81-1262-10062

REPORT ON GEOLOGY AND GEOCHEMISTRY

GAYLE CLAIM GROUP

ATLIN MINING DIVISION

RECORD NUMBERS 805, 806, 807, 808

NTS MAPSHEET 104N/11E

L.C.P. COORDINGATES: GAYLE 1-3 133°10'30"W; 59°42'N
GAYLE 4 133°08'00"W; 59°40'N

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OWNER: MATTAGAMI LAKE EXPLORATION LIMITED

DATE: OCTOBER 1981

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO 10,062

ABSTRACT

The Cretaceous Surprise Lake Batholith, as found immediately east of Surprise Lake, B.C., is composed predominantly of alkali granite and related porphyritic and sheared phases. Sheared and unsheared aplite dykes are abundant and appear to be related with the formation of the Trout Lake Graben which formed to the east. Geophysical methods will be required to define the mineral potential of the GAYLE claims as abundant felsenmeer apparently masks the geochemical dispersion of the elements.

ACKNOWLEDGEMENTS

I wish to express my appreciation to Victor Nishi, Linda Hebert, Yuko Tainaka and Aaron Bradley for their fine work on this project.

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CHAPTER ONE: INTRODUCTION

1.1 Introduction

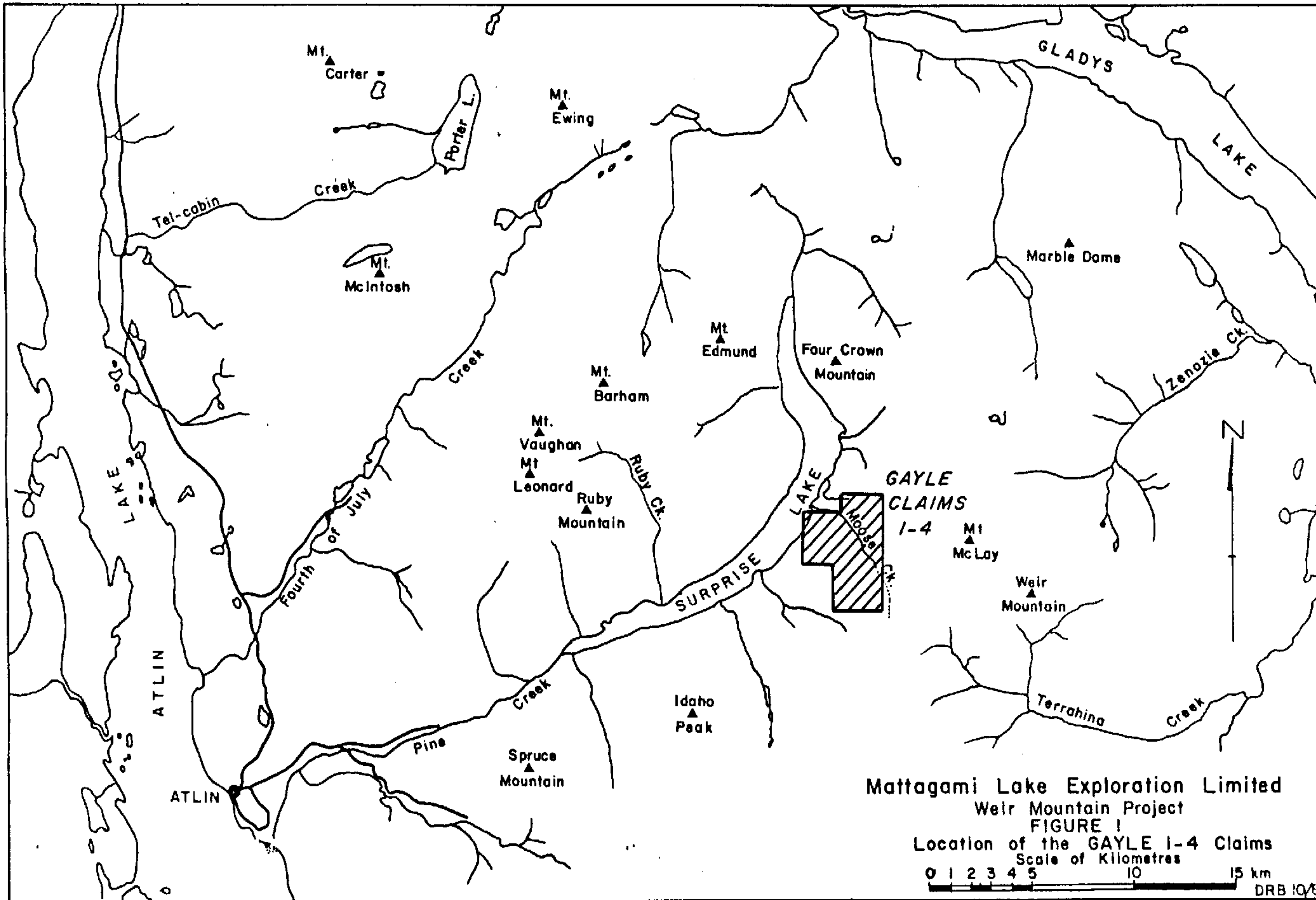
The GAYLE 1-4 claims comprise a total of 68 units that were staked on September 17, 18 and 23, 1979 in response to a regional stream sediment survey conducted by the Geological Survey of Canada. Sample 779152 of the resulting Open File Release contained 520 ppm Sn and 275 ppm W.

Initial work performed during the 1980 field season consisted of reconnaissance stream sediment, heavy mineral concentrate, water and geological sampling of the claim group to delineate anomalous regions. Follow-up in 1981 consisted of an intense 7 day geochemical and geological sampling program concentrated within the confines of the GAYLE 2 claim. During this time, a total of 51 soil, 15 stream sediments, 84 rock and 15 heavy mineral concentrate samples were collected.

1.2 Location and Accessibility

The GAYLE 1-4 claims are situated along the eastern shore of Surprise Lake approximately 33km northeast of Atlin, British Columbia (Figure 1). Topographic coverage of the area is provided by the NTS mapsheets 104N/11E, 104N/11W and the air photographs BC5686 #039 to 043 and #081 to 086.

Access to the property is restricted to helicopter transport which is available through Keystone Helicopters Limited (Darryl Bruns, pilot), Atlin, B.C. A Hughes 500D and a Bell 206 are available for charter. Camp moves were initiated from the ADANAC property access road along Ruby Creek (Figure 1). A Keystone fuel cache, landing pad and parking area is situated along this road approximately 30 minutes from the Atlin townsite. From this



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Weir Mountain Project
FIGURE 1
Location of the GAYLE 1-4 Claims

jump-off site, a return trip to the GAYLE claims (with sling) requires 15 minutes of flying time.

An excellent campsite exists along the mouth of a small tarn at the base of the cirque on the GAYLE-2 claim (Figure 2). The area is level, dry and moderately well-protected from westerly winds. Clean and plentiful water is adjacent the camp area as is a helicopter landing site. The working zone above the cirque requires a 45 minute uphill climb.

1.3 Physiography

The GAYLE 3 and 4 claims typically cover low, gently rolling hills that give way to high mountainous regions to the south and east (typical of GAYLE 1 and 2). Elevation of the claims varies from 942m along the shore of Surprise Lake to 1,700m along the uppermost ridges. Figure 2 depicts the dominant physiographic characteristics of the claims.

Within the lower regions of the claim group (especially GAYLE 3 and 4) floral cover consists primarily of spruce and pine stands with a thick floor cover of willow and various other bushes and shrubs. An old forest fire has resulted in abundant deadfall interspersed with thick regenerating evergreens. Overburden is thick (especially in the northwest) with bedrock exposures restricted to low, well-rounded, linear hills and incised stream beds.

A normal progressive change from sub-alpine to alpine vegetation occurs as access is gained to the upper altitudes. Sparse alpine grasses and flowers form the bulk of the vegetation with thick willow stands occurring along stream beds and within sheltered depressions on the mountain sides. GAYLE claims 1, 2 and the southeast portion of 4 are typically alpine. Overburden is minimal, especially in the upper reaches but felsenmeer is prevalent with true

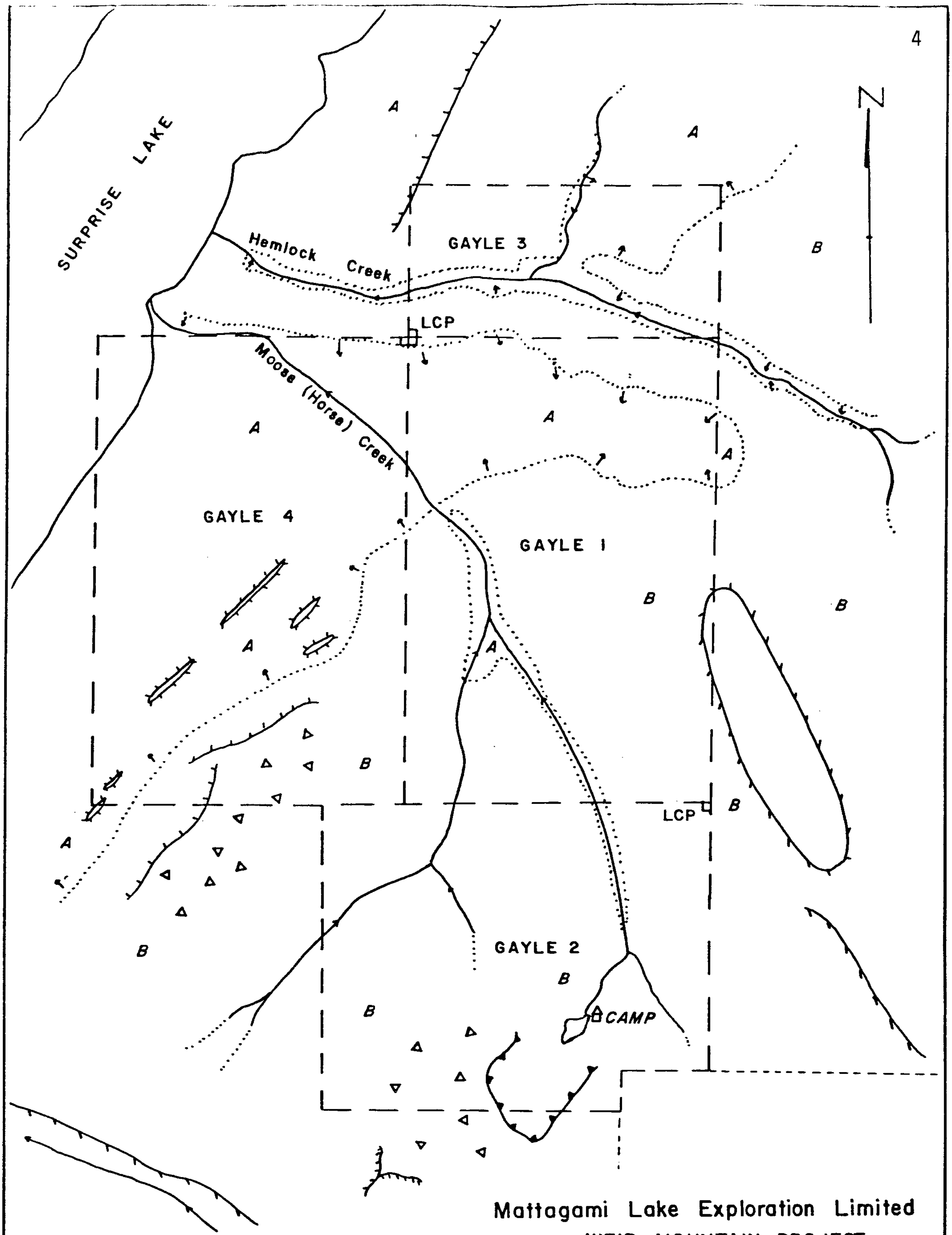

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FIGURE 2

PHYSIOGRAPHY OF THE GAYLE CLAIMS

: CIRQUE
: STEEP RIDGE
: LOW RELIEF EXPOSED RIDGE
: FELSENMEER
A : SUB ALPINE
B : ALPINE

0 200 400 600 800 metres

Air Photograph BC 5686 083

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outcrop restricted to stream channels, ridge tops and near vertical cliff faces. With the exception of these cliffs (which are of limited extent) slope profiles are generally moderate to gentle exhibiting broad low-angle characteristics of a well-glaciated valley. Two major streams (Hemlock and Horse Creeks) plus numerous tributaries have their origins in this mountainous area.

The singularly most spectacular feature of the claim group is the well-developed cirque and related tarn situated along the southern boundary of the GAYLE 2 claim. The cirque is approximately 700m wide and 200m deep with excellent, accessible bedrock exposure. The vast majority of work performed in 1981 was centered in and adjacent to this glacial remnant.

