

MAR 19710006: GOMER LAKE

Received date: Dec 31, 1971

Public release date: Jan 01, 1973

DISCLAIMER

By accessing and using the Alberta Energy website to download or otherwise obtain a scanned mineral assessment report, you ("User") agree to be bound by the following terms and conditions:

- a) Each scanned mineral assessment report that is downloaded or otherwise obtained from Alberta Energy is provided "AS IS", with no warranties or representations of any kind whatsoever from Her Majesty the Queen in Right of Alberta, as represented by the Minister of Energy ("Minister"), expressed or implied, including, but not limited to, no warranties or other representations from the Minister, regarding the content, accuracy, reliability, use or results from the use of or the integrity, completeness, quality or legibility of each such scanned mineral assessment report;
- b) To the fullest extent permitted by applicable laws, the Minister hereby expressly disclaims, and is released from, liability and responsibility for all warranties and conditions, expressed or implied, in relation to each scanned mineral assessment report shown or displayed on the Alberta Energy website including but not limited to warranties as to the satisfactory quality of or the fitness of the scanned mineral assessment report for a particular purpose and warranties as to the non-infringement or other non-violation of the proprietary rights held by any third party in respect of the scanned mineral assessment report;
- c) To the fullest extent permitted by applicable law, the Minister, and the Minister's employees and agents, exclude and disclaim liability to the User for losses and damages of whatsoever nature and howsoever arising including, without limitation, any direct, indirect, special, consequential, punitive or incidental damages, loss of use, loss of data, loss caused by a virus, loss of income or profit, claims of third parties, even if Alberta Energy have been advised of the possibility of such damages or losses, arising out of or in connection with the use of the Alberta Energy website, including the accessing or downloading of the scanned mineral assessment report and the use for any purpose of the scanned mineral assessment report so downloaded or retrieved.
- d) User agrees to indemnify and hold harmless the Minister, and the Minister's employees and agents against and from any and all third party claims, losses, liabilities, demands, actions or proceedings related to the downloading, distribution, transmissions, storage, redistribution, reproduction or exploitation of each scanned mineral assessment report obtained by the User from Alberta Energy.

ECONOMIC MINERALS

FILE REPORT No.

U-AF-088(6)

U-AF-089(5)

REPORT ON GEOLOGICAL EXPLORATION

OF THE

GOMER LAKE AREA

IN

PERMITS 132 & 133 - NORTHEAST ALBERTA

OF

TYEX MINERALS LTD.

by

Dr. E. K. Babcock - August 9, 1971

TABLE OF CONTENTS

	<u>Page No.</u>
SUMMARY	1
Introduction - Purpose	1
Location and Accessibility	1
Physiography and Exposure	1
GENERAL GEOLOGY	2
GEOLOGY OF THE GOMER LAKE AREA	2
ROCK TYPES	3
STRUCTURAL GEOLOGY	4
URANIUM MINERALIZATION	5
ANOMALIES ASSOCIATED WITH JOINTS	5
ANOMALIES ASSOCIATED WITH PEGMATITES	6
CONCLUSIONS	6

SUMMARY

The area surrounding Gomer Lake was geologically mapped and prospected on a reconnaissance basis during July and August of 1971. Five rock units were delineated and 29 small radiometric anomalies were located using a SRAT-SPP2-NF and a 117B scintillometer.

Introduction

Purpose:

Objectives of the investigation were to make a reconnaissance radiometric survey of the area surrounding Gomer Lake, to map the area geologically on a scale of 1" = 2/3 mile, to determine where possible, the geological control of uranium mineralization and to make recommendations for further exploration.

Location and Accessibility

Permit 132 is located about 32 miles northeast of Fort Chipewyan Alberta within T115, R6 W4M. Access to the area is by float plane from Fort Chipewyan, 32 miles to the southwest or from Fort Smith, 77 miles to the northwest.

Physiography and Exposure

The area explored is characterized by an undulating topography having a relief of 350' or less between the rocky hills and muskeg-filled valleys. Most fault zones are expressed as narrow steep sided linear valleys, which often contain small lakes.

