

URANGESELLSCHAFT CANADA LIMITED  
GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL REPORT  
TETA CLAIMS 1&3 THROUGH 28  
SHEET 116-B-7

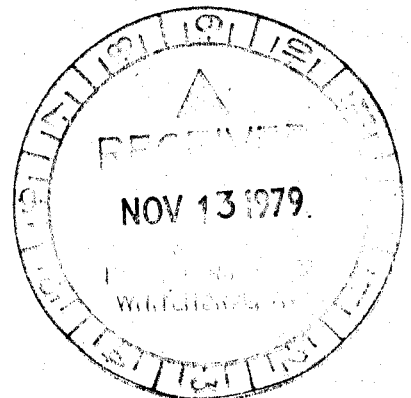
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Longitude  $138^{\circ}25'$  -  $138^{\circ}40'$



June 01st-August 23rd 1979

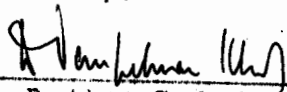
090503

J. Bruce Williams



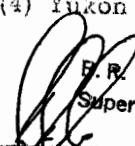
This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work to the amount of

\$ 4,600



Resident Geologist or  
Resident Mining Engineer

Considered as representation work under  
Section 53 (4) Yukon Quartz Mining Act.

  
E. R. BAXTER  
Supervising Mining Recorder


  
Commissioner of Yukon Territory

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Foreward

This preliminary report is a compilation of the majority of work performed on the Teta claim group during 1979. It does not include thin section work nor details of trenches. This work is being compiled, pending receipt of thin sections, laboratory results etc., by H.J. Weyer, a German Consultant and final report will therefore be forwarded when available.

1. INTRODUCTION

A uranium exploration program was conducted by Urangesellschaft Canada Ltd. (UG Canada) between August 1 and August 23, 1979, over the Teta group of 23 claims in the Tombstone area of the Yukon. The claims were staked in August of 1976 on the basis of an airborne radiometric anomaly obtained over the property during reconnaissance surveys conducted across the Yukon in that year.

The scope of UG's fieldwork was to extend existing mapping and to sample the claim group and open ground in the area of the Tombstone batholith. Results and material collected during the field season will be the base for a Master's thesis dealing with the Tombstone batholith and the uraniferous tinguaitite giving regard to the genesis of this complex. This work will be done by H.J. Weyer at RWTH Aachen, Germany. Therefore, in this preliminary report, only the highlights are mentioned.

2. PROPERTY, DESCRIPTION AND LOCATION

The Teta group of claims are contiguous and consist of 18 full-sized and 5 fractional claims with tag numbers YA5259 and YA5261 to 5282 inclusive. The claims, which are listed below, are wholly owned by Urangesellschaft Canada Ltd. with principal offices at 3100 - 2 Bloor Street East, Toronto, Ontario.

<u>Claim</u>	<u>Tag #</u>	<u>Claim</u>	<u>Tag #</u>	<u>Claim</u>	<u>Tag #</u>
*Teta 1	YA5259	Teta 10	YA5268	Teta 17	YA5275
*Teta 3	YA5261	Teta 11	YA5269	Teta 18	YA5276
Teta 4	YA5262	Teta 12	YA5270	Teta 19	YA5277
Teta 5	YA5263	Teta 13	YA5271	Teta 20	YA5278
*Teta 6	YA5264	Teta 14	YA5272	Teta 21	YA5279

<u>Claim</u>	<u>Tag #</u>	<u>Claim</u>	<u>Tag #</u>	<u>Claim</u>	<u>Tag#</u>
*Teta 7	YA5265	Teta 15	YA5273	Teta 22	YA5280
*Teta 8	YA5266	Teta 16	YA5274	Teta 23	YA5281
Teta 9	YA5267			Teta 24	YA5282

\*) fractional claims

The claims (refer to Fig. 1) are located at latitude  $64^{\circ}24'$ , longitude  $138^{\circ}42'$  on the Tombstone River map sheet (NTS 116-B-7) in the southern Ogilvie Mountains. The claims lie entirely above the tree line between elevations 4000 and 7100 feet (1200 to 2150 m).

The dominant feature within the claim group is a cirque within which surficial deposits including glacial moraine, scree, and boulder glaciers predominate. Outcrop within the cirque is scarce. The walls of the cirque are generally precipitous, owing to the vertical joint-controlled, weathering characteristics of the syenite. Typically, the walls terminate in sharp-crested, serrate ridges.

### 3. Logistics and Access

Helicopter services are available from Transwest and Transnorth in Dawson. UG mostly contracted Transwest. Mobilization and demobilization of camp was done by Hughes 500C helicopter and truck. For this purpose gear was trucked up to mile 42 of Dempster Highway and then flown by helicopter to the campsite. Radio contact was maintained twice daily with the expediter (Whitehouse Motel, P.O. Box 193, Dawson City, Y.T., YOB 1G0). However, the used Marconi CP34 radio proved to not be suitable for the distance. UG frequency was 4441, and the call sign was VGE 240. The expediter's call sign was VGE 555 Dawson.



