

October 20, 1975

Imperial Oil Limited

Zia Hasan

by

K374254-257 Incl.

CLAIMS: K374245-250 Incl.

ONTARIO

OF GAME LAKE CLAIMS BRIDGES TOWNSHIP

GEOLOGY AND RADIO-METRIC SURVEY

PROJECTS UNIT

010

SF135E026 2.1956 BRIDGES



2.1956

## INTRODUCTION

During 1973, Imperial Oil Limited optioned from Augmittto Exploration

ten claims located in Bridges Township, Kenora Mining Division, Ontario.

Subsequently, some trenching and sampling was done on surface showings of

uraniferous pegmatites. Geological mapping of the claim group was carried

out by Kay Garvey and reported in September, 1974. In order to evaluate

the extent of the pegmatite bodies found in the claim area and the extent

of uranium mineralization, a detailed geologic and radiometric survey was

carried out during July and August of 1975. The trenches were mapped in

detail and resampled for further assaying.

The mapping and survey was carried out by Imperial Oil crew and the uranium assays were done in the Company's assay laboratories in Calgary, Alberta.

## GEOLOGICAL MAPPING

Mapping was carried out by M. Lenters and D. McIvor along pace and compass

lines run from two established base lines in the claim area. The base lines

were chained and blazed. Survey lines were established at 200 foot intervals

and stations were flagged and numbered every 100 feet along the line. All

the outcrops and overburden features were recorded and identified as shown

on the map in Fig. 1.

The claim area is underlain by Archaean gneisses and sills of granitic

pegmatites both belonging to Superior Structural Province. The disposition

of various rock units is plainly discernible from Fig. 1.

### MAPPING, SAMPLING AND SURVEYS OF TRENCHES

Trenches marked 1 to 4 on Fig. 1 were surveyed at 1" = 10 feet scale. Variation in the pegmatite and the extent of mineralization in them is shown in Fig. 2-5. Chip samples were obtained over the area of mineralization and the result of assaying as % U<sub>3</sub>O<sub>8</sub> is shown beside each sample number in Fig. 2 to 5. A list of assay is given in Appendix A. Radiometric surveys of the trenches are given in Fig. 6 to 9. The details of instrument used and the units of measurement are exactly the same as explained in the legend of radiometric survey map of the claim group shown in Fig. 10.

### RADIOMETRIC SURVEY

Radiometric survey of the claim area was carried out simultaneously with the mapping. A McPhar TV-1 model scintillometer was used and its working principles are given in Appendix B. Readings were taken at a level of 2.5 feet above the ground. Reading interval of 50 feet was generally used along the lines except for areas of high response where readings were recorded every 10 feet. The results of this survey are given in Fig. 10 and the trench surveys are given in Fig. 6 to 9.

### RESULTS AND CONCLUSIONS

The surveys indicate the pegmatite to be of variable strike length and lense-shaped in attitude. Most radiometric responses are over small areas indicating erratic nature of uranium enrichment in pegmatite. Some relationship of mineralization to the pegmatite contacts was noted.

RECOMMENDATIONS

No further work is warranted on the claims on the basis of work done to date.

October 20, 1975

  
Zia Hasan

APPENDIX A

<u>SERIAL NO.</u>	<u>TRENCHES</u>	<u>NO. OF SAMPLE IN TRENCH</u>	<u>LOCATION (FROM SOUTH END)</u>	<u>% U<sub>3</sub>O<sub>8</sub> CHEMICAL</u>
1	1	1	11.5' N (East side)	.009
2	1	2	7.0' N (West side)	.008
3	1	3	18.0' N (West side)	.02
4	1	4	22.0' N (West side)	.004
5	1	5	35.0' N (East side)	.02
6	1	6	109.0' N (Centre)	.007
7	2	1	32.0' N (West side)	.009
8	2	2	34.0' N (West side)	.02
9	2	3	37.0' N (West side)	.003
10	3	1	6.0' N (East side)	.07
11	3	2	9.0' N (Centre)	.01
12	3	3	53.0' N (East side)	.002
13	3	4	3.0' N (Centre)	.01
14	Old Pits	1	109.0' N (East side)	.009
15	Old Pits	2	83.0' N (Centre)	.02
16	Old Pits	3	64.0' N (East side)	.02
17	Old Pits	4	53.0' N (Centre)	.01
18	Old Pits	5	18.0' N (Centre)	.008
19	New Peg.	1	~ L 13.8 E; 4.4 N	.006
20	New Peg.	2	~ L 13.7 E; 4.3 N	.02

GENERAL DESCRIPTION AND APPLICATIONS OF  
THE McPHAR MODEL TV-1 GAMMA RAY SPECTROMETER

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 photo-multiplier converts the light emission to electrical pulses. The magnitudes of the electrical pulses bear a relationship to the energy levels of the intercepted gamma rays.

