



41016NW0036 63A.402 HORWOOD

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R E P O R T   O N  
A J A X   M I N E R A L S   L I M I T E D  
H O R W O O D   T O W N S H I P   P R O P E R T Y  
S U D B U R Y   M I N I N G   D I V I S I O N ,   O N T A R I O

Ajax Minerals Limited holds 27 unpatented mining claims in Horwood Township, Ontario. During the summer of 1961 these claims were geologically mapped by the writer.

The following is a report dealing with this mapping program.

PROPERTY:

The property consists of 27 contiguous mining claims of approximately 40 acres each. Of the estimated 1,080 acres involved, approximately 280 acres are covered by water.

The claims are numbered S - 115073 to S - 115099, inclusive.

The property located in the southeast quarter of Horwood Township, covers parts of both shores of Hardiman Bay, Horwood Lake and straddles the portage from Hardiman Bay to Great Pike Lake.

The property lies approximately 55 miles southeast of the town of Timmins and can be reached via Highway 101 or by C.N.R. to Horwood Lake station, thence 7 miles south by boat.

WORK PERFORMED:

An east west base line was established across the claims from which picket lines were cut every 200 feet, and chained to establish stations every 100 feet.

Work Performed (Cont'd)

Using the line grid as control, the property was geologically mapped, with the help of assistants to uncover and trace interesting veins and structures.

Maps of the observed outcrop geology were produced at a scale of 200 feet to one inch.

A few grab samples of veins and their outcrops were obtained and assayed.

HISTORY:

At various times during the last 70 years the area has been prospected for iron, copper, lead and gold.

Pits and trenches dug on quartz veins and shears can be seen at various places in the area. This work was largely done in the early 1930's.

Holinger Consolidated Gold Mines Limited sank a shaft to an inclined depth of 570 feet on a gold bearing vein lying about 3 miles to the southwest of the Ajax claims.

Orofino Mines Limited opened up two levels from a shaft on a property some 7 miles to the southwest. Company records indicate a grade of about \$14.00 gold per ton. Orofino reportedly plans to reactivate this property. (Recent Company Prospectus.)

To the south and southeast lie the Townships of Wigham, Coppell, Newton, Dale and McCowen, which have recently been acquired by Algoma-Talisman Minerals Limited, who plan to examine several known gold deposits. (Northern Miner, Oct. 5/61, page 11.)

Algoma-Talisman plan immediate investigation of reported occurrences followed by complete airborne studies of the Townships.

GENERAL GEOLOGY:

The table of geological formations from Ontario Department of Mines Report, Vol. 46, part 2, by W.D. Harding, is as follows:

Precambrian

Keweenawan

Olivine diabase  
Quartz diabase  
Intrusive Contact

Algoman

Quartz veins  
Quartz-feldspar porphyry, pegmatite  
Granite, syenite, gneiss  
Intrusive Contact

Haliburton (?)

Diorite  
Intrusive Contact

Keewatin

Slate, quartzite, greywacke, conglomerate, iron formation  
Acid volcanics, including pyroclastics  
Basic volcanics, including pyroclastics

Keewatin Volcanics:

These rocks are typical of the Keewatin volcanics found in other parts of Ontario and are thought by Harding to resemble the lower Keewatin volcanics of the Swayze area.

They consist predominantly of basic volcanics and include lavas, acid pyroclastics, sediments and iron formation.

Most of the Keewatin rocks remote from granite have been dynamically metamorphosed; they are closely folded and highly foliated, and consist largely of secondary minerals.

General Geology (Cont'd)

Close to the granite intrusives contact metamorphism is highly developed. The lavas have been baked, hardened, and amphibolitized; certain of the flows have been altered to black hornblende rocks.

In east Horwood Township the rocks strike from northwest to northeast, generally following the strike of the granite contact. The dip is westward, averaging about 45°.

In the area, andesitic pillow lavas and amygdaloidal types are the most common volcanics. They are all highly carbonated and chloritized.

Acid volcanics are rare. Harding states: "It is possible that some of the light-coloured bands of acid cherty material of rather striking appearance, which occur with Keewatin sediments at various scattered places in the area are tuffaceous sediments of acid type."

Coarse agglomerate, in which angular fragments consist mostly of fresh, dark rather coarse textured diorite containing abundant hornblende, is exposed at various localities in the area.