South of Gomer Lake approximately 80% of the surface is sparsely vegetated outcrop. Travel by foot is relatively easy. North of Gomer Lake only 10 - 20% of the area is outcrop and most of the area is densely vegetated or covered by deadfall. Travel by foot is relatively difficult in this area.

General Geology

Much of the complex of igneous and metamorphic rocks in NE Alberta, north of Gomer Lake, has been mapped by Godfrey (1958a, 1958b, 1966). He describes the most striking feature of the area as being the prevailing northerly trend and vertical or steep attitude of all major geologic features such as foliation, gneissosity, compositional banding, mylonite zones and major faults (1966, P6). Riley's reconnaissance map of the Gomer Lake area shows structural features such as gneissosity, faulting and also lithologic contacts to have a slightly more easterly trend than those mapped by Godfrey farther to the north. Riley mapped two rock units near Gomer Lake. Surrounding the lake and south, he mapped the rocks as "quartzite gneiss with or without garnet, chlorite and biotite schists; meta-quartzite, argillite, slate". These, he considered to be meta-equivalents of sediments of the Tazin Group. North of Gomer Lake he mapped the rocks as "undivided granitic and minor quartzite gneiss". This lithic unit has been subdivided into five different granitic gneisses in exploration permit 133, approximately five miles north of Gomer Lake by Williams (1970). Turner (1970) mapped the area surrounding Gomer Lake as metasediments, "migmatized pure and impure quartzite with or without garnetiferous zones or veins".

Geology of the Gomer Lake Area

Rocks within the Gomer Lake area are a series of metamorphosed granitic and sedimentary rocks. The metasediments which were originally impure quartz sandstones have been divided into three compositional units (Fig. 2) (see Fig. 1 for location of traverses and observation points). Quartz-feldspar gneisses crop out west of Gomer Lake and are divided into two lithologic units.

Rock Types

Grey and pink, quartz-feldspar - biotite gneiss: This unit crops out at the western side of the map area where it forms an area of bold relief. The unit is variable in color ranging from grey to pink. It can be distinguished from dark grey gneisses to the east on the basis of lighter or pink color and a biotite content of usually less than 25%. Composition within the unit is variable within the range of 40 - 70% grey quartz, 20 - 40% tan to pink feldspar and 20 - 30% biotite. In places up to 30% of the rock is composed of bands of pink gneiss of granitic composition containing less than 15% biotite. Epidote veinlets are common within the unit.

Grey biotite rich feldspar gneiss: This unit crops out along the west shore of Gomer Lake where it forms a low area of only about 15% outcrop. It is characterized by a strongly developed foliation, a biotite content of usually greater than 25%, dark grey color and is generally exposed by areas of sparse outcrop. Composition within the unit is highly variable within the range of 25 - 70% quartz, 10 - 65% pink feldspar and 20 - 40% biotite and chloritized biotite; 5 to 10% of the rock is made up of pink feldspar pegmatites at most localities.

Banded quartz - biotite schist and quartzite: This unit crops out on an isolated hill north of Gomer Lake. It is a quartz-biotite schist consisting of 40 - 65% biotite, 30 - 40% grey quartz and 15 - 20% pink feldspar comprising 50 - 90% of the outcrop interbanded with grey quartzite composed of approximately 70% grey glassy quartz, 20% pink feldspar and 10% biotite. At the north end of the outcrop approximately 5% of the rock is composed of quartz and feldspar pegmatites.

Grey quartzite banded with pink quartz-feldspar gneiss: Grey biotitic quartzite interbanded with non-foliated quartz-feldspar bands up to 30' wide crop out east of Gomer Lake. In most areas approximately 70% of the

outcrop consists of quartzite and 30% of the outcrop is pink and grey coarse-grained to pegmatitic quartz-feldspathic rock of variable composition. The quartzites are dark grey and consist of 80 - 95% glassy grey quartz (usually fine grained) and 5 - 15% biotite with usually less than 5% feldspar. Quartz-feldspar bands range in composition from nearly pure grey quartz to nearly pure pink feldspar. Most are coarse grained to pegmatitic and weakly foliated or non-foliated.

Garnetiferous grey quartzite banded with pink quartz-feldspar gneiss: This rock unit is similar compositionally to the unit described above, except that from less than 1% to 15% consists of red to lavender colored euhedral garnets, often concentrated in bands.

