



41H15NE0001 2.15284 MOWAT

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A GEOLOGICAL SURVEY OF THE  
DIMENSION STONE RESOURCES ON THE  
GRUNDY LAKE PROPERTY  
THE PARRY SOUND DISTRICT OF ONTARIO

by

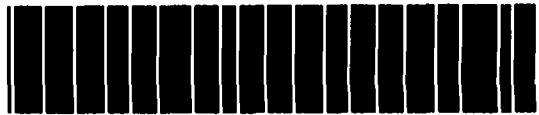
JAMES R. TRUSLER ✓

**2.15284**

LONG.: 80°30' 6"W - 80°31' 18"W  
LAT.: 45°56' 39"N - 45°57' 11"N  
NTS: 41H/15

DATE: December 30, 1993





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## INTRODUCTION

In 1991, the writer commenced a project to evaluate the flagstone and dimension stone resources of the Parry Sound area. At the same time efforts by former Ministry of Northern Development and Mines geologists, principally Chris Marmont and Dave Villard, were being made to outline the substantial potential for these stone resources and make the public aware of the opportunity. In 1992, the regional investigation of flagstone resources by the writer proved discouraging. It was decided late in the field season to focus solely on the dimension stone potential.

By the end of 1992, many prospective dimension stone sites had been identified by either government publications or by the writer's prospecting. Nine of these dimension stone properties have now been staked by the writer, and an initial evaluation of each property involving geological mapping of the outcrops at a scale of 1:5,000 has been completed. The work provides an initial evaluation of potential quarry sites on each property. The project has been supported by the Ontario Prospector's Assistance Program in both 1992 and 1993.

In March and May, 1993, the Grundy Lake property was staked for its dimension stone potential. Geological mapping was carried out in 1993, and the map in the back pocket was prepared and is being submitted with the final report for the OPAP grant in 1993.

The format of the geological report is formulated in compliance with assessment submission requirements.

### LOCATION AND ACCESS

The property is located in Mowat Township, Parry Sound District, Southern Ontario Mining District, and Sudbury District Regional Geologist's area approximately 190 (304 km) north of Toronto (Figure 1). The property is bounded by longitudes  $80^{\circ}31'18''\text{W}$  on the west and  $80^{\circ}30'6''\text{W}$  on the east and latitudes  $45^{\circ}56'39''\text{N}$  on the south and  $45^{\circ}57'11''\text{N}$  on the north. The corresponding UTM co-ordinates in metres are 538,620 on the west, 537,000 on the east, 5,087,780 on the south and 5,088,665 on the north. The property is within National Topographic System area 41H/15 and is recorded on claim map M191.

The Grundy Lake property is crossed by a forest access road 4.5 km north of Hwy 522, 1.1 km east of the Canadian Pacific rail crossing at Pakesley. Although a competent road bed exists for the forest access road, a bridge over a creek is washed out approximately 1.5 km short of the property and two other areas have been flooded by beaver ponds.