DAWSON  
YUKON TERRITORY




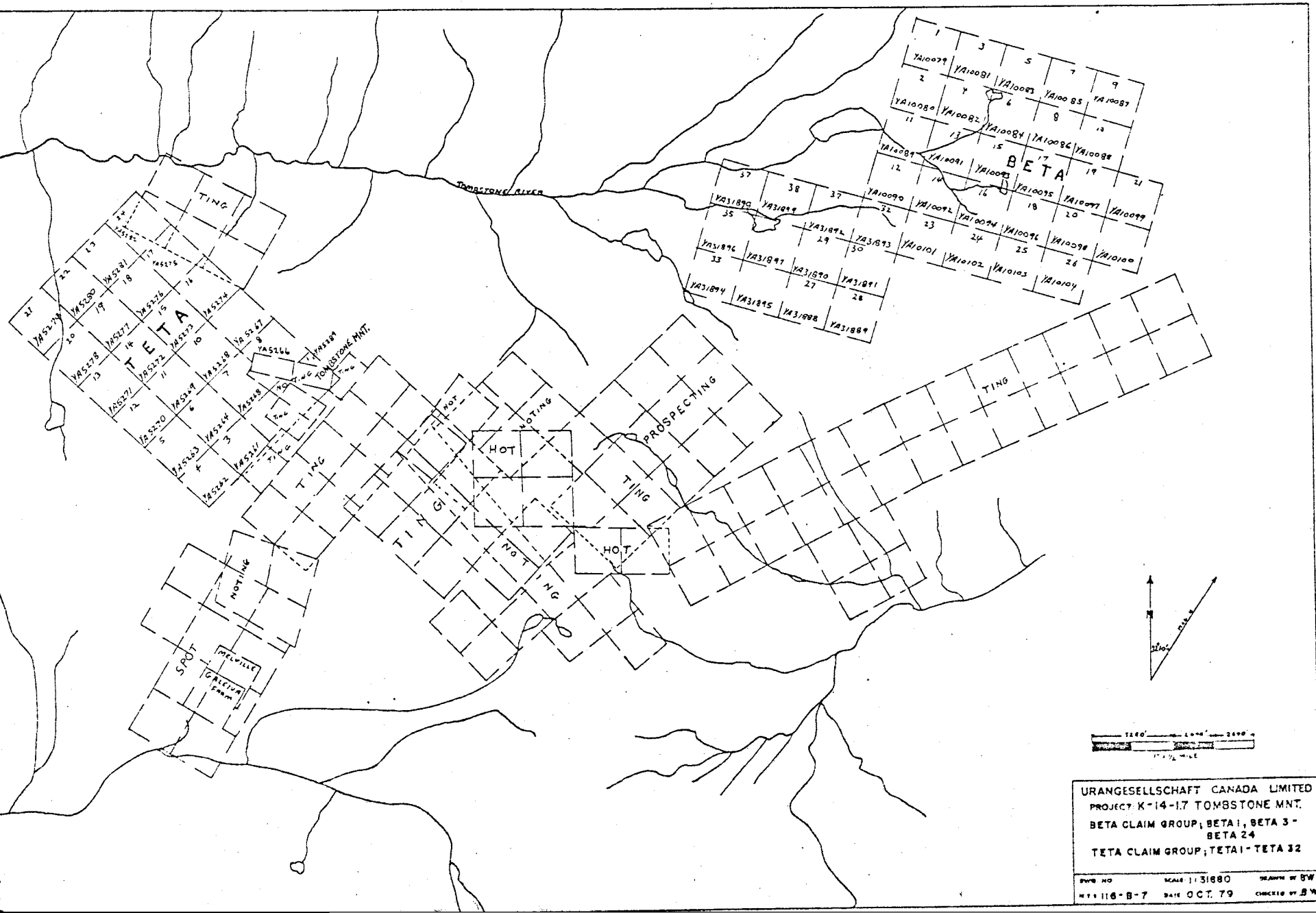
-  TETA Claim Group
-  Dawson City
-  Dempster Highway



FIGURE 1 GENERAL LOCATION AND ACCESS, TETA CLAIMS



Location of Surrounding Claims

FIGURE 2

URANGESELLSCHAFT CANADA LIMITED  
 PROJECT K-14-17 TOMBSTONE MNT.  
 BETA CLAIM GROUP; BETA 1, BETA 3 -  
 BETA 24  
 TETA CLAIM GROUP; TETA 1 - TETA 22

DWG NO. 116-B-7 SCALE 1:31880 DRAWN BY BW  
 DATE OCT. 79 CHECKED BY BW

The Dempster Highway passes within 12.5 miles (20 km) of the claim group. The east-northeast trending Tombstone River valley, which lies immediately north of the property, meets the Dempster Highway within 16 miles (25 km) of the claim group. The moderate grade (avg. 4 to 5%) of this broad valley would make it the logical access corridor from the Dempster Highway to the claim group in the event of future development. General access to the property is illustrated in Figure 2.