Structural Geology

In the Gomer Lake area the dominant structural trend is approximately 25°. Lithologic contacts follow this trend roughly as does foliation in most places as well as many prominent faults and pegmatites. In all places where observed the foliation and compositional banding are within 15° or less of parallelism. East of Gomer Lake the foliation is uniform in trend at approximately 25° with dips of 64° to 88°W. South of the lake there is considerable variation in the strike and dip of foliation, which is due to folding within the quartzites. Small scale drag folds were noted at several outcrops associated with late faulting.

Numerous faults are visible as linear valleys on the air photos, however, none of these larger fault zones was visible in the field due to their being covered by muskeg or soil. Two prominent sets of joints trending approximately 280° and 10° form an orthogonal system within the area. South of Gomer Lake radioactive anomalies are associated with these joint sets .

Uranium Mineralization

Twenty-nine radiometric anomalies were located and flagged in the Gomer Lake area. The greatest concentration of anomalies is located on the south shore of the lake where 10 anomalies were flagged. Locations and magnitudes of anomalies, as well as background radiation are shown in Fig. 3. Figures 4 and 5 show waist and face anomalous radioactive values as color codes.

Radiometric anomalies within the area mapped are of two types, those associated with joints and those associated with pegmatites. Little correlation exists between these anomalies and those shown on the Geo-X airborne radiometric survey map. Most anomalies have a radioactivity of about 300 cps at the waist and 500 cps at the outcrop face, associated with a background radiation of usually 100 cps. The maximum anomaly intensity recorded was 300 cps waist and 850 cps face.

Anomalies Associated with Joints

Radiometric anomalies associated with joints are present only south of Gomer Lake. Twelve such anomalies were located. Of these, ten are associated with joints trending E-W (stations 1,2,4,8,9,12,60A60B) and two (stations 10 and 11) are associated with joints trending roughly N-S. The joint associated anomalies are similar radiometrically, with most having a value of 300 cps at the waist and 500 cps maximum face reading. The maximum anomalies measured had a magnitude of 250 cps waist and 750 cps face.

Most of these anomalies occur in grey biotitic quartzite. No unusual mineralization or yellow staining was noted along the anomalously radioactive fractures. It is doubtful if exploitable quantities of uranium minerals are associated with the fracture anomalies because of the low radioactivity and the lack of observable mineralization.

Anomalies Associated with Pegmatites

All radiometric anomalies east, north and west of Gomer Lake (Figures 3, 4 and 5) are associated with quartz-feldspar and knots of coarse-grained quartz-feldspathic rock. The anomalously radioactive rocks range in composition from pure pink potassium feldspar pegmatites to quartz-feldspar pegmatites of variable composition and coarse-grained rocks ranging in composition from nearly 100% quartz to nearly 100% pink potassium feldspar.

Showings of anomalous radiation range in size from 5' to 30' in diameter, with most being 10' to 15' in diameter. Magnitudes of radiation range from 200 cps waist, 350 cps face to 300 cps waist, 1000 cps face, associated with background radiation ranging from 75 to 100 cps. Most pegmatite anomalies are about 300 cps waist and 450 cps face. Only at anomaly 37 (300 cps waist, 850 cps face) was slight yellow staining noted; no other evidence of uranium mineralization was seen.

The low radiation and scattered occurrences of the small pegmatite anomalies, as well as their lack of observable mineralization suggests that exploitable quantities of U_3O_8 are not present in the pegmatite anomalies.

It should be noted that a garnetiferous band described by Turner (1970) was mapped and prospected carefully but no large zone of anomalous radioactivity was found.

Conclusions

In view of the small size, low radioactivity, lack of visible mineralization and scattered occurrence of radiometric anomalies, it is unlikely that exploitable quantities of uranium are present in the vicinity of Gomer Lake.