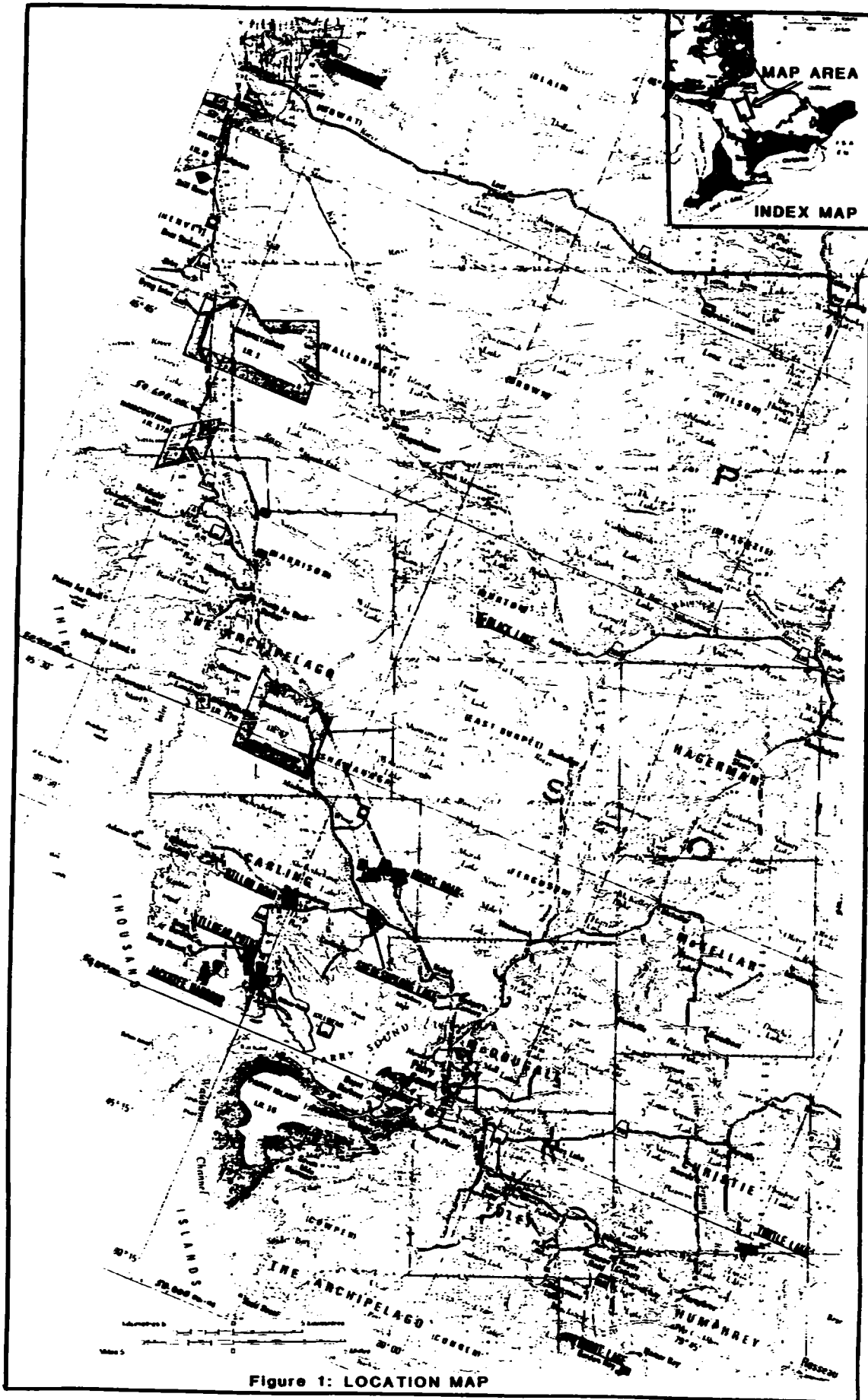


Figure 1: LOCATION MAP

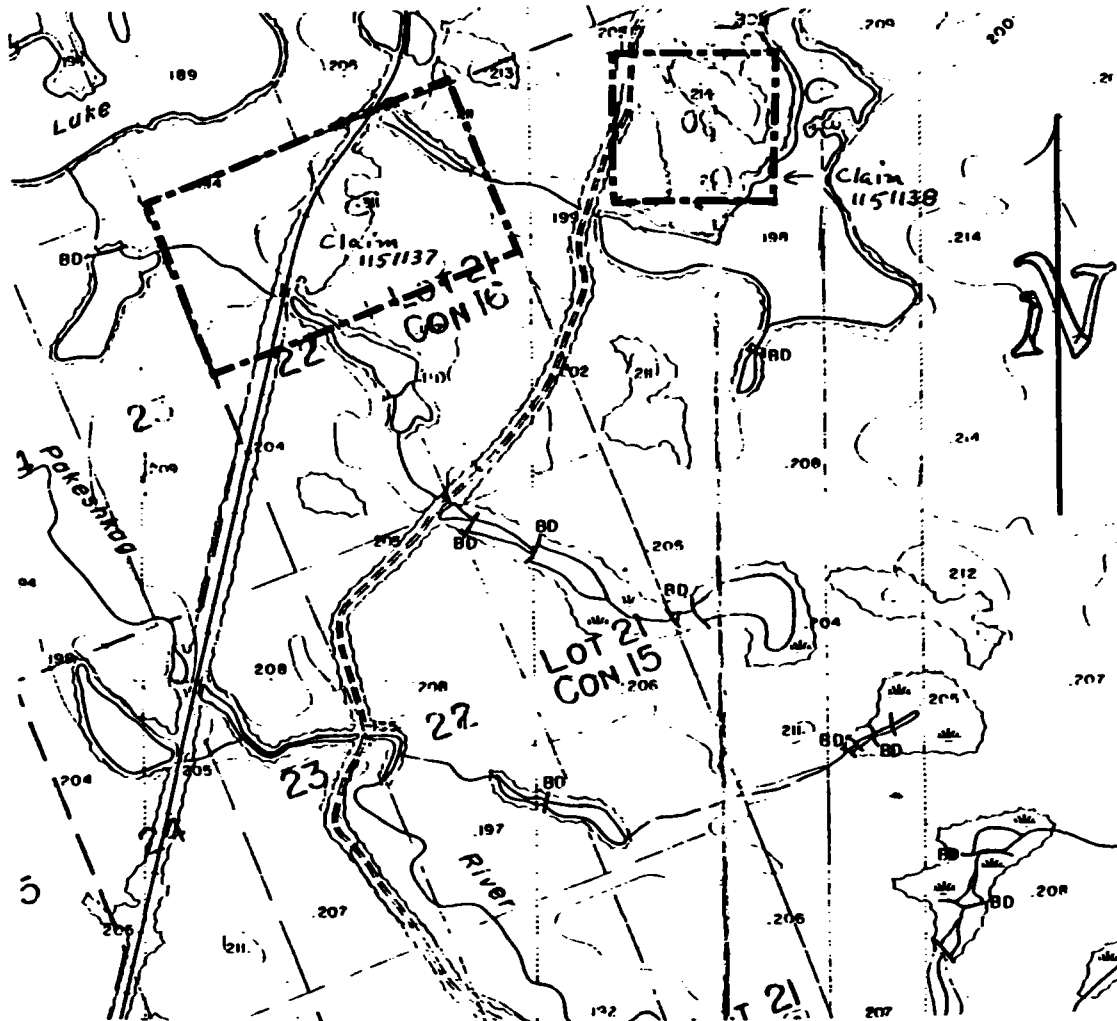
**PROPERTY**

The Grundy Lake property comprises approximately 140 acres and is more particularly described in TABLE 1 (Figure 2).

Assessment will be filed for the current work on the claims, and it is anticipated, as a result, that sufficient credits should be available to keep the entire claim group in good standing for some five years from the date of submission.

**TABLE 1: GRUNDY LAKE PROPERTY**

<u>Claim No</u>	<u>Township</u>	<u>Lot</u>	<u>Conc.</u>	<u>Area</u>	<u>Recording Date</u>
1151138	Mowat	19 & 20	XVI	40 ac	Mar. 29, 1993
1151137	Mowat	N/2 21 & 22	XVI	100 ac	May 4, 1993



Scale: 1:20,000  
Figure 2: Property Map

#### DATES WORKED METHODS USED ON CURRENT PROJECT

Preparation work on the project commenced in March, 1993, the field work commenced on July 17, 1993 and the map drafting and report writing was completed on December 30, 1993. Actual work days for assessment purposes break down as follows:

#### Grundy Lake Property: Claims S01151137, 1151138.

Preparation: July 18,19,24, 1993 (3 days)

Field: July 17,20, Sept. 14,15, 1993 (3½ days)

Drafting: Sept. 29,30, Oct. 1,4-7,19,22,24,27, 1993 (4days)

Reporting: Sept. 20-24,27, Oct. 26, Nov. 1, Dec. 16-24,26-30, 1993 (4 days)

Preparation for field work involved production of 1:5,000 blow ups of data from Ontario Base Maps and 1:30,000 air photographs. A grid was overlain on the maps, and stations for recording observations at approximately 100 metre centres were plotted and coded. Due to the high percentage of outcrop, visual control was feasible in almost all cases, but traversing by pace and compass from known sites was sometimes supplemented by the use of a rangefinder. The magnetic declination used in the field work is 9°-30' W.

At each station rock types with variations were noted generally with a visual description of colour and textures. Foliations were described and measured where possible. The main emphasis was in measurement of joints and their separations. In this respect at each station joints were observed within a 50 to 100 foot radius of the station. The attitude of each joint was recorded with the minimum and maximum spacing observed and the average spacing estimated.

Observations were directly recorded on a dictaphone in the field. The verbal record was later transcribed to paper notes. Drafting of the data onto maps was later done from the paper notes.

## PREVIOUS GEOLOGICAL WORK

A traverse of the shore of Georgian Bay was made by Alexander Murray in 1848, and he gives a brief account of the geology of the shoreline (Murray 1848, p.45,46). The shoreline of Georgian Bay was again examined by Robert Bell in 1876 (Bell 1876, p.198-207). The Huntsville -Bracebridge area was investigated by W.A. Parks (1900, p.121-126), and brief notes on the geology are given. Further field work was done in the area in 1905 by T.L. Walker (1905, p. 84-86). The International Geological Congress had a field excursion in Parry Sound area in 1913. Some local geological features are described by T.L. Walker (1913, p. 98-100).

The first comprehensive reconnaissance mapping in the area was done by Satterly (1942) who visited all the local known mineral deposits. Satterly (1955) also mapped Lount Twp. in detail showing for the first time the existence of mappable units in the Parry Sound area. Hewitt (1967) was able to accurately identify the complexity of petrographic units and correlate some of these in a reconnaissance mapping program.

Greater interest in resolving the geological complexity of the area was kindled by Lumbers who was progressively mapping Grenville terranes in Ontario from the Grenville Front to the south Lumbers (1975) and by Wynne-Edwards (1972). Wynne-Edwards suggested the first interpretive framework for the Central Gneiss Belt of the Grenville Structural Province. The controversy which arose from Wynne-Edwards "Sea of Gneisses" lead a profusion of other researchers into the area who have conducted specific detailed and reconnaissance mapping and synoptic studies. Since 1972 M. W. Schwerdtner and students have concentrated on resolving many of the structural geology problems of the area contributing a great amount to the understanding of the geology of the Central Gneiss Belt.