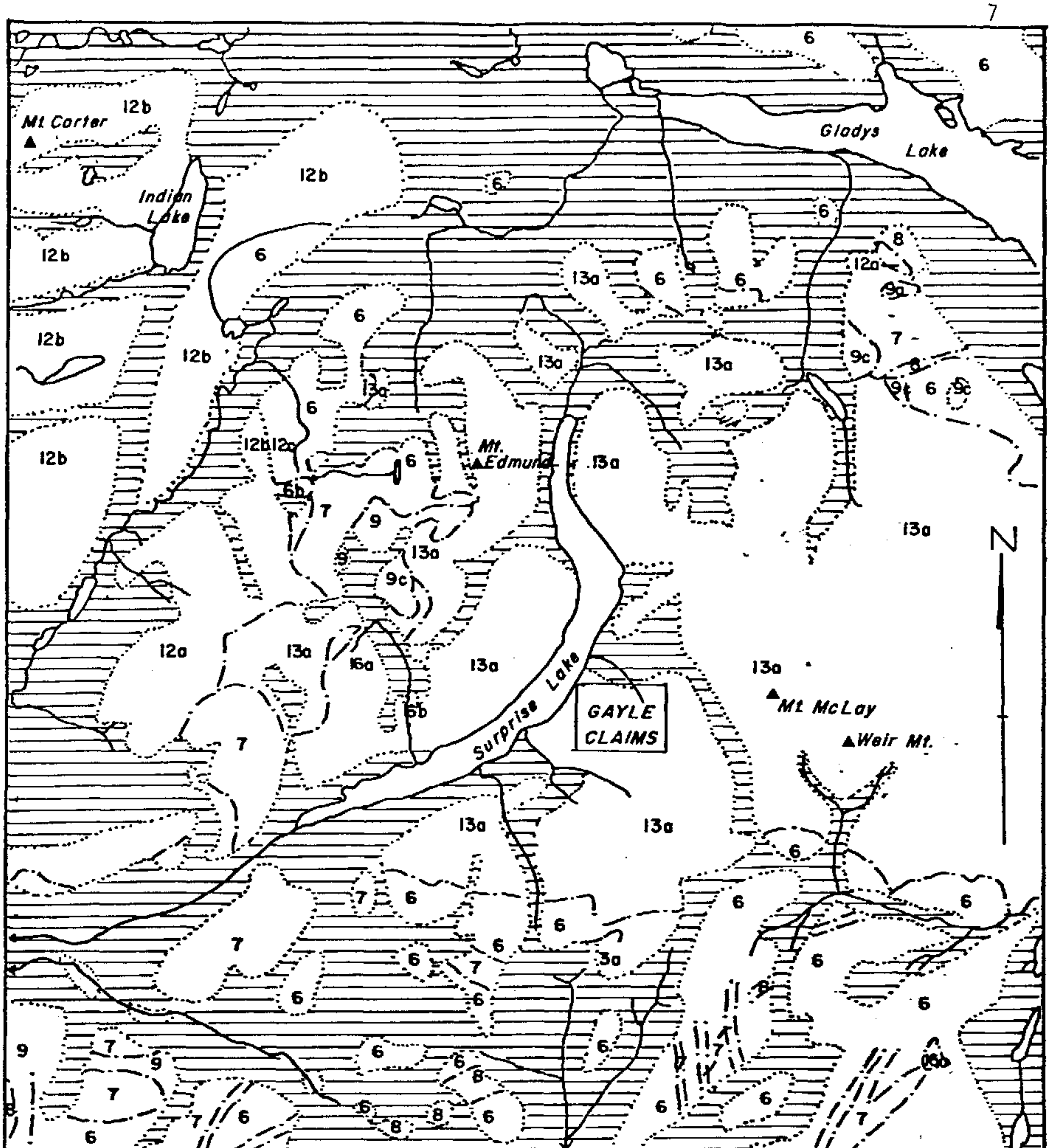
CHAPTER TWO: GEOLOGY

2.1 Regional Geology

As mapped by J.D. Aitken of the Geological Survey of Canada (Memoir #309, 1959) the GAYLE claims encompass approximately 17km² of a Cretaceous batholith that extends from Surprise Lake to east of Trout Lake, and north to Gladys Lake; an area greater than 630km² (Figure 3). The predominant lithology is alaskite which, by convention, is a granitic rock with only a few percent of mafic minerals but by definition is characterized by quartz comprising 20-60% of the felsic minerals, and an alkali feldspar to total feldspar ratio greater than 90%. Rocks of the unit are recognized by their recessive nature, inequigranular and highly variable texture (fine to coarse-grained and porphyritic), abundant smoky quartz, low mafic content, and a lack of color contrast between plagioclase and potash feldspar (Aitken, 1959). Discontinuous and aerially small intrusions of simple pegmatite are abundant throughout the Surprise Lake Batholith.

The sequential compilation of the regional geology as visible today (Figure 3) began with the thick accumulation of Cache Creek Group volcanic and marine sedimentary units during Pennsylvanian and Permian times. The Atlin intrusives were also emplaced at this time. The cessation of Cache Creek accumulation is marked by folding of the unit into a northwest trending body.

A distinct gap in the geological record from Permian to Jurassic times is noted through a lack of volcanic rocks and marine sediments (Laberge Group) which were laid down in adjacent regions. Folding of the Laberge Group and emplacement of the Coastal Intrusions (effect and cause relation?) was followed by a period of tectonic quiescence during which the Suprise Lake



AFTER MAP BY J.D. AITKEN.

Pleistocene & Recent: alluvium & glacial drift.
16 : Tertiary & Quaternary: Olivine basalt & scoria.
16a: Tertiary. 16b: Pleistocene.
13 : Cretaceous. a: Alaskite. b: Qtz. Monzonite.
12 : Jurassic coast intrusions. 12a: Black Mtn. Body
12b: Fourth of July Creek Body.
9 : Pennsylvanian & Permian. Atlin Intrusions;
Peridotite, meta-diorite, meta-gabbro.
9a: Serpentinite , 9b: Carbonitized Serpentinite.
Cache Creek Group
8 : Limestone & Lst. breccia.
7 : Greenstone & volcanic greywacke
6 : Chert, argillite, chert pebble conglomerate & chert breccia, derived quartzite & schist.

Approximate Geological Boundary.
Known Geological Contact.

Scale 1:253,440

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GAYLE CLAIMS
FIGURE 3
Regional Geology of the Surprise Lake area.
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Batholith and Dawson Peak Stock were emplaced. At this stage, a dominating history of accumulation gave way to erosive events in the area bordering Surprise Lake until Tertiary and Pleistocene times when minor basaltic flows occurred. At least two phases of Pleistocene glaciation occurred, sculpturing the land and leaving extremely thick glacial deposits in many areas.

The Surprise Lake Batholith possesses characteristically steep sided contacts associated with the overlying Cache Creek Group. Along the perimeter of the intrusion, an intrusion breccia of angular greenstone fragments within a matrix of fine-grained alaskite occurs. The intrusive body primarily crosscuts the country rock (northwest trending, folded sedimentary and volcanic sequences) except along the southern boundary where the contact parallels regional trends (Aitken, 1959). In addition to the Cache Creek Group, the Surprise Lake Batholith also intrudes segments of the Coastal Intrusions along Boulder Creek west of Surprise Lake (Figure 3) and at Mount Snowden east of Trout Lake.

Structurally, the most prominant feature within the region is the Trout Lake Graben which, due to well-defined faults, consists of a band of Cache Creek Group rocks sunk into the consolidated batholith. This is evidenced by shearing of the alaskite along fault planes.

2.2 Geology of the GAYLE Claims

On the basis of 1980 fieldwork and a more detailed program carried out over select regions of the claim group in 1981, twelve distinct rock types have been defined. These are described in detail below.

Alkali Granite

Pale, mottled grey white weathering same, it composes the predominant lithological unit within the GAYLE claims and can be correlated as the essential component of the Surprise Lake Batholith. The weathering surface is extremely coarse, very crumbly, and often stained rust-brown. A medium to very coarse-grained rock, it is composed of:

i) 35-45% anhedral to subhedral smoky quartz

ii) 45-55% subhedral potassic feldspar

iii) 5-10% euhedral biotite with minor, very fine-grained, anhedral biotite aggregations.

The K-feldspar crystals are typically light colored from which it is difficult to distinguish any plagioclase which may be present.

Primarily massive in texture, the fracture patterns which do exist range from tabular to blocky.

Porphyritic Alkali Granite

As described above with 30% of the alkali feldspar as well-developed, euhedral phenocrysts to 2cm in length. These often weather to a pale yellow color from pale white.

Altered (Sheared) Alkali Granite

Primarily restricted to zones of shearing, the rock is characteristically milky-white, prominantly stained orange-brown. Varying from fine to coarse-grained, often only quartz grains are identifiable with the vast majority of the feldspar reduced to a white, powdery to sugary material (clay alteration or mechanical grinding product). The degree of alteration varies with proximity to the shear zone and intensity of shear force. Shear foliation is normally striking 75-85° and dipping 75-85° to the northwest. The unit is typically recessive.

Aplite

Mottled dull-white-grey-orange weathers same with increased rusty-orange staining. Equigranular, sugary, fine-grained rock composed of quartz, K-feldspar, plagioclase feldspar±biotite in indeterminant quantities. Varies from highly resistant dykes with tabular fractures to crumbly, recessive phases; perhaps in relation to relative abundance of quartz. Small veinlets of randomly orientated smoky quartz are common. Primary occurrence of aplite is in the form of dyke rock. Slickensides are well preserved on numerous samples of the various aplite phases.

Porphyritic Quartz-Alkali Feldspar-Biotite Aplite

Mottled milky-white, grey weathering same with prominant rusty-brown staining. Phenocrysts are set within a very fine-grained milky-white matrix of quartz and feldspar. 40-50% of rock is composed of the various phenocrysts:

i) Quartz: 25-35% subhedral smoky quartz ranging in size from 0.3-1.2cm.

ii) K-Feldspar: 10-15% euhedral K-feldspar bleached white, and often recessive. 0.4-2.0cm in length.

iii) Biotite: Less than 5% euhedral biotite "books" to 5mm in length. Well-developed but weather out easily.

Porphyritic Quartz, Alkali Feldspar Aplite

Characteristically mottled light yellow-brown weathering darker yellow-brown. Typically fine-grained as described for aplite but tends to be very resistant; more so than the host alkali granite. Quartz (10-15% of rock) occurs as subhedral phenocrysts to 1cm in length while K-feldspar (5-10%) is found as white, euhedral phenocrysts up to 2cm long.

Porphyritic Quartz Aplite

Ideally as described for aplite with 5-10% of the rock as subhedral quatz phenocrysts 0.3-0.6cm in length. Fine-grained biotite crystals and aggregates are commonly associated with this aplite phase.

Porphyritic Biotite Aplite

A mottled grey-brown phase weathering same with rusty-orange staining. A crumbly, recessive rock containing 10-15% biotite as euhedral phenocrysts 0.2-0.7cm in length.

Sheared (Altered) Aplite

Essentially as described for the other respective phases with the exceptions of a very milky-white color, intense orange-brown staining on weathering surfaces, very fine to fine-grained texture, and often only the quartz phenocrysts are the only remaining recognizable constituents. This phase is usually crumbly and recessive.

This sheared phase has a strike of 75-85° and usually has altered and sheared alkali granite host rock associated with it.

Quartz Syenite

Limited in aerial extent, the quartz syenite is characteristically stained an intense red-brown color with a very recessive, crumbly texture. A "fresh" surface was impossible to obtain. A very coarse-grained rock, it is composed of 70-80% euhedral K-feldspar, 5-20% subhedral smoky quartz and 10-15% biotite, primarily as very fine-grained, anhedral to subhedral aggregates up to 1cm in length.

Biotite Syenite

Intensely stained, yellow-red orange with thick black manganese coatings along planes of weakness. Very coarse-grained, crumbly rock with biotite occurring as fine-grained aggregates (anhedral form) and medium-grained, subhedral to euhedral crystals.

Simple Pegmatite

Mottled grey-white with black biotite weathering pale. Extremely coarse-grained, the pegmatites are very discontinuous indicating development in void spaces within the cooling host rock. The alkali feldspar is typically euhedral while the smoky quartz varies from anhedral, massive stringers to euhedral crystals. Biotite often is found as very well-developed "books" to 3cm in length but does not occur in all pegmatitic showings. Though commonly associated with the coarser phases of the alkali granite, pegmatites were also found in finer granitic phases and incorporated into aplite phases.

Unidentified Dyke Rock (Diabase?)

Only found in one locale, it is an undistinguishable, very fine-grained, resistant, dark grey-green rock. Extreme hardness indicates a high silica content. May be a hydrothermally altered aplite.

Property Description

As illustrated in Figure 4, the dominant lithology encountered during the 1981 mapping program was the alkali granite and its related phases. The porphyritic phase forms a major contact with the equigranular alkali granite south of GAYLE 2. Although outcrop is scattered, the contact between the two units is well-defined.

Both phases of the alkali granite are massive, structurally simple, and typically crumbly. The rapid rate of weathering may be due to the lack of groundmass material which would normally bond the large phenocrysts together. The outcrops are well-rounded and the adjacent "soil" is characteristically rock with a high proportion of quartz and K-feldspar fragments.