North

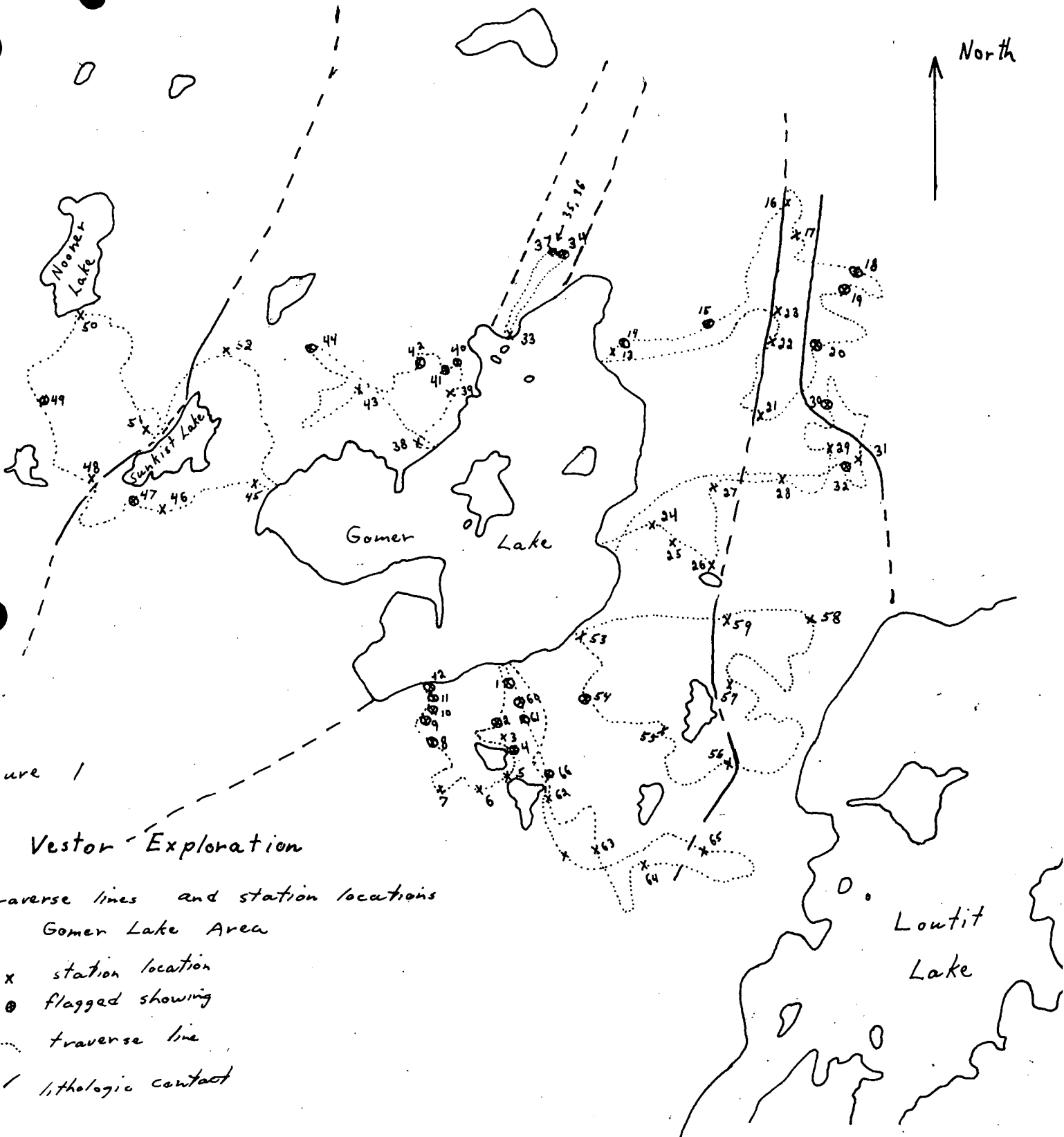


Figure 1

Vestor Exploration

Traverse lines and station locations

Gomer Lake Area

- x station location
- ⊙ flagged showing
- ⋯ traverse line
- - - lithologic contact