#### 4. Climate

The climate is continental in the Tombstone Range. Weather and wind directions are liable to change within 2 - 3 hours. Precipitation is low with peak rainfall during the summer months. Due to these conditions one third of the working period was lost by rain and dense fog (see GSC memoir 364, 5.3). Hence, the name "Cloudy Range", given to this area is understandable.

During the day temperatures are quite pleasant and reach highs up to 70<sup>o</sup>F. A field season between mid June and the end of August is recommended.

#### 5. PREVIOUS WORK

The Tombstone area was mapped as a part of a large scale mapping project undertaken by the Geological Survey of Canada in 1962. Results of this project, known as "Operation Ogilvie" were published as GSC Memoir 364.\*

\*) Green L.H.: "Geology of the Nash Creek, Larsen Creek, and Dawson Map-Areas, Yukon Territory", GSC Memoir 364, 1970 (2nd edition)

Detailed mapping of the Tombstone area was conducted by D.J. Tempelman-Kluit and published as GSC Bulletin 180.\*\*

On the property itself, very old claim posts and a trench were observed, but no significant mineralization was seen nor could any assessment be found to document this previous work.

In 1977, UG Canada ran a 5,200 ft. baseline with cross lines at 400 feet intervals. A scintillometer survey, surficial and bedrock geological mapping were conducted over the grid and the entire property. A detailed grid was built over a zone of supra-normal radioactivity. In this area some of the same work was done as well as manometer and electromagnetometer surveys. (see 1977 report).

In 1978 UG Canada emplaced four trenches and three pits by blasting and hand trenching. Two of the pits and one of the trenches failed to reach outcrop because the overburden was too thick or permafrost was encountered. Of these trenches, trench #4 received, special attention.

#### 6. Exploration Procedure and Logistics

Exploration of the Teta claims proceeded as follows:

- i) Trench number 4 was cleaned of rocks and debris. The trench exposed 18 feet of fresh outcrop. This was chip sampled across its width at 2 foot intervals and sent for analysis. The location and results are shown in Drawing 1 and 2.
  
- ii) A series of stream sediments were taken along the Tombstone River. Samples were taken every 500 meters for 3 km until the outer edge of the batholith was crossed.

\*\* Tempelman-Kluit, D.J.: "Stratigraphy and Structure of the 'Keno Hill Quartzite' in Tombstone River-Upper Klondike River map areas, Yukon Territory", GSC Bulletin 180, 1972

6.

iii) Geological mapping of bedrock and surficial deposits was conducted north of the trenches and in the 'Teta' valley.

Pace, compass and altimeters were used for ground control in conjunction with 1:10,000 topographic map. A helicopter was chartered on a casual basis to transport personnel to inaccessible areas of the property, to ferry camp supplies from Dawson City and to mobilize and demobilize the camp. Camp provisions were ordered by Marconi CP 34 short wave radio to Resources Expediting, Dawson. Food stuffs were purchased from the Monte Carlo Ltd.

## 7. Geology

### 7.1 Introduction

The Tombstone batholith is a Cretaceous intrusion into Mesozoic and predominantly Paleozoic rocks represented in different large roof pendants. The core of the syenitic pluton consists of quartz-monzonite and a marginal pseudoleucite tinguaite phase in the SW. The work target was to map the area with special attention to the tectonics. Scale of mapping was 1:10,000. Declination in the area is 30.1° E. Only the middle third of the batholith was mapped.

Surficial geology and bedrock geology was mapped separately.

### 7.2 Surficial Geology (see map 3)

The surficial geology map differentiates between moraine, scree, boulder, glacier and outcrop. More detailed mapping of the moraines and the scree is possible, however, the short working period and the

limited importance in respect to uranium exploration restricted the amount of work done in this regard. The main moraine fills the Tombstone River Valley and varies in thickness between 25 and 30 m. Smaller valleys show cirques which were once filled with cirque glaciers and connected with the main glacier. The glaciation was of alpine type. Most of the valleys are sealed by end moraines and filled with water.

The northern slopes of the mountains are covered by scree produced by intense physical weathering. In most cases the scree is transported only a short distance (15 - 20 m) along the slope and the thickness of the cover exceeds more than 3 meters only at valley bottoms. A relation between size of boulders and number of joints was observed. Scree derived from igneous rocks shows sharp edges while scree from sediments and metasediments is more rounded and has a tendency to slide during traversing.

Boulder glaciers contain a mixture of boulders and ice and occur at the southern sides of valleys. Due to thawing and freezing of the material they move and it is dangerous to cross them. The melt water from the boulder glaciers are draining into cirque lakes.

### 7.3 Bedrock Geology and Tectonics

The following lithological units are represented in the Tombstone batholith: syenites, granites, quartz-monzonites, tinguaitite, hybrid roof pendant as well as various dyke rocks.