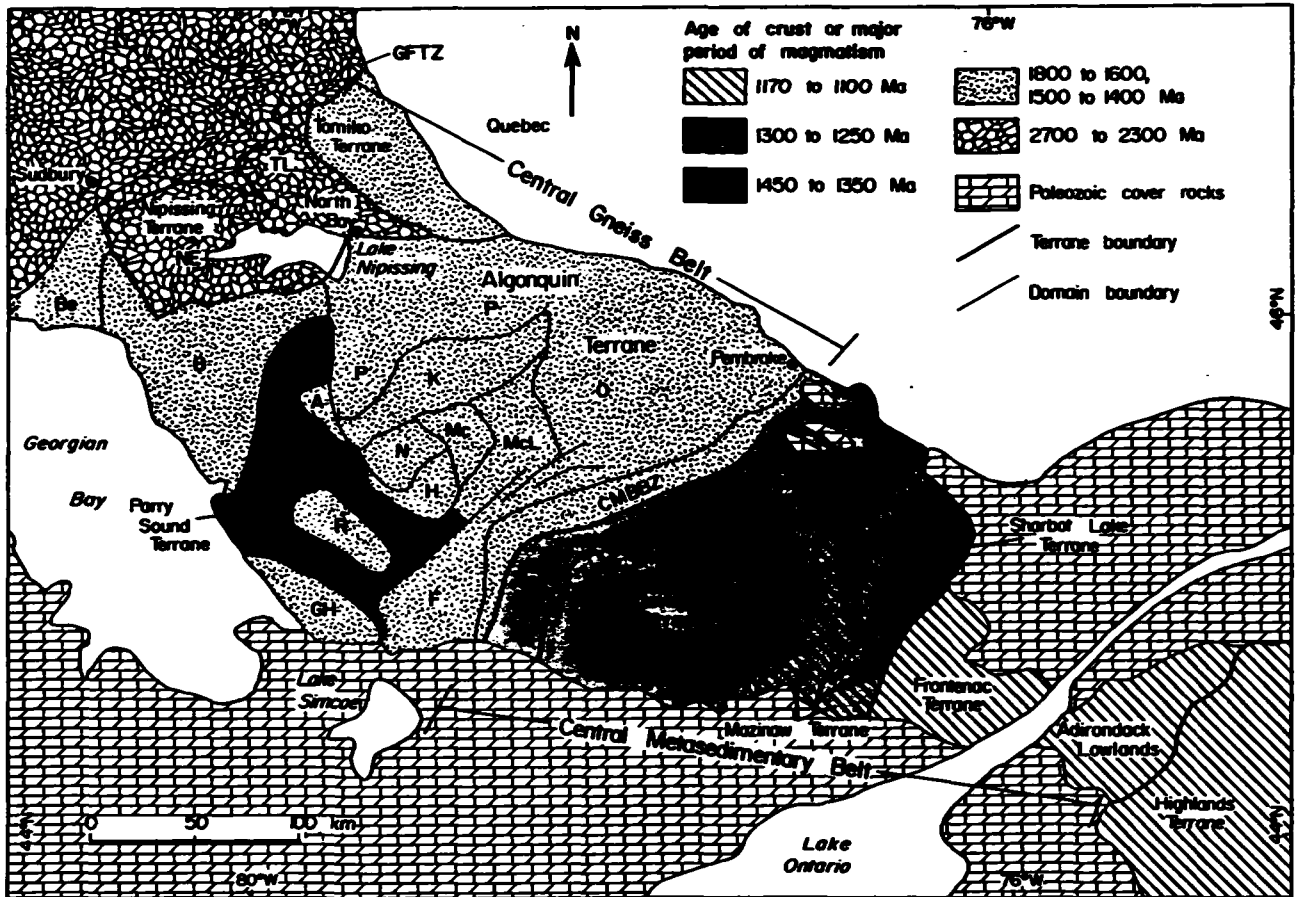
The framework for all current work in the area was provided by Davidson et al. (1982). This has been modified subsequently by Davidson and other workers, and Easton (1992) has synthesized this work eloquently. The tectonic terranes and domains separated by shear zones have become imbedded in the literature.

## REGIONAL GEOLOGY

The Muskoka-Parry Sound region is part of the Ontario segment of the Central Gneiss Belt in the Grenville Structural Province (Wynne-Edwards 1972). No detailed geological map of the whole region, which was included in a recent major project on the Ontario Gneiss Segment by the Geological Survey of Canada, has been published to date.

Recent mapping by Davidson et al. (1982) has led to a tectonic model in which the thickening of Proterozoic crust is accomplished by deep-level thrusting and associated reverse ductile

shearing (Davidson 1984a, 1984b). According to this model, major crustal slices (called domains and sub-domains, see Fig.3) have been translated over large distances toward the margin of the Superior Structural Province.



<b>Abbreviations</b>					
A	Almic Domain	GH	Go Home Domain	NE	Nepewassi Domain
B	Britt Domain	H	Huntsville Domain	O	Opeongo Domain
Be	Beaverstone Domain	K	Kiosk Domain	P	Powassan Domain
CMBBZ	Central Metasedimentary Belt	Mc	McCraney Domain	PS	Parry Sound Domain
	Boundary Zone	McL	McClintock Domain	R	Rosseau Domain
F	Fishog Domain	MR	Moon River Domain	S	Seguin Domain
GFTZ	Grenville Front Tectonic Zone	N	Novar Domain	TL	Tilden Lake Domain

**Figure 3: Lithotectonic terranes, domains Central Gneiss Belt (Easton, 1992)**

This view has been further modified by some more local studies by Hanmer (1988) and Schwerdtner (1987). According to Hanmer the southeast to northwest thrusting was initiated at approximately 1160 Ma and continued for 100 Ma. However he claims that subordinate northeastward thrusting was coeval and that late synmetamorphic extensional shears cut these major thrusts and thrust sheets but are in turn cut by late movement on the thrusts. He further alludes to the comparison to the structural style of the



Central Gneiss Belt and the Himalayas suggesting that the Grenville exposes the architecture and processes presently active in the roots of younger mountain belts. Schwerdtner's observations agree with Hanmer's respecting a northeasterly component to deformation which he invokes to explain north-south buckle folds. However, Schwerdtner observed that not all foliations can be explained by the thrust model and that three sets of folding are superimposed and cross the domain boundaries. He claims that all the structural facts can be explained without large differential translations of crustal slices and most discordances in the regional gneissosity could have been created by décollement and repeated buckling.

Easton (1992) synthesized all previous studies stating that, "Recorded within the Grenville Province is the tectonic evolution of the southeast margin of Laurentia during the Mesoproterozoic. The Grenville Orogeny has overprinted the structural trends and metamorphic effects of the Archean and Paleoproterozoic geological province of Laurentia. It is now generally accepted that this orogenic event or events involved northwest directed thrusting and imbrication of the entire crust, presumably as a result of a terminal collision at about 1100 Ma. with a continental landmass somewhere to the southeast.

The Central Gneiss Belt consists mainly of upper amphibolite and local granulite facies, quartzo-feldspathic gneisses, chiefly of igneous origin with subordinate paragneiss. Distinctive lithotectonic terranes, some further subdivided into domains, have been identified within the Central Gneiss Belt. The terranes and domains are distinguished by differences in rock types, internal structure, metamorphic grade, geological history, and geophysical signature and are bounded by zones of intensely deformed rocks traceable for tens of kilometres."

The Algonquin terrane consists of 1800 to 1600 Ma gneisses intruded by 1500 to 1400 Ma granitic and monzonitic plutons that may represent an extension of the Eastern Granite-Rhyolite Province. Although imbricated by later thrusting the Algonquin terrane is probably parautochthonous. The Britt and Rosseau domains are part of the Algonquin terrane.

The Britt Domain (Figure 4) comprises a complexly deformed and metamorphosed series of rocks. Although some of the rocks are metasedimentary in origin the preponderance of the rocks were originally plutonic, but have been changed by dynamic and thermal metamorphism. The final stages of this metamorphism appear to have annealed the rock into a compact and durable material having some relict textures and many overlapping and lively features. Dips of these rocks are generally flat to 10° to the southeast. Some units are entirely composed of isoclinal sheath folds whereas other units are evidently deformed megacrystic granitic plutons.