0 1/2 1 miles

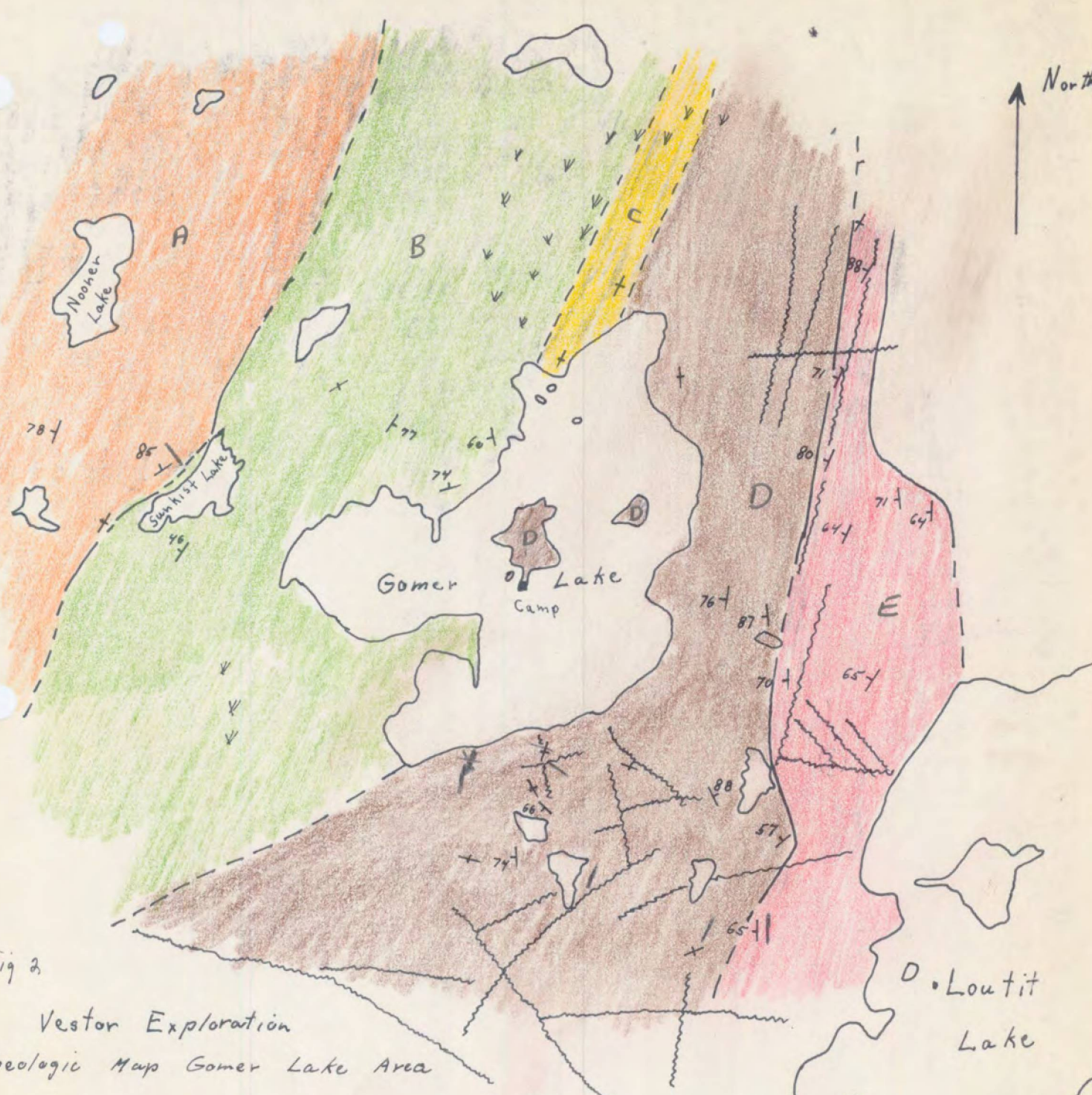


Fig 2
 Vestor Exploration
 Geologic Map Gomer Lake Area

- A ■ Grey and pink, Qtz.-feldspar.-biotite gneiss (less than 25% biotite) some granitic bands ridge forming unit
- B ■ Grey biotite rich (generally >25% biotite) quartz-feldspar gneiss
- C ■ Banded quartz-biotite schist and granitic gneiss quartzite
- D ■ Grey quartzite, up to 20% biotite banded with pink quartz-feldspathic gneiss of variable composition
- E ■ Grey quartzite, up to 20% biotite and up to 15% red and lavender garnet, banded with quartz-feldspar gneiss