A further distinction within syenites and granites is possible as they show different colours, structures and paragenesis. In the field it proved difficult to distinguish between granite and quartz monzonite. Investigations of thin sections should bring some more

help in this respect.

A gradual transition from the marginal syenite to granite and to a core of monzonite was observed. The transition zone is generally 2 - 3 m wide and especially at the syenite/granite contact is enriched in mafic components.

In valleys South and Southwest of the Tombstone River the contacts are superimposed by large joints or possible faults. However, it was difficult to determine the amount of displacement on the igneous rocks. There is evidence that these huge joints are caused in the fresh rock by lateral stress shortly after the intrusion of the batholith. The joints link up with still active faults in the surrounding area of the batholith.

The upper Tombstone River follows the major joint system while the drainage system North of the Tombstone River follows the normal cooling joint structures.

Surprisingly, in the core of the batholith, the monzonite is fine grained while the granite forms a medium grained and the syenite a fine grained unit. This sequence is contrary to a normal cooling sequence, where the coarse grained variation is expected in the center of the intrusion. Tinguaitite is considered as the oldest unit of the pluton as has been observed by OLADE and GOODFELLOW. Tinguaitite xenoliths occur within the syenite indicating that syenite intruded tinguaitite.

The pluton is the result of incongruent melting. With the first crystallization phase tinguaitite intruded and crystallized. At this point feldspar was still present. Northeast of and partially surrounding the tinguaitite the pluton came up after all feldspathoids had melted incongruently.

Shortly after cooling, tectonic movements led to joints and faults within the syenite. In the tinguaitite however, it led to shears which are often related to joints. Strong shearing is observed only in the middle part of the tinguaitite. To the north no obvious contact could be seen. Tinguaitite changes gradually into a dark, medium grained syenitic rock without phenocrysts of pseudolucite.

#### 7.4 Mineralization

An important uranium occurrence is located within the Teta claims where radioactivity in trenches reached 10,000 cps. (see annual reports 77 and 78 J. Brophy).

The occurrence of radioactivity together with molybdenite and to a lesser degree with fluorite and the restriction of mineralization to sheared tinguaitite is indication for a late introduction of uranium into the system. More work will be done to investigate the mineralization in thin sections.

The Teta claims and the surrounding area were mapped with special emphasis to outline the Northern contact of the tinguaitite.

Trench #4 was cleaned and resampled. Results are pending. The trench reached bedrock, with the exception of a small area. In the northern third of the trench a 10 - 20 cm wide radioactive zone with up to 800 cps was observed in a NW direction. (see figure 1.2).