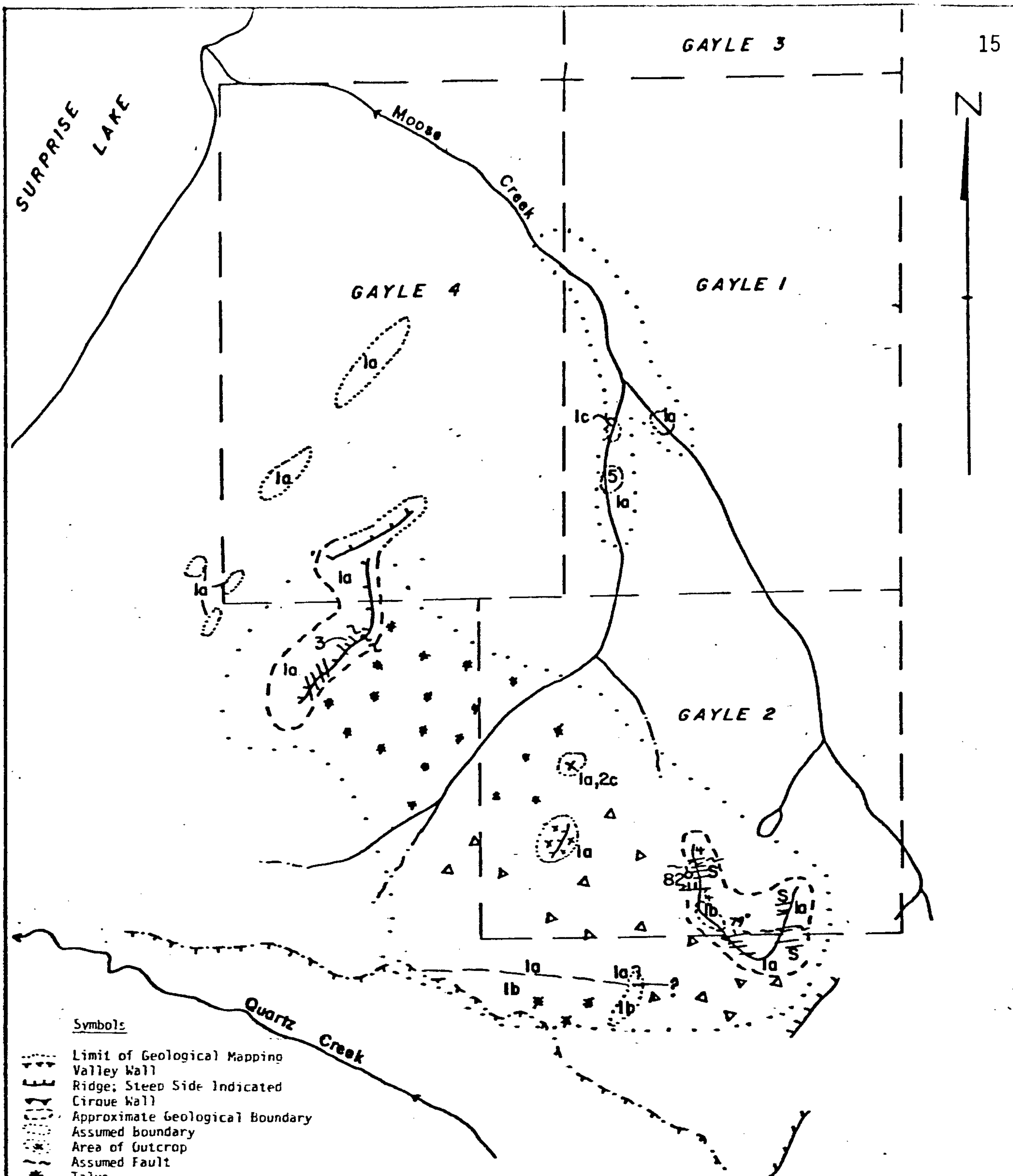
The presence of discontinuous, patchy but well-developed simple pegmatite lenses, stringers and "blebs" within the alkali granite are notable and considered to be the results of cavity infillings formed post-magmatically. They occur throughout the alkali granite but are best exposed within the GAYLE 2 cirque.

Perhaps the most interesting units are the six phases of aplite. Aplite dykes and dyke swarms are found throughout the map area but are best exposed along the cirque wall where the ice has carved a cross-sectional view of the mountain. Detailed mapping was carried out over four aplite shear zones at a scale of 1:1,000 or 1:500 (Figures 5, 6, 7 and 8). Three of the traverses were conducted within the cirque, the fourth was on the southeast flank of the mountain near the cirque edge.

Typically, the dykes strike 75-85° and dip 50-60° to the south with shear foliation (when present) striking the same but dipping steeply to the north, (78-85°). The formation of the Trout Lake Graben (cited earlier) is the probable source of the faulting, but the two are not parallel.

The dykes range in size from 0.2-3.0m in width and form recessive (usually sheared) to unsheared resistant bodies. The variation (especially in resistance) is perhaps indicative of a two phase system where one series of dykes were intruded, faulted, sheared and subsequently altered by upwelling hydrothermal waters utilizing the fault planes as conduits. This was succeeded by a second phase of dyke intrusions which were not sheared and tend to be resistant. A pronounced lack of alteration is evident in the second system. A phase preference from the first to second stage is not in evidence nor were any cross-cutting dyke systems observed from which age relationships could be ascertained.

The two syenitic phases were observed on the steep cliffs along the southern boundary of GAYLE 4. The unit was approximately 1m wide and very recessive (a fresh surface was impossible to obtain). The syenite probably represents the late, felsic stage of magmatic consolidation and is of minor aerial consequence. Macroscopic mineralization was not observed.



Symbols

- Limit of Geological Mapping
- Valley Wall
- Ridge; Steep Side Indicated
- Cirque Wall
- Approximate Geological Boundary
- Assumed boundary
- Area of Outcrop
- Assumed Fault
- Talus
- Felsenmeer
- Closely Spaced Aplite Dykes
- Sheared Aplite
- Shear Foliation with Dip
- Approximate Claim Boundary

Litholocial Units

1a Alkali Granite
1b Porphyritic Alkali Granite
1c Altered (Sheared) Alkali Granite
2a Equigranular Aplite
2b Porphyritic Quartz, K-Feldspar, Biotite Aplite
2c Porphyritic Quartz K-Feldspar Aplite
2d Porphyritic Quartz Aplite
2e Porphyritic Biotite Aplite
2f Sheared (Altered) Aplite
3a Quartz Syenite
3b Biotite Syenite
4 Simple Pegmatite (within Granite)
5 Diabase??Dyke Rock

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FIGURE 4
1981 Geological Map, Southern Portion of Gayle Claims 2 & 4

Scale 1cm = 357m

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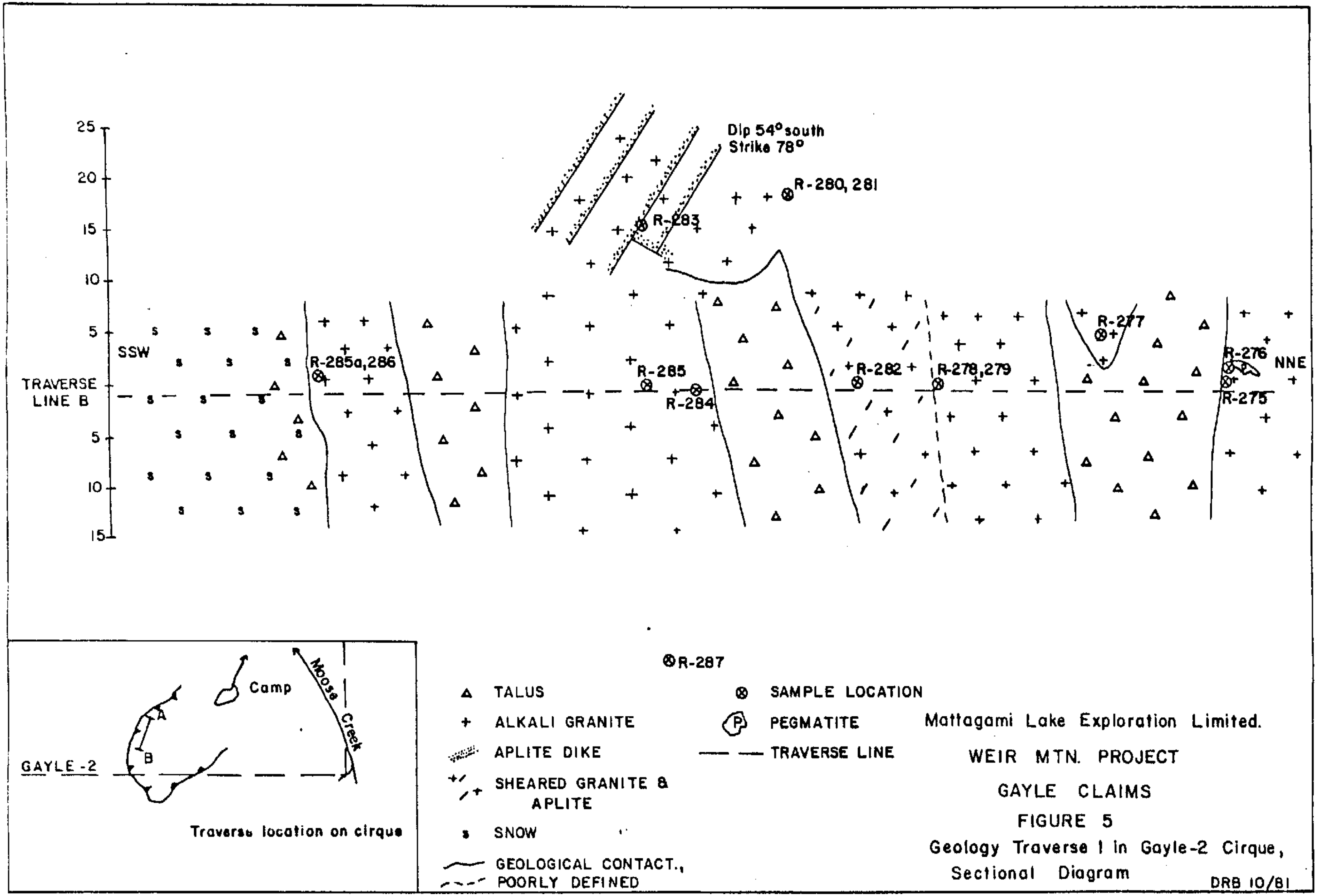

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FIGURE 5

Geology Traverse I in Gayle-2 Cirque, Sectional Diagram

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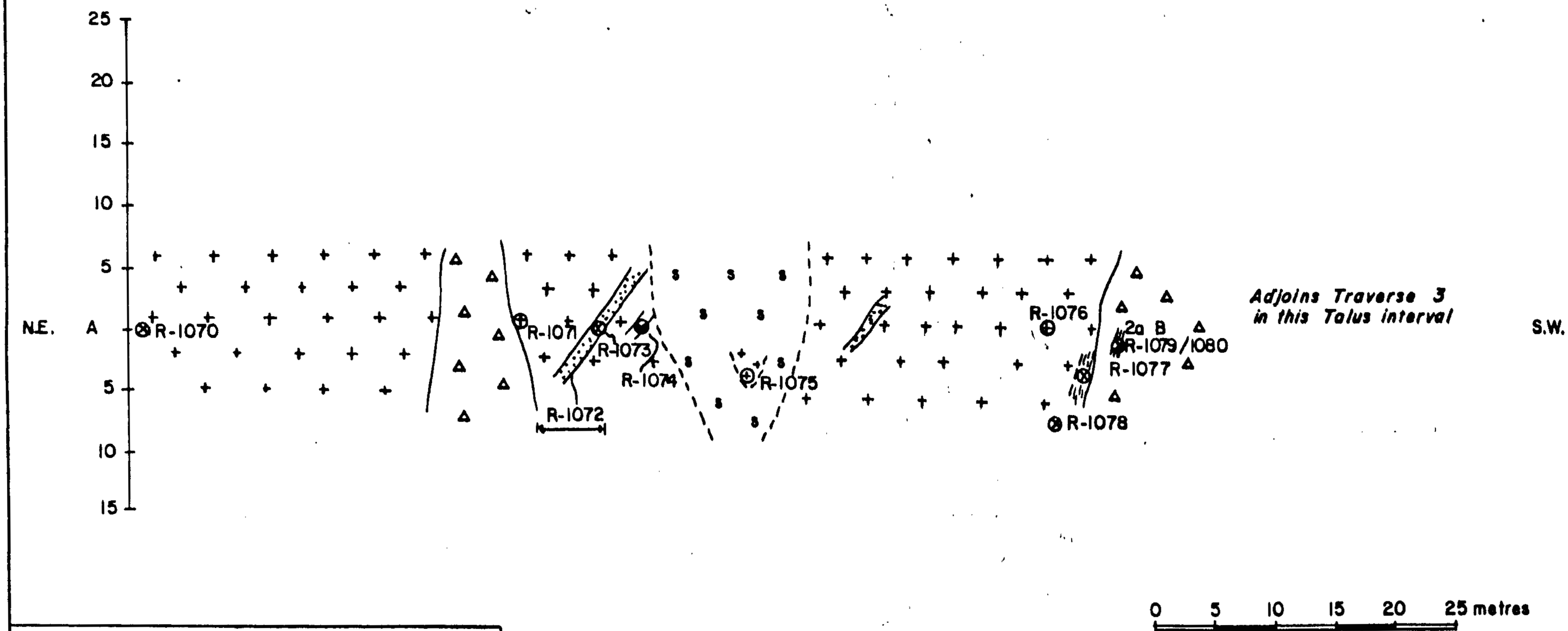