— faults mapped on photos
x strike and dip of foliation
/ / prominent joint trends
/ lithologic contact

0 1/2 1 miles

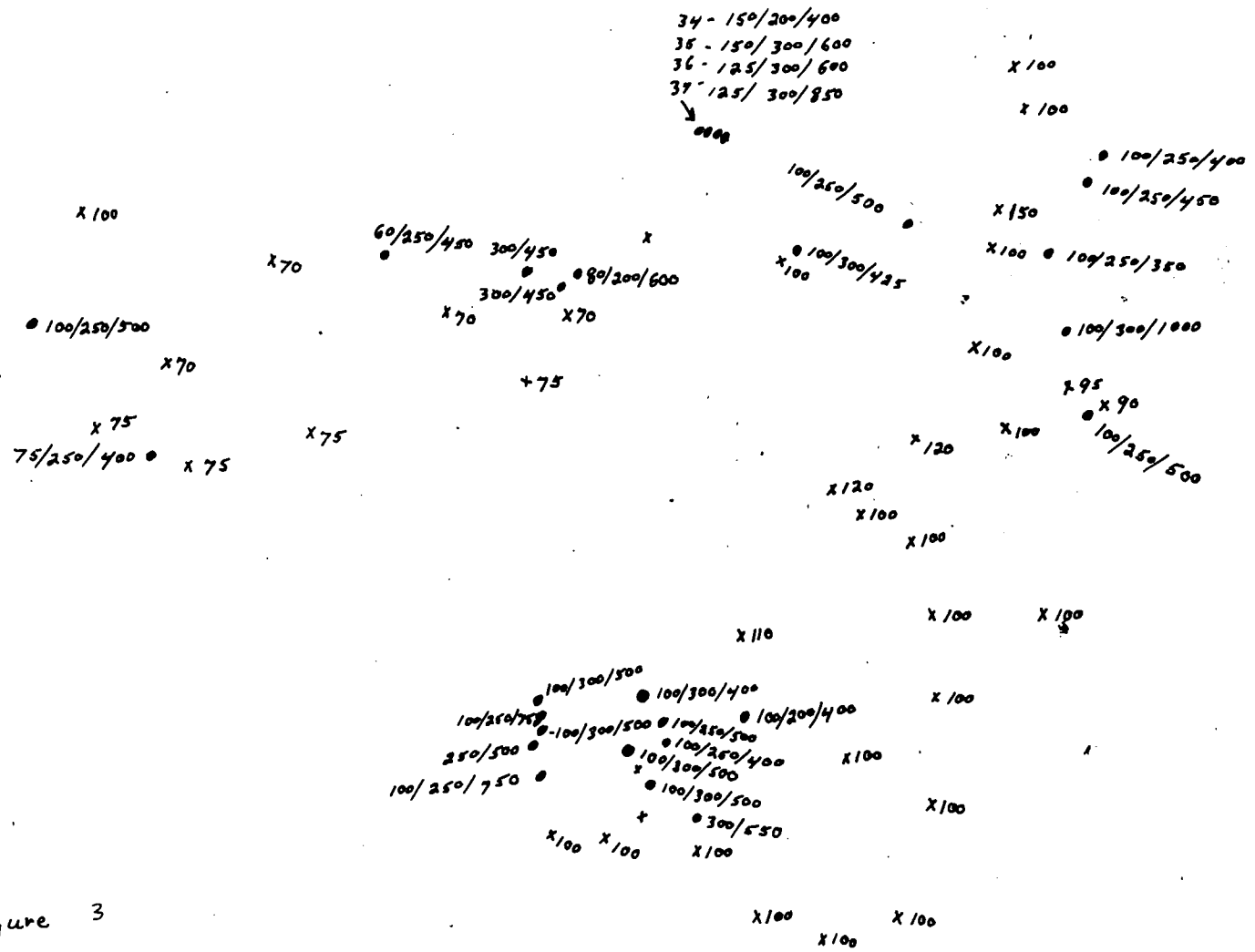


Figure 3

Vestor Exploration

Overlay showing radiometric values Gomer Lake area

x station