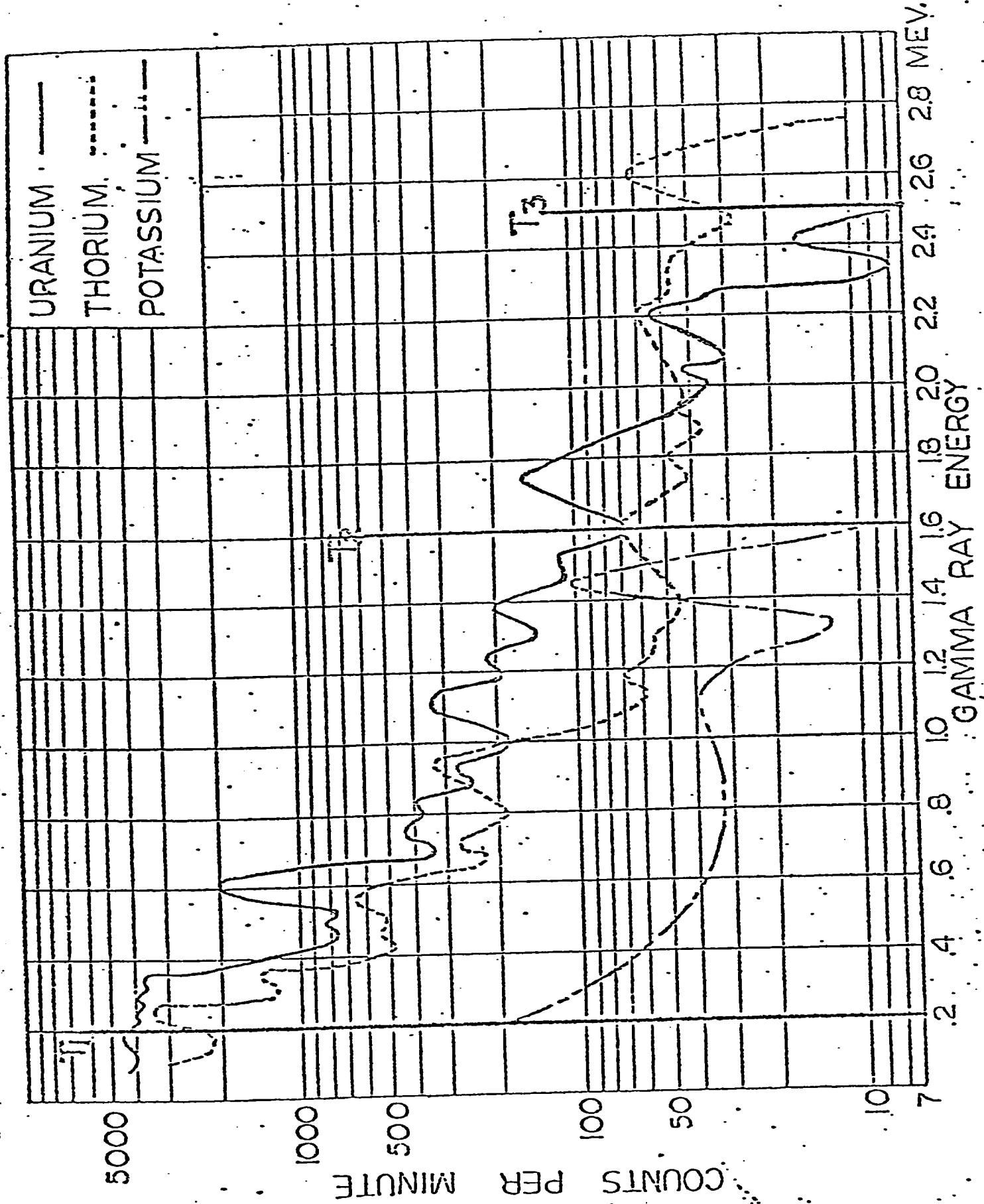
Various radioactive elements have characteristic gamma energy spectrums. The nature of the spectrum for a given element can be used to advantage in identifying it in the presence of other radioactive elements. Fig. 2 shows spectral curves for the three main elements of interest in radioactive surveys; 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 T1, T2 and T3 show the location of the threshold settings of the TV-1 spectrometer after the instrument has been calibrated. Threshold T3 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. T2 similarly responds to gamma energy levels above 1.6 Mev. When both thorium and uranium are present during a measurement, then the reading at T2 contains

counts resulting from both elements whereas T3 contains counts from thorium only.

It is possible then, to subtract the count in the T2 reading, leaving the count from uranium only. The count representing thorium in the T2 reading is a fixed multiple of the T3 reading. In the TV-1 spectrometer, this multiple is 3.5. That is, the count in T2 due to uranium is  $T2 - 3.5T3$ . A thorium calibrating source and calibration procedure, provided with the instrument, ensures that this is always the case.