# LEGEND













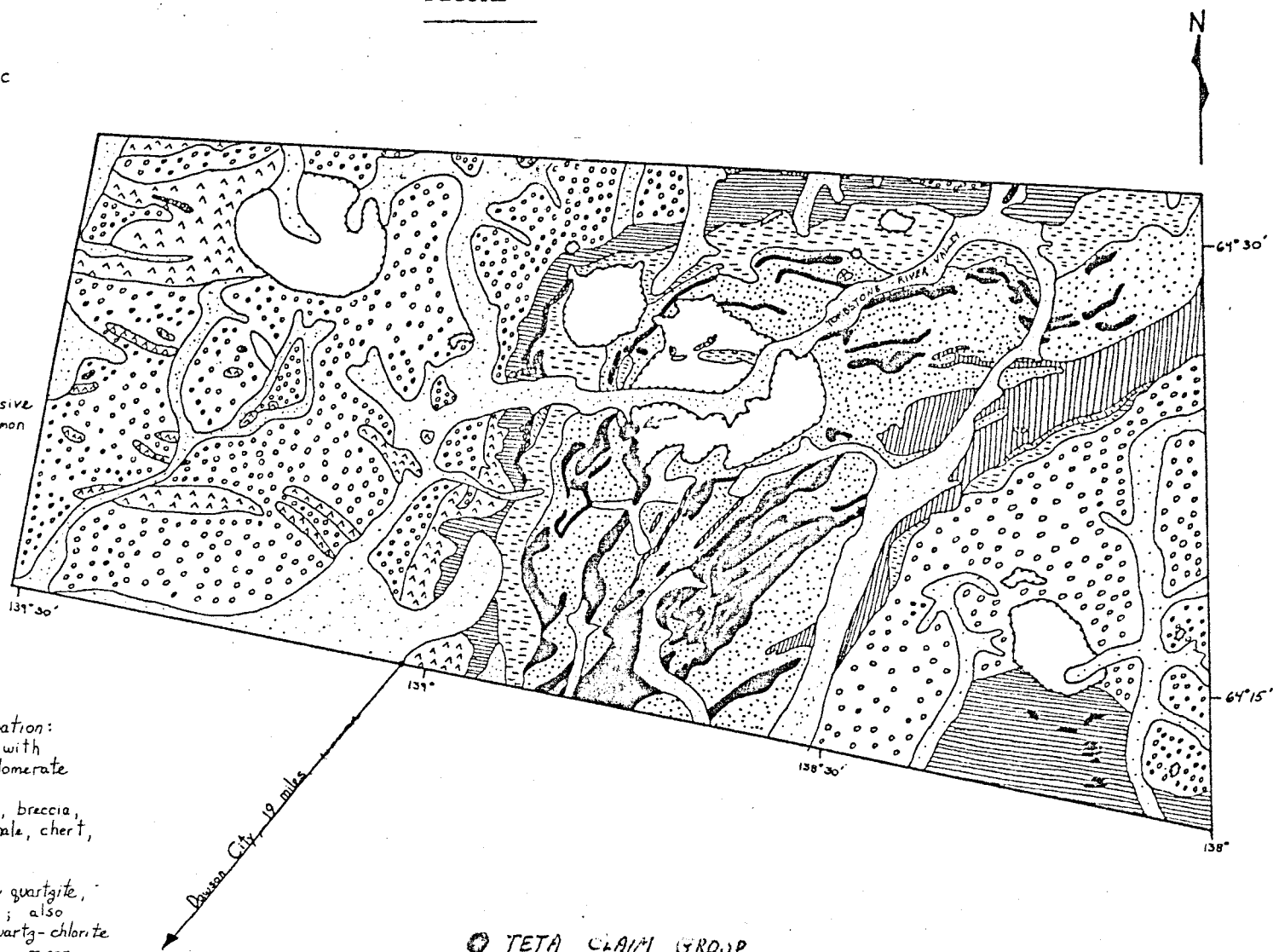
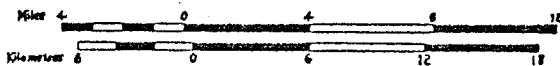
-  Quaternary: Unconsolidated glacial and fluvial deposits
-  Cretaceous: Medium grained to porphyritic hornblende / hornblende / biotite syenite
-  Cretaceous: Biotite-granodiorite and biotite-quartz monzonite
-  Mesozoic: Diorite and Gabbro
-  Mesozoic: Shale and thin bedded siltstone, commonly limy
-  Mesozoic: Keno Hill Quartzite: massive quartzite, minor slate and phyllite, common graphitic, argillaceous quartzite
-  Jurassic: Lower Schist division: predominantly dark grey argillite, slate, and phyllite
-  Permian: Limestone with some chert
-  Triassic: Platy, black limy shale and limestone
-  Ordovician / Silurian: Road River Formation: mainly black chert and black argillite with minor quartzite and quartz pebble conglomerate
-  Precambrian / or later: volcanic rocks, breccia, tuff, agglomerate; minor interbedded shale, chert, siltstone, and sandstone
-  Precambrian / or Cambrian: Mainly gritty quartzite, sandstone, and quartz pebble conglomerate; also shale, slate, schistose quartzite, quartz-chlorite schist, quartz-mica schist and phyllite, minor limestone and black chert

FIGURE 3



Scale 1:250,000



URANGESELLSCHAFT CANADA LIMITED  
 PROJECT: R11, 1.7  
 Regional Geology,  
 Tombston Area

DWG NO. SCALE DRAWN BY  
 N.Y. 115 C 7 DATE CHECKED BY

APPENDIX I

GEOCHEMICAL RESULTS AND DATA INTERPRETATION

Figure 4

BARRINGER MAGENTA Geochemical Laboratory Report No. 79-520C

Sample Type	HNO <sub>3</sub> U <sup>s</sup> ppm	Mo ppm					
Stream							
Sediment							
HJW-55	1	144	80				
	3	60	5				
	4	20	19				
	5	19.0	4				
	6	32	4				
	7	156	20				
	8	44	8				
	9	24	7				
	10	60	6				
	12	40	5				
	13	28	4				
	14	20	4				
	15	20	3				
	16	18.0	4				
(14.7)	17	24	5				
(15.7)	17	8.4	13				
	18	15.6	6				
	19	8.0	4				
SS	20	18.0	7				
	21	I.S.	2				
	22	I.S.	I.S.				
	23	9.2	2				
	24	24	30				
	25	28	4				
	26	176	7				
	27	24	9				
	28	14.0	3				
	29	24	9				
	30	56	5				
	32	3.6	4				
	33	48	5				
	34	48	6				
	35	24	6				
	36	32	6				
(25.7)	37	100	8				
(8.8)	37	36	7				