• flagged showing

100/200/750 Radioactivity at background/waist/face in cps

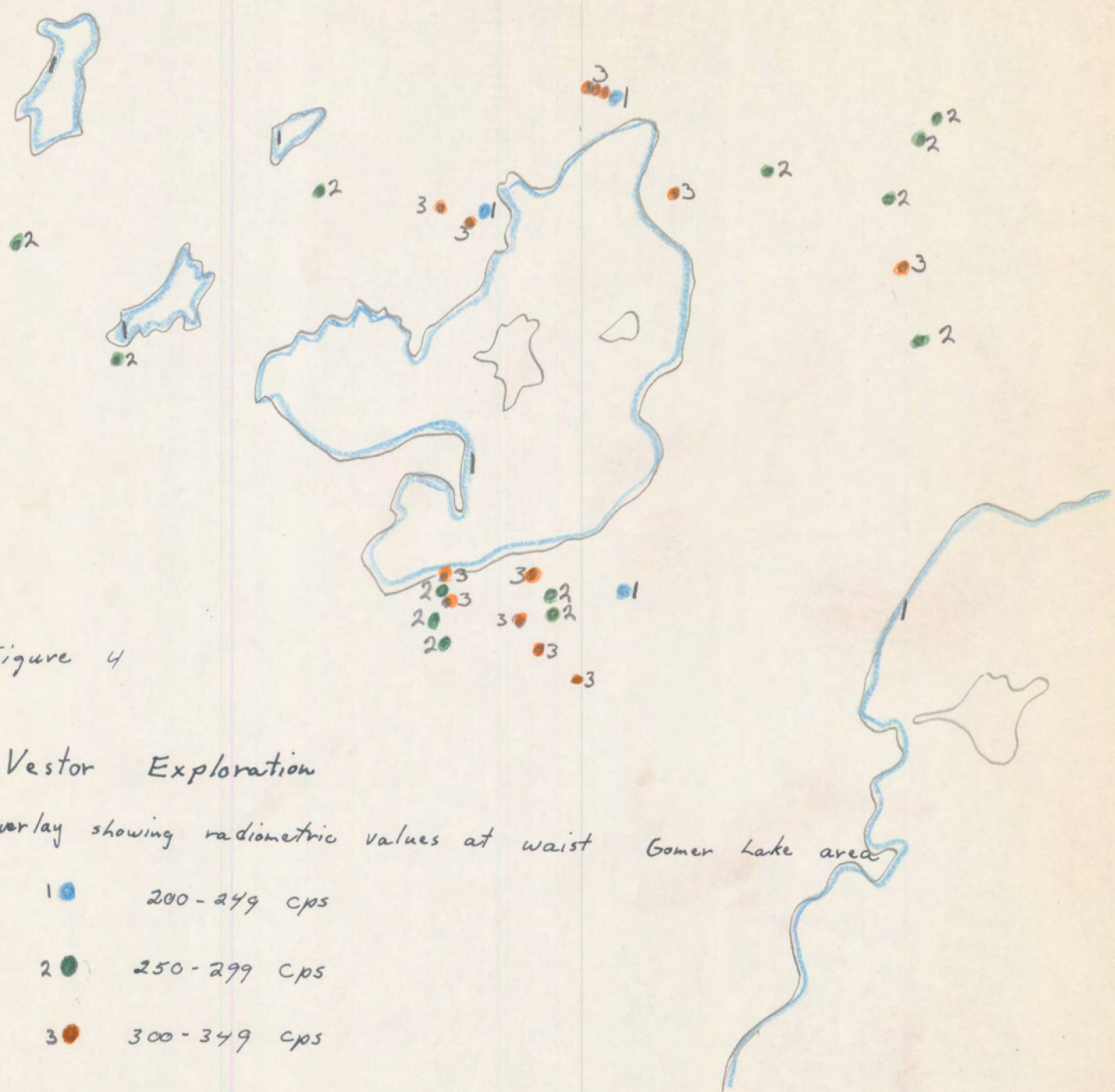


Figure 4

Vestor Exploration

Overlay showing radiometric values at waist

Gomer Lake area

- 1 ● 200-249 cps
- 2 ● 250-299 cps
