



32D045E0269 2.3459 HEARST

010

RECEIVED

SEP 23 1980

MINING LANDS SECTION

ASSESSMENT REPORT

MANOR PROPERTY

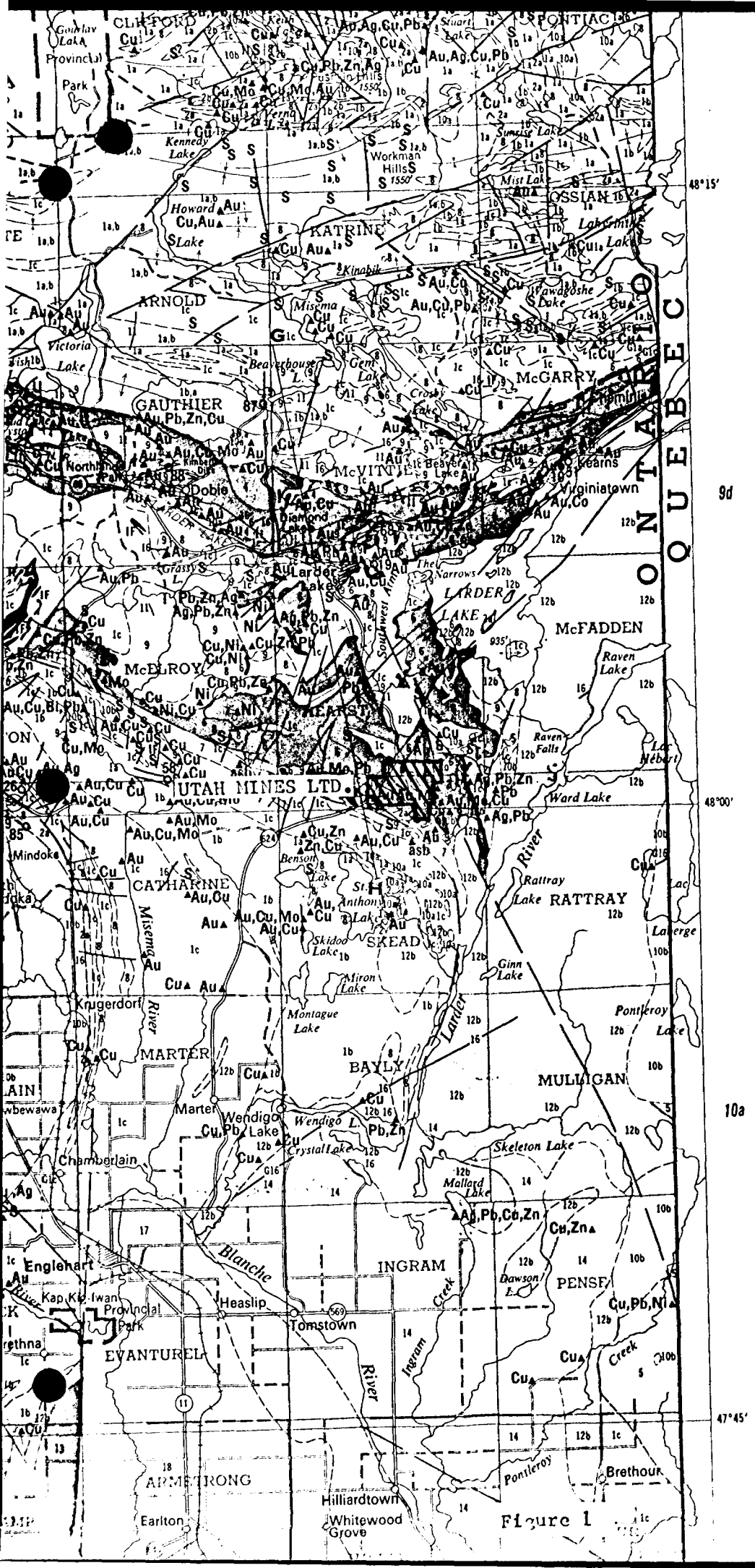
HEARST AND SKEAD TOWNSHIPS

OF

SUPERIOR NORTHWEST INC.

SEPTEMBER, 1980

BY: Louis Godbout
Senior Geologist



- 10 porphyry, feldspar porphyry, granophyre, felsite
 - 10b Trondhjemite, granodiorite, quartz monzonite: simple batholiths and stocks
 - 10c Trondhjemite, granodiorite, quartz monzonite, quartz diorite, aplite, pegmatite, migmatite: complex batholiths.
- 9 Syenite, monzonite, feldspar porphyry

METAMORPHOSED MAFIC AND ULTRAMAFIC ROCKS^g

- 8 Gabbro, diorite, lamprophyre.
- 7 Peridotite, dunite, pyroxenite, serpentinite

INTRUSIVE CONTACT METASEDIMENTS^g

- 6 Conglomerate, greywacke, siltstone, slate, argillite
- 5 Greywacke, siltstone, slate, argillite and minor pebble conglomerate

METAVOLCANICS^g ALKALIC METAVOLCANICS^h

- 4 Trachyte, leucitic trachyte; flows, tuff, breccia.

ULTRAMAFIC METAVOLCANICS^k

- 3 Serpentinized dunitic and peridotitic flows.

FELSIC METAVOLCANICS^l

- 2 Unsubdivided.
- 2a Pyroclastic rocks.
- 2b Flows.

INTERMEDIATE AND MAFIC METAVOLCANICS^l

- 1 Unsubdivided.
- 1a Intermediate flows.
- 1b Intermediate pyroclastic rocks.
- 1c Mafic flows and pyroclastic rocks.

- IF Iron formation and ferruginous chert (occurs as a member of stratigraphic units 1, 2, 4, and 5).
- S Sulphide mineralization.

- ^aFormerly classified as Nipissing in part.
- ^bNorth-trending dikes are part of Malachewan swarm.
- ^cFormerly classified as Algoman.
- ^dSeveral ages; some units appear to be intrusive equivalents of volcanic formations whereas others postdate volcanism.
- ^eFormerly classified as Haileyburian.
- ^fMay in part be composed of ultramafic flows.
- ^gRocks in these groups are subdivided lithologically and the order does not necessarily imply age relationship within or among groups.
- ^hFormerly classified as Timiskaming.
- ⁱFormerly classified as Keewatin.
- ^kProbably composed mainly of ultramafic flows, but may include some sills.

The letter "G" preceding a rock unit number, for example "G14", indicates interpretation from geophysical data in drift covered areas.

SYMBOLS

- Geological boundary.
- Synclinal axis.

Figure 1

INTRODUCTION

This report covers a line cutting and geological mapping survey completed on 44 claims belonging to Superior Northwest Inc. in Hearst and Skead Townships. The report and accompanying 1 in. = 200 ft. geological plans, are of the entire 44 claim option, which was taken by Utah Mines Ltd. in the spring of 1980. However this report applies only to 32 claims of the option, each requiring a total of 40 days of assessment work, and are indicated on Figure #2.