Figure 5

BARRINGER MAGENTA

Geochemical Laboratory Report No. 79-520C

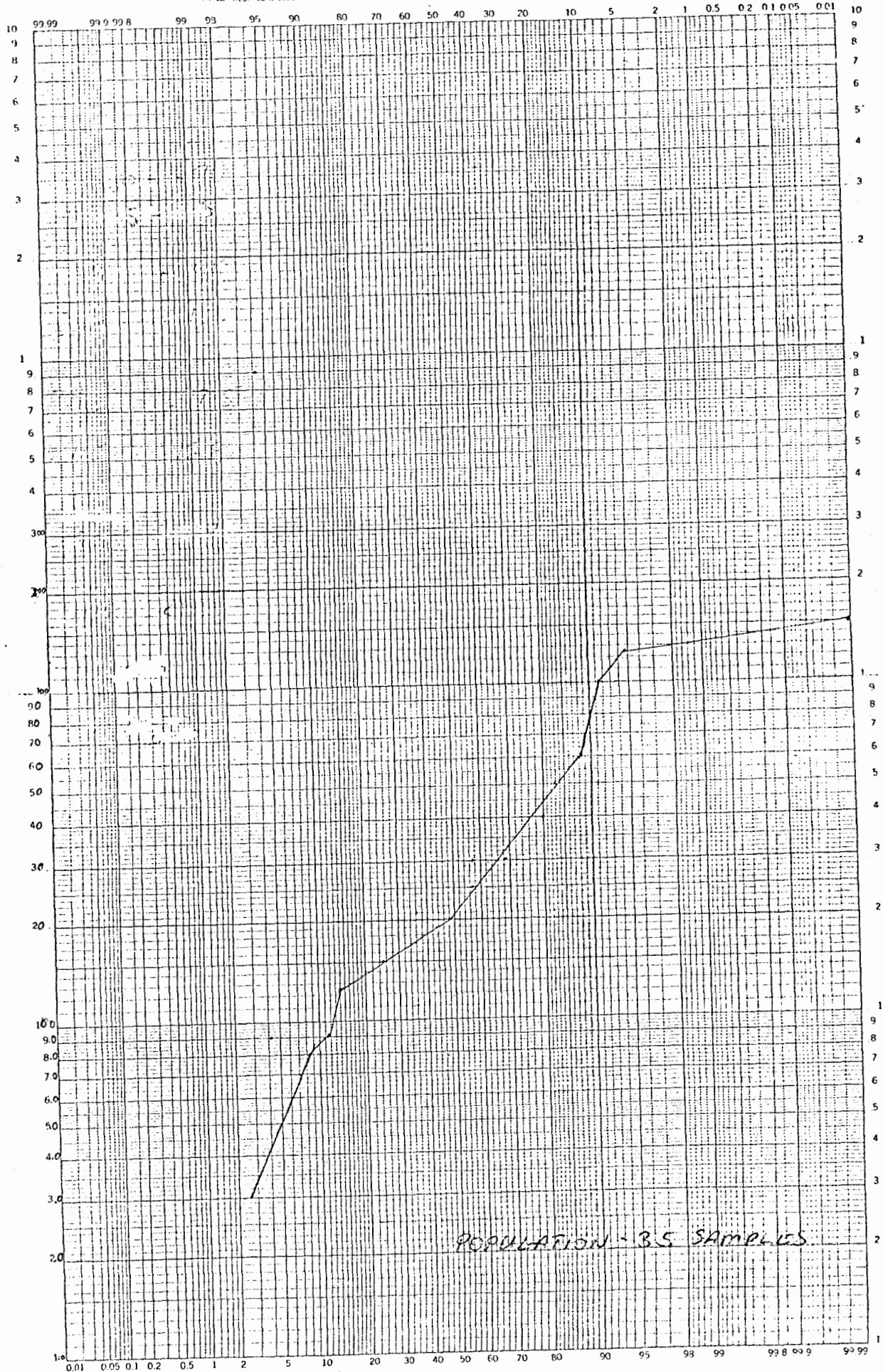
Sample Type Rock	Total U ppm	Mo ppm						
91	80	37						
92	84	6						
107	20	7						
124	64	6						
162	360	10						
166	260	3						
201	200	2						
226	52	2						
315	2720	1200						
327	2.60%	22						
Trench #4								
T- 41	150	22						
42	56	27						
43	24	12						
44	44	33						
45	92	56						
46	176	165						
47	2560	600						
48	3520	1200						
49	520	290						



Figure 7

TOMBSTONE STREAM SEDIMENTS. (u).  
46 8040

K&E PROBABILITY & LOG CYCLES  
KEUFFEL & ESSER CO. MADE IN U.S.A.