- 3 ● 300-349 cps

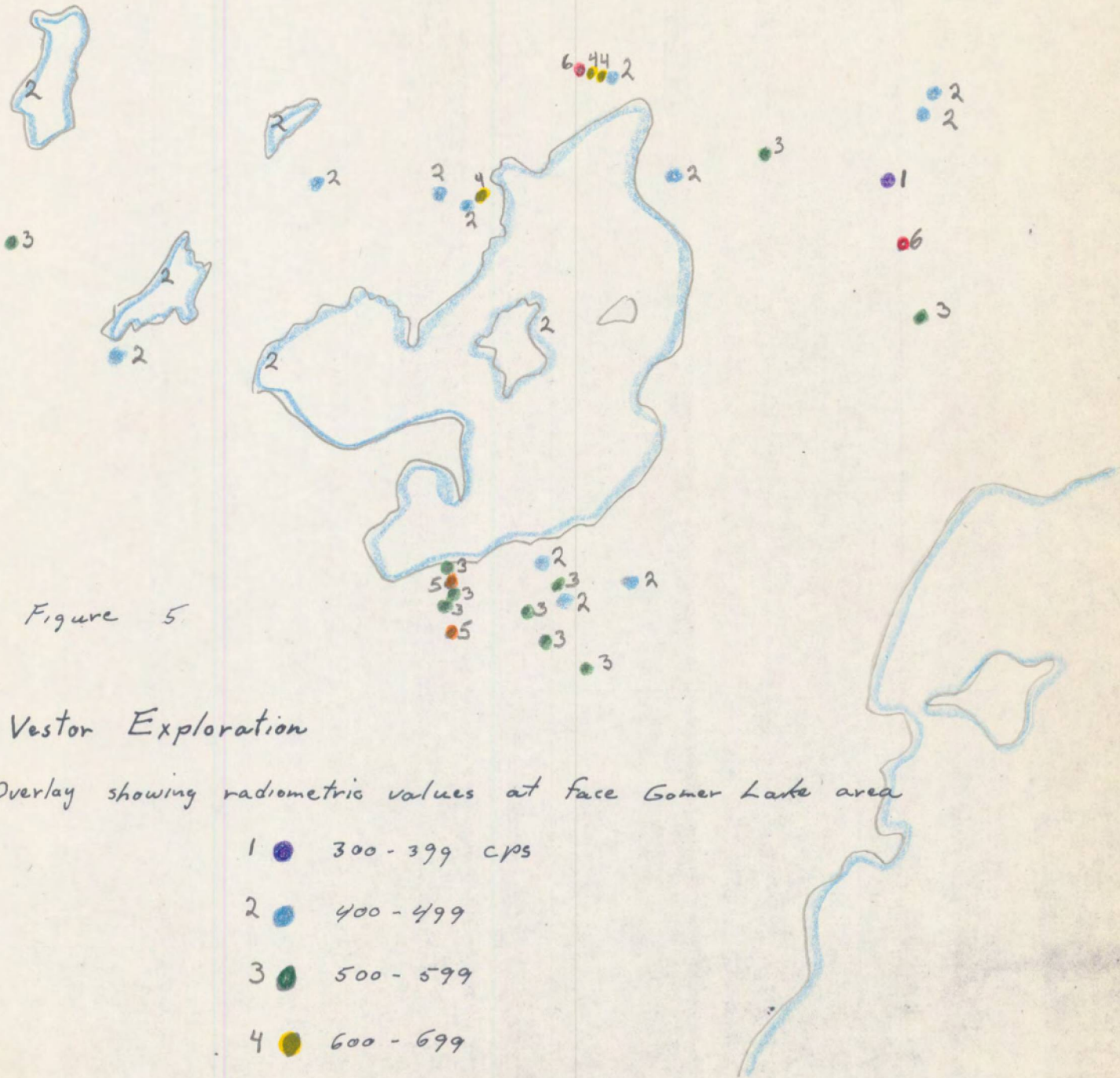


Figure 5

Vestor Exploration

Overlay showing radiometric values at face Gomer Lake area

- 1 ● 300 - 399 cps
- 2 ● 400 - 499
- 3 ● 500 - 599
- 4 ● 600 - 699
- 5 ● 700 - 799
- 6 ● > 800 cps