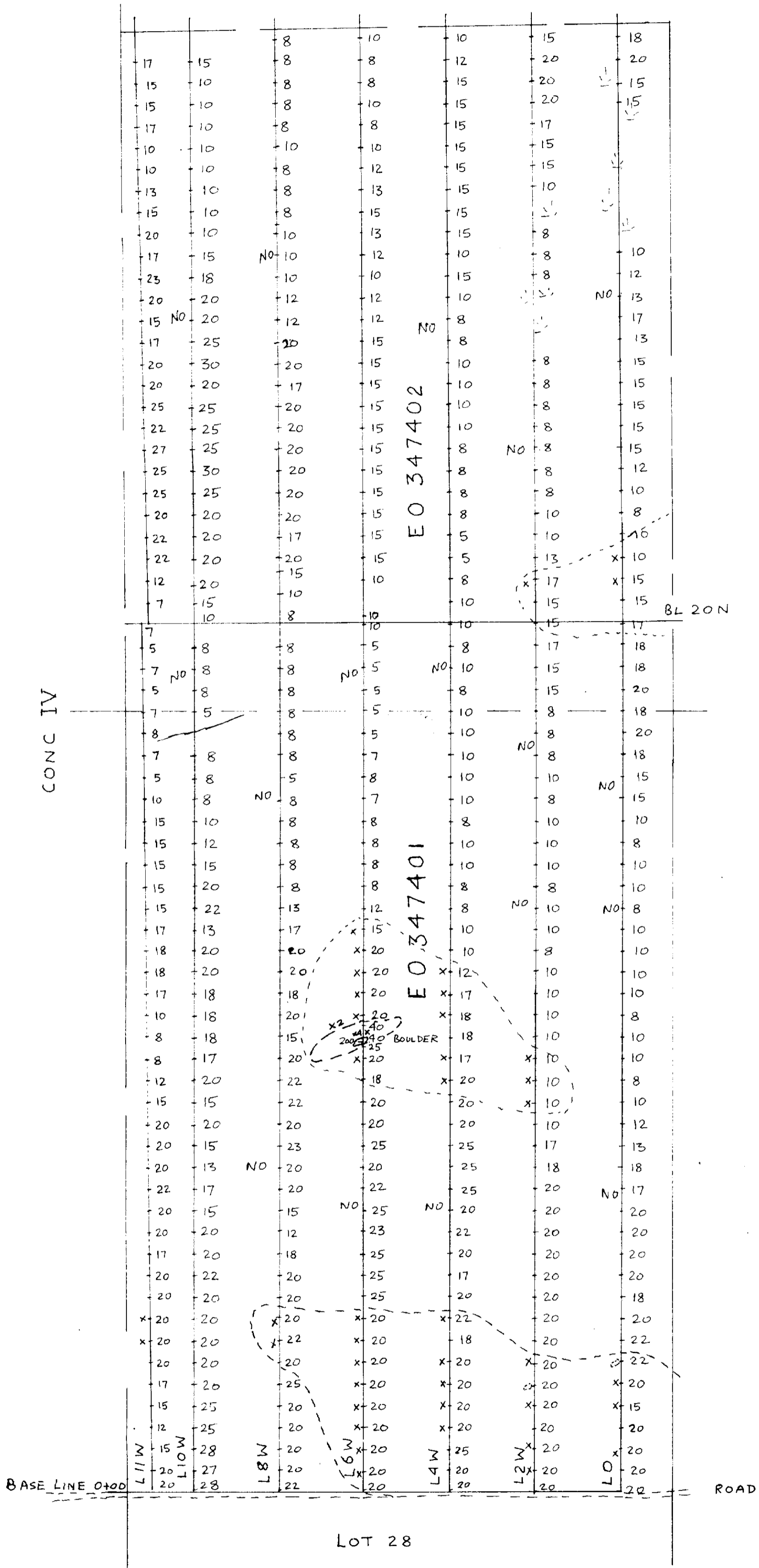


FIG 3

*J. Haran*

IMPERIAL OIL LIMITED  
 MONMOUTH PROSPECT  
 SCINTILLOMETER SURVEY USING  
 MCPHAR TV-1  
 WESTERN CLAIM GROUP  
 GLAMORGAN TOWNSHIP

- 20 READING ON TI SCALE
- FAST COUNT AT X100 CPS
- AREA OF ANOMALOUS RADIOACTIVITY TIMES
- BACKGROUND OF 1500 CPS
- SWAMP
- X - SMALL OUTCROP
- - LARGE OUTCROP
- - AREA OF OUTCROPS
- NO - NO OUTCROPS
- SCALE 1" = 200'

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