APPENDIX III

Drawing No. 1 Bedrock Geology

Drawing No. 2 Surficial Geology

Drawing No. 3 Stream Sediment & Rock Sample Locations  
Scintillometer & Readings (BSG-ISL)



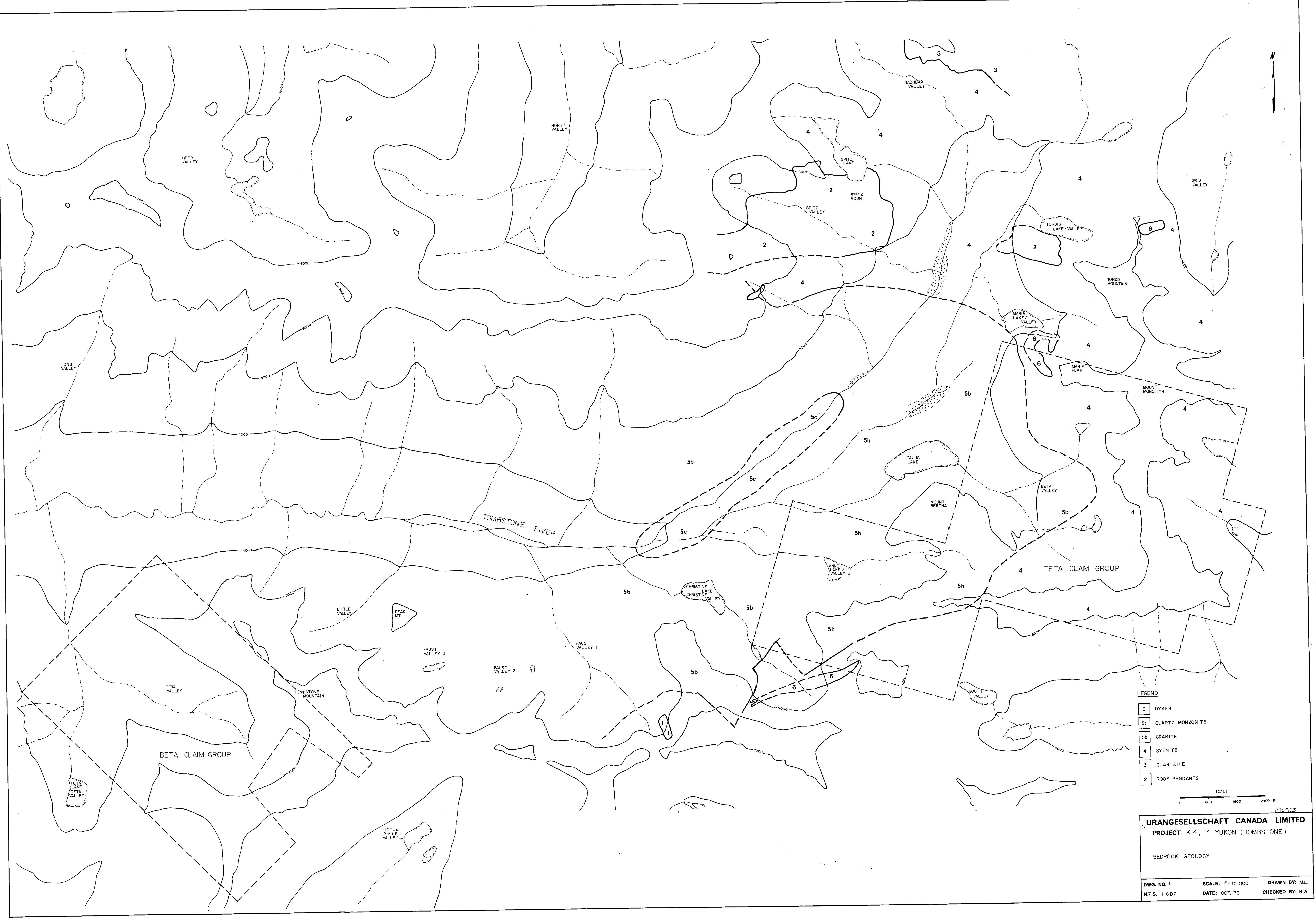
LEGEND

- ▲ - Sediment Sample
- - Rock Sample
- ◇ - Scintillometer Value (same position as ▲)
- ✕ - Sample sent for analysis

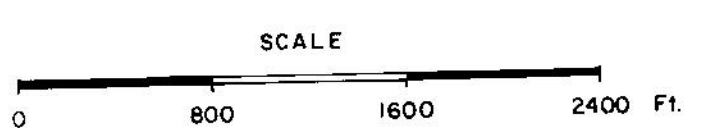


**URANGESELLSCHAFT CANADA LIMITED**  
 PROJECT: K14, I7 YUKON (TOMBSTONE)  
 STREAM SEDIMENT & ROCK SAMPLE LOCATIONS  
 SCINTILLOMETER & READINGS (BGS-ISL)

DWG. NO. 3      SCALE: 1" = 10,000'      DRAWN BY: ML  
 N.T.S. 116B7      DATE: OCT. '79      CHECKED BY: B.W.