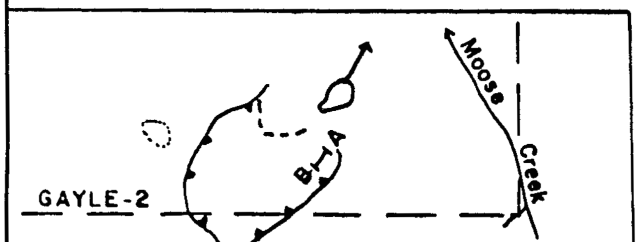

Traverse location on Gayle-2 Cirque

- s SNOW
- △ TALUS
- + ALKALI GRANITE
- GEOLOGICAL CONTACT
- 2a APLITE, EQUIGRANULAR
- 2c PORPHYRITIC QTZ., K-FELDSPAR APLITE
- ⊗ SAMPLE LOCATION

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FIGURE 6

Geology Traverse 2 in Gayle-2 Cirque, Sectional Diagram

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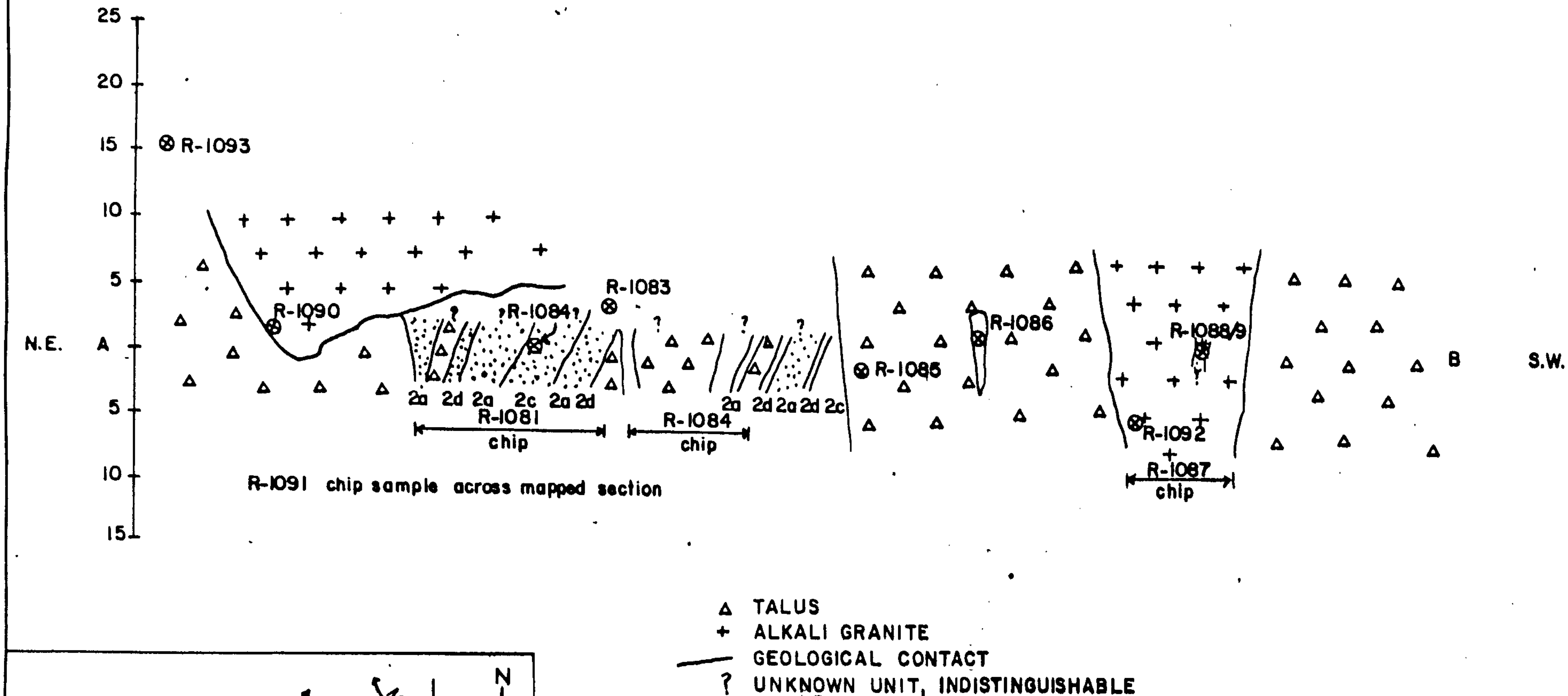

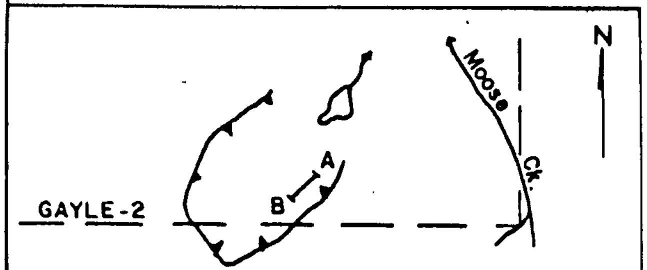

Traverse 3 location, relative to cirque

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FIGURE 7

Geology Traverse 3 Sectional Diagram.

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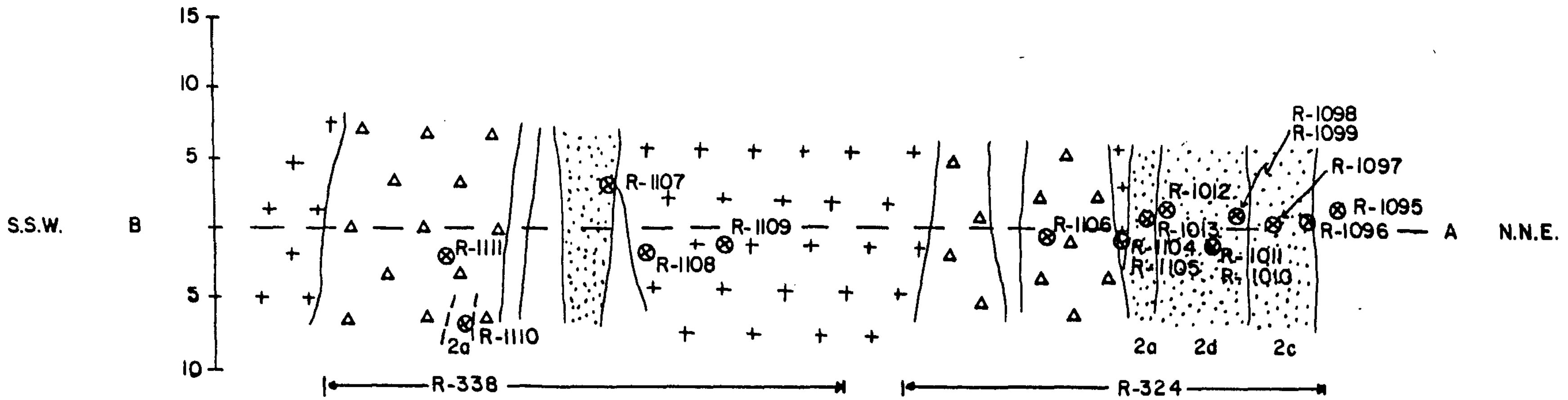

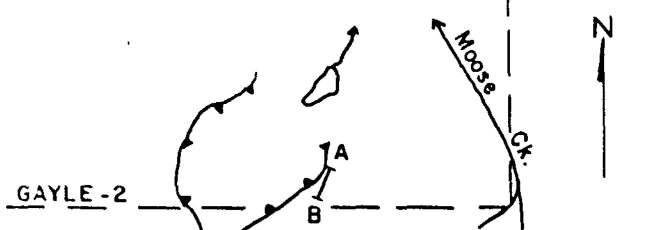

Traverse 4 location, relative to cirque.

△ TALUS

+ ALKALI GRANITE

GEOLOGY CONTACT

LINE OF TRAVERSE

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FIGURE 8

Geology Traverse 4 Sectional Diagram.

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CHAPTER THREE: FIELD WORK

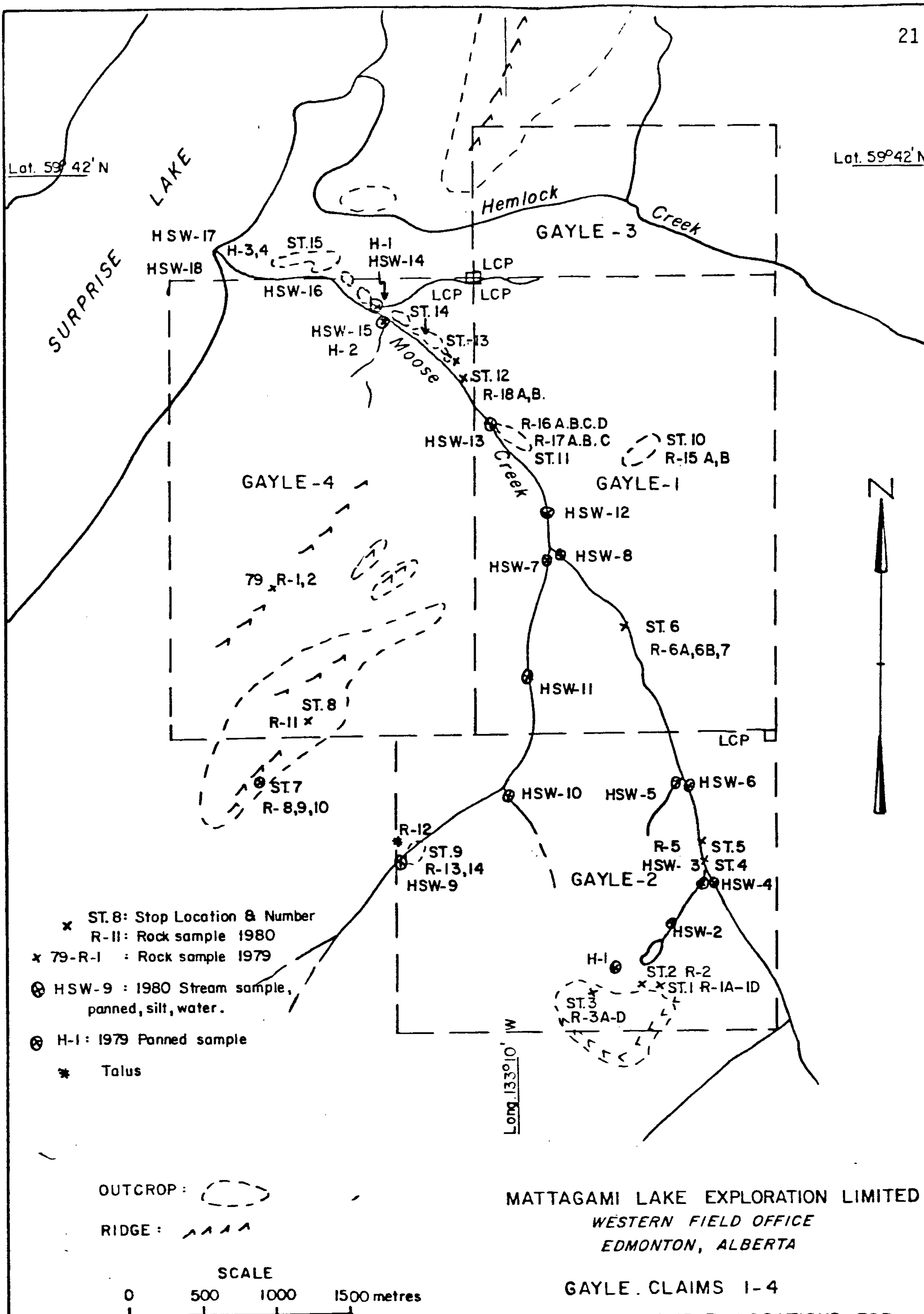
3.1 Previous Field Work

At the time of staking (September 1979) 9 stream sediment samples and 4 heavy mineral concentrates were collected along Moose Creek (Figure 9). Several weak tin and tungsten anomalies were indicated. Two outcrop samples were obtained from the southern boundary of the GAYLE 4 claim; a quartz porphyry and a weathered alaskite. The quartz porphyry was found to contain 1,400 ppm lead however (due to the nature of the two rock types) it is believed that the results were interchanged and the alaskite was in reality anomalous in lead.

The field work performed during 1980 was restricted to a short 3 day program during which 27 rock, 17 water, 17 silt and 18 heavy mineral concentrates were collected (Figure 9). Several samples within each group were anomalous, the most interesting of which are listed below.