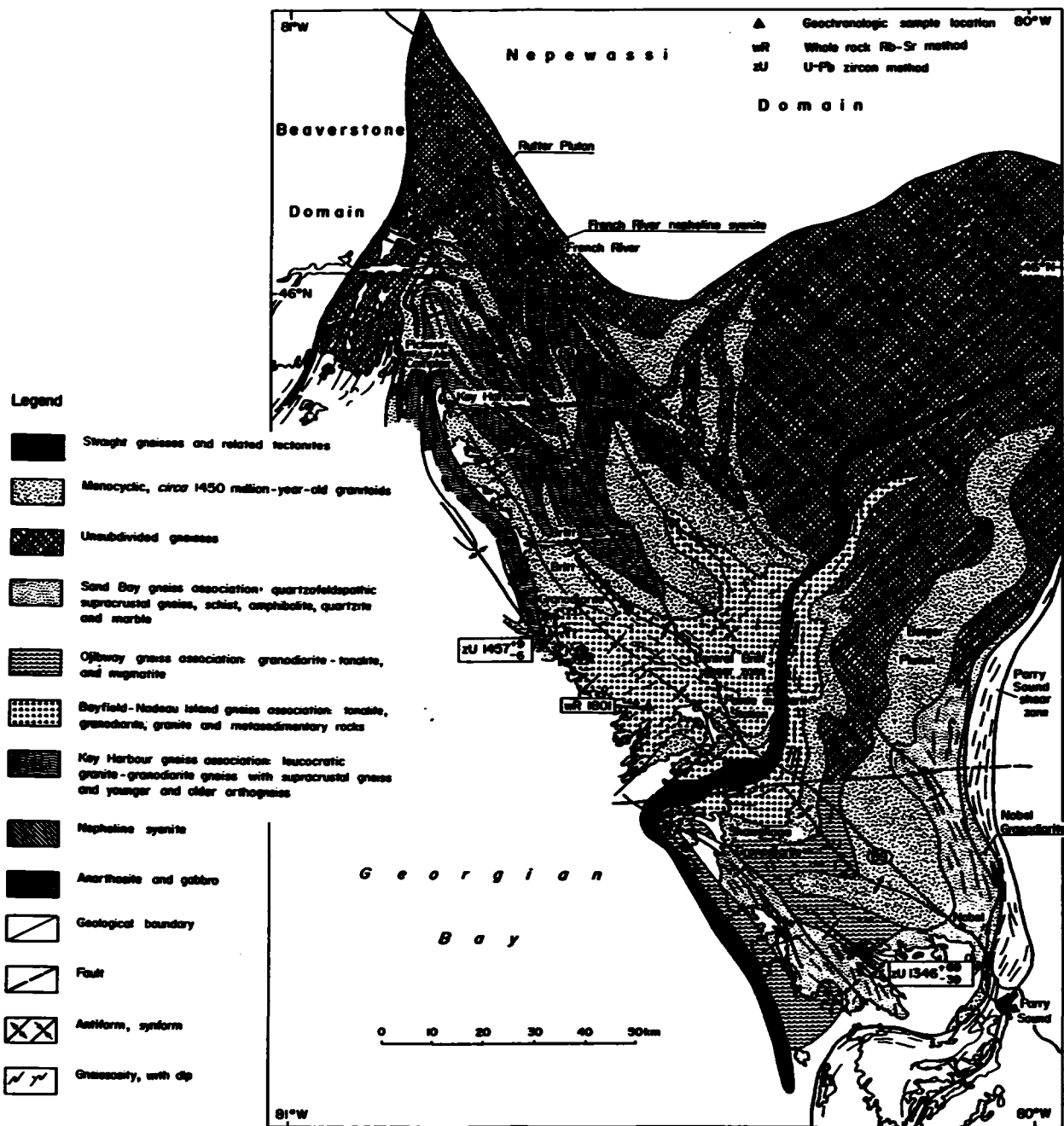


Figure 4: Geology of the Britt Domain (Easton (1992))

The Parry Sound and Moon River domains consist chiefly of juvenile crust 1450 to 1350 Ma in age and are parallochthonous. The Parry Sound domain rocks comprise dense high metamorphic facies rocks (amphibolite and granulite facies) which are emergent on the other domains. The rocks in the Parry Sound domain are dominantly amphibolite and pyroxenite gneisses which strike to the north east and dip 20°-60° to the southeast (at a much steeper angle than the postulated shear couple accompanying thrusting). The bedrock

largely comprises veined, banded and homogeneous pink and grey migmatitic gneisses produced by injection and granitization of metamorphic gneisses of various types. The rocks are mainly of upper amphibolite and granulite metamorphic facies. Hypersthene-bearing charnockitic gneisses are present in the area. The origin of much of the amphibolite gneiss is obscure. Some which is associated with bands of marble is thought to be paragneiss whereas some is proximal to large bodies of gabbro and anorthosite and thought to be orthogneiss. Trusler and Villard (1980) found evidence that some of the mafic and felsic rocks are of volcanic origin. The high metamorphic grade of the rocks is attributed to a deep seated origin possibly involving underplating at an early stage.

The Bolger pluton in the Britt domain is dated at circa 1450 Ma and underlies the Black Lake, Woods Road and Shebeshekong Lake properties (Figure 4). The Dillon Road property is underlain by both the Bolger pluton and the Ojibway gneiss association. The Killbear Point and Jackknife Harbour properties are underlain by the Sand Bay gneiss association. The Grundy Lake property is underlain by an unnamed V-shaped pluton believed to be circa 1450 Ma.

Comparable regional maps do not cover areas about the Turtle Lake property and the Burnt Lake property which are situated in the Rosseau and the Moon River domains respectively.

#### DESCRIPTION OF ROCK UNITS

Since no comprehensive, detailed geological maps have been produced for the Parry Sound area, none of the previous workers have made an attempt to construct a table of rock units. None of the rock units have been correlated across domain boundaries. Trusler and Villard made an attempt to derive a Table of Rock units for the Parry Sound -Sans Souci area in 1980 and some of that information is used here to produce Table 2. These Formation names are not used in the mapping since these have been inadequately defined for inclusion in the literature. However, the area mapped by Trusler and Villard covers parts of the Britt, Parry Sound and Moon River domains and the lithologic variety is well represented.

The Sans Souci-Killbear Point Group correlates well with the Sand Bay gneiss association of Figure 4 which underlies the Killbear Point and Jackknife Harbour properties. Similar rocks which are younger underlie the Burnt Lake property. The Ojibway gneiss association which underlies part of the Dillon Road property correlates with the tonalite in Table 2. The remaining sites are megacrystic granites or migmatitic derivatives of megacrystic granites classified under quartz monzonite in Table 2.

The rocks on the property have been subdivided into mappable units as follows: megacrystic granite, and tonalite.

The megacrystic granite is a highly strained to gneissic pink and grey rock containing relict pink orthoclase phenocrysts from 2 to 5 cm in original diameter which have been stretched to form a prominent lineation. Rarely this lineation is also crenulated. The orthoclase comprises 20-50% of the rock. Hornblende at between 10 and 15%, quartz at 10-20% and plagioclase are also present. The lineation rakes SSE at a gentle angle.

The tonalite is generally a gneissic, medium to coarse grained, thinly to thickly layered rock uniformly variegated light grey and greyish black and containing 20 to 40% mafic minerals overall with amphibole being the dominant mafic mineral. Usually approximately 10%, but occasionally up to 20% of the rock unit comprises introduced or anatexitic, syntectonic quartzo-feldspathic material. Pinch and swell characteristics are common especially in neosome portions of this rock.

**TABLE 2: TABLE OF ROCK UNITS FOR THE PARRY SOUND AREA**

**PHANEROZOIC**

**CENOZOIC**

**Quaternary**

**Recent**

swamp, lake, and stream deposits

**Pleistocene**

bouldery, cobbly and silty sand till, silt, sand, pebble gravel, and cobble gravel

\_\_\_\_\_Unconformity (possible regolith)\_\_\_\_\_

**PALAEOZOIC**

**Cambro - Ordovician**

Calcareous fracture fillings

\_\_\_\_\_Unconformity\_\_\_\_\_

**PRECAMBRIAN**

**Late Precambrian**

Late Breccias- thin mylonites; quartz veined dilatant breccias of unknown origin

**Late Pegmatite**

massive granite pegmatite dikes

\_\_\_\_\_Intrusive Contact\_\_\_\_\_

High Rank Regional Metamorphism

**Middle to Late Precambrian**

**Tectonites**

**Mylonite:** very fine grained massive to thinly to thickly laminated rock frequently exhibiting compositional and graded layering and containing rotated porphyroclasts; generally marginal to schistose and gneissic rocks; matrix minerals generally are siliceous and comprise quartz, microperthite, biotite and/or amphibole and/or pyroxene

**Tectonic Breccia:** brecciated rock comprising lithic clasts within a fine to coarse grained schistose to gneissic cataclastic matrix with quartz, perthitic microcline, biotite and/or amphibole and/or pyroxene

\_\_\_\_\_Sheared Contact\_\_\_\_\_

**Syenite and Monzonite Suite Intrusive Rocks**

pink to grey and green, massive to porphyritic to lineated and gneissic biotite, hornblende-biotite and hornblende syenite and monzonite, charnokite and mangerite.

\_\_\_\_\_Intrusive Contact\_\_\_\_\_

**Anorthosite Suite Intrusive Rocks**

**Anorthosite-** massive to gneissic labradorite anorthosite, andesine anorthosite with up to 10% pyroxene, and gabbroic anorthosite

\_\_\_\_\_ Intrusive Contact \_\_\_\_\_

**Gabbro-** massive to gneissic fine to coarse grained, black pyroxenite, anorthositic gabbro and gabbro

\_\_\_\_\_ Intrusive Contact \_\_\_\_\_

**Tonalite-** massive to strongly lineated and gneissic light to dark grey pyroxene tonalite and diorite with minor gabbro

\_\_\_\_\_ Intrusive Contact \_\_\_\_\_

**Quartz Monzonite - Syenite Suite Intrusive Rocks**

massive to gneissic medium to coarse grained biotite quartz monzonite, pyroxene quartz monzonite and foliated granite pegmatite, pyroxene syenite and foliated syenite pegmatite; megacrystic granite and derivatives.