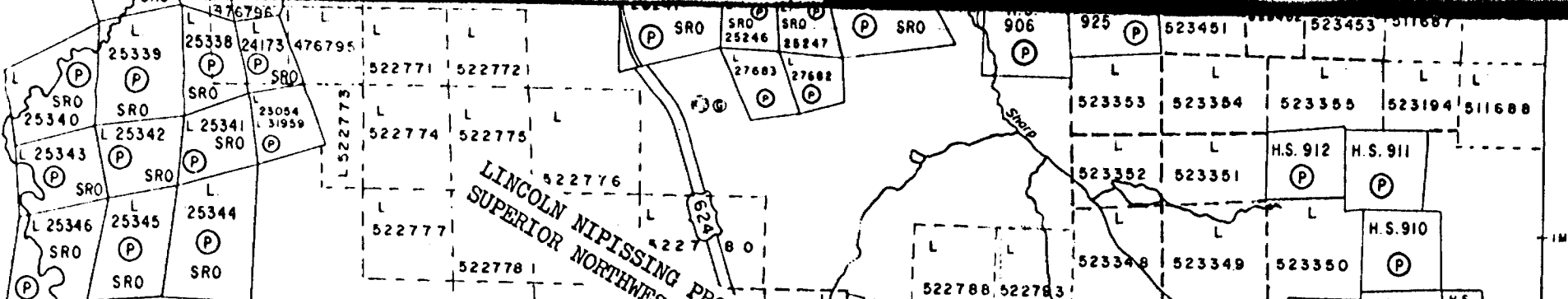
(a) PROPERTY LOCATION AND DESCRIPTION

The property is a block of 44 claims straddling the boundary of Hearst and Skead Townships. Thirty claims are located in north central Skead Township and the remaining fourteen in southern Hearst Township. The center of the block is six miles south of the town of Larder Lake, at latitude 48°00' and longitude 79°40'. The exact shape and dimensions of the property are shown on the claim sketch copy on the following page. (Figure #2)

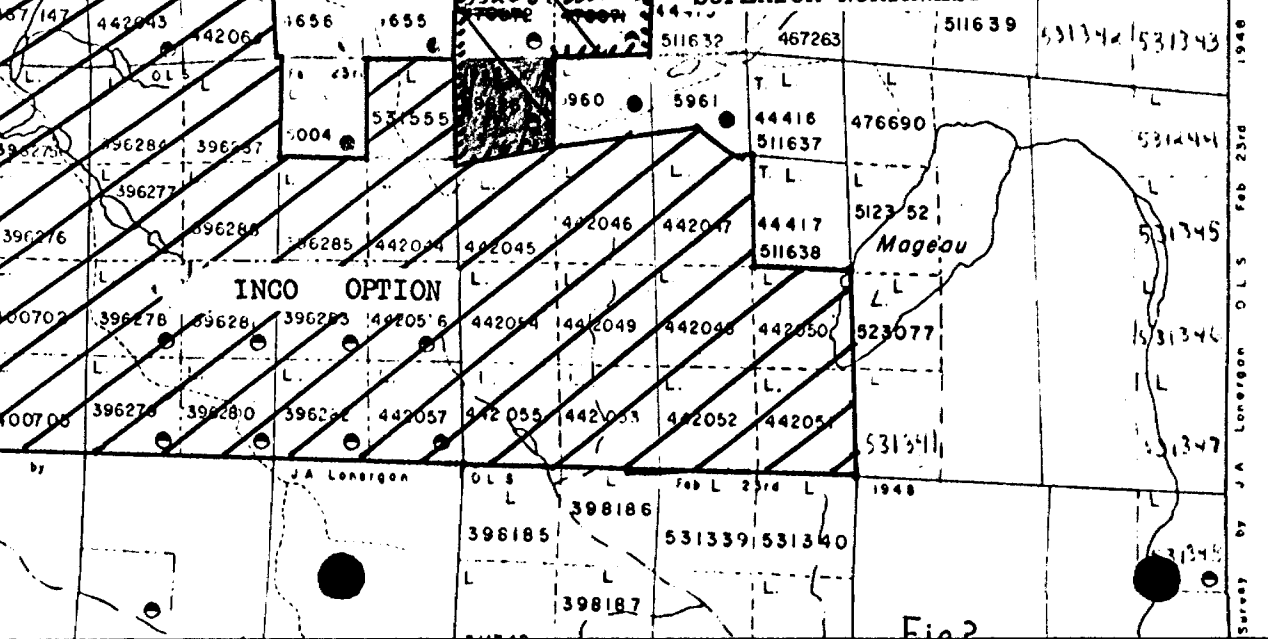
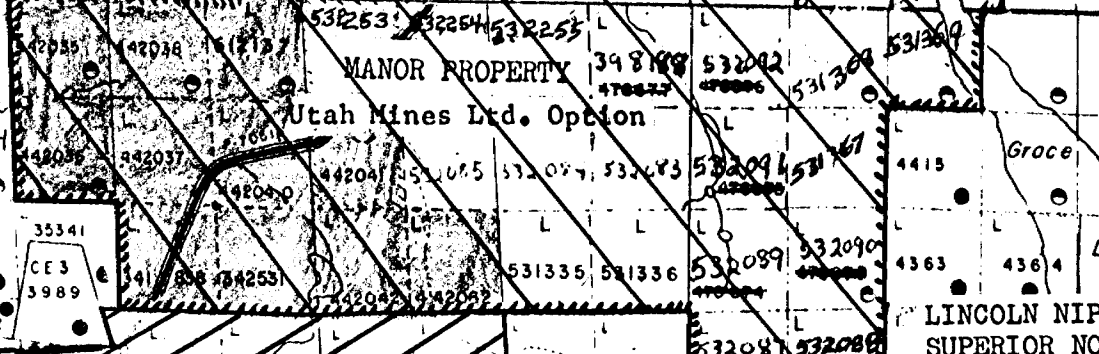
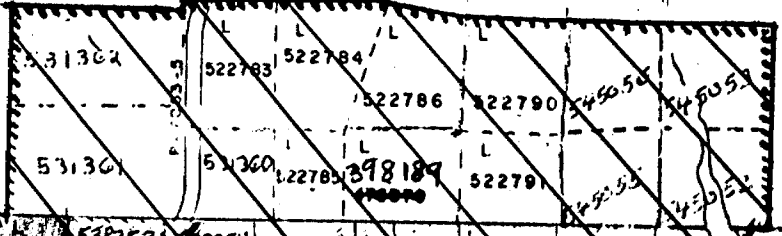
(b) ACCESS

Highway 624 from Larder Lake passes through the west half of the property in a northeast to southwest direction. Branching off from Highway 624 are several logging roads in the northwest corner and one main gravel road which extends from the highway, near the township line to the southeast corner of the property. This road serves as access to a main gravel pit off the south boundary of the property and is accessible by two-wheel drive vehicles in the late summer and fall only.

There are a number of shorter bush roads in the northwest sector of the property which served as access for timber cutting and later reforestation projects. These roads however, do not provide access to a large part of the property.