Sediments:

Sediments are rare in the area. One belt strikes northeast for four miles from the east shore of Great Pike Lake. In places the sediments consist of regular parallel beds of impure silica and magnetite; in other places they contain visible detrital material and are identified as quartzite, slate and greywacke.

East of Great Pike Lake portage, Harding identifies green amphibolitized sediments in thin laminations, probably composed of detrital material derived from the erosion of basic lavas.

General Geology (Cont'd)

Banded light-coloured sediments of both chemical and detrital origin occur in many places in Horwood Township. They occur as thin beds between the basic lavas and can be confused with altered porphyry dikes or easily mistaken for acid lava.

Harding includes the sediments in the Keewatin, stating; "The similarity between the character of the material composing these sediments with that of known Keewatin sediments in other areas and the absence of any recognizable unconformity leaves little reason for supposing that they are Timiskaming in age."

It is possible that they are representatives of a Timiskaming horizon discontinuously exposed from the Swayze area through to the Porcupine district.

Such a series would be expected to continue from Swayze Township through Coppell, Newton and Horwood Townships.

Halleyburian (?) Intrusives

These are small pre-Algoman masses of hard, fresh, dark massive diorite containing abundant hornblende. Some may be classed as hornblendite. A gold bearing quartz vein (Orofino) lies in this type of diorite.

Algoman

Harding describes the Algoman rocks of the area as consisting of plutonic types, such as granite and syenite and their corresponding gneisses, and granodiorite pegmatite, quartz-feldspar porphyry, and quartz veins. Most of the algoman rocks are granite gneisses and massive granites possessing slight foliation.

General Geology (Cont'd)

In many sections the gneisses obviously derive their banding from the partial assimilation of stratified lavas and sediments.

Quartz-feldspar porphyry dikes varying from a few feet to over 100 feet wide are numerous in Horwood Township. They are generally intruded parallel to the schistosity. Harding states: "The development of schistosity in some of the quartz-feldspar porphyry dikes and their dissection by small quartz veins indicate that they were intruded before the Algonian deformation was complete.

Keweenaw

Narrow dikes varying from diabase to diorite, that generally trend north-south are abundant in the area. In places, as at Great Pike Lake they are quartz diabases.

An olivine diabase dike, up to 600 feet wide strikes northeast across Horwood Township.

STRUCTURAL GEOLOGY:

The main structural features of the area consist of a series of northeastward striking anticlines and synclines.

The channel of Horwood Lake extending south from Hardiman Bay is known to lie along a fault of unknown displacement. Hardiman Bay itself is presumed to be due to a fault. Northeast striking faults may occur, parallel to Hardiman Bay, as well as northwest striking faults and shear zones.

ECONOMIC GEOLOGY:

Algonian quartz veins, porphyry dikes and shear zones containing quartz and sulphides are found throughout the area.

Most veins strike northeast and dip to the northwest. The veins, containing pyrrhotite, tourmaline and actinolite are believed to have been formed at considerable depths and at high temperatures. Other vein minerals are pyrite, chalcopyrite, galena, sphalerite and gold. In places the gold was introduced with galena late in the vein forming period; the sulphides being deposited in fractures in the quartz.

GEOLOGY OF THE PROPERTY:

Most of the claims are underlain by basic volcanic rocks; generally andesites to the west, amphibolites in the north central portion and chloritic schists adjacent to the granitic intrusives.

Sedimentary bands trending to the north-northeast and varying from 100 feet to 600 feet wide occur along and within the area of granitic rocks.

The sediments, greywacke, slates, quartzite and arkose, have been largely altered to mica schists and porphyritic gneisses.

The main intrusive mass to the east is represented along the southeastern claims by granite gneiss. Adjacent and somewhat gradational to the granite gneisses are sill-like areas of intrusive feldspar porphyry gneiss.

Difficulty was encountered in separating the various gneissic and porphyritic rocks. Similar problems were encountered in distinguishing between schists of volcanic and of sedimentary origin.

Geology of the Property (Cont'd)

The directions of schistosity are generally conformable to the trend of the granite contact. Most strikes are north-northeast with dips varying from 30° to 60° to the west.

From linears and observed shearing, two directions of faulting or shearing are inferred; Hardiman Bay probably represents a major northeast fault.