RTG:rn





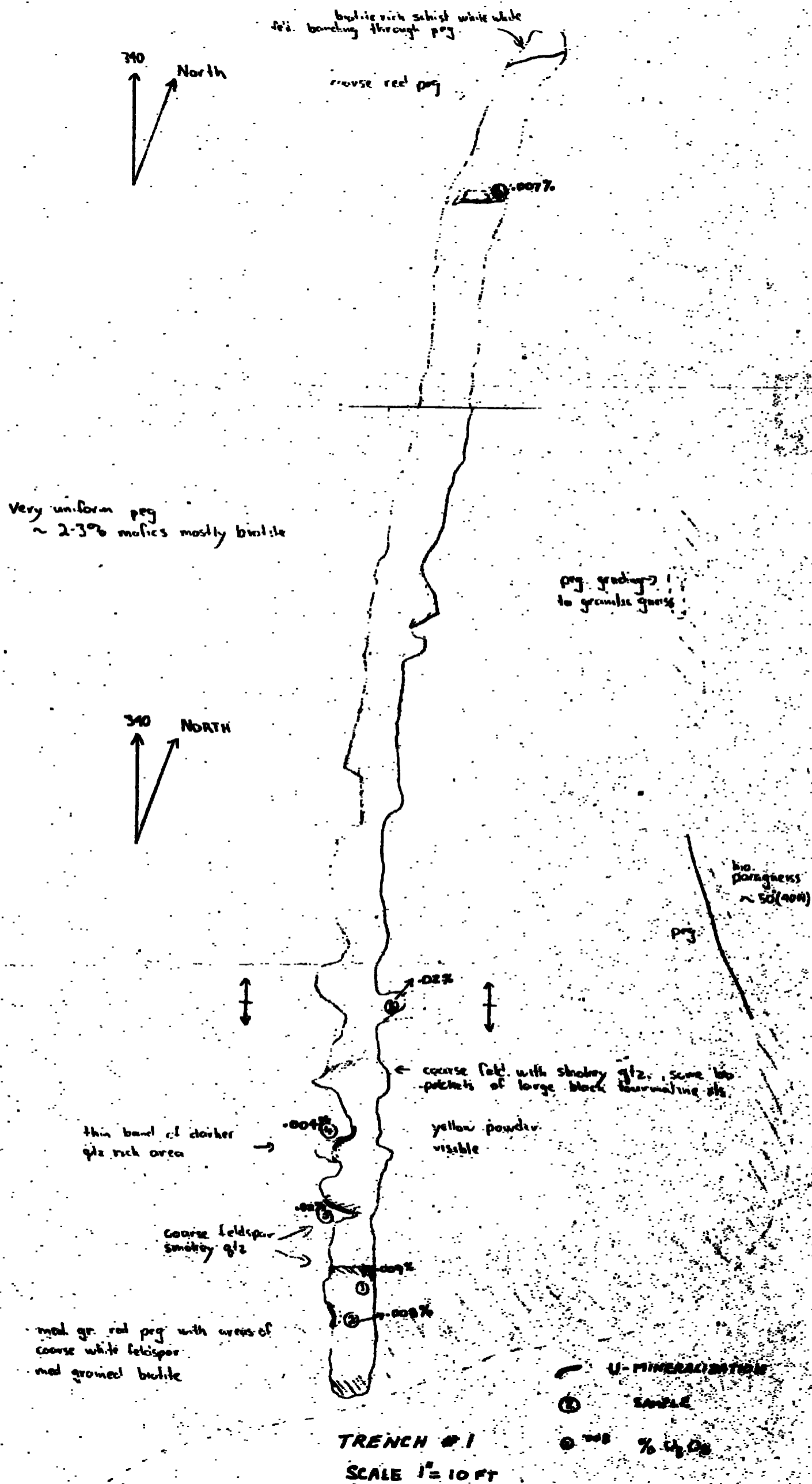
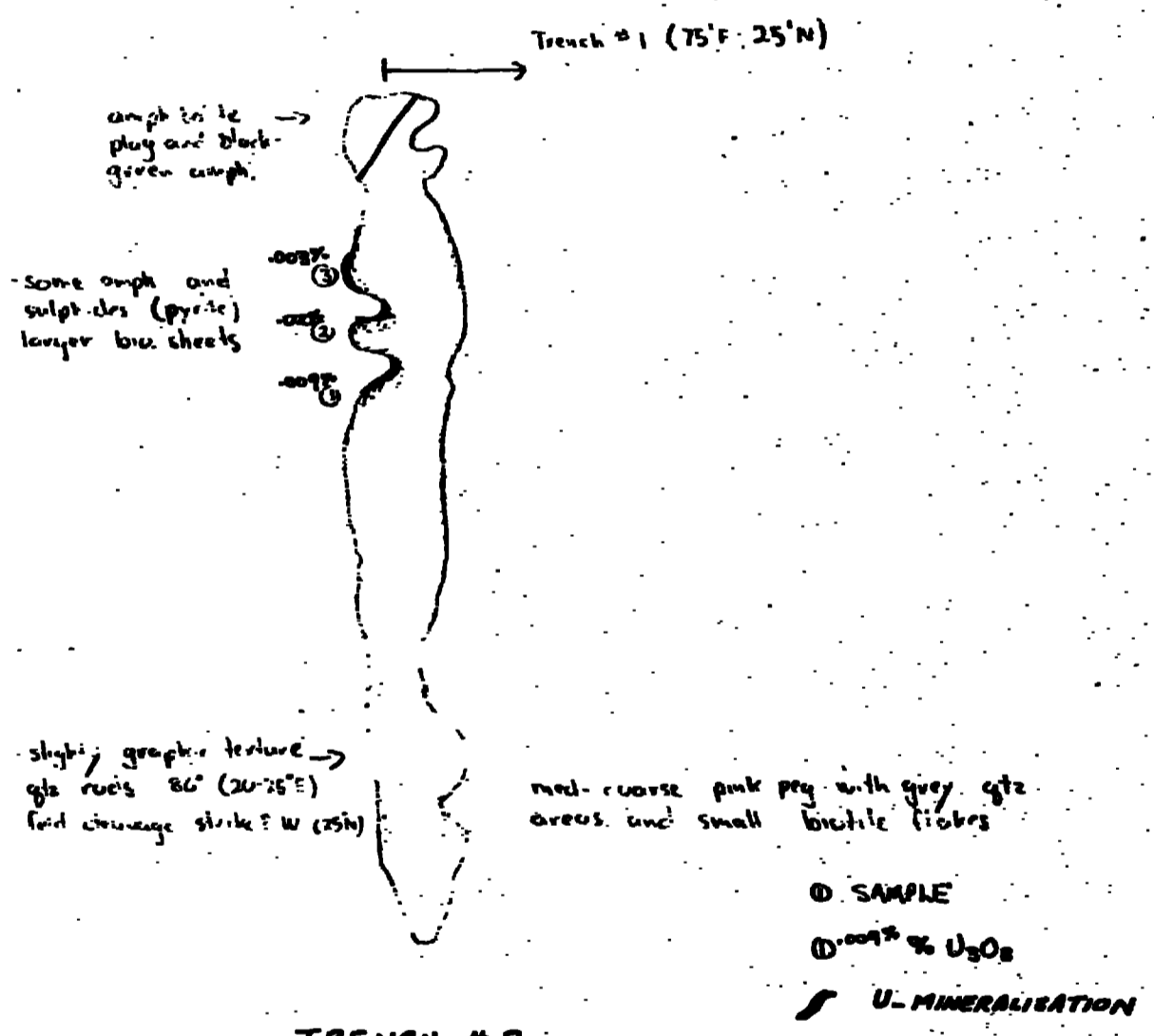
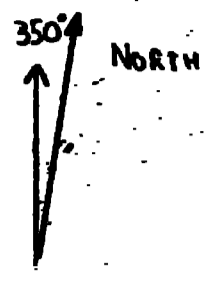
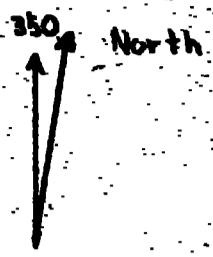