TABLE ONE: Anomalous Rock, Sediment, Water and Pan samples; 1980 Field Season

Type and Sample #	Anomalous Values (ppm)	Approximate Location (Figure 9)
Rock Samples		
R- 3a	F - 4,000; Sn - 73; W - 1,100	Hydrothermally altered shear zone on GAYLE 2 cirque, 6m chip sample
R-10	F -11,000; W - >0.2%	Hematized,sheared aplite, GAYLE-4
R-16c	Zn- >2%	Mn-Fe oxide stained syenite, GAYLE-1
Heavy Mineral Concentrates		
H-12	W - 150	Moose Creek, GAYLE-1
H-13	Sn - 125; W - 85	Moose Creek, GAYLE-4
Stream Sediments		
S-2	Cu - 39; Pb - 50; Zn - 419	Creek draining GAYLE-2 tarn
S-6	Sn - 38, W - 55	Moose Creek, GAYLE-2
S-8	U - 150; Zn - 149	Moose Creek, GAYLE-1
Water Sample		
W-10	Cu - 7ppb; Pb - 7ppb	Northwest corner of GAYLE-2



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WESTERN FIELD OFFICE
EDMONTON, ALBERTA

GAYLE. CLAIMS 1-4

FIGURE 9 : SAMPLE LOCATIONS FOR 1979 & 1980

As a result of the interesting geochemical data obtained during 1979 and 1980, a detailed study of specific zones was suggested for 1981. This program was to key on geological mapping and sampling with soil geochemistry to be utilized in regions devoid of outcrop.

3.2 1981 Field Program

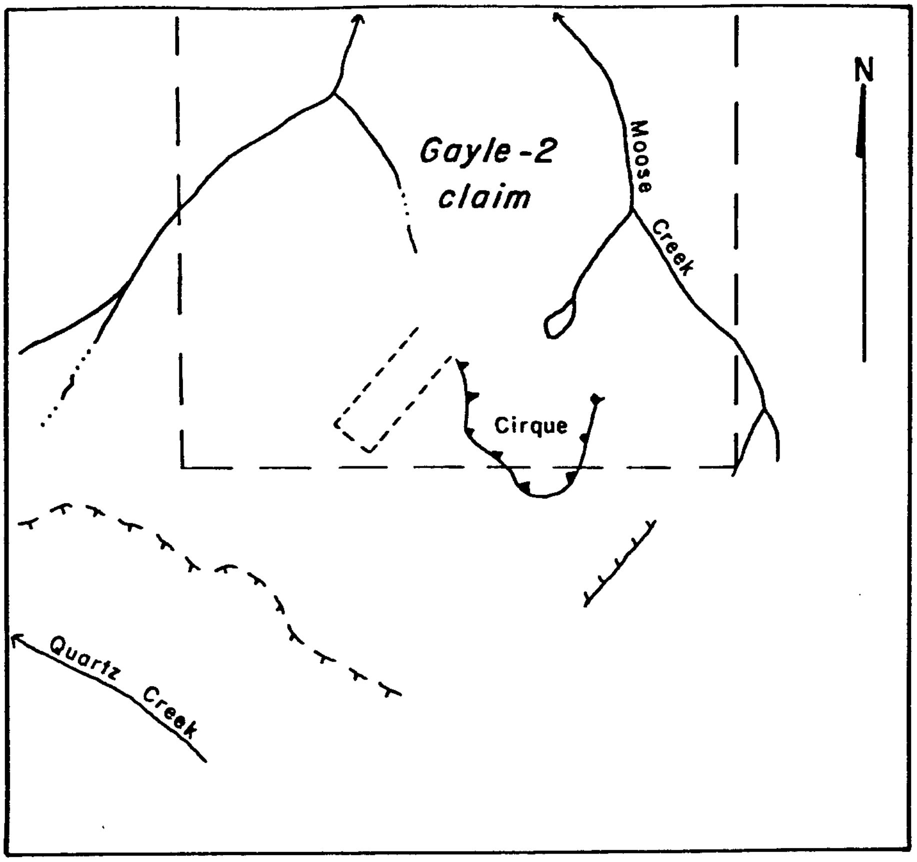
During the 7 day period over which field work was carried out, 165 soil, stream sediment, heavy mineral concentrates and rock samples were collected on the GAYLE claims. Sample locations are plotted in Figures 10, 11 and 12. All of the samples were analyzed for Ag, As, Au, Cu, F, Mo, Pb, Sb, Sn, W and Zn.

3.2.1 Soil Geochemistry Program

Soil samples were collected in two distinct regions; adjacent to the cirque on GAYLE 2 (Figure 10) and along the banks of Moose Creek on GAYLE 1 (Figure 11). Those collected along Moose Creek (in conjunction with stream sediment and heavy mineral concentrate samples) were to delineate anomalous tin and tungsten results defined in 1980.

3.2.2 Stream Sediments and Heavy Mineral Concentrates

To confirm anomalous tin and tungsten values obtained from Moose Creek, 13 stream sediments and 13 heavy mineral concentrates were collected along Moose Creek and some of its tributaries as illustrated in Figure 11. Two stream sediments were collected high above Moose Creek between the GAYLE 2 and 4 claims. These samples are plotted with the rock samples in Figure 12.



Scale 1cm = 357 metres

VALLEY WALL

RIDGE

CLAIM BOUNDARY

TRAVERSE

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Location of soil sampling traverses on the Gayle -2 claim.

FIGURE 10

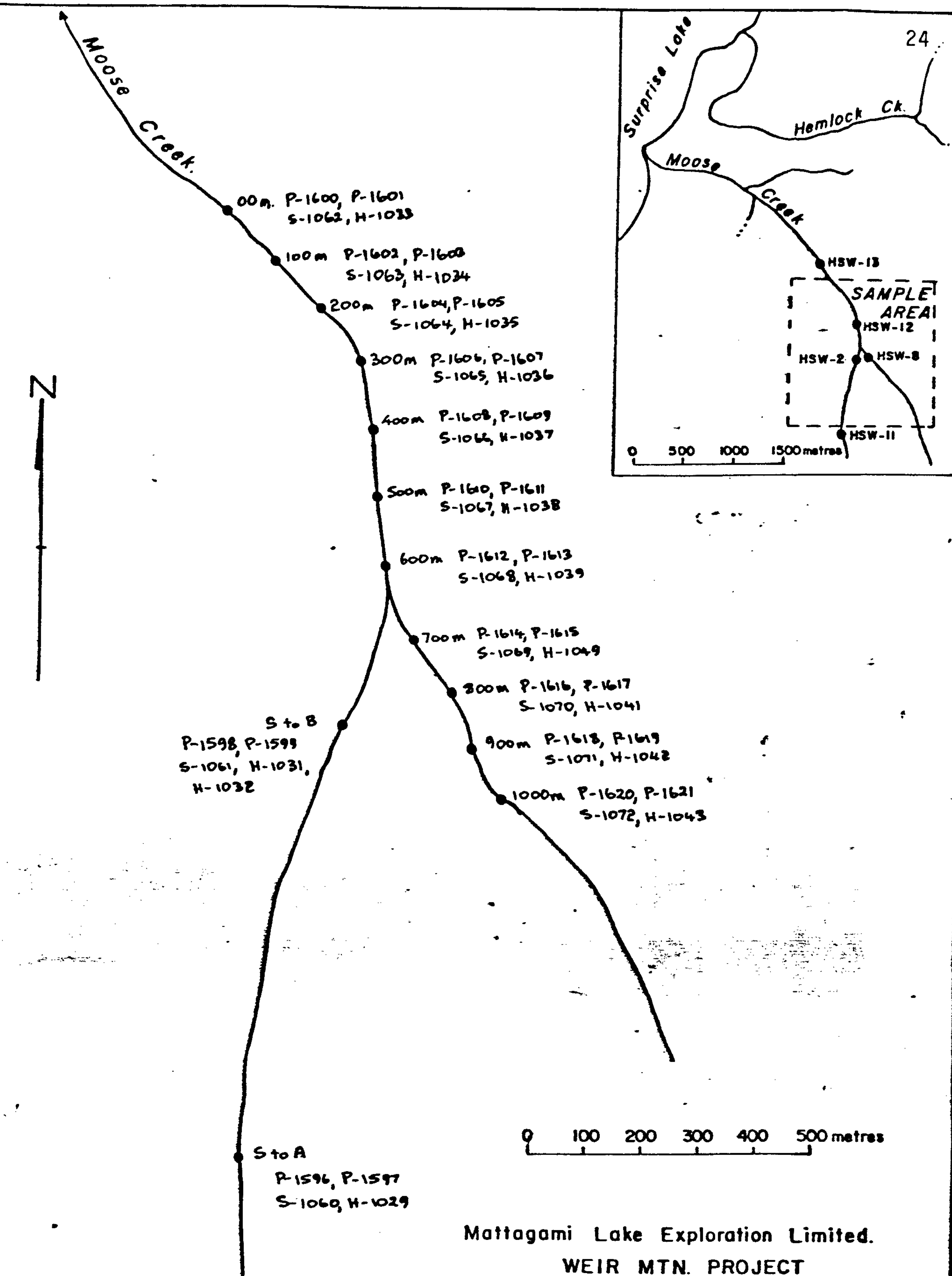

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FIGURE 11

Soil, Stream Sediment, & Heavy Mineral Sample Locations along Moose Creek

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3.2.3 Rock Sample Program

Geological samples of the areas of interest took two forms: a regional program at a 1:40,000 scale over GAYLE 1 and 2 (Figure 12) and a detailed mapping program over shear zones as previously illustrated in Figures 5, 6, 7 and 8 (1:1,000 and 1:500). A total of 84 samples were collected of which 20 were chip samples across zones of shear structure.

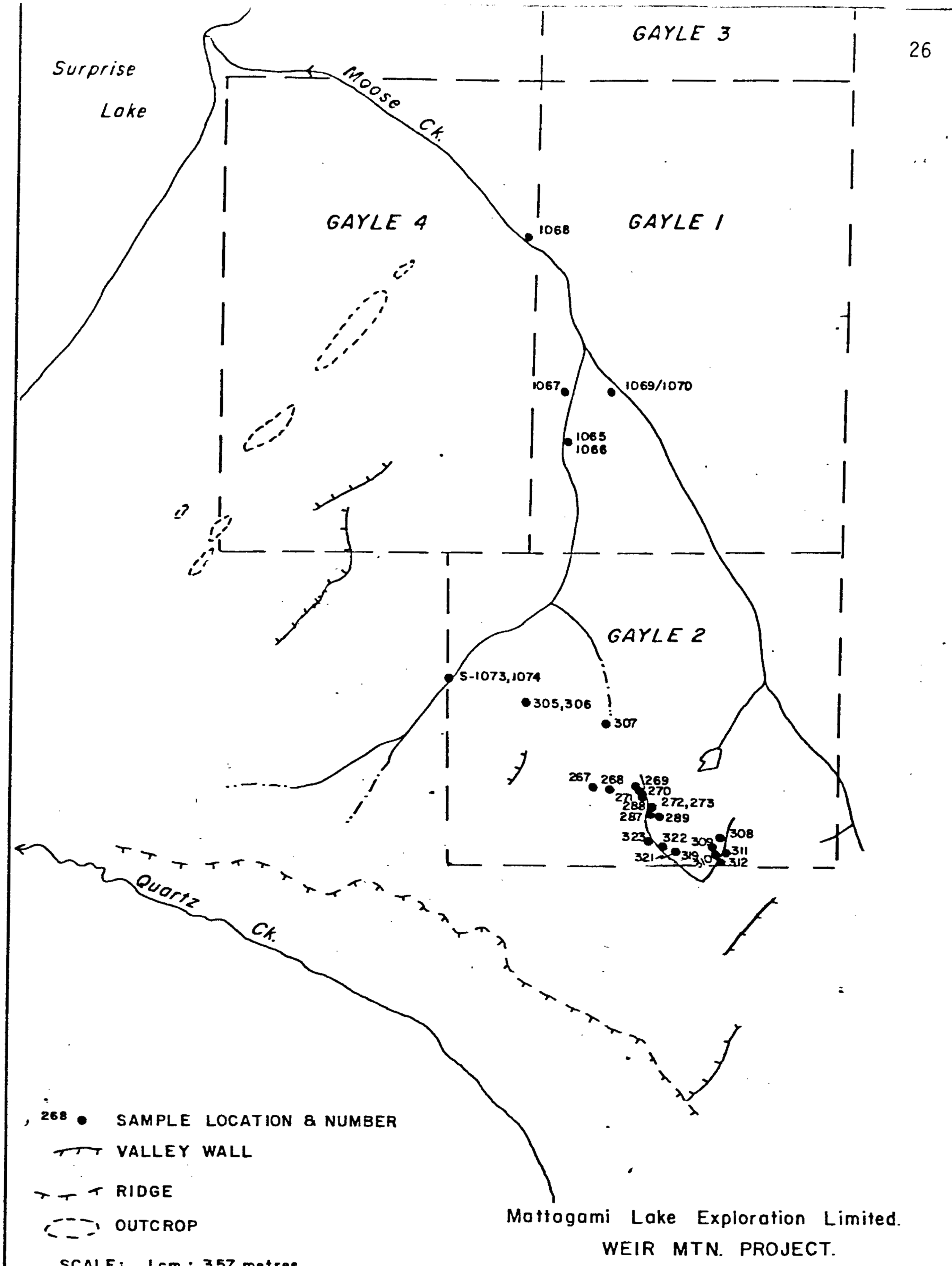

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FIGURE 12
Rock Sample Locations

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CHAPTER FOUR: GEOCHEMICAL RESULTS

4.1: Geochemical Procedures

Soil, stream sediments and heavy mineral concentrates were analysed by Noranda Exploration Company Limited in Vancouver while rocks were analysed by Noranda Bell Mines Limited at Granisle, B.C. All samples were analysed for Ag, As, Au, Cu, F, Mo, Pb, Sb, Sn, W and Zn by various geochemical and nuclear techniques.