There is minor evidence of northeast fractures; from the north end of Great Pike Lake, near the northeast corner, and towards the northwest corner of the property.

North-northwest zones of faulting or shearing are suggested, on the western claims of the group, by topography.

A quartz filled shear up to eight feet wide and at least two hundred feet long was noted parallel to Hardiman Bay in claim S-115088. The zone contained considerable pyrite but grab samples indicated only minor amounts of gold.

Other quartz veins from one inch to six inches wide, striking north and northwest occur northwest of Hardiman Bay.

Quartz veins from one inch to eight feet wide can be found from the shore of Great Pike Lake in claim S-115081 to Claim S-115082.

Most of these veins occur north of the granite gneiss in claims S-115073, S-115094, S-115093 and S-115082. The veins which can be seen for only short distances strike mostly northeast and northwest.

One vein from five feet to eight feet wide was traced, intermittently, for 650 feet. This vein cuts the base line at line 75 and can be seen in a few outcrops to the southwest. It is only slightly fractured where seen. Some pyrite occurs along its contacts. The



Geology of the Property (Cont'd)

contact material contains minor amounts of gold.

Random grab samples from other veins contained only traces of gold or no gold.

In this area, where many quartz veins associated with minor porphyry dikes are known to occur, the veins were seen and sampled only where they were relatively massive and unfractured.

CONCLUSIONS:

Quartz veins occur in an extensive zone in the eastern part of the property.

The veins, where they outcrop, are relatively massive and contain at best only negligible quantities of gold.

Interesting gold values have been found in other veins throughout the area. It is thus felt that work to trace and sample the veins on the property is warranted.

RECOMMENDATIONS:

Extensive stripping, utilizing a bulldozer, should be done in the area north of claim S-115073.

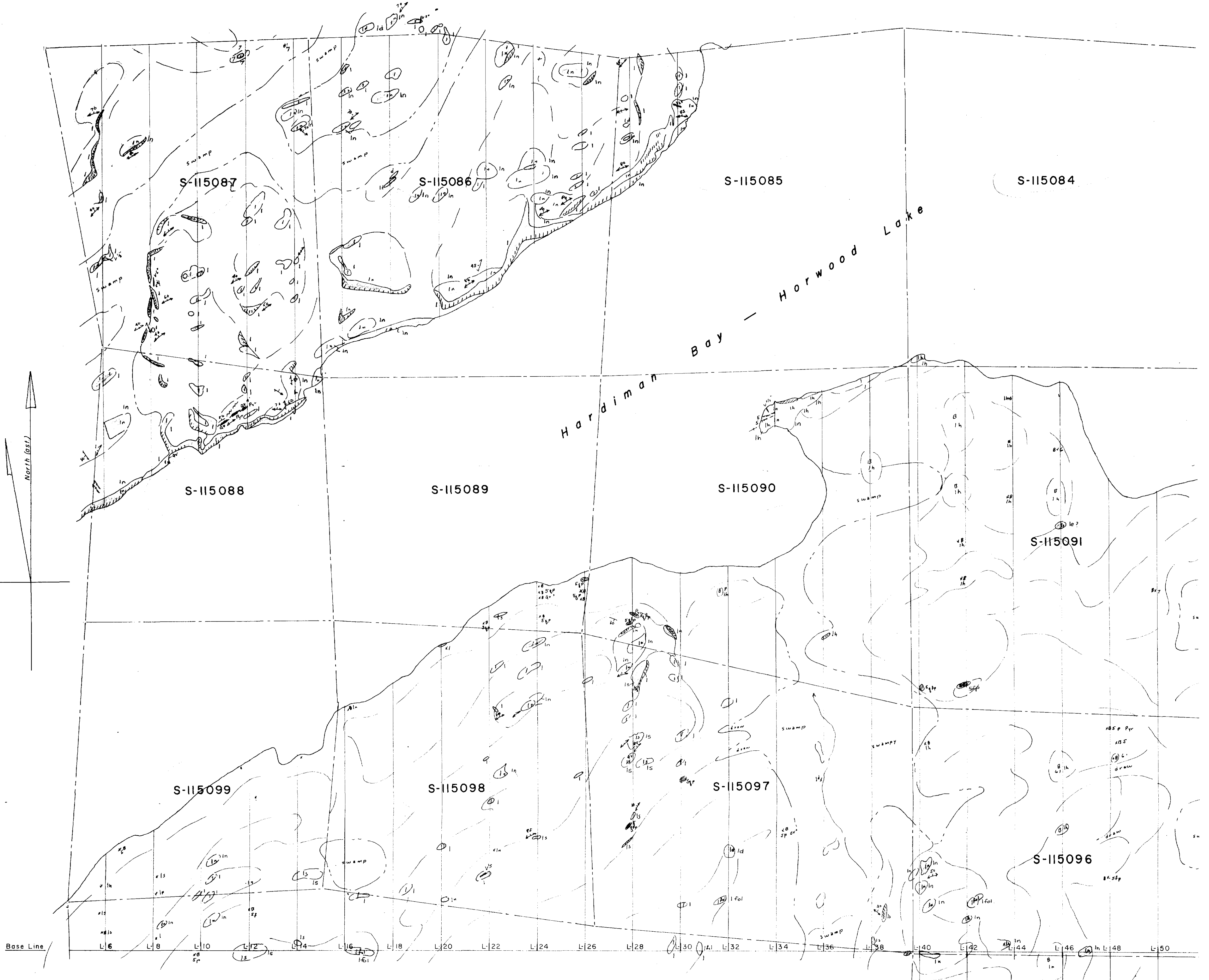
This work would be done in an attempt to find fractured and mineralized veins within the broad vein zone noted during the mapping of the property.