FIG. 2



TRENCH # 2  
SCALE 1" = 10 FT  
FIG. 3



- light pink-white med. grained pyg
- long thin biotite sheets
- sulphide specks

- purple iron stains (pyrite)
- large thin biotite sheets



← large white milky qtz area

over burden

← more biotite ~5% randomly orientated sheets

← more qtz (gray) large pink stains

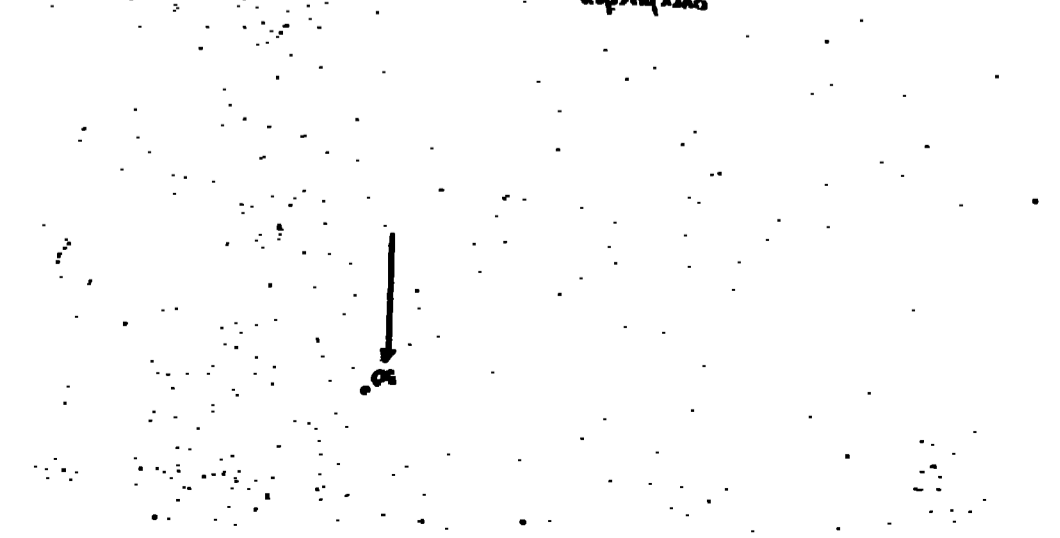
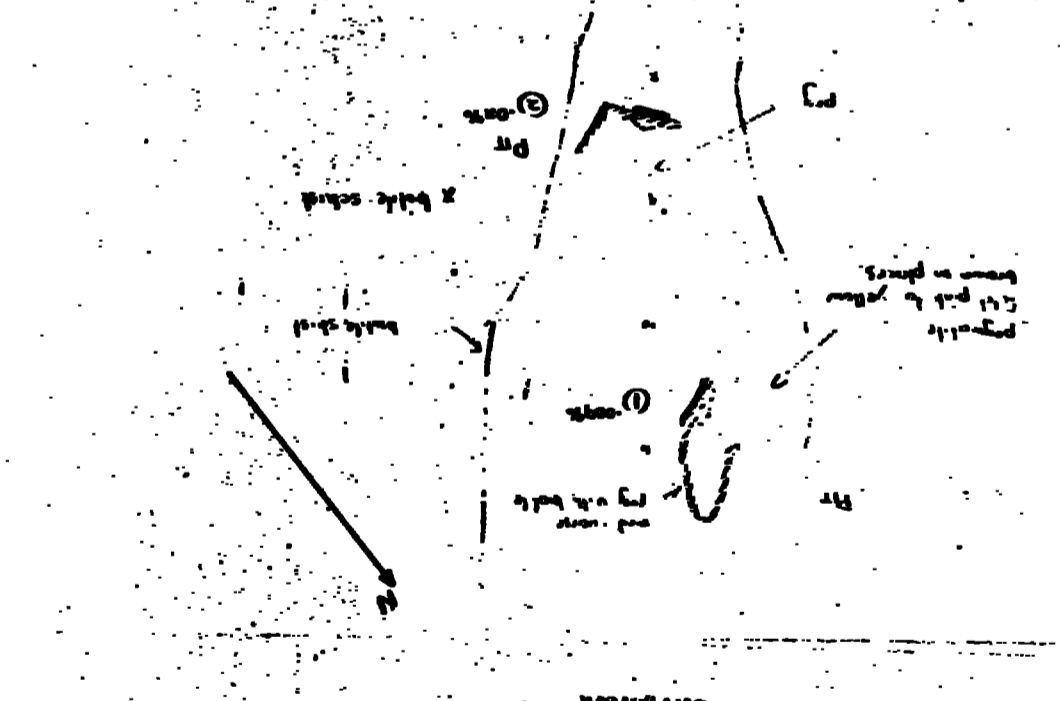
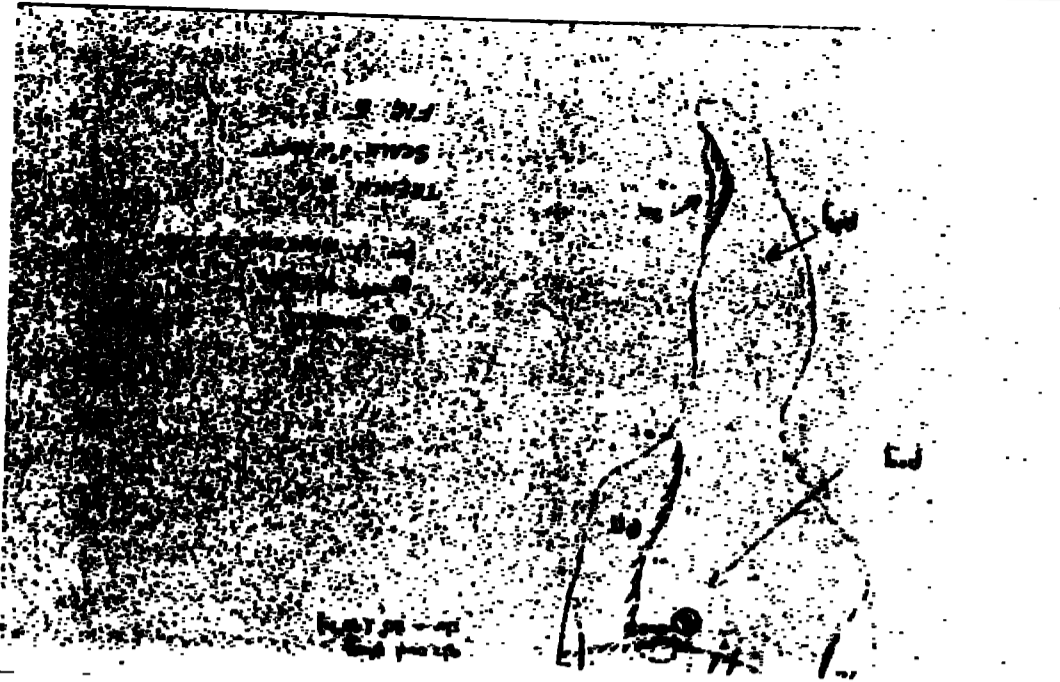