Physically, the rock samples were crushed and pulverized with a rotary plate (or ring and puck pulverizer) with the -200 mesh fraction being separated and rolled for uniformity. Soil and stream sediment samples are dried at 80°C for 24 to 48 hours then sieved to -80 mesh fraction with a nylon screen. The +80 mesh material is discarded. Contrastingly, the heavy mineral concentrates are analyzed as received unless the material is too coarse in which case it is passed through a -40 mesh screen.

The product of the physical separation is then analyzed for its constituent elements. For Ag, Cd, Co, Cu, Cr, Fe, Mn, Mo, Ni, Pb, V and Zn a perchloric-nitric acid decomposition ($HClO_4$-HNO_3) is used. In this method, 0.4 grams of sample are digested with 4 ml of perchloric acid (70%) plus nitric acid (4:1) for 4 hours at reflux temperature. After digestion, each sample is diluted to 10 ml with water and analyzed with the Vartan AA-475 atomic absorption machine which has been corrected for background.

For fluorine and tin specific techniques are required.

a) Flourine: 0.25 grams of sample are sintered with sodium carbonate-potassium nitrate flux and dissolved in water. The fluorine content is compared to standards on a specific ion electrode meter.

b) Tin: 0.5 grams of sample is heated with ammonia iodide which will convert tin bearing cassiterite into staniic iodide. The resulting sublimate is dissolved in 1M HCl and the addition of gallein will produce a pink tin complex. Colormetric comparison with standards allows tin concentration to 2 ppm to be determined.

For the remaining elements of interest (As, Au, Sb, W) 0.5 grams from the original sieved sample was sent to X-Ray Assay Laboratories in Don Mills, Ontario for Neutron Activation Analysis.

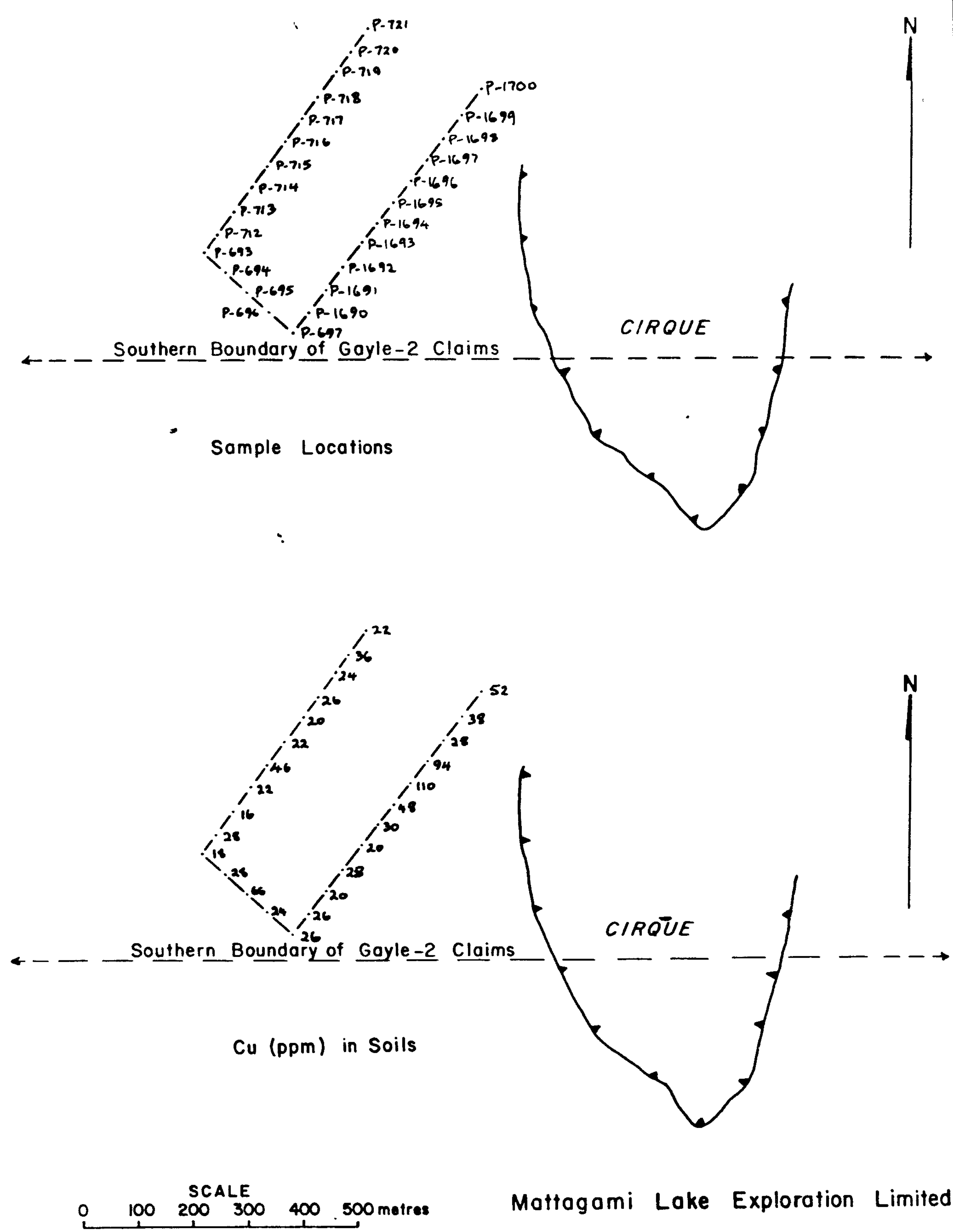
4.2 Soil Geochemistry Results

Fifty-one soil samples were collected and analyzed for Ag, As, Au, Cu, F, Mo, Pb, Sb, Sn, W and Zn. Characteristically the soils were poorly developed, dark brown alpine soils containing abundant, locally derived rock fragments; primarily potassic feldspar and smoky quartz. Mechanical weathering processes (ice, water, wind and snow) are the predominant agents for soil formation as botanical influences are minimal at the altitude of sampling.

Results for the acid leach analysis (Appendix One) are plotted for Cu, Ag, Mo, F, Sn, Pb and Zn on Figues 13 through 16 respectively. Unfortunately, the results for As, Au, Sb and W have yet to be received.

The preponderance of felsenmeer within the sample area may effectively mask the geochemical effects of underlying mineralization therefore it would appear appropriate to utilize geophysical techniques to trace the shear zones.

Twenty-six soil samples were collected along Moose Creek (Figure 17) in conjunction with stream sediment samples and heavy mineral concentrates. The results (although incomplete to date) were poor with only F and Zn occurring as weakly anomalous values.



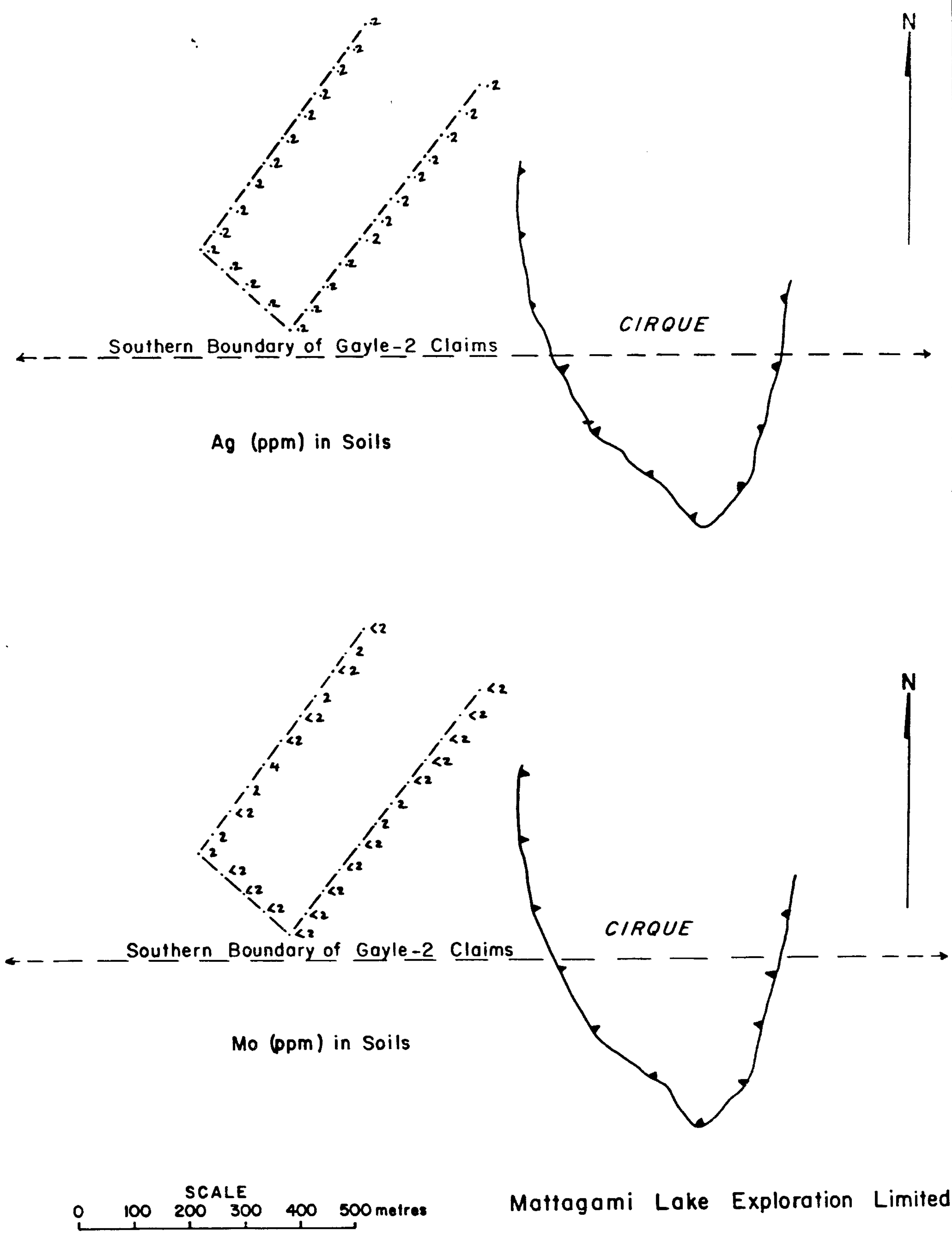
Mattagami Lake Exploration Limited

WEIR MTN. PROJECT.

GAYLE CLAIMS

SOIL SAMPLING TRAVERSES, JULY '81.

FIGURE 13



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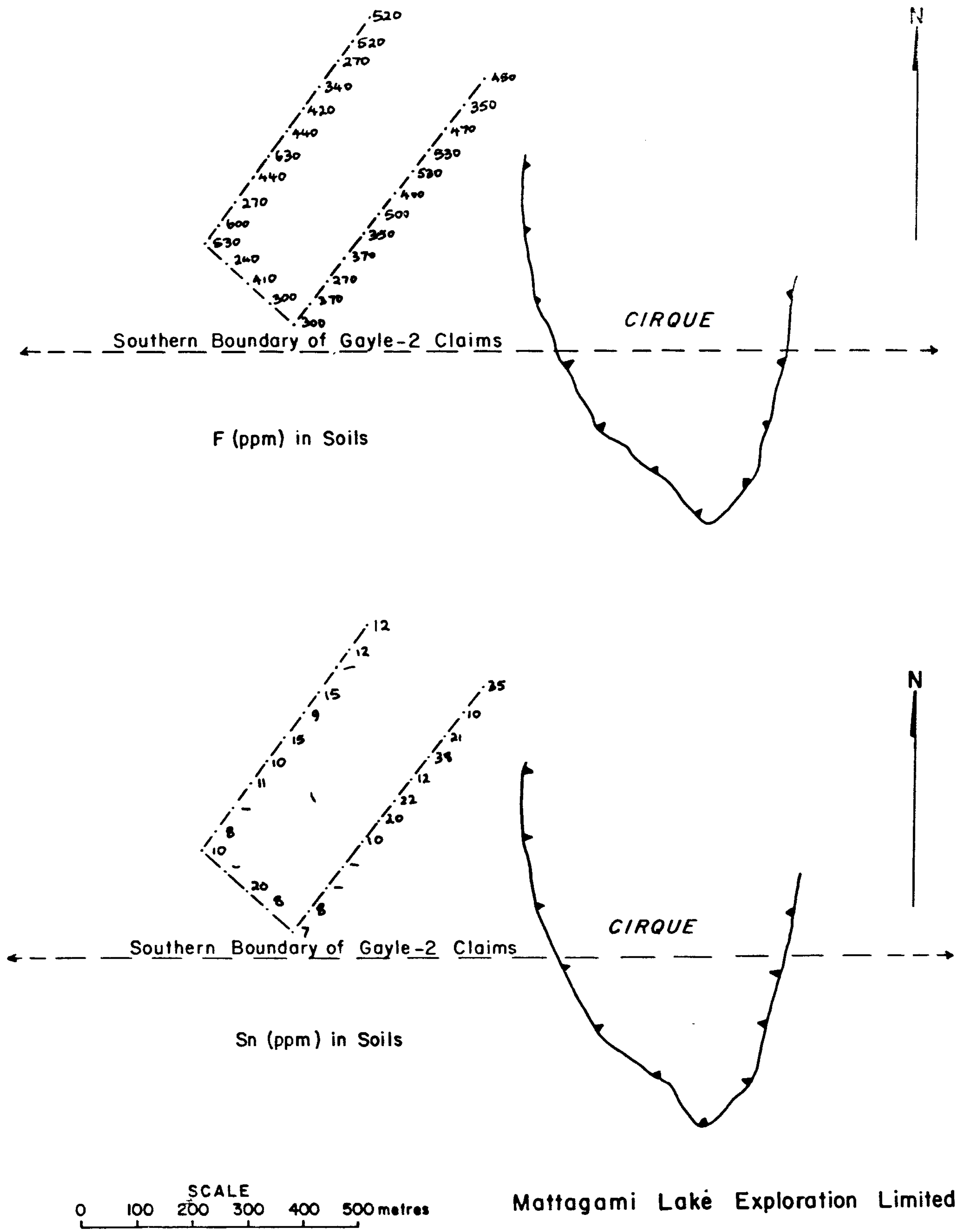
SOIL SAMPLING TRAVERSES, JULY '81.