Respectfully submitted,



Robert Liard, P.Eng.

291 St. George Street  
Toronto 5, Ontario  
October 26th, 1961.



**LEGEND**

- KEWEENAWAN**
- 7 Olivine diabase
  - 6 Quartz diabase
- ALGOMAN**
- QV Quartz vein
  - 5 Acid intrusive and related metamorphic rocks  
felsite and porphyry: fp(gn), feldspar porphyry (gneiss)
  - Gneissic Granite: P, porphyry, GP, quartz-feldspar porphyry  
PG, porphyritic granite, Gn, gneiss
- HAILEYBURIAN**
- 4 Diorite
- KEEWATIN**
- 3 Sediments (including schists and gneisses)  
qtz, quartzite; gn, gneissic, P, porphyritic, (arkose)  
gwk, greywacke: ms, mica schist, slate
  - 1 Basic volcanics, s, chlorite schist (may be 3s in part)  
h, (hornblende) amphibolite, fol, foliated, d, dioritic  
n, andesite

**SYMBOLS**

- Cliff, ridge
- Swamp outline
- Topography
- Trail
- Outcrop, outcrop area
- Strike and dip of contacts
- Schistosity
- Joints, fractures
- Shears, faults
- Geological boundary; approximate
- Claim boundary
- B Boulders
- sil Siliceous

**AJAX MINERALS LIMITED.**  
**HORWOOD TWP. PROPERTY**  
**GEOLOGICAL PLAN**

Scale: 1 in. = 200 ft.