- Claims applicable to the report
- Claims not applicable to the report



VI

V

Survey by J.A. Lonergan O.L.S. Feb 23rd 1948

Fig 2

c) TOPOGRAPHY AND VEGETATION

Twenty-five percent of the property has bedrock exposure. The bedrock occupies the higher relief points, separated by lower lying swampy terrain. A major esker trends from the middle north boundary, south southeasterly through the property. There is no outcrop exposed in the esker area. At least three gravel pits have been excavated within the esker which is at least 1000 ft. in width. Almost all commercial timber in the esker area has been harvested, in the recent past and the area has undergone a recent reforestation program. In the southwest corner of the property, which contains an abundance of outcrop, timber cutting has not been carried out for some time. This applies also to the west half of the property which is more rugged and has abundant outcrop. Timber cutting in these areas has been prevented because of rough topography. The largest body of water is Grace Lake which is located in the extreme northeast corner of the property. The lake trends in a north northwest direction and drains into Larder Lake, several miles to the north via Sharp Creek. On the southwest corner of the property are two beaver ponds up to 400 ft. in length. Three small lakes are located in the northwest corner of the property west of Highway 624. They are localized along a linear swamp lowland drained by a small creek flowing from west to east. On the east side of the property are several small ponds or lakes localized in linear swamplowlands which are likely fault zones striking in a northwest direction. The largest swamp on the property occurs on the south boundary in the west half of the property. It is located off the west boundary of the esker and strikes to the northwest terminating at Highway 624.

There is no accessible commercial timber on the property. All accessible timber in the central esker has been harvested. Commercial size timber to the southwest and northeast sides of the property is not accessible due to the very rugged topography. The northwest $\frac{1}{4}$ of the property has undergone a reforestation project. The southwest corner and east one-half of the property has abundant

(c) TOPOGRAPHY AND VEGETATION

undergrowth of alder, hazelnut, cherry and maple. White birch, scattered spruce and poplar are localized in low lying areas between the small hills containing outcrop.

(d) HISTORY OF WORK

1. Geological Mapping

The first work done on the property was around 1906 - 1911 by prospectors from the Cobalt Mining Camp. Several pits in the eastern half of the property and the northwestern sector were excavated at this time. The pits encountered graphitic shale, felsic agglomerate with pyrrhotite and pyrite fragments and minor chalcopyrite. One small pit in the northwest corner was excavated on a quartz vein containing minor amounts of chalcopyrite.

In 1920 a shaft was sunk near the south boundary of the property, several hundred feet southeast of Highway 624. It was sunk on a property originally known as the Manor Property. This work followed the discovery of visible fine grained gold on a slicken sided contact between quartz-porphyry and a narrow band of green carbonate. The shaft was sunk to a depth of 500 ft. and approximately 1800 ft. of lateral development was completed. The shaft occurred within or immediately south of the Manor fault, a major structural feature striking in a south east direction. The predominant host rock in the shaft was a chloritized sheared gabbro. The prospectors who found the showing were Manly and O'Rilley, after whom the property was named.

A second shaft was sunk to a depth of 500 ft. off the property to the east, one-quarter mile southwest of Grace Lake. The shaft was sunk on a visible gold occurrence, occurring within a granite or synite dyke body.

HISTORY OF WORK

1. Geological Mapping

Visible gold was found in a quartz veined system within the body. More than 500 ft. of lateral drifting and cross cutting were done from three levels in the shaft. This property was known as Lafond Gold Mines.

Official mapping done by the Ontario Department of Natural Resources was completed over a period of 1941 to 1948. The mapping projects were done in two phases; the first phase covering Hearst and MacFadden Townships by J.A. Thomson; the latter phase was conducted by D.F. Hewitt covering Skead Township. Both phases were well co-ordinated and rock types and stratigraphic correlations were matched between the three townships.

The eastern half of the property hosting a major felsic volcanic belt has seen more activity in the recent past. Kennco, in 1970, drilled two holes to test ground E.M. conductors, a possible follow-up of an airborne survey. Hole #1 was drilled in claim #532094 to a depth of 538 ft. It intersected mostly porphyritic rhyolite with a banded brown pyritiferous chert section at 134-153.5 ft. This section assayed .5% Zn at 139 - 143 ft. The entire chert section was anomalous in zinc and copper. Hole #2 by Kennco, was drilled in claim #532089 to a depth of 325 ft. It intersected cherty to porphyritic rhyolite and some black slate units. The black slate units were probably graphitic and may have been the conductor targets. Both holes also encountered low grade sulfides within the cherty rhyolite and felsic pyroclastic units.

In 1972 Noranda established a grid over the same area which covered 14 claims. They completed a McPhar vertical loop E.M. and magnetometer survey over the grid. Six conductors were discovered, two of them having co-incident mag highs. No reported drilling was followed up.

(d) HISTORY OF WORK

1. Geological Mapping

In 1968 a Dighem airborne electromagnetic survey was flown for Superior Northwest Inc. over the entire property.

In 1977 the property was optioned to the Dighem Syndicate, a subsidiary of Teck Corporation, who carried out investigations of 20 airborne targets. The work done was V.L.F.E.M., fluxgate magnetometer and reconnaissance geological mapping. Thirteen of the conductors were interpreted as barren graphite or graphitic sulfide horizons. The remaining seven were considered to be too weak or located in geologically unfavorable environments to merit diamond drilling.

The most recent work was done by Superior Northwest who staked the claims applicable to this report in 1979. Superior Northwest blasted several outcrops along the highway and established a grid in the southwest portion of the property. They carried out mag and V.L.F.E.M. surveys primarily to meet assessment work requirements.

The Ontario Department of Natural Resources jointly funded with the Federal Government an Input survey over 24 townships in the spring of 1979. The survey covered 24 townships in the Kirkland Lake-Larder Lake area which included both Hearst and Skead Townships.

GEOLOGY

(a) PROCEDURE

The mapping project involved the participation of two, two man parties during the period of May 13 to July 13/80. Each party consisted of one senior geological assistant with a junior field assistant. The junior assistant sighted with compass and chained in outcrops from the grid, plus geological features which the senior recorded on a sheet of scale 1 in. = 200 ft. All geological data and other surface features, such as roads, swamps, streams, claim posts, and beaver ponds were recorded during mapping and transferred on to a geological base plan. (Scale 1"=200')

GEOLOGY

(a) PROCEDURE

Daily plotting of data was encouraged to facilitate and co-ordinate interpretative mapping between the two parties and different areas of the property. Frequent references and correlations were made between this survey and those surveys carried out by Thomson and Hewitt in the 1940's. The final geological interpretation incorporated the surface mapping data, diamond drill hole data and a recent magnetic survey to extend geological units into areas having no outcrop.

A considerable number of outcrops were sampled and assayed, especially the felsic pyroclastic volcanic rocks. Assays were commonly run for gold, silver, copper, zinc and some rare earths. This assay data is included on the geological plans.

The entire mapping project was supervised by the author, who is a staff geologist with Utah Mines Ltd.

(b) RESULTS AND INTERPRETATION

1. General Description

The property is underlain Keewatin felsic to mafic volcanics, quartz feldspar rhyolite to dacite porphyrys and sheared gabbro. A minor amount of serpentinized peridotite which has been dated as post Keewatin by Thomson occurs on the western half of the property. A great unconformity separates the post Keewatin from the overlying Timiskaming sediments. The Timiskaming sediments consist of conglomerates, greywackies, thinly bedded turbidite shales and slates, and metasediments. Intruding the Timiskaming are small lamprophyre and amphibolite dykes which have been dated as Algomian. A second great unconformity separates the Algomian from overlying meta-sediments and conglomerate belonging to the Huronian Cobalt Series. Wisconsin age Pleistocene sediments, such as varved clays, esker sands and gravels, and tills, overlie the bedrock.