FIGURE 14



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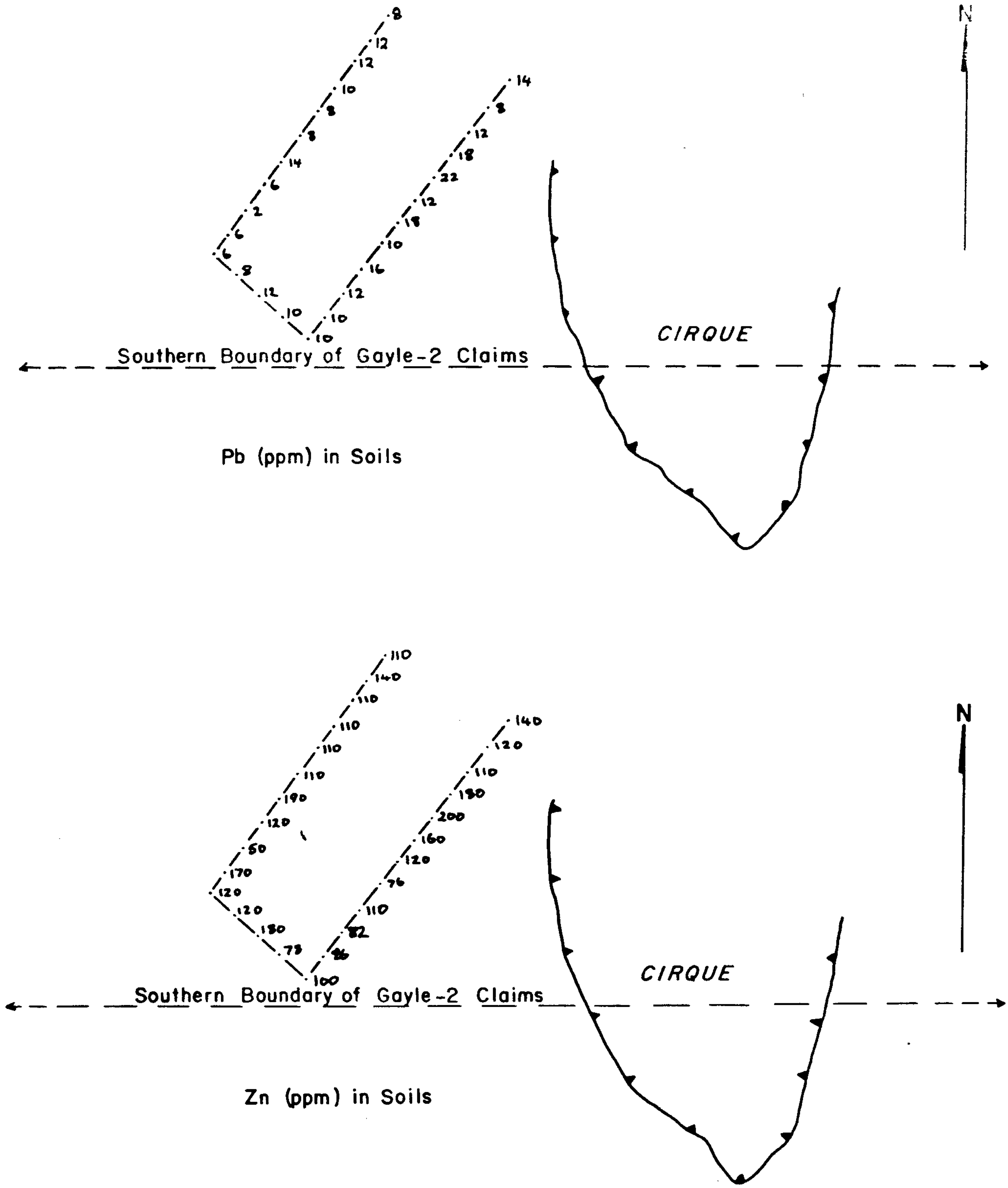
SOIL SAMPLING TRAVERSES, JULY '81.

FIGURE 15



SCALE
0 100 200 300 400 500 metres

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SOIL SAMPLING TRAVERSES, JULY '81.

FIGURE 16

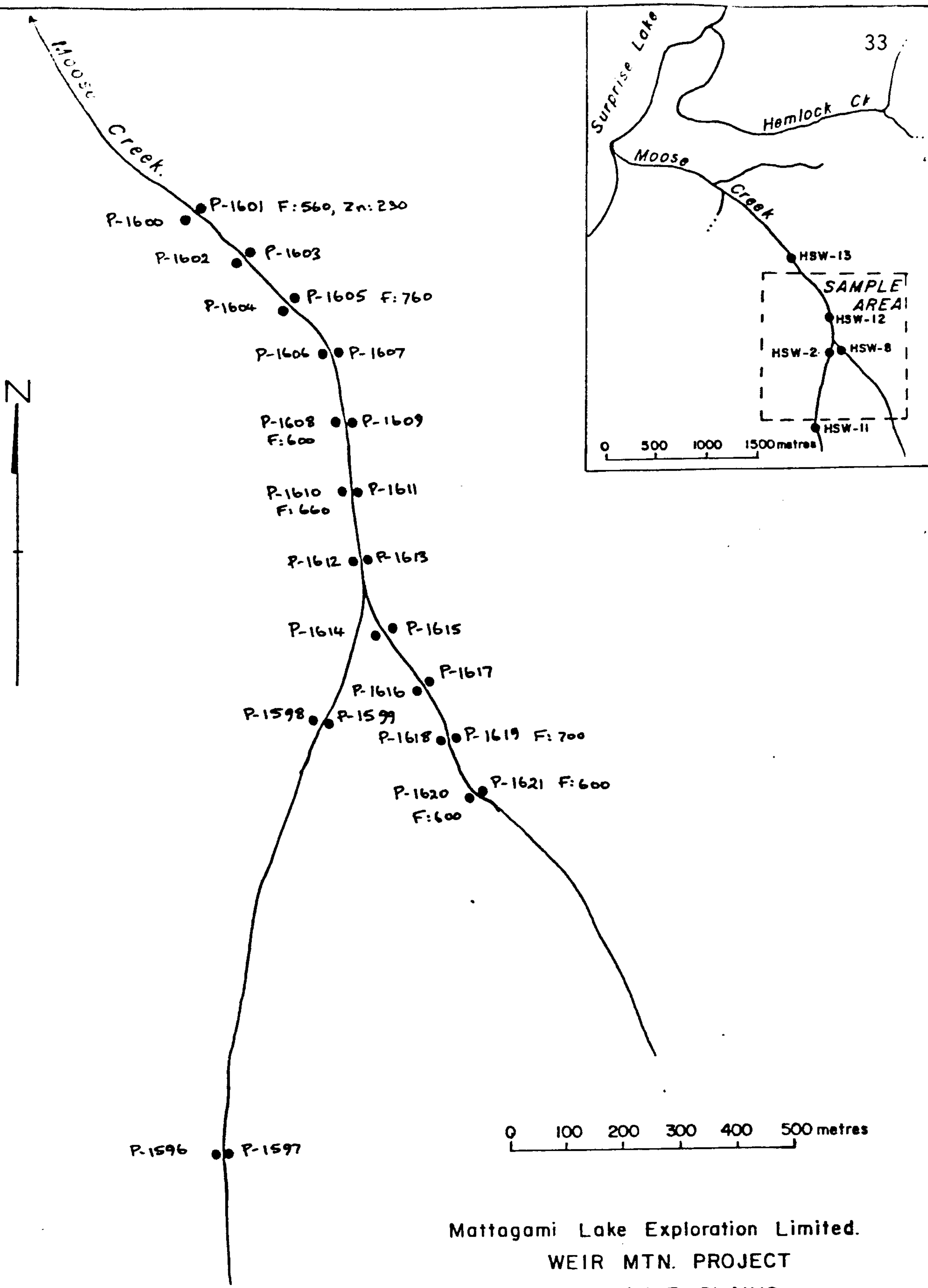

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FIGURE 17

Soil Sample Locations & Anomalous Values along Moose Creek.

DRB 10/81

4.3 Rock Geochemistry Results

At the time of writing this assessment report, the geochemical data for the rock samples had not been received. Appendix Two lists the sample number and lithology for each rock collected.

4.4 Stream Sediments and Heavy Mineral Concentrate Results

The results for 17 stream sediments and 15 heavy mineral samples are tabulated in Appendix One for Ag, Cu, F, Mo, B, and Zn. Data for As, Au, Sn and Sb have not been received. Overall the results are poor with only fluorine values anomalous. Sample locations and high values are illustrated in Figure 18.

As many of the samples were extremely coarse, it is likely that only the heavy, immobile elements that depend on mechanical rather than geochemical transport (Au, Sn, W) will be preferentially concentrated in the sediments. In contrast, the mobile, geochemically transportable elements (Cu, F, Zn) will be readily removed to lower portions of the stream where finer sediments to which they may adhere, will accumulate.

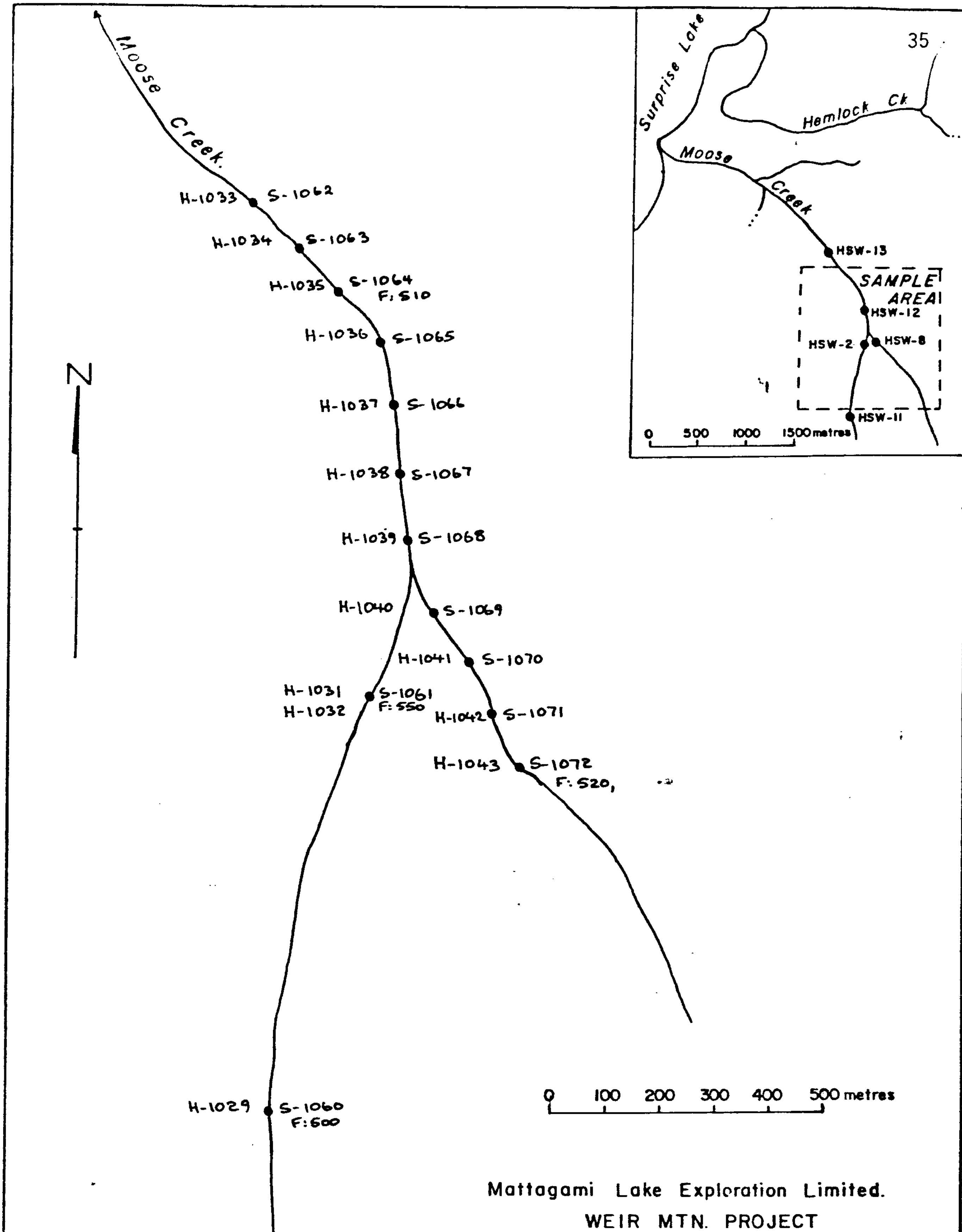

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FIGURE 18
Stream Sediment & Heavy Mineral Samples along Moose Creek. Sample Locations & Anomalous Values.