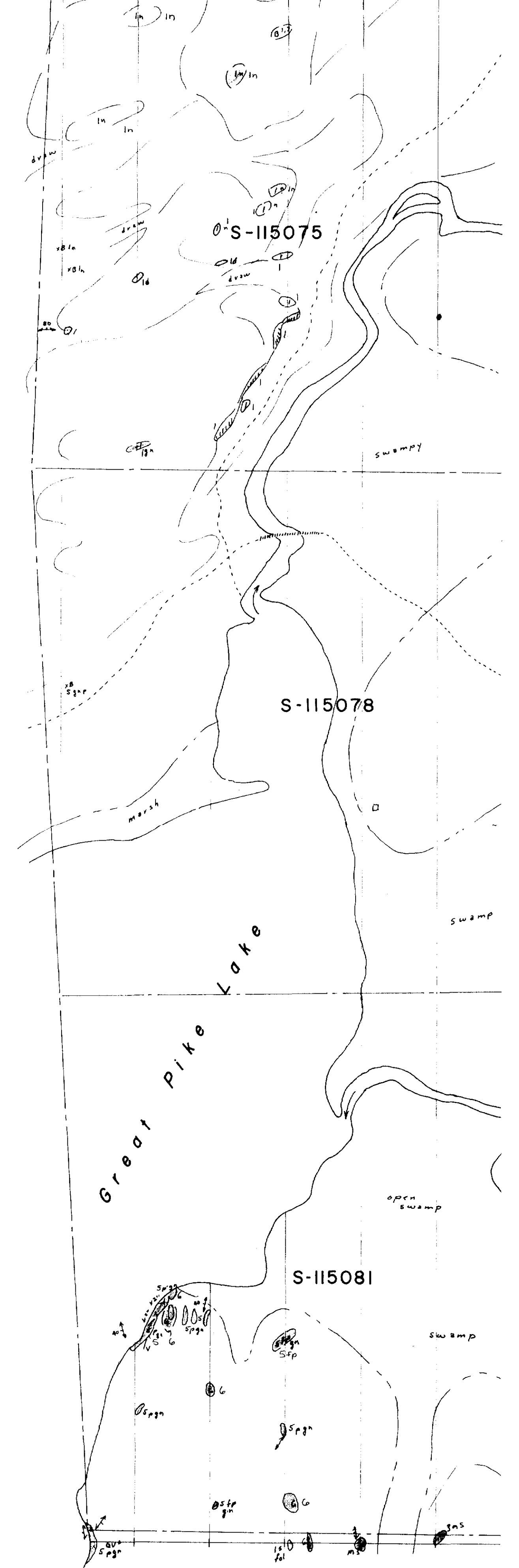
Aug. 1961

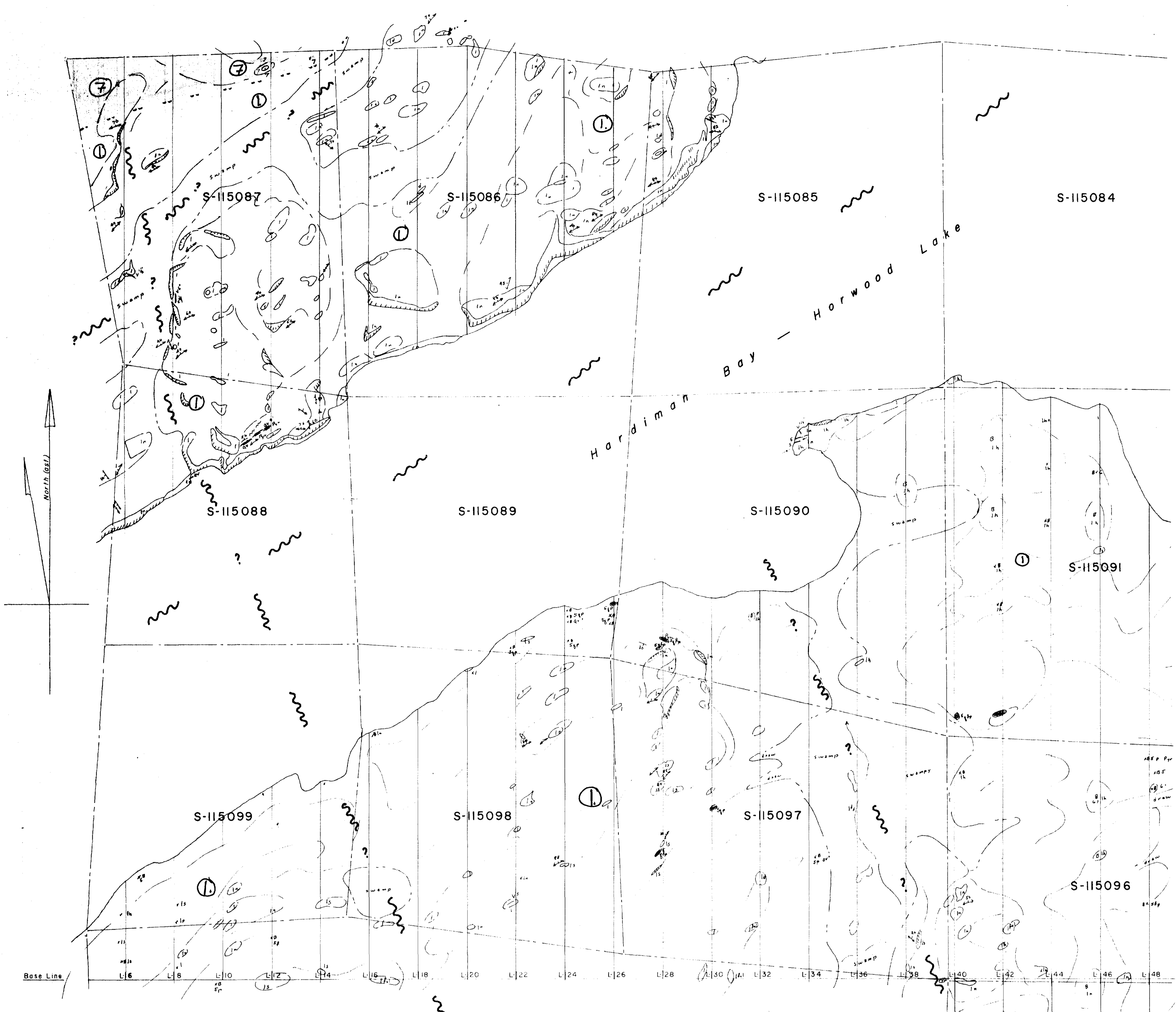
*Revised*  
 File 63A-402



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  - 6 Quartz diabase
- ALGOMAN**
- QV Quartz vein
  - 5 Acid intrusive and related metamorphic rocks  
felsite and porphyry: fp(gn), feldspar porphyry (gneiss)