\_\_\_\_\_ Intrusive Contact \_\_\_\_\_

**Parry Sound Group Metavolcanic Rocks<sup>1</sup>**

**Spider Lake Formation<sup>1</sup>:** intermediate to felsic rocks, medium to coarse grained generally porphyritic, massive to gneissic rocks containing quartz, feldspar, almandite, amphibole and pyroxene; some fragmental units present.

**Parry Sound Formation<sup>1</sup>:** mafic, medium to coarse grained, schistose to gneissic, pyroxene-feldspar and amphibole-feldspar bearing massive and fragmental rock

**Sans Souci - Killbear Point Group Metasedimentary Rocks<sup>1</sup>**

**Unsubdivided:** thinly laminated to extremely thickly layered; interlayered medium to coarse grained schists and gneisses; lower amphibolite to granulite facies; intercalated with metavolcanics above

**Killbear Point Formation<sup>1</sup>:** thinly to extremely thickly layered, schistose and gneissic medium to coarse grained biotite, quartz, feldspar rocks

**Bateau Island Formation<sup>1</sup>:** very thickly layered, medium to coarse grained felsic gneiss with mafic biotite and amphibole rich parting planes; variously interpreted as an arkose or granite; cataclastic textures.

<sup>1</sup> The formation names have not been accepted and criteria for introduction of these names into the literature have not been fulfilled. Identification as to origin is tentative

## PROPERTY GEOLOGY

The property principally is underlain by felsic rocks of unusual character of Middle to Late Precambrian age. The property is underlain by a portion of a large megacrystic granite pluton which has undergone relatively uniform simple strain resulting in stretched phenocrysts and amphibolite facies metamorphism.

The individual rock units were described under the heading DESCRIPTION OF ROCK UNITS on Page 9 of this report. The megacrystic granite has a medium grained, hypidiomorphic granular matrix of quartz, plagioclase, orthoclase and hornblende. The phenocrysts vary from very rare, original, relict orthoclase eyes with sugary grained rims in the least strained rocks to pink sugary aggregates preserving the identity of the original orthoclase.

Although the tonalite also has a cataclastic texture some of the original compositional banding or layering appears to be relict. Some of this rock may also be suitable for quarrying although limited in outcrop extent underlying the eastern claim.

Gneissic foliations were measured at each station where possible. Despite some exceptions, the general pattern displayed is of a relatively structurally uniform sequence. Within the megacrystic granite the metamorphic texture is transitional between a lineation, a combination of lineation and gneissic foliation and a gneissic foliation alone. Within the tonalite the gneissic foliation is prominent. The rocks strike east to southeast and dip steeply between 75° east and 75° west.

The sub-horizontal joint spacing, based on 11 data, on the property averages at least 2.5 metres and the vertical joint spacing, based on 76 data, averages 5 metres. Thirty-six per cent of the vertical joint data, based on 75 data, cluster about an azimuth of 55° and a further thirty per cent cluster about an azimuth of 132°. The remaining data are scattered. In locations favourable for quarrying the joints tend to be more orthogonal and consistent.

## POTENTIAL DIMENSION STONE SITES

Both main outcrops with megacrystic granite are underlain by similar material which should consistently produce 30 tonne blocks. The main texture is a simple stretched phenocryst, although significant areas have stretched and folded phenocrysts which are extremely attractive. The main outcrop on the western claim covers an area 450 metres square with a relief of 6 metres and the main granitic portion of the outcrop on the eastern claim covers an area 400 metres X 200 metres with a similar relief for a resource above the water table of approximately 4,000,000 tonnes.

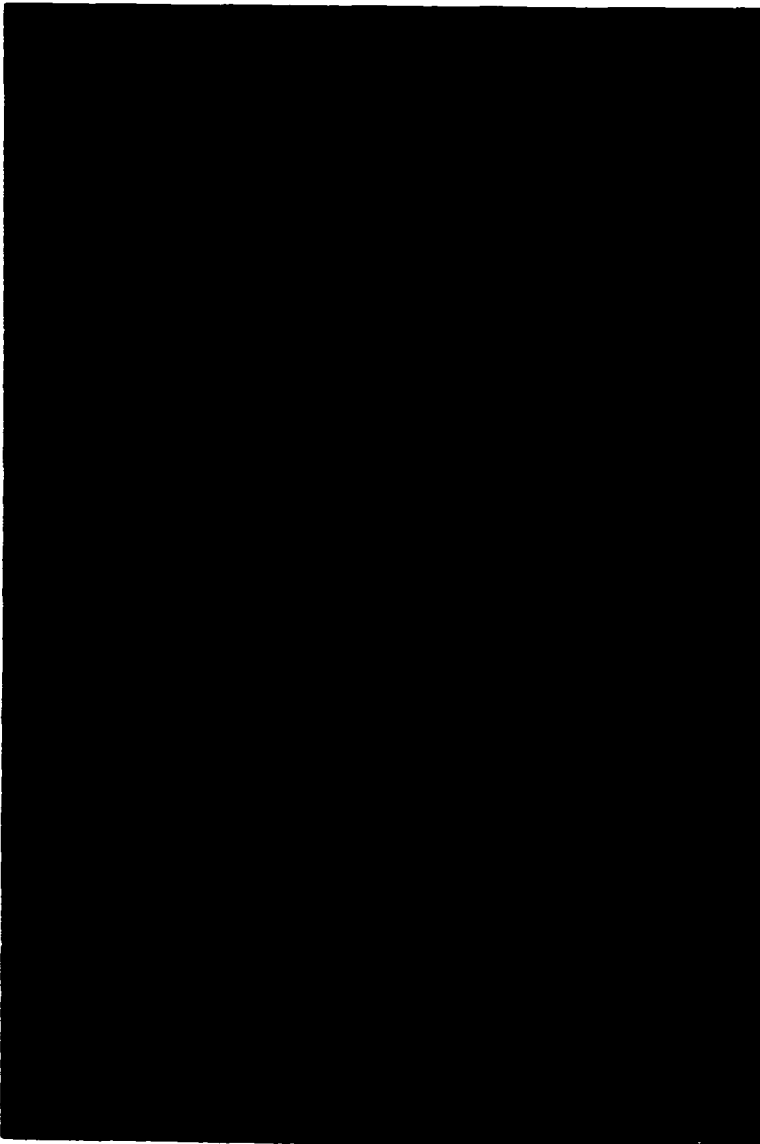


Photo 1 Outcrop of Megacrystic Granite, Grundy Lake West (above) displays the relative homogeneity, absence of vertical joints and durability of the rock. Trough-like areas are due to glacial fluting; Photo 2 Close-up of Outcrop of Megacrystic Granite, Grundy Lake West (below) depicting the end on and side views of folded rapakivi-textured, pink, orthoclase phenocrysts.



On both sites the initial quarrying would start on the northeast side where cliff faces are exposed. Site plans should be prepared for both properties with detailed mapping if necessary to isolate zones with the folded phenocrysts. Photo 2 shows a rock exposure with the folded phenocrysts and a sample of granite containing regularly stretched phenocrysts which has been slabbed and polished is described in Table 3.

A sample should be taken of the banded tonalite for slabbing and polishing.

**TABLE 3: RESULTS OF SAMPLE POLISHING**

<u>Sample No.</u>	<u>Type of Sample</u>	<u>Rock Type</u>	<u>Test Results</u>
1993-2	polished samples provided by Chris Marmont and Dave Villard, formerly of the Ministry of Northern Development and Mines, from their sampling program.	Megacrystic Granite displaying rapakivi textures.	Samples taken were cut to obtain an end on and section view of the stretched phenocrysts. Transitional between lineated and combined lineation and gneissic textures, granoblastic; grain size 0.1-2.0 mm and hornblende poikiloblasts up to 6.0 mm. Orthoclase(30%), plagioclase (35%), quartz(20%), hornblende(10%), biotite(5%), sphene, apatite, clinopyroxene, zircon. The polished specimens are very attractive with no defects. (Marmont, 1993)

### CONCLUSIONS

The Britt domain comprises a complexly deformed and metamorphosed series of rocks. Although some of the rocks are metasedimentary in origin the preponderance of the rocks were originally plutonic, but have been changed by dynamic and thermal metamorphism. The final stages of this metamorphism appear to have annealed the rock into a compact and durable material having some relict textures and many overlapping and lively features.