④

TRENCH #3  
SCALE 1" = 10 FT

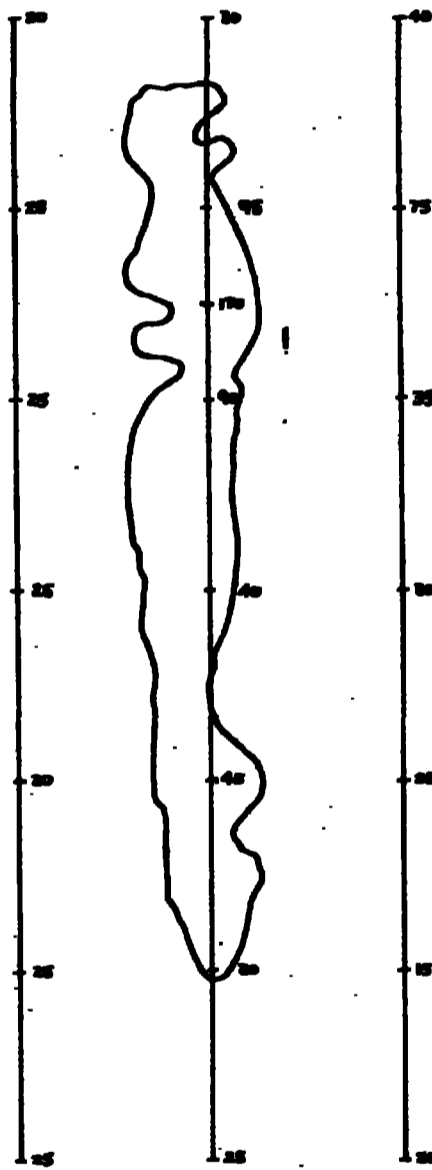
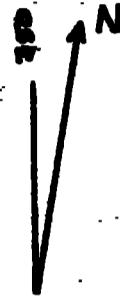
FIG. 4

- ① SAMPLE
- ② 0.07% U<sub>2</sub>O<sub>8</sub>
- ③ U-MINERALIZATION



TRENCH #2  
- SCINTILLOMETER  
SURVEY

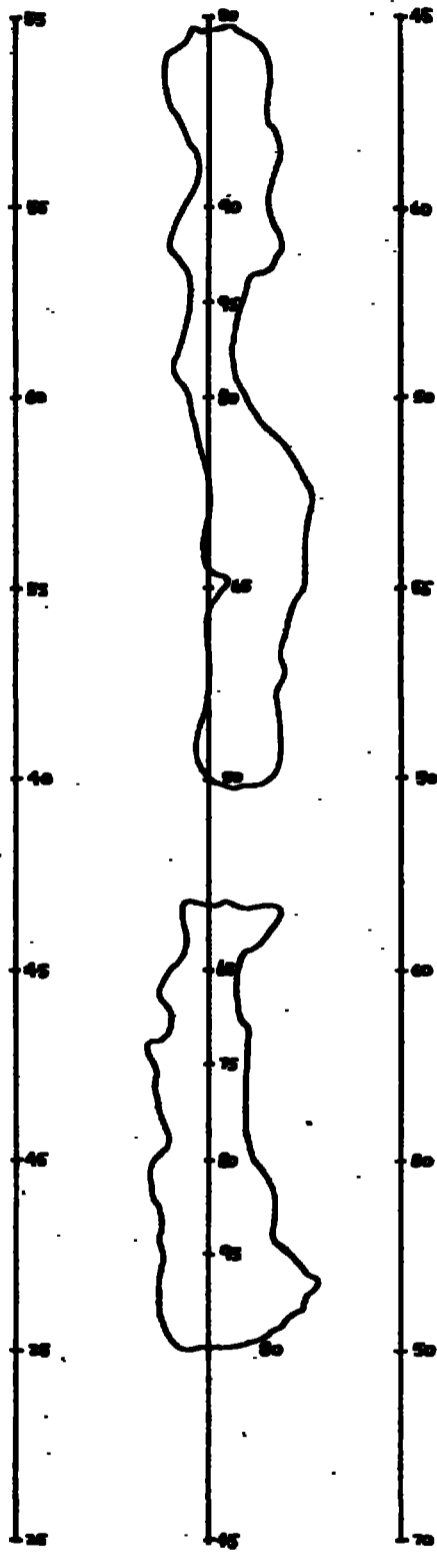
by  
M. LENTERS  
D. MCIVOR



SCALE 1" = 10 FT  
FIG. 7

TRENCH # 3  
- SCINTILLOMETER  
SURVEY

by  
M. LENTERS  
D. MCIVOR



SCALE 1" = 10 FT  
FIG. 8

OF 2.1956

# BRIDGES

DISTRICT OF  
KENORA

KENORA  
MINING DIVISION

SCALE: 1-INCH 40 CHAINS

## LEGEND

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

## NOTES

400' Surface Rights Reservation Around All Lakes And Rivers.