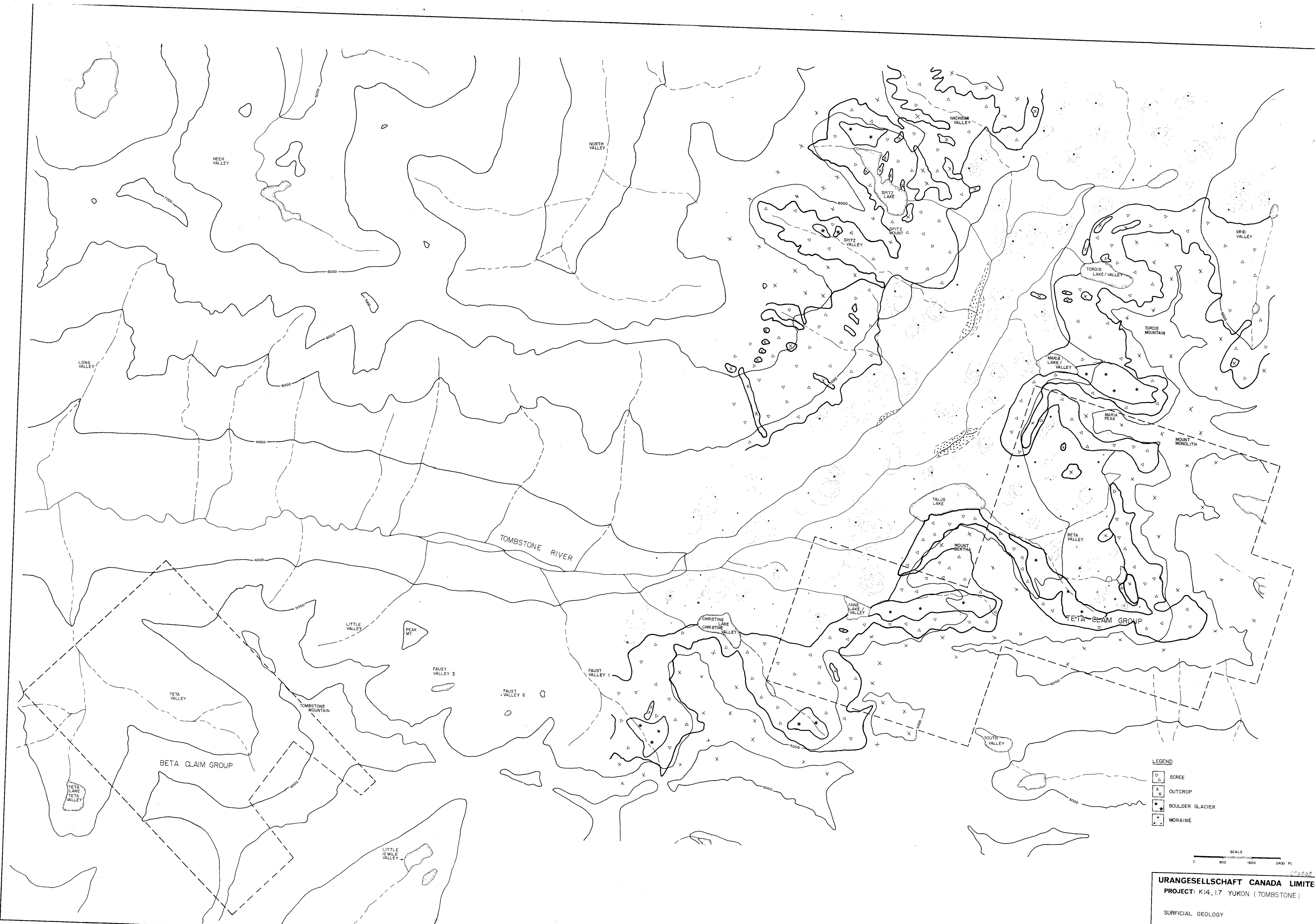
- LEGEND**
- 6 DYKES
  - 5c QUARTZ MONZONITE
  - 5b GRANITE
  - 4 SYENITE
  - 3 QUARTZITE
  - 2 ROOF PENDANTS



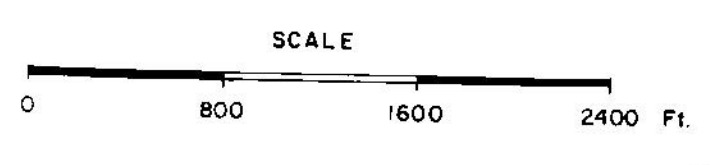
**URANGESELLSCHAFT CANADA LIMITED**  
 PROJECT: K14, I7 YUKON (TOMBSTONE)

BEDROCK GEOLOGY

DWG. NO. 1 SCALE: 1" = 10,000 DRAWN BY: ML  
 N.T.S. 11687 DATE: OCT. '79 CHECKED BY: B.W.



- LEGEND**
- ▽ SCREE
  - △ SCREE
  - ⊗ OUTCROP
  - ⊗ OUTCROP
  - \* BOULDER GLACIER
  - \* BOULDER GLACIER
  - MORaine
  - MORaine



**URANGESELLSCHAFT CANADA LIMITED**  
 PROJECT: K14, I7 YUKON (TOMBSTONE)  
 SURFICIAL GEOLOGY

DWG. NO. 2 SCALE: 1" = 10,000 DRAWN BY: M  
 N.T.S. 11687 DATE: OCT. '79 CHECKED BY: B