GEOLOGY

(b) RESULTS AND INTERPRETATION

1. General Description

Volcanic rocks occupy approximately 25% of property. They are localized along two limbs of a major synform whose axis strikes northwest - southeast through the mid-west section of the property. They are Keewatin and consist of dacite tuffs, rhyolite, cherty rhyolite tuffs, felsic agglomerates, pillowed basalts and intermediate to mafic volcanics. The volcanic belt on the southwest limb of the synform strikes northwest - southeast. That on the east strikes approximately north - south. Along these limbs is an abundant amount of gabbro which has intruded the volcanics and has irregular crosscutting contacts with them. Eighty percent of the gabbro outcrop occurs on the east half of the property underlying almost 50% of that area. Many of these outcrops resemble mafic to intermediate highly chloritized volcanic material. Outcrops containing fresh textured gabbro grade transitionally into what appears to be highly sheared gabbro with no relict textures or intermediate to mafic volcanics contemporaneous with the gabbro. In many places, it was impossible to recognize the true boundaries between volcanic and gabbro phases. During mapping both types were grouped as one and are noted by the number "4" in the legend column.

A somewhat lesser amount of quartz feldspar porphyry (rhyolite) and dacite porphyry has intruded the volcanic belt on the southwest limb. The largest body occurs northwest of Highway 624 and contains large xenolithic zones of similar felsic volcanic material. At one locality the quartz feldspar porphyry body appears to post date the gabbro intrusive. A very minor amount of felsic intrusive occurs on the east half of the property at line 64N station 4E. As previously mentioned the axial area of the synform is occupied by Timiskaming sediments which consist of conglomerate greywacke, thinly bedded turbidite and metasediments. This axial belt is up to 4000 ft. wide along Highway 624. It narrows as it extends to the southeast.

GEOLOGY

(b) RESULTS AND INTERPRETATION

1. General Description

On the extreme east side of the property are large outcrops of Huronian metasediments. These metasediments overlie the gabbro complex being separated by a major unconformity. Stratigraphically above the sediments and further to the east is a conglomerate which is dated as the youngest unit of the Huronian Cobalt Series on the property. Further to the east and east of Grace Lake is a fine grained chloritized metasediment which has been identified as a Timiskaming age sediment. This interpretation agrees with Thomson's.

2. Structure

At least two major faults have been interpreted on the property. One is in the extreme northeast corner separating a Huronian conglomerate unit from an older Timiskaming metasediment further to the east. This fault occurs in the middle of Grace Lake and strikes parallel to the lake in a north - northwest direction. The fault allows for the uplifting of older Timiskaming sediments to the east. A second fault occurs in the extreme southwest corner. This was identified by Thomson and is known as the Manor Fault. It strikes in a northwest - southeast direction and passes through the Manor shaft area. There is possible a third fault localized along a northwest trending creek containing several beaver ponds on the east half of the property. This creek is contained within a narrow valley with sheared outcrops of volcanics on either side. However, no definite signs of faulting were observed.

The most major structure is the synform running from the northwest - southeast corner of the property. Bedding dips throughout the property are quite steep, the shallowest being a 50° dip occurring in the Timiskaming sediments near the axial zone of the synform. Most lithological units displaying bedding have been folded.

GEOLOGY

(b) RESULTS AND INTERPRETATION

3. Lithologies

The lithologies identified on the property will be described in ascending stratigraphic order. The numbers prefixing these descriptions, in the left hand column, are equivalent to lithological numbers plotted on the geology plan and recorded on the legend at the right hand side of each sheet.

Keewatin

- (1) Pillowed basalts - fine grained to aphanitic with well formed pillows, chloritized and slightly silicified in some places, minor calcium carbonate veining along fractures and trace of pyrite and pyrrhotite.
- (2) Felsic volcanics - cherty and tuffaceous rhyolite, cherty rhyolite thinly bedded at certain locations.
- felsic agglomerate, contains up to 80% clasts of quartz feldspar porphyry with quartz eyes up to one-quarter inch in diameter. Matrix is predominantly finer clasts of felsic volcanics with clasts of green ankeritic carbonate, chert, and argillite and up to 3% clasts of pyrite and pyrrhotite.
- (3) Dacite - cherty tuffaceous chloritized mafics, has lapilli texture in places, displays weak flow banding in places.
- (4) Intermediate to Mafic volcanics/sheared gabbro - appears to range from a mafic chloritized volcanic to a well textured medium grained gabbro. Gabbro is highly sheared in many outcrops (volcanic and gabbro phases may be contemporaneous volcanic and their intrusive equivalents)
- (5) Felsic Intrusives- Quartz feldspar porphyry, predominantly dacite, minor rhyolite which contains quartz eyes up to one-quarter inch in diameter, grey to blue in color, matrix is feldspar with minor amounts of pyrite at certain localities.

GEOLOGY

(b) RESULTS AND INTERPRETATION

3. Lithologies

Post Keewatin

- (6) Serpentinized peridotite - highly serpentinized aphanitic ultramafic massive, strongly magnetic, contains polygonal jointing on surface (possibly a komatiitic flow) contains up to .25% Ni.

Timiskaming

- (7) Conglomerate - poorly sorted with pebbles supported by fine mafic matrix material, pebbles are angular to well rounded and are predominantly volcanic. Greywacke - often displays well bedded rhythmic turbidite sequences, having well formed graded bedding from coarse sand size to silt at the top of each sedimentary cycle.

Thinly bedded shales and slates - in places contain graphite and disseminated sulfides up to 5% pyrite and pyrrhotite. Mostly located along eastern border of the synformal sedimentary basin.

Metasediments - often chloritized, schistosed, reworked intermediate to mafic volcanic material.

Algoman

- (8) Lamprophyre - often schistosed, fine grained biotite rich.
Amphibolite - dyke form, coarse grained hornblended plagioclase
 $\frac{1}{2}$ to $\frac{1}{4}$ inch diameter.

Huronian (Cobalt Series)

- (9) Metasediments - chloritized and schistosed units of the following lithologies: Greywacke intermediate to mafic volcanic; thinly bedded green to black graphitic argillite; thickly bedded medium grained quartzite.

GEOLOGY

(b) RESULTS AND INTERPRETATION

3. Lithologies

- (10) Conglomerates - predominantly poorly sorted pebbles and clasts of gravel, granite, felsic-mafic volcanics up to 3 in. in diameter. Clasts are well supported by fine grained, chloritized matrix appearing to be of mafic volcanic origin.

CONCLUSIONS

Structures and rock types mapped on the property indicate a very tectonically active history. The earliest events was possibly the intrusion of quartz feldspar porphyry, and deposition of its volcanic equivalents.