Nine dimension stone prospects were staked in the Parry Sound area, and all have been mapped geologically. Many of the rocks underlying these properties are migmatitic derivatives of granitic intrusions and present a great variety of textures. In some cases it is evident that the paleosome constituent was megacrystic and subsequent neosome phases have distinct

compositions and fabrics. The sites were chosen for their attractiveness and the apparent availability of accessible large blocks.

Large outcrops with wide joint spacing on both the east and west claims at Grundy Lake expose megacrystic granites displaying stretched rapakivi and folded, stretched rapakivi textures which are very attractive. The outcrops individually cover a significant area, and the total resource to a depth of 6 metres is estimated to be 4,000,000 tonnes. Production of two separate site plans is recommended followed by an initial quarry test on one of the sites.

A portion of the tonalite outcrop is uniform and attractively laminated. A large sample of this material should be recovered for slabbing and polishing.

#### **RECOMMENDATIONS**

1. Two site plans should be prepared in order to licence the initial quarry development of one of the outcrops on the property.
2. One of the outcrops should be developed by initial quarrying of a 3,000 tonne sample.
3. A sample of banded tonalite should be taken for slabbing and polishing.

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**AUTHOR'S CERTIFICATE**

- a. This report was prepared by:

James R. Trusler P.Eng.

Principal,  
J R Trusler and Associates  
143 Temperance St.  
Aurora, Ontario L4G 2R5  
(416) 727-5084

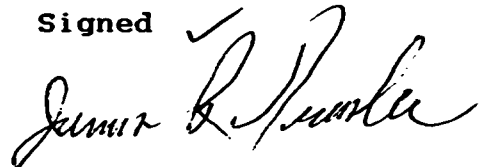
**GEOLOGICAL ENGINEER.**

- b. Qualifications:

B A Sc - Geological Engineering, University of Toronto, 1967  
M S - Geology, Michigan Technological University, 1972  
Professional Engineer - Ontario  
Fellow - Geological Association of Canada  
Member - Canadian Institute of Mining, Metallurgy and  
Petroleum

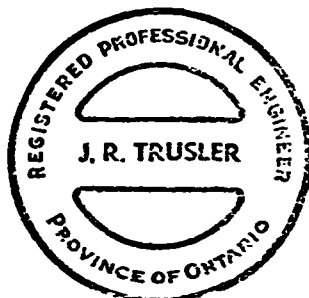
- c. This report is based on a review of all available relevant data; historical, and geological, on personal involvement as Regional Geologist, Algonquin Region, Ministry of Natural Resources from 1974 to 1980, and on a program of field mapping conducted within the area of this report in 1993. I have personally examined the properties and the surrounding area in the field.
- d. I have used my experience gained in geological mapping, the exploration for minerals, visits to most dimension stone quarries in North America, the definition of mineral deposits and the evaluation of properties (over 30 years) in preparation of this report.
- e. I hold an undivided 100% interest in the claims mentioned in this report, but do not expect to receive any remuneration for the report or as a result of statements made in this report.

Signed



Dated: December 30, 1993

James R. Trusler M.S., P.Eng.







## Report of Work Conducted After Recording Claim

**Mining Act**

Transaction Number  
**W9490.00007**

Personal information collected on this form is obtained under the authority of the Mi this collector. should be directed to the Provincial Manager, Mining Lands, Mini Sudbury, Ontario, P3E 6A5, telephone (705) 670-7264.



900

- Instructions:**
- Please type or print and submit in duplicate.
  - Refer to the Mining Act and Regulations for requirements of filing assessment work or consult the Mining Recorder.
  - A separate copy of this form must be completed for each Work Group.
  - Technical reports and maps must accompany this form in duplicate.
  - A sketch, showing the claims the work is assigned to, must accompany this form.

Recorded Holder(s) <b>JAMES R TRUSLER</b>		Client No. <b>203 403</b>
Address <b>143 TEMPERANCE ST. AURORA ONT L9G 2R5</b>		Telephone No. <b>(905) 727-5084</b>
Mining Division <b>SOUTHERN ONTARIO</b>	Township/Area <b>MOWAT</b>	M or G Plan No. <b>M191</b>
Dates Work Performed From: <b>JULY 17, 1993</b>		To: <b>SEPT 15, 1993</b>

**Work Performed (Check One Work Group Only)**

Work Group	Type
<input checked="" type="checkbox"/> Geotechnical Survey	<b>GEOLOGICAL SURVEY</b>
<input type="checkbox"/> Physical Work, Including Drilling	
<input type="checkbox"/> Rehabilitation	
<input type="checkbox"/> Other Authorized Work	
<input type="checkbox"/> Assays	
<input type="checkbox"/> Assignment from Reserve	

**4713**

**RECEIVED**

**JAN 27 1994**

**MINING LANDS BRANCH**

Total Assessment Work Claimed on the Attached Statement of Costs \$ **5,666** ✓

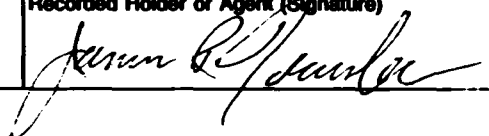
**Note:** The Minister may reject for assessment work credit all or part of the assessment work submitted if the recorded holder cannot verify expenditures claimed in the statement of costs within 30 days of a request for verification.

**Persons and Survey Company Who Performed the Work (Give Name and Address of Author of Report)**

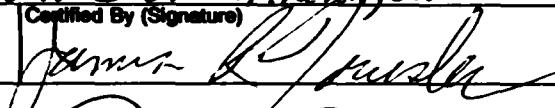
Name	Address
<b>JAMES R. TRUSLER</b>	<b>143 TEMPERANCE ST. AURORA, ONT L9G 2R5</b>

(attach a schedule if necessary)

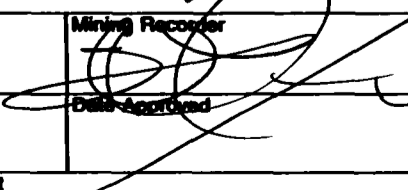
**Certification of Beneficial Interest \* See Note No. 1 on reverse side**

I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.	Date <b>Jan 11, 1994</b>	Recorded Holder or Agent (Signature) 
--	-----------------------------	---

**Certification of Work Report**

I certify that I have a personal knowledge of the facts set forth in this Work report, having performed the work or witnessed same during and/or after its completion and annexed report is true.		
Name and Address of Person Certifying <b>JAMES R. TRUSLER, 143 TEMPERANCE ST AURORA, ONT L9G 2R5</b>		
Telephone No. <b>(905) 727 5084</b>	Date <b>Jan 11, 1994</b>	Certified By (Signature) 

**For Office Use Only**

Total Value Cr. Recorded <b>5,666</b>	Date Recorded <b>Jan 11/94</b>	Mining Recorder 	Recorded Stamp <b>SOUTHERN ONTARIO MINING DIVISION</b> <b>RECEIVED</b> <b>JAN 11 1994</b> AM 7,8,9,10,11,12,13,14,15,6 PM
	Deemed Approval Date <b>April 11/94</b>	Date Approved <b>Jan 11/94</b>	
	Date Notice for Amendments Sent		



Grandy Lake

Statement of Costs for Assessment Credit

État des coûts aux fins du crédit d'évaluation

Mining Act/Loi sur les mines

Transaction No./N° de transaction

W9490.00007

2.15284

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used to maintain a record and ongoing status of the mining claim(s). Questions about this collection should be directed to the Provincial Manager, Minings Lands, Ministry of Northern Development and Mines, 4th Floor, 159 Cedar Street, Sudbury, Ontario P3E 6A5, telephone (705) 670-7264.

Les renseignements personnels contenus dans la présente formule sont recueillis en vertu de la Loi sur les mines et serviront à tenir à jour un registre des concessions minières. Adresser toute question sur la collecte de ces renseignements au chef provincial des terrains miniers, ministère du Développement du Nord et des Mines, 159, rue Cedar, 4<sup>e</sup> étage, Sudbury (Ontario) P3E 6A5, téléphone (705) 670-7264.