  - Gneissic Granite: P, porphyry, GP, quartz-feldspar porphyry  
PG, porphyritic granite, Gn, gneiss
- HAILEYBURIAN**
- 4 Diorite
- KEEWATIN**
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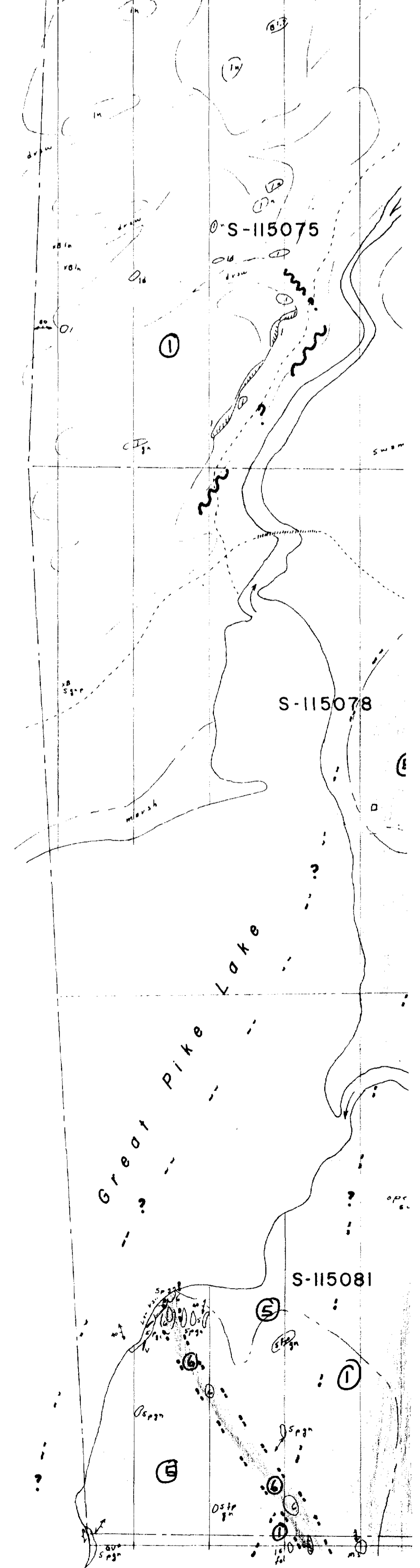
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**AJAX MINERALS LIMITED.**  
**HORWOOD TWP. PROPERTY**