The predominance of pyroclastic textured rhyolite indicate proximity to such intrusives and volcanic vents. Post dating this activity was the intrusion of gabbro bodies and the extrusion of its volcanic equivalents. It is a possibility that later gabbros intruded their older volcanic equivalents and could explain the difficulty in separating volcanic and intrusive material in this particular unit. Gabbro intrusions could have been the genesis of the pillowed basalt to andesite unit which has been placed at the bottom of the stratigraphic column as unit 1. This placement may not have been correct due to complexity in structural folding making its interpretation difficult. Following this volcanic and intrusive activity was major block faulting which promoted the deposition of Timiskaming greywacke turbidite type sediments. The youngest bedrock lithologies are the Huronian Cobalt Series sediments which were deposited on the east side of the property.

CONCLUSIONS

The felsic pyroclastic units are rated as having the most commercial potential. A base metal (copper-zinc) target will be looked for in or near this particular unit. Exploration for this target will involve geophysical ground surveys of Pulse E.M., I.P., and MaxMin. Anomalies delineated from these surveys will be rated for drill testing at a later date.

Per Louis Godbout
Louis Godbout, Senior Geologist

REFERENCES

- 1) J.A.S. Thomson, "Geology of Hearst and McFadden Townships", Vol.LVI part VIII, 1947
- 2) D.F. Hewitt, "Geology of Skead Township, Larder Lake Area", Vol.LVIII, Part VI, 1949
- 3) Further information on the geology of the area was gained by discussions with the following people: H.L. Lovall, Resident Geologist, Ontario Ministry of Natural Resources
R. MacGregor, President of Superior Northwest Inc., Sault Ste. Marie



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2.3459

1980 12 31

Mr. George Koleszar
Acting Mining Recorder
Ministry of Natural Resources
P.O. Box 984, 4 Government Road E.
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

Re: Your letters of December 9 and 17, 1980

The list of assessment credits attached to my letter of December 3, 1980 included the following mining claims in error:

L 341838, 342531, 396263
L 512127, 442035 to 38 inclusive
L 442040 - 41 - 42, 442062

You may delete those numbers from your copy.

The same list should have included mining claims L 531361 and L 531368 as being entitled to 40 days geological credits each. Please amend your copy accordingly.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3

FWM:wg

c.c. Superior Northwest Inc
Sault Ste Marie, Ontario

R.A. MacGregor
Sault Ste Marie, Ontario

Resident Geologist
Kirkland Lake, Ontario

RECEIVED
JUL 05 1984
MINING LANDS SECTION



Ministry of
Natural
Resources

Your file: 2.3459

Our file:

Office of the Mining Recorder
4 Government Road East
Kirkland Lake, Ontario.
P2N 1A2

December 17th, 1980

Mr. E. F. Anderson
Director
Land Management Branch
Room 6450, Whitney Block
Queen's Park
Toronto, Ontario.
M7A 1W3

RECEIVED

DEC 22 1980


MINING LANDS SECTION

Dear Sir:

Would you please check your records in regards to file 2.3459 and advise this office if approval of 40 days Geological work will be allowed for mining claims L 531361 and L 531368. It appears that these claims were omitted on approval notice of December 3rd, 1980.

An early reply would be very much appreciated.

Yours truly,


George Koleszar
Acting Mining Recorder
Telephone (705) 567-9241

GK/jb
Encls.



Ministry of
Natural
Resources

RECEIVED

DEC 15 1980

MINING LANDS SECTION

Recording Office
4 Gov't Road East
Kirkland Lake, Ontario
P2N 1A2

December 9, 1980

Mr. E. F. Anderson
Director
Land Management Branch
Ministry of Natural Resources
Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3

Dear Sir

RE: Approval notice - your file 2.3459

I am enclosing a copy of approval notice, listed above.

Please note that mining claims L 341838, 342531, 396263, 512137, 442035 to 442038 inclusive, 442040 442042 and 442062 have already been approved.

Yours truly

G. Koleszar
Acting Mining Recorder
Telephone (705) 567-9241

GK/fh

ENCL.

Your file:

Our file:

RECEIVED	
Land Management Branch	
CIRCULATE <input type="checkbox"/>	
COMMENTS PLEASE <input type="checkbox"/>	
BY	
DEC 15 1980	
E. F. ANDERSON	
J. R. LORION	
J. C. SMITH	
W. GOOD	
W. LEONARD	
J. M. SWALE	
RETURN TO B. 6450	

6139

Technical Assessment
Work Credits

File
2.3459

Record Holder: Superior Northwest Inc. *Revised notification*
Township or Area: Hearst and Skead Townships

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic _____ days	L. 398188-89
Magnetometer _____ days	L. 522783 to 86 incl.
Radiometric _____ days	L. 522790 - 91
Induced polarization _____ days	L. 531335-36-60-62-67-69
Section 86 (18) _____ days	L. 532083-84-85
Geological <u>40</u> days	L. 532087 to 92 incl.
Geochemical _____ days	L. 532253 to 55 incl.
Man days <input type="checkbox"/> Airborne <input type="checkbox"/>	L. 545052-53-55-56
Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	L. 341838 <i>work recorded June 5/78</i>
	L. 342531 <i>approved Nov 6/78</i>
	L. 396263 <i>work recorded June 14/79</i>
	L. 512137 <i>approved Nov 12/79</i>
	L. 442035-36-37-38-40-41-42-62 <i>work recorded Dec 9/78. approved May 2/79</i>
<input type="checkbox"/> Credits have been reduced because of partial coverage of claims.	<i>work recorded Sept 28/78 approved March 23/79</i>
<input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 06 (15a) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey Insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 86(18)-60;

2.3459

1980 12 03

Mr. George Koleszar
Acting Mining Recorder
Ministry of Natural Resources
P.O. Box 984, 4 Govt. Rd. E.
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

Re: Mining Claims L. 398188 et al. Hearst and Skead Townships,
File 2.3459

The Geological assessment work credits as shown on the attached statement have been approved as of the above date. Please inform the recorded holder of these mining claims and so indicate on your records.

Yours very truly,

R.F. Anderson
Director
Land Management Branch
Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1316

SH:ie

cc: Superior Northwest Inc.
Sault Ste. Marie, Ontario

R.A. MacGregor
Sault Ste. Marie, Ontario

Resident Geologist
Kirkland Lake, Ontario

Recorded Holder Superior Northwest Inc.
Township or Area Hearst and Skead Townships

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic _____ days	L. 398188-89
Magnetometer _____ days	L. 522783 to 86 incl.
Radiometric _____ days	L. 522790 - 91
Induced polarization _____ days	L. 531335-36-60-62-67-69
Section 86 (18) _____ days	L. 532083-84-85
Geological <u>40</u> days	L. 532087 to 92 incl.
Geochemical _____ days	L. 532253 to 55 incl.
Man days <input type="checkbox"/> Airborne <input type="checkbox"/>	L. 545052-53-55-56
Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	L. 341838
<input type="checkbox"/> Credits have been reduced because of partial coverage of claims.	L. 342531
<input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	L. 396263
	L. 512137
	L. 442035-36-37-38-40-41-42-62
	L 531361
	L 531368
	<i>Dec 30, 1980</i> <i>J. W. MacIsaac</i>

Special credits under section 86 (15a) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey Insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 86(18)-80:

GEOLOGICAL BRANCH

Mr. R. Barlow

Date of Approval _____

19

Signature _____

Comments: _____

Mr. S. V. Burr

Date of Approval Nov 27 1980

Signature S.V. Burr

Comments: _____

Dr. I. Thomson

Date of Approval _____

19

Signature: _____

Comments: _____

oh

2.3450

1969 09 25

Mr. George Teleszar
Acting Mining Recorder
Ministry of Natural Resources
P.O. Box 994, 4 Govt. Rd. E.
Midland Lake, Ontario
P2P 1A2

Dear Sir:

We have received reports and maps for a Geological survey submitted under Special Provisions (credit for Performance and Coverage) on mining claims L. 522773 et al. in the Townships of Hearst & Skead.