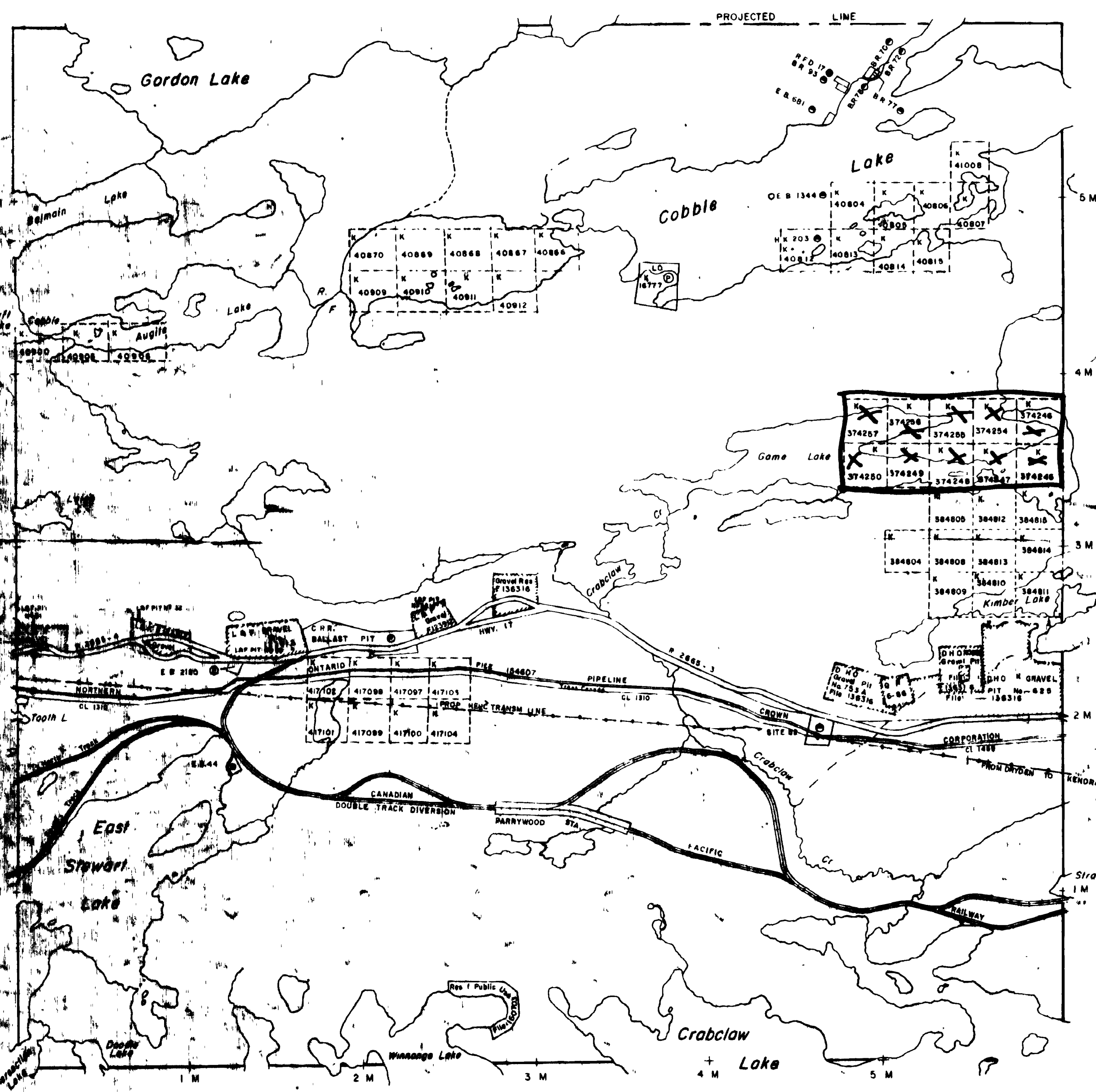
Parcels indicated Thus:

- Patented for Mining & Surface Rights.
- Surface Rights Only

- MINING LANDS -  
DATE OF ISSUE  
OCT 27 1975  
MINISTRY  
OF NATURAL RESOURCES

PLAN NO. M.1951

ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH



Docker Twp. (M.1968)

Crabclaw Lake Area (M.1971)