1. Direct Costs/Coûts directs

Type	Description	Amount Montant	Totals Total global
Wages Salaires	Labour Main-d'oeuvre		
	Field Supervision Supervision sur le terrain		
Contractor's and Consultant's Fees Droits de l'entrepreneur et de l'expert-conseil	Type Geological Mapping & Preparation 5 days @ \$400/day	2,000.00	
	Drafting 7 days @ \$150/day	1,050.00	
	Report writing 4 days @ \$250/day	1,000.00	4,050.00
Supplies Used Fournitures utilisées	Type Field consumables	7.31	
	maps & photos	327.96	
	film & batteries	40.97	
	stationery & misc	61.58	437.82
Equipment Rental Location de matériel	Type		
<b>Total Direct Costs Total des coûts directs</b>		<b>5,237.82</b>	

2. Indirect Costs/Coûts indirects

\*\* Note: When claiming Rehabilitation work indirect costs are not allowable as assessment work. Pour le remboursement des travaux de réhabilitation, les coûts indirects ne sont pas admissibles en tant que travaux d'évaluation.

Type	Description	Amount Montant	Totals Total global
Transportation Transport	Type Personal Car		
	781 km @ 0.30	237.30	
	parking	1.88	
<b>Sub Total of Indirect Costs Total partiel des coûts indirects</b>			<b>239.18</b>
Food and Lodging Nourriture et hébergement	Hotel & meals		191.73
Mobilization and Demobilization Mobilisation et démoblisation			
<b>Amount Allowable (not greater than 20% of Direct Costs) Montant admissible (n'excédant pas 20 % des coûts directs)</b>			<b>427.91</b>
<b>Total Value of Assessment Credit (Total of Direct and Allowable indirect costs) Valeur totale du crédit d'évaluation (Total des coûts directs et indirects admissibles)</b>			<b>5,665.73</b>

Note: The recorded holder will be required to verify expenditures claimed in this statement of costs within 30 days of a request for verification. If verification is not made, the Minister may reject for assessment work all or part of the assessment work submitted.

Note: Le titulaire enregistré sera tenu de vérifier les dépenses demandées dans le présent état des coûts dans les 30 jours suivant une demande à cet effet. Si la vérification n'est pas effectuée, le ministre peut rejeter tout ou une partie des travaux d'évaluation présentés.

Filing Discounts

1. Work filed within two years of completion is claimed at 100% of the above Total Value of Assessment Credit.
2. Work filed three, four or five years after completion is claimed at 50% of the above Total Value of Assessment Credit. See calculations below:

Total Value of Assessment Credit	Total Assessment Claimed
	x 0.50 =

Remises pour dépôt

1. Les travaux déposés dans les deux ans suivant leur achèvement sont remboursés à 100 % de la valeur totale susmentionnée du crédit d'évaluation.
2. Les travaux déposés trois, quatre ou cinq ans après leur achèvement sont remboursés à 50 % de la valeur totale du crédit d'évaluation susmentionné. Voir les calculs ci-dessous.

Valeur totale du crédit d'évaluation	Évaluation totale demandée
	x 0,50 =

Certification Verifying Statement of Costs

I hereby certify: that the amounts shown are as accurate as possible and these costs were incurred while conducting assessment work on the lands shown on the accompanying Report of Work form.

that as Recorded Holder I am authorized (Recorded Holder, Agent, Position in Company)

to make this certification

Attestation de l'état des coûts

J'atteste par la présente: que les montants indiqués sont le plus exact possible et que ces dépenses ont été engagées pour effectuer les travaux d'évaluation sur les terrains indiqués dans la formule de rapport de travail ci-joint.

Et qu'à titre de \_\_\_\_\_ je suis autorisé (titulaire enregistré, représentant, poste occupé dans la compagnie)

à faire cette attestation.

Signature: [Signature] Date: Jan 11, 1994



Ontario

Ministry of  
Northern Development  
and Mines

Ministère du  
Développement du Nord  
et des Mines

Geoscience Approvals Office  
33 Ramsey Lake Rd., 6th Flr  
Sudbury, Ontario  
P3E 6B5

Telephone: (705) 670-5853

Fax: (705) 670-5863

Our File: 2.15284

Transaction #: W9490.00007

June 21, 1994

Mining Recorder  
Ministry of Northern Development  
and Mines  
Sudbury

Dear Mr. Denomme:

**RE: Approval of Notice of Reduction issued for assessment work reported on mining claims 1151137 et al in Nowat Township.**

The assessment work credits as outlined in the Notice of Reduction dated April 11, 1994 have been approved as of May 26, 1994. Please see the attached assessment work credit form.

If you require additional information please contact Dale Messenger at 670-5858.

Yours sincerely,

Ron C. Gashinski  
Senior Manager, Mining Lands Section  
Mining and Land Management Branch  
Mines and Minerals Division

DEM/vni

cc Assessment Files Office  
Sudbury

cc Res Geo  
Sudbury

**ASSESSMENT WORK CREDIT FORM**

**FILE NUMBER: 2.15284**

**DATE: May 26, 1994**

**TRANSACTION NUMBER: W9490.00007**

**RECORDED HOLDER: James Trusler**

**TOWNSHIP: Mowat**

**CLIENT NUMBER: 203403**

**Level of Assessment Credit to be approved \$4,606.00**

<b>CLAIM NUMBER</b>	<b>VALUE OF ASSESSMENT WORK DONE ON THIS CLAIM</b>	<b>VALUE APPLIED TO THIS CLAIM</b>	<b>RESERVE</b>
1151137	\$3200.00	\$3200.00	
1151138	1406.00	1406.00	

THE TOWNSHIP OF  
OF  
**MOWAT**  
2/15/84.  
DISTRICT OF  
PARRY SOUND  
SOUTHERN ONTARIO  
MINING DIVISION

SCALE: 1-INCH= 40 CHAINS

**LEGEND**

- PATENTED LAND Ⓟ
- CROWN LAND SALE Ⓢ or C.S.
- LEASES Ⓛ
- LOCATED LAND Ⓛ
- LICENSE OF OCCUPATION L.O.
- MINING RIGHTS ONLY M.R.O.
- SURFACE RIGHTS ONLY S.R.O.
- ROADS —
- IMPROVED ROADS —
- KING'S HIGHWAYS —
- RAILWAYS —
- POWER LINES —
- MARSH OR MUSKEG —
- MINES X

**NOTES**

THIS MAP IS NOT TO  
BE USED FOR  
**SURVEY PURPOSES**

- Land reserved for gravel pit shown thus Ⓢ
- 400' Surface rights reservation around all lakes & rivers.
- Islands in French River withdrawn from staking. File: 67051
- French River Ind on Reserves shown thus —