This material will be examined and assessed and a statement of assessment work credits will be issued.

Yours very truly,

E.F. Anderson
Director
Land Management Branch
Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1P3
Phone: 416/265-1316

SH:ic

cc: Superior Northwest Inc.
Sault Ste. Marie, Ontario

R.A. MacGregor
Sault Ste. Marie, Ontario



Ontario

Ministry of
Natural
Resources

Notification of recording
of assessment work credits

RECEIVED

AUG 18 1980

MINING LANDS SECTION

Supervisor, Projects Unit
Mining Lands Section
Ministry of Natural Resources
Room 1617, Whitney Block
Queen's Park, Toronto
M7A 1W3

Date of recording of work: August 11, 1980

Recorded holder: SUPERIOR NORTHWEST INC.

Address: Box 1110, SAULT STE. MARIE, Ontario

Township or Area: HEARST & SKEAD

Type of survey and number of Assessment days credit per claim	Mining claims
Geophysical	L 522783, -84, -85, -86,
Electromagnetic _____ days	L 522790, -91, L 531335, -36
Magnetometer _____ days	L 532083, -84, -85, L 398188,
Radiometric _____ days	L 398189, L 532087, -88, -89, -90,
Induced polarization _____ days	L 532091, -92, L 531360, -61, -62,
Section 86 (18) _____ days	L 531367, -68, -69, L 532253,
Geological <u>40</u> _____ days	L 532254, -54, -55, L 545052, -53,
Geochemical _____ days	L 545055, -56.
Man days <input type="checkbox"/>	Airborne <input type="checkbox"/>
Special provision <input type="checkbox"/>	Ground <input type="checkbox"/>

Notice to recorded holder:

Survey reports and maps in duplicate must be submitted to the Projects Unit, Toronto within 60 days from the date of recording of this work.

Reports and maps are being forwarded to the Projects Unit with this letter.

Sept 30/80
J. Bettiol
J. Bettiol (Mrs.)
Acting Mining recorder

c.c. Robert A. MacGregor
134 Palace Dr.
SAULT STE. MARIE, Ontario

PROFESSIONAL QUALIFICATIONS OF AUTHOR

I, Louis Godbout, residing at 1357 Chenier Avenue, Timmins, Ontario, due attest to the following professional credentials.

- (1) Graduated from the University of New Brunswick in 1970 with a Bachelor of Science degree, majoring in geology.
- (2) Worked in mining exploration during the summer periods of my Bachelor program at university.
- (3) Worked as a mine geologist at the Sullivan Mine, in Kimberly, British Columbia for two years.
- (4) Worked for one year on Potash exploration in New Brunswick.
- (5) Have worked six years in mining exploration in eastern Canada.
- (6) Have written assessment reports in Ontario, Quebec, and Nova Scotia.

Per

Louis Godbout

Louis Godbout, Senior Geologist



Ministry of Natural Resources

File 2-2459

GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Linecutting and geological mapping
 Township or Area Skead and Hearst Townships
 Claim Holder(s) Superior Northwest Inc.
 Survey Company Utah Mines Ltd.
 Author of Report Louis Godbout
 Address of Author 1357 Chenier Ave., Timmins P4R 1A8
 Covering Dates of Survey May 13 - July 13, 1980
 (linecutting to office)
 Total Miles of Line Cut forty-three(43)

SPECIAL PROVISIONS CREDITS REQUESTED	Geophysical	DAYS per claim
ENTER 40 days (includes line cutting) for first survey.	-Electromagnetic _____	
ENTER 20 days for each additional survey using same grid.	-Magnetometer _____	
	-Radiometric _____	
	-Other _____	
	Geological <u>40</u>	
	Geochemical _____	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
 (enter days per claim)

DATE: Sept 22 1980 SIGNATURE: Louis Godbout
 Author of Report or Agent

Res. Geol. _____ Qualifications 2-2876

Previous Surveys			
File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED List numerically	
L. (prefix)	522783 ✓ (number)
L.	522784 ✓
L.	522585 ✓
L.	522786 ✓
L.	522790 ✓
L.	522791 ✓
L.	531335 ✓
L.	531336 ✓
L.	532083 ✓
L.	532084 ✓
L.	532085 ✓
L.	398188 ✓
L.	398189 ✓
L.	532087 ✓
L.	532088 ✓
L.	532089 ✓
L.	532090 ✓
L.	532091 ✓
L.	532092 ✓
L.	531360 ✓
L.	531361 ✓
L.	531362 ✓
TOTAL CLAIMS <u>Thirty-two(32)</u>	

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations 2112 Number of Readings N.A.
Station interval 100 feet Line spacing 400 feet
Profile scale _____
Contour interval _____

MAGNETIC

Instrument _____
Accuracy - Scale constant _____
Diurnal correction method _____
Base Station check-in interval (hours) _____
Base Station location and value _____

ELECTROMAGNETIC

Instrument _____
Coil configuration _____
Coil separation _____
Accuracy _____
Method: Fixed transmitter Shoot back In line Parallel line
Frequency _____
(specify V.L.F. station)
Parameters measured _____

GRAVITY

Instrument _____
Scale constant _____
Corrections made _____
Base station value and location _____
Elevation accuracy _____

INDUCED POLARIZATION
RESISTIVITY

Instrument _____
Method Time Domain Frequency Domain
Parameters - On time _____ Frequency _____
- Off time _____ Range _____
- Delay time _____
- Integration time _____
Power _____
Electrode array _____
Electrode spacing _____
Type of electrode _____

PREFIX

CLAIM NUMBER

L.

531367 • ✓

L.

531368 • ✓

L.

531369 • ✓

L.

532253 • ✓

L.

532254 • ✓

L.

532255 • ✓

L.

545052 ✓

L.