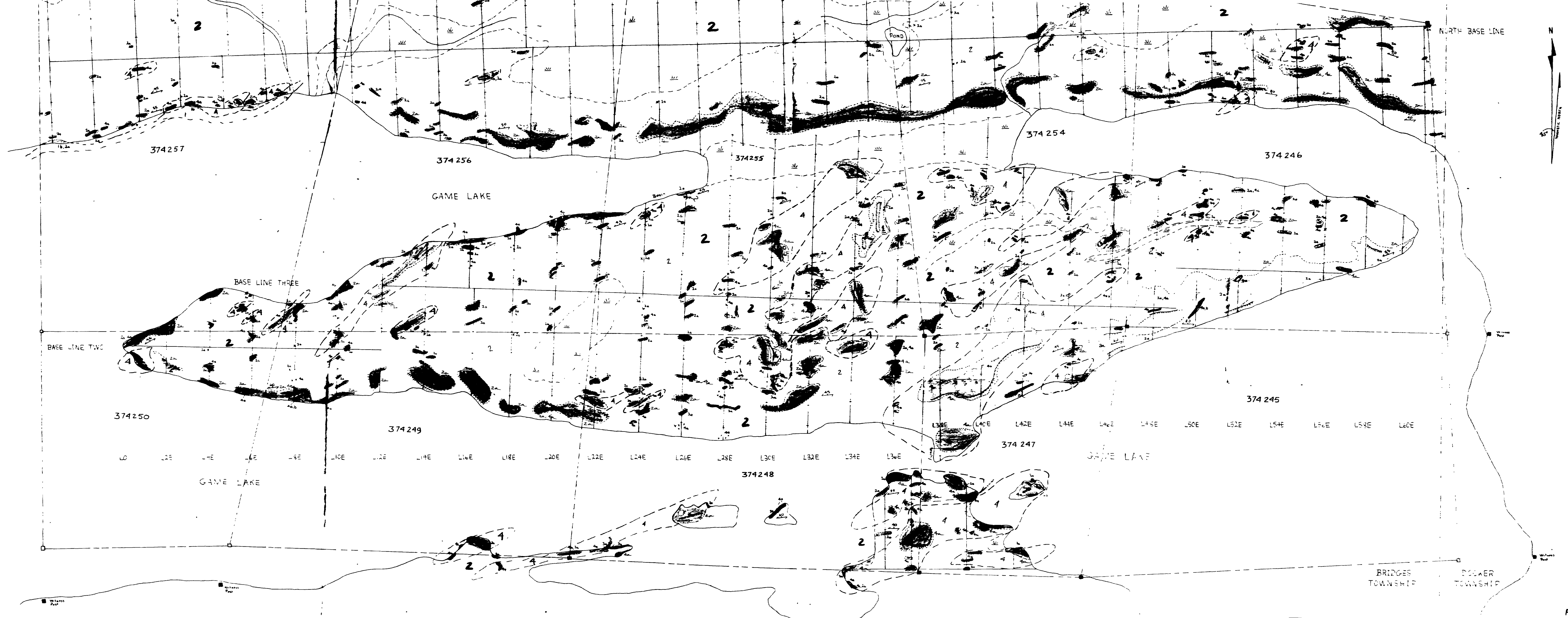
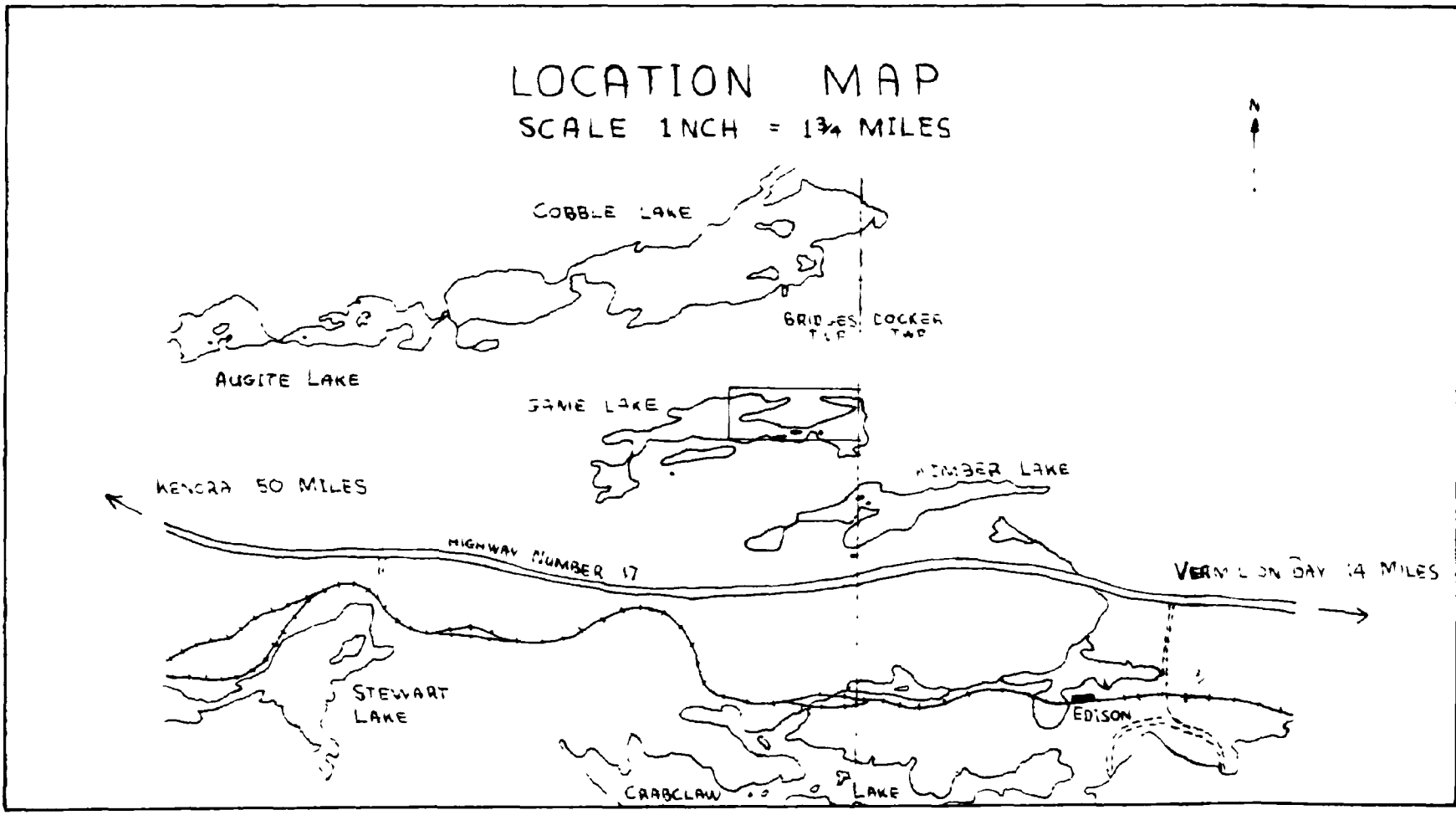


FIG. 1.