**GEOLOGICAL PLAN**  
**INTERPRETATION**

Scale: 1 in. = 200 ft. Date: 1961

CA-402



Horwood Lake

S-115084

S-115083

S-115082

S-115091

S-115092

S-115093

S-115096

S-115095

S-115094

S-115075

S-115074

S-115073

S-115078

S-115077

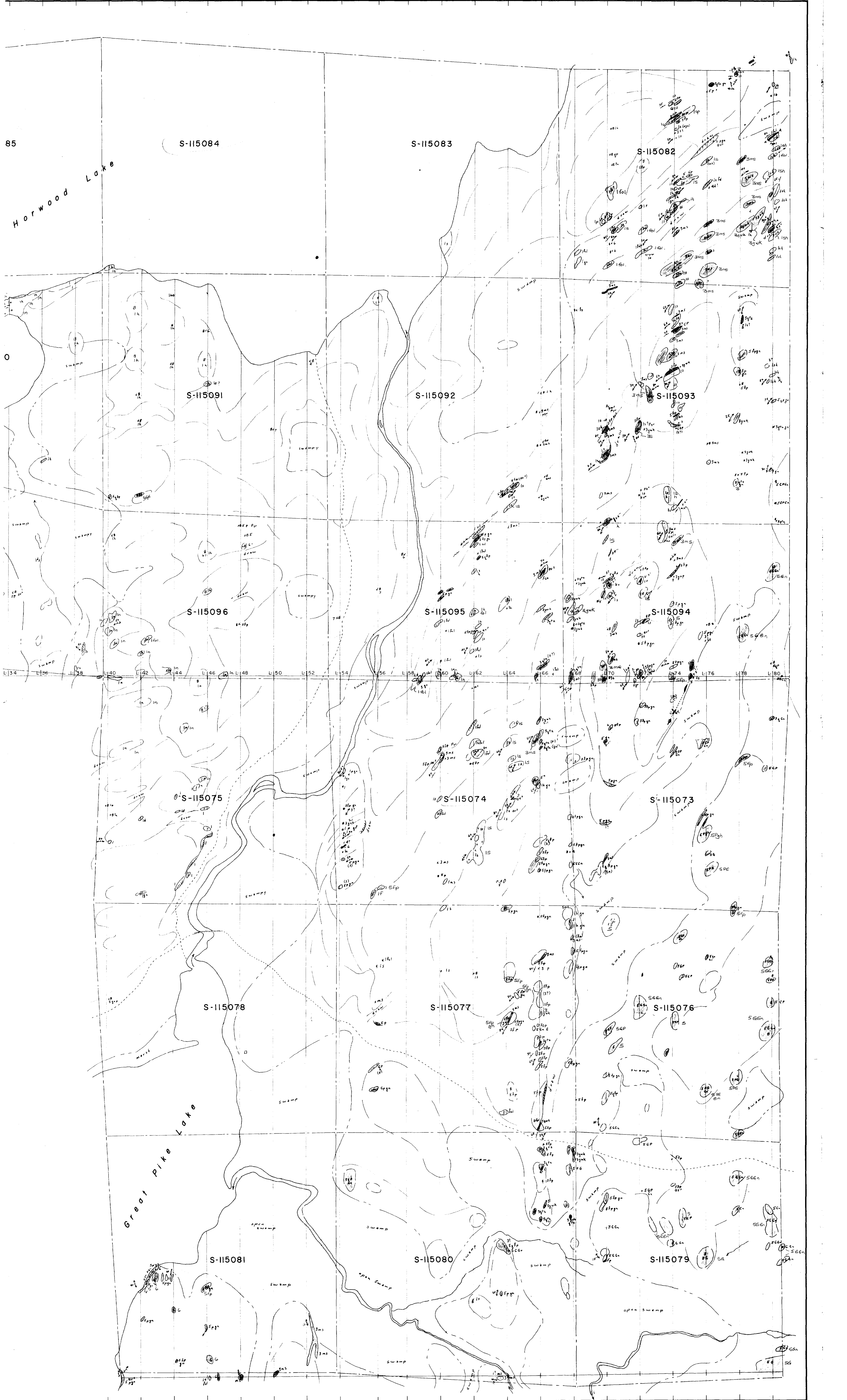
S-115076

Great Pike Lake

S-115081

S-115080

S-115079



S-II5085

S-II5084

S-II5083

S-II5082

Horwood Lake

II5090

S-II5091

S-II5092

S-II5093

5097

S-II5096

S-II5095

S-II5094

S-II5075

S-II5074

S-II5073

S-II5078

S-II5077

S-II5076

Great Pike Lake

S-II5081

S-II5080

S-II5079