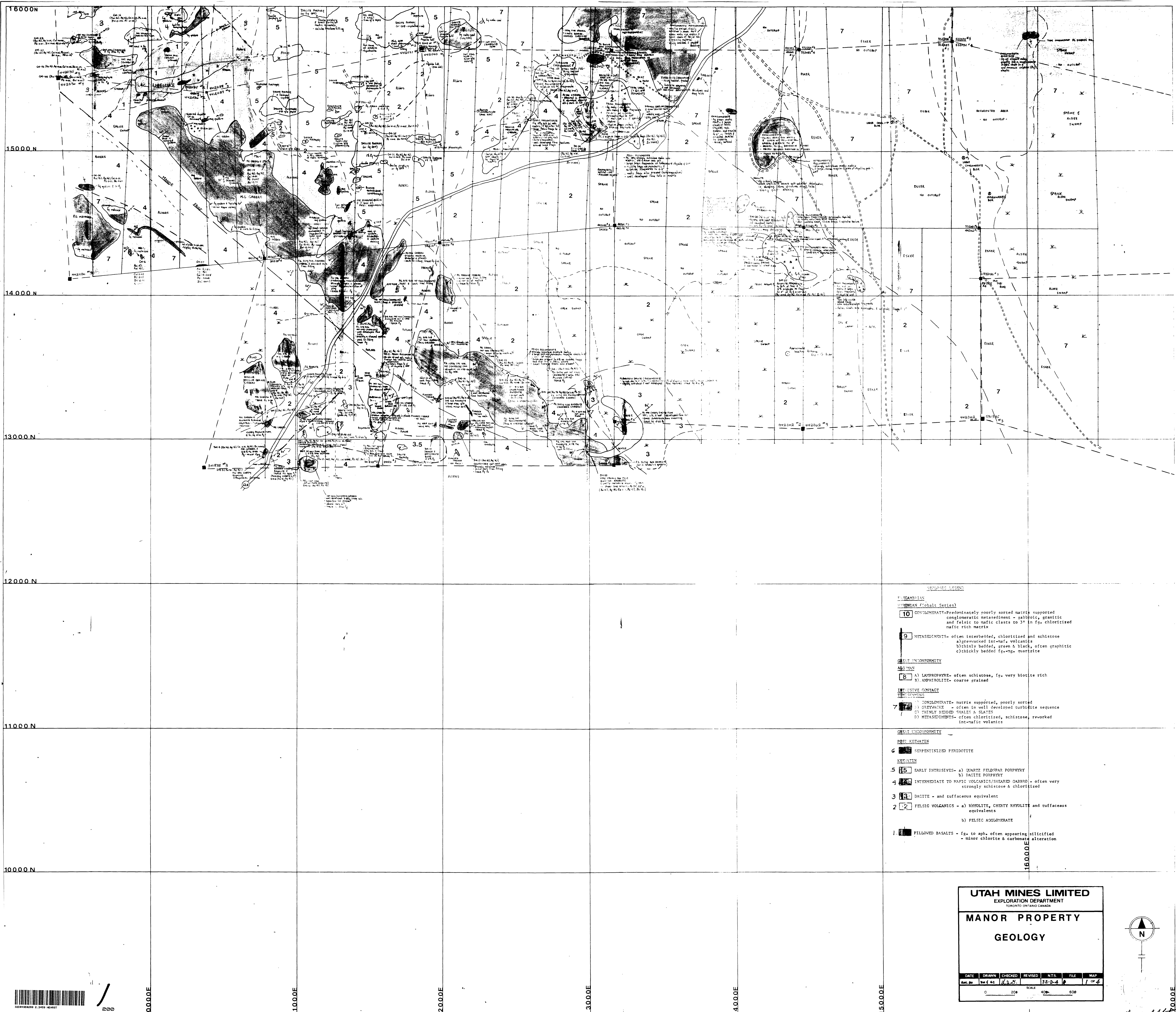
545053 • ✓

L.

545055 • ✓

L.

545056 • ✓



- LEGEND**
- PROBABLE**
- PROBABLE (Cobalt Series)**
- 10 CONGLOMERATE - Predominately poorly sorted matrix supported conglomeratic metasediment - gabbroic, granitic and felsic to mafic clasts to 3" in fg. chloritized mafic rich matrix
- 9 METASEDIMENTS - often interbedded, chloritized and schistose
 a) argillaceous int-mafic volcanics
 b) thinly bedded, green & black, often graphitic
 c) thickly bedded fg-mg. quartzite
- PROBABLE UNIFORMITY**
- ALUMINUM**
- 8 A) LAMPROPHYRE - often schistose, fg. very biotite rich
 B) AMPHIBOLITE - coarse grained
- INTRUSIVE CONTACT**
- TEMPORARY**
- 7 CONGLOMERATE - matrix supported, poorly sorted
 a) GNEISS - often in well developed turbidite sequence
 b) THINLY BEDDED SHALES & SLATES
 c) METASEDIMENTS - often chloritized, schistose, reworked int-mafic volcanics
- PROBABLE UNIFORMITY**
- POST-BASALTIC**
- 6 SERPENTINIZED FERRODOLITE
- KEPAIN**
- 5 EARLY INTRUSIVES - a) QUARTZ FELDSPAR PORPHYRY
 b) DACITE PORPHYRY
- 4 INTERMEDIATE TO MAFIC VOLCANICS/SHEARED GABBRO - often very strongly schistose & chloritized
- 3 DACITE - and tuffaceous equivalent
- 2 FELSIC VOLCANICS - a) RHYOLITE, CHERTY RHYOLITE and tuffaceous equivalents
 b) FELSIC AGGLOMERATE
- 1 FILLING BASALTS - fg. to apha. often appearing silicified - minor chlorite & carbonate alteration

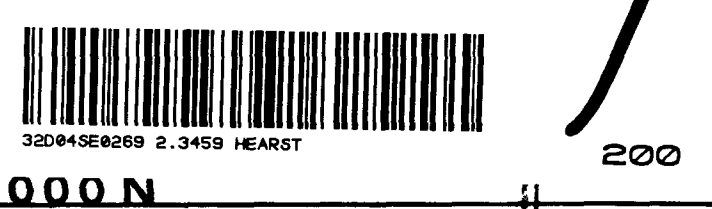
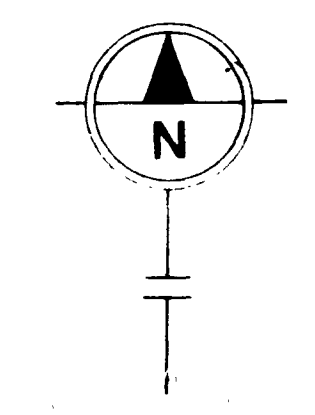
UTAH MINES LIMITED
 EXPLORATION DEPARTMENT
 TORONTO, ONTARIO, CANADA