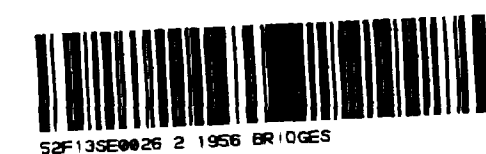
- LEGEND**
- CENOZOIC**  
 PLISTOCENE AND RECENT  
 SAND, GRAVEL, CLAY AND SWAMP  
 UNCONFORMITY
- PRECAMBRIAN**  
**GRANITIC ROCKS**  
 4a PEGMATITE, PEGMATITIC GRANITE  
 4b GRAPHIC GRANITE  
 4c BOTTLE GRANITE
- INTRUSIVE CONTACT
- ULTRAMAFIC META-INTRUSIVE ROCKS**  
 3a GABBRO
- INTRUSIVE CONTACT
- METASEDIMENTS**  
 2a BIOTITE-QUARTZ-FELDSPAR GNEISS
- INTERMEDIATE METAVOLCANICS**  
 1a ANDROSINERITE, BASALTA  
 1b TUFF

**IMPERIAL OIL LIMITED**  
 BRIDGES TOWNSHIP  
 GAME LAKE CLAIM GROUP  
 VERMILION BAY AREA  
**GEOLOGICAL MAP**

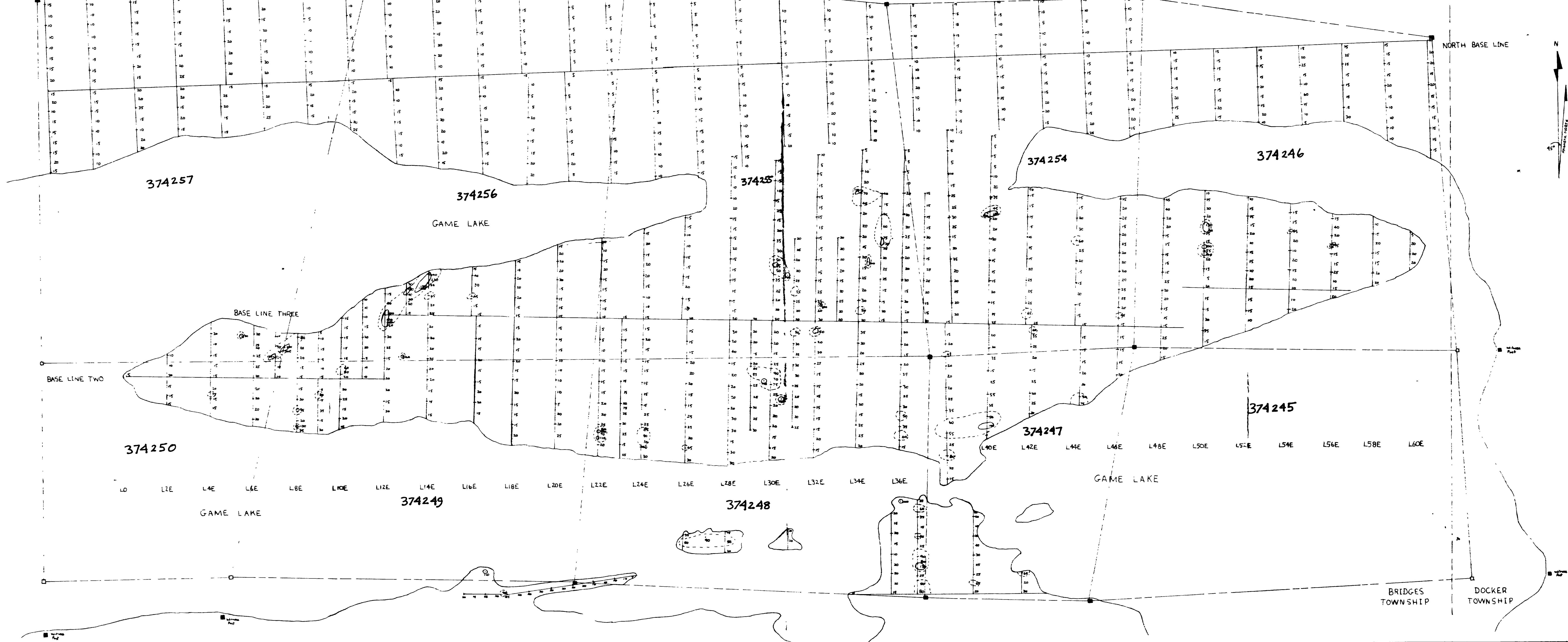
- BOUNDARY OR SPOT OF OUTCROP
- GNEISSOSITY OR FOLIATION
- DRAG FOLD WITH PLUNGE
- GEOLOGICAL BOUNDARY (OBSERVED, INTERPRETED)
- TRENCH OR PIT
- RIDGE OR CLIFF
- MARSH, SWAMP OR LOW VALLEY
- CREEK OR STREAM
- TRAVERSE LINE
- CLAIM POST
- CLAIM LINE
- TOWNSHIP BOUNDARY LINE
- ROAD OR TRACK

SCALE: 1 INCH = 200 FEET  
 JULY 1975  
 M. LENTERS, D. MCIVOR  
 SIGNATURE: M. Lenters

*J. Heenan*  
 Oct 20/75







IMPERIAL OIL LIMITED  
 BRIDGES TOWNSHIP  
 GAME LAKE CLAIM GROUP  
 VERMILION BAY AREA  
 SCINTILLOMETER SURVEY

- TRVERSE LINE
- CLAIM POST
- CLAIM LINE
- TOWNSHIP BOUNDARY LINE
- == ROAD OR TRACK
- 45 COUNTS/MIN
- 90 COUNTS/MIN
- † RADD-ACTIVITY, COUNTS/MIN

*J Mean*  
*Oct 20/75*

SCALE: 1 INCH = 200 FEET  
 JULY 1975 M. LENTERS, D. MCIVOR  
 SIGNATURES

FIG. 10