DRB 10/81

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

Initial geochemical results are poor, however the reception of the remaining geochemical data may greatly enhance the prospect of the GAYLE claims. Recommendations cannot be accurately proposed at this time, however a geophysical survey will definitely be required to penetrate the abundant felsenmeer.

APPENDIX ONE

SOIL, STREAM SEDIMENT AND HEAVY MINERAL CONCENTRATE GEOCHEMICAL VALUES

GAYLE CLAIMS, 1981

APPENDIX ONE: 1981 GEOCHEMICAL SOIL VALUES, GAYLE CLAIMS, in ppm except Au (ppb)

Sample Number	Location	Ag	As	Au	Cu	F	Mo	Pb	Sb	Sn	W	Zn
81-115-P- 693	West of	0.2			18	530	2	6		10		120
694	Cirque	0.2			28	240	<2	8				120
695		0.2			66	410	<2	12		20		180
696		0.2			24	300	<2	10		8		78
697		0.2			26	300	<2	10		7		100
712		0.2			28	600	2	6		8		170
713		0.2			16	270	<2	2				50
714		0.2			22	440	2	6		11		120
715		0.2			46	630	4	14		10		190
716		0.2			22	440	<2	8		15		110
717		0.2			20	420	<2	8		9		110
718		0.2			26	340	2	10		15		110
719		0.2			24	270	<2	12				110
720		0.2			36	520	2	12		12		140
721		0.2			22	520	<2	8		12		110
1691		0.2			20	270	<2	12				82
1692		0.2			28	370	<2	16				110
1693		0.2			20	350	<2	10		10		76
1694		0.2			30	500	2	18		20		120
1695		0.2			48	400	2	12		22		160
1696		0.2			110	530	<2	22		12		200
1697		0.2			94	530	<2	18		38		180
1698		0.2			28	470	<2	12		21		110
1699		0.2			38	350	<2	8		10		120
1700		0.2			52	450	<2	14		35		140
1596	Moose	0.2			16	450	<2	10				86
1597	Creek	0.2			12	340	<2	12				52
1598		0.2			10	360	<2	14				66
1599		0.2			14	390	<2	10				94
1600		0.2			14	540	<2	16				110
1601		0.2			8	560	<2	10				230
1602		0.2			14	480	<2	16				100
1603		0.2			8	480	<2	26				170
1604		0.2			10	370	<2	10				60
1605		0.2			8	760	<2	12				190
1606		0.2			12	440	<2	10				76
1607		0.2			12	490	2	18				120
1608		0.2			12	600	<2	10				78
1609		0.2			14	420	<2	12				86
1610		0.2			10	660	<2	6				76

APPENDIX ONE: 1981 GEOCHEMICAL SOIL VALUES, GAYLE CLAIMS, in ppm except Au (ppb)

Sample Number	Location	Ag	As	Au	Cu	F	Mo	Pb	Sb	Sn	W	Zn
81-115-P-1611	Moose	0.2			10	540	<2	20				110
1612	Creek	0.2			18	580	2	22				140
1613		0.2			10	540	<2	24				100
1614		0.2			18	400	<2	8				52
1615		0.2			12	660	<2	14				130
1616		0.2			12	520	<2	16				100
1617		0.2			8	540	<2	10				84
1618		0.2			10	400	<2	8				72
1619		0.2			8	700	<2	12				120
1620		0.2			14	600	<2	10				100
1621		0.2			8	600	<2	18				110

APPENDIX ONE: 1981 GEOCHEMICAL SEDIMENT VALUES, GAYLE CLAIMS, in ppm except Au (p

Sample Number	Major Component	Ag	As	Au	Cu	F	Mo	Pb	Sb	Sn	W	Zn
81-115-S-1060	Sand	0.2			22	500	<2	10				140
1061	Gravel	0.2			18	550	<2	12				180
1062	Sand	0.2			12	420	<2	12				130
1063	Gravel	0.2			12	430	<2	12				160
1064	Gravel	0.2			14	510	<2	16				160
1065	Gravel	0.2			14	480	<2	14				170
1066		0.2			10	460	<2	12				150
1067	Gravel	0.2			12	480	<2	12				170
1068		0.2			10	380	<2	10				140
1069		0.2			10	420	<2	12				110
1070		0.2			12	460	<2	12				190
1071		0.2			8	360	<2	8				110
1072		0.2			14	520	<2	18				140
1073		0.2			24	620	<2	12				110
1074		0.2			26	600	2	12				100

APPENDIX ONE: 1981 GEOCHEMICAL VALUES (PANS), GAYLE CLAIMS, in ppm except Au (ppb

Sample Number	Location	Ag	As	Au	Cu	Mo	Pb	Sb	Sn	W	Zn
81-115-H-1029	Moose	0.2			14	<2	10				60
1030	Creek										
1031		0.2			12	<2	22				130
1032		0.2			10	<2	24				140
1033		0.2			8	<2	40				80
1034		0.2			8	<2	22				110
1035		0.2			4	<2	8				58
1036		0.2			6	<2	16				88
1037		0.2			8	<2	26				100
1038		0.2			6	<2	10				78
1039		0.2			8	<2	20				74
1040		0.2			8	<2	34				94
1041		0.2			6	<2	10				80
1042		0.2			6	<2	20				70
1043		0.2			6	<2	12				84

APPENDIX TWO

GAYLE CLAIM ROCK SAMPLES

APPENDIX TWO: GAYLE CLAIM ROCK SAMPLES

Sample Number	Rock Type
81-115-R- 267	Quartz K-Feldspar Porphyritic Aplite
268	Quartz K-Feldspar Porphyritic Aplite
269	Alkali Granite
270	Quartz Syenite
271	Aplite Dyke (Quartz Porphyry)
272	Sheared Aplite Dyke
273	Sheared Aplite Dyke (Chip Sample)
274	Shear Zone (Chip Sample)
275	Alkali Granite
276	Pegmatite (Simple)
277	Alkali Granite
278	Aplite
279	Alkali Granite
280	Alkali Granite
281	Altered Alkali Granite
282	Quartz Porphyritic Aplite
283	Aplite Dyke
284	Alkali Granite
285	Alkali Granite
285a	Alkali Granite
286	Alkali Granite
287	Alkali Granite
288	Quartz K-Feldspar Porphyritic Aplite
289	Alkali Granite
305	Quartz K-Feldspar Porphyritic Aplite
306	Alkali Granite
307	Sheared Alkali Grantie
308	Sheared Alkali Granite
309	Sheared Quartz K-Feldspar Porphyritic Aplite
310	Simple Pegmatite
311	Aplit Dyke
321	Quartz K-Feldspar Biotite Porphyritic Aplite
322	Altered Alkali Granite
323	Altered Alkali Granite
1065	Diabase(?) Dyke
1066	Alkali Granite
1067	Altered Alkali Granite
1068	Alkali Granite
1069	Alkali Granite
1070	Alkali Granite

APPENDIX TWO: GAYLE CLAIM ROCK SAMPLES

Sample Number	Rock Type
81-115-R-1071	Alkali Granite
1072	Aplite Dyke
1073	Aplite Dyke
1074	Quartz K-Feldspar Porphyritic Aplite Dyke
1075	Alkali Granite
1076	Alkali Granite
1077	Aplite Dyke Float
1078	Aplite Dyke Float
1079	Aplite Dyke
1080	Aplite Dyke
1081	Aplite
1082	Aplite
1083	Quartz Porphyritic Aplite
1084	Alkali Granite
1085	Altered Aplite
1086	Aplite
1087	Alkali Granite
1088	Aplite (Chip Sample)
1089	Aplite (Chip Sample)
1090	Alkali Granite
1091	Alkali Granite (Chip Sample)
1092	Alkali Granite
1093	Coarse-Grained Granite
1094	Alkali Granite
1095	Alkali Granite
1096	Quartz K-Feldspar Porphyritic Aplite
1097	Quartz K-Feldspar Porphyritic Aplite
1098	Quartz Porphyritic Aplite
1099	Quartz K-Feldspar Porphyritic Aplite
1100	Quartz K-Feldspar Porphyritic Aplite
1101	Altered Aplite
1102	Aplite
1103	Biotite Porphyritic Aplite
1104	Altered Alkali Granite
1105	Alkali Granite
1106	Alkali Granite
1107	Quartz K-Feldspar Porphyritic Aplite
1108	Alkali Granite
1109	Quartz K-Feldspar Porphyritic Aplite
1110	Biotite Porphyritic Aplite
1111	K-Feldspar Quartz Porphyritic Aplite

APPENDIX THREE

STATEMENT OF COSTS

TOTAL COST SHEET FOR GAYLE CLAIMS 1-4, JULY 14-20, 1981

Camp Cost		
Food, Lodging at $ 35.00 per manday for a crew of 5 for 7 days		$ 1,225.00
Drafting		300.00
Equipment Rental		
SBX-11A VHF Radio $ 150.00/month for 7 days		35.00
Geochemical Analysis		
51 soils for Ag, Cu, Mo, Pb, Zn by Perchloric-Nitric Acid Decomposition	$1.60/1st element $ .60/each additional $4.00/sample	204.00
51 soils for F, Sn by Special Method	$2.50/element/sample $5.00/sample	255.00
51 soils for As, Au, Sb, W by Neutron Activation	$1.00 each/As, Sb, W $6.00/Au $5.00/Irradiation 14.00/sample	714.00
84 rocks as for soils	23.00/sample plus 1.00/sample preparation 24.00/sample	2,016.00
15 stream sediments as for soils	- 23.00/sample	345.00
15 heavy mineral concentrates as for soils	- 23.00/sample	345.00
Helicopter Costs		
Flying Time	4.2 hours @ $ 400.00/hour	1,680.00
Fuel	117 gallons @ $ 2.00/gallon	234.00
Report Writing		
$ 81.16/day for 6 days		486.95
Telephone Charges		10.00

Vehicle Rental

1 Panel Van @ $ 550.00/month for 7 days	$	88.70
1 Toyota Land Cruiser @ $ 1,014.00/month for 7 days		228.96
Fuel - Regular		75.00
- Diesel		50.00

Wages (As Calculated in Table A-1)

Camp Set-up		287.03
Geology		997.16
Geochemistry		926.02
TOTAL COSTS FOR GAYLE CLAIMS, 1981	$	10,302.79

1981 Statement of Costs for the GAYLE 1-4 Claims for the Period July 14-20, 1981

Mandays and Wage Costs per Technique per Person (Wages include Payroll Burden and Bush Bonus of 27%)

Crew Member	Cost/Day	Geology Days	Geology Cost	Geochem Days	Geochem Cost	Misc. Days	Misc. Cost
C. Stewart	72.46	5	362.30	1	72.46	1	72.46
V. Nishi	60.07	3	180.21	3	180.21	1	60.07
L. Hebert	52.85	3	158.55	3	158.55	1	52.85
Y. Tanaika	55.25	2	110.50	4	221.00	1	55.25
A. Bradley	46.40	4	185.60	2	93.80	1	46.40
		17	997.16	13	726.02	5	287.03

TOTAL COST FOR WAGES IS $ 2,010.21 for 35 mandays.

*Miscellaneous Wages includes Camp Set-up.

APPENDIX FOUR: CERTIFICATES, Stewart and Mercer

CERTIFICATE.

I, Craig Stewart, of the City of Edmonton, Province of Alberta, do hereby certify that:

1. I am a geologist residing at #304, 5210 - 122 Street, Edmonton.
2. I am a graduate of The University of Alberta, Edmonton, with a B.Sc. (1980) in geology.
3. I have been practicing my profession since May, 1980 and am at present Exploration Geologist with Mattagami Lake Exploration Limited.
4. I am a member of the Geological Association of Canada.

Dated: 13 November, 1981

C. Stewart, B.Sc.

CERTIFICATE

I, William Mercer, of the City of Edmonton, Province of Alberta, do hereby certify that:

1. I am a geologist residing at 6814 - 110 Street, Edmonton.
2. I am a graduate of Edinburgh University, Scotland, with a B.Sc. Hons (1968) in geology and McMaster University, Ontario, with a Ph.D. (1975) in geology.
3. I have been practicing my profession since 1974 and am at present Regional Manager for Mattagami Lake Exploration Limited in Edmonton.
4. I am a fellow of the Geological Association of Canada and a member of the Society of Economic Geologists and the Canadian Institute of Mining and Metallurgy.
5. I supervised the work that is described in this report.

Dated: 13 November 1981

W. Mercer, Ph.D.