MANOR PROPERTY

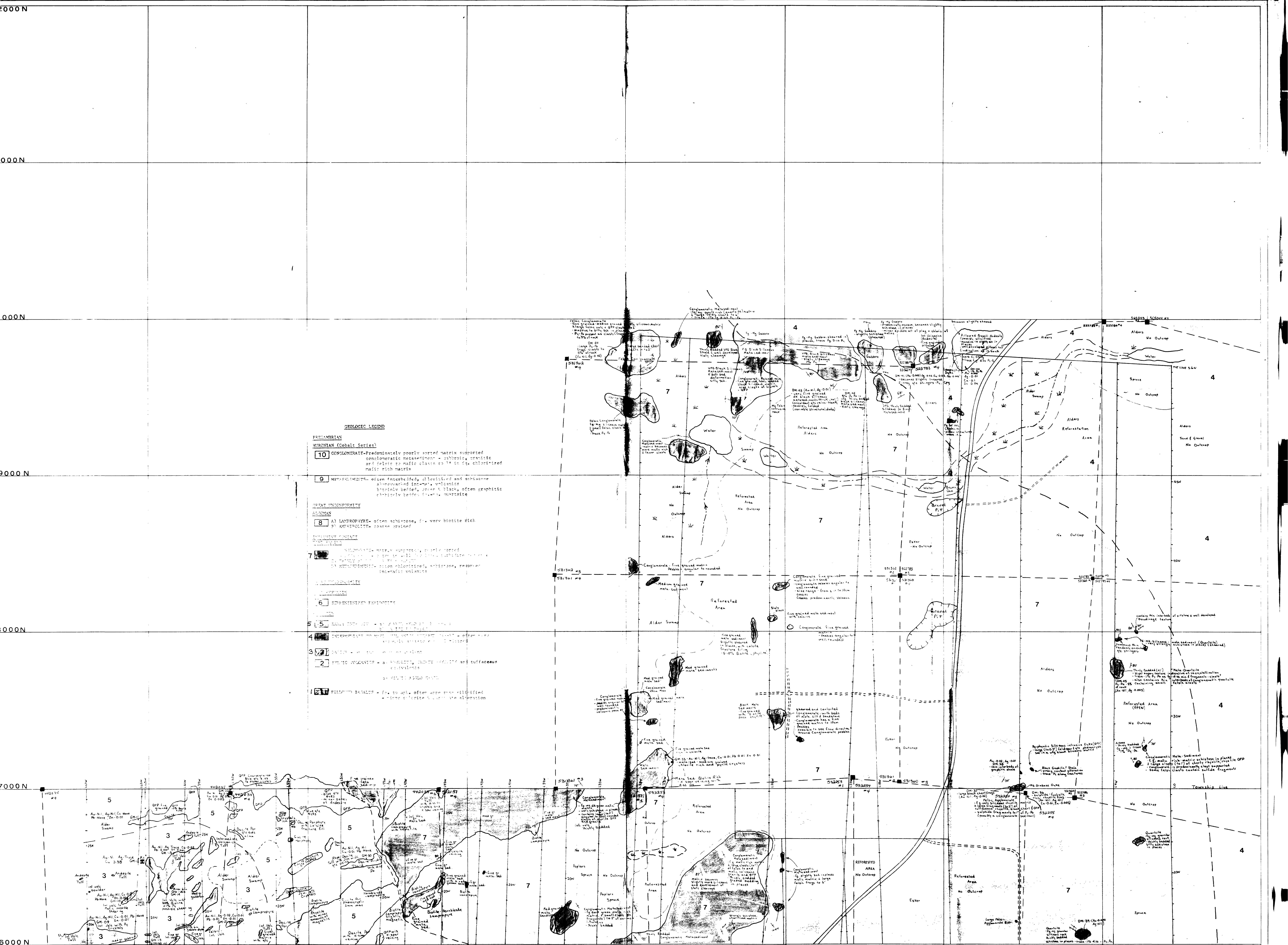
GEOLOGY

DATE	DRAWN	CHECKED	REVISED	N.T.S.	FILE	MAP
April 20	W.C.	R.H.		52-D-4	7	4

SCALE 1:2000



200



- GEOLOGIC LEGEND**
- PRECAMBRIAN**
- MURNTAN (Gobalt Series)**
- 10** CONGLOMERATE - Predominately poorly sorted matrix supported conglomeratic mesocrystine + dioritic, granitic and felsic to mafic clasts to 150 cm, chloritized mafic rich matrix
- 9** AMPHIBOLITE - often amphibolized, chloritized and sometimes amphibolized inter-m. volcanic basaltic bedded, green & black, often granitic chlorite beds, quartz, muscovite
- 8** AMPHIBOLITE - often chlorite, f. very biotite rich + amphibolized - coarse grained
- 7** AMPHIBOLITE - often chlorite, f. very biotite rich + amphibolized - coarse grained
- 6** AMPHIBOLITE - often chlorite, f. very biotite rich + amphibolized - coarse grained
- 5** AMPHIBOLITE - often chlorite, f. very biotite rich + amphibolized - coarse grained
- 4** AMPHIBOLITE - often chlorite, f. very biotite rich + amphibolized - coarse grained
- 3** AMPHIBOLITE - often chlorite, f. very biotite rich + amphibolized - coarse grained
- 2** AMPHIBOLITE - often chlorite, f. very biotite rich + amphibolized - coarse grained
- 1** AMPHIBOLITE - often chlorite, f. very biotite rich + amphibolized - coarse grained

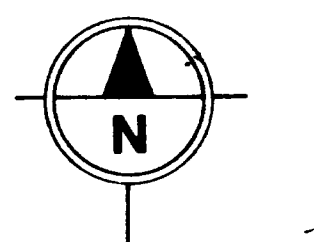
UTAH MINES LIMITED
EXPLORATION DEPARTMENT
TORONTO ONTARIO CANADA

MANOR PROPERTY

GEOLOGY

DATE	DRAWN	CHECKED	REVISED	NTS	FILE	MAP
Aug 10	GC	DM	DM		52-D-4	2 of 4

SCALE 0 200 400 600



Louis H. H. H.

17000E

18000E

19000E

20000E

21000E

22000E

23000E

24000E

21000N

20000N

17000N



GEOLOGIC LEGEND

PRECAMBRIAN

MURONIAN (Gabbro Series)

- 10 **CONGLOMERATE** - predominantly poorly sorted matrix supported conglomeratic metasediment - gabbroic, granitic and felsic to mafic clasts to 3' in fg. chloritic mafic rich matrix
- 9 **METASEDIMENTS** - often interbedded, chloritized and schistose aggregate of mafic volcanics thinly bedded, green & black, often graphitic & thickly bedded fg.-mg. quartzite

GREAT UNCONFORMITY

ALZOWAN

- 8 **LAMPORPHYRE** - often schistose, fg. very biotite rich
- 8 **AMPHIBOLITE** - coarse grained

INTRUSIVE CONTACT

TEMPERATURE

- 7 **CONGLOMERATE** - matrix supported, poorly sorted
- 7 **GREYWACKE** - often in well developed turbidite sequence
- 7 **THINLY BEDDED SHALES & SLATES**
- 7 **METASEDIMENTS** - often chloritized, schistose, reworked int-mafic volcanics

GREAT UNCONFORMITY

POST HEPWORTH

- 6 **SERPENTINIZED PERIDOTITE**

NEPHEW

- 5 **EARLY INTRUSIVES** - a) QUARTZ FELDSPAR PORPHYRY b) DACITE PORPHYRY
- 4 **INTERMEDIATE TO MAFIC VOLCANICS/SHEARED GABBRO** - often very strongly schistose & chloritized
- 3 **DACITE** - and tuffaceous equivalent
- 2 **FELSIC VOLCANICS** - a) RHYOLITE, CHERTY RHYOLITE and tuffaceous equivalents b) FELSIC AGGLOMERATE

- 1 **FILLOWED BASALTS** - fg. to aph. often appearing silicified - minor chlorite & carbonate alteration

UTAH MINES LIMITED
EXPLORATION DEPARTMENT
TORONTO ONTARIO CANADA

MANOR PROPERTY
GEOLOGY

Map No. 0-2220