**SAND and GRAVEL**

- M.N.R. SAND & GRAVEL RESERVE No. 26
- QUARRY PERMIT

DATE OF ISSUE  
1 Oct 12 1991  
SOUTHERN ONTARIO  
MINING DIVISION

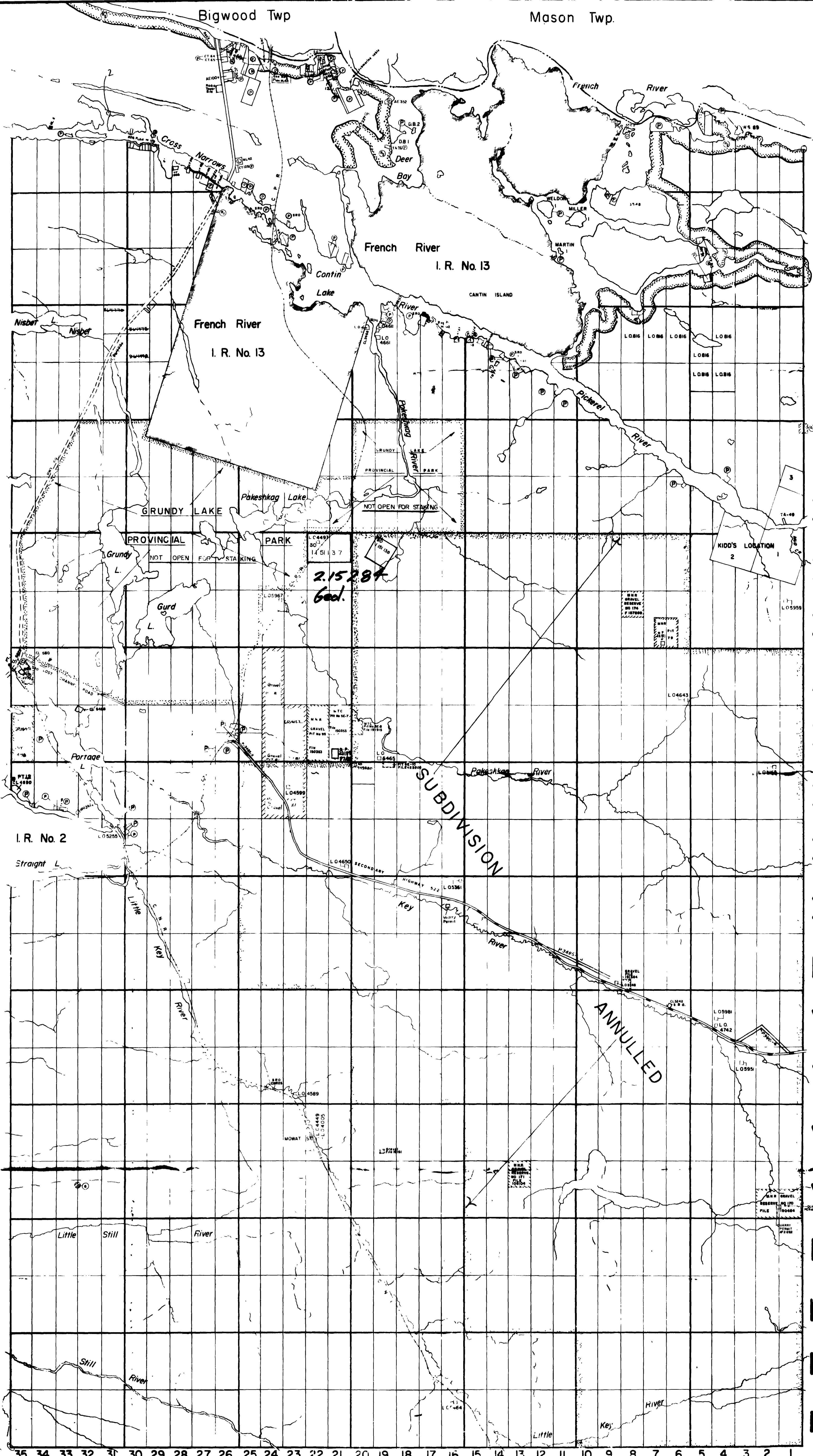
**AREAS WITHDRAWN FROM DISPOSITION**

- M.R.O. - MINING RIGHTS ONLY
  - S.R.O. - SURFACE RIGHTS ONLY
  - M.+S. - MINING AND SURFACE RIGHTS
- | Description                  | Order No.                               | Date    | Deputing | File   |
|------------------------------|---|---------|----------|--------|
| SEC 36/80                    | W 9/83                                  | 31/3/83 | S.R.O.   | 125507 |
| FRENCH RIVER PROVINCIAL PARK | O. REG. #80/89, APRIL 25, 1989, BCH #28 |         |          | 180539 |

Key Harbour Area

Henney Twp.

Blair Twp.



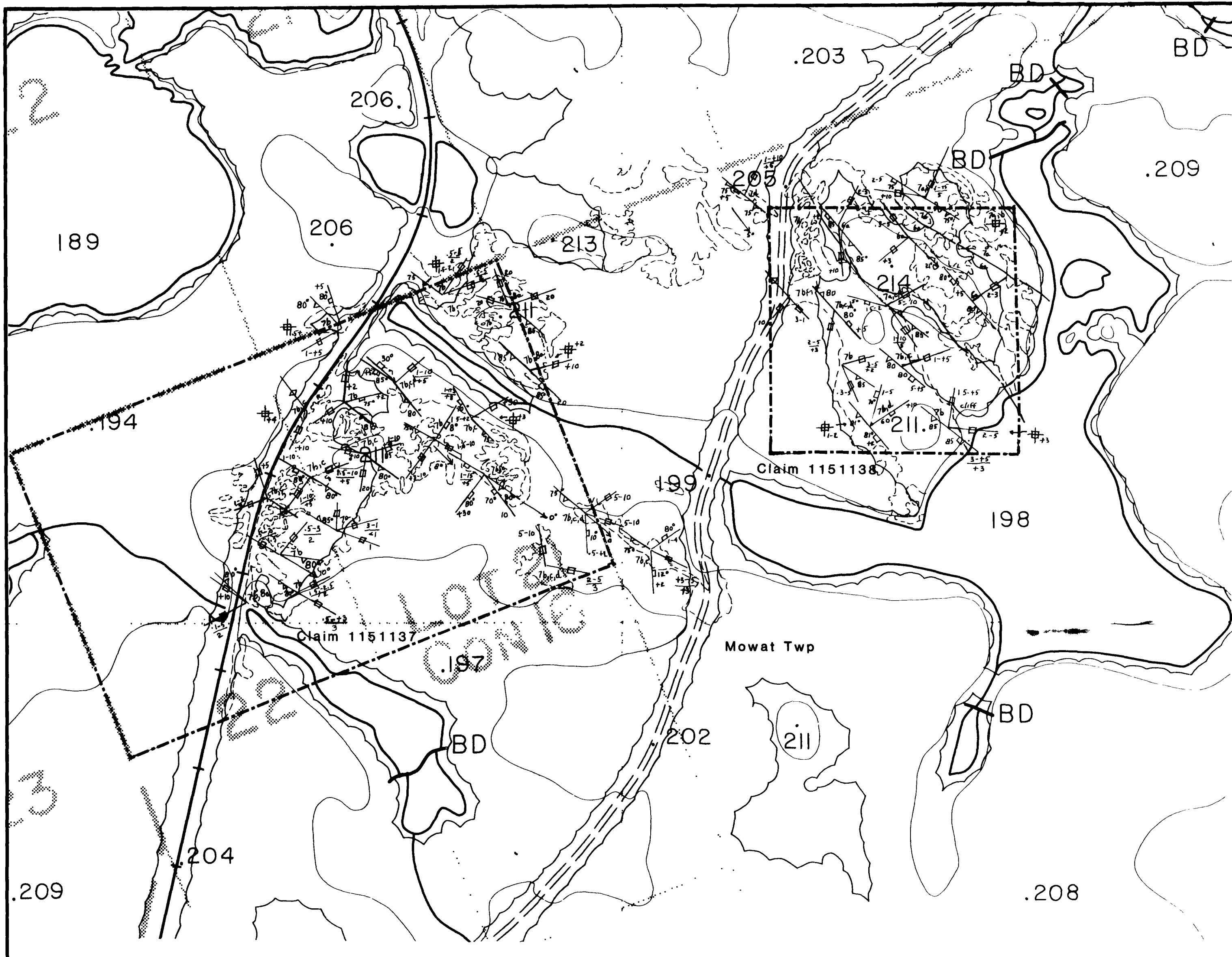
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Wallbridge Twp.

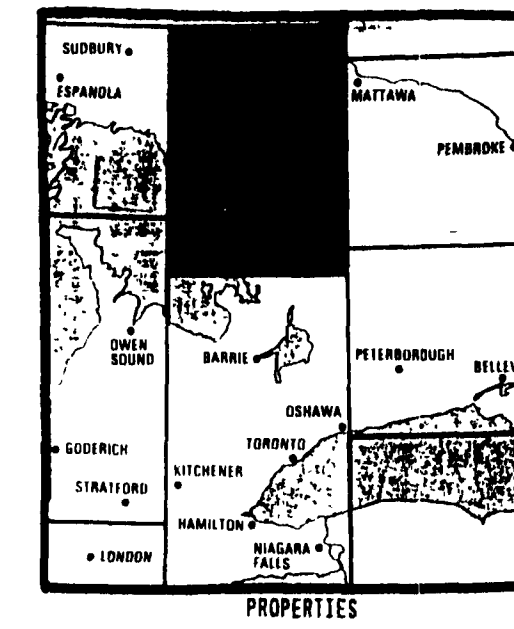
PLAN NO. M.191

ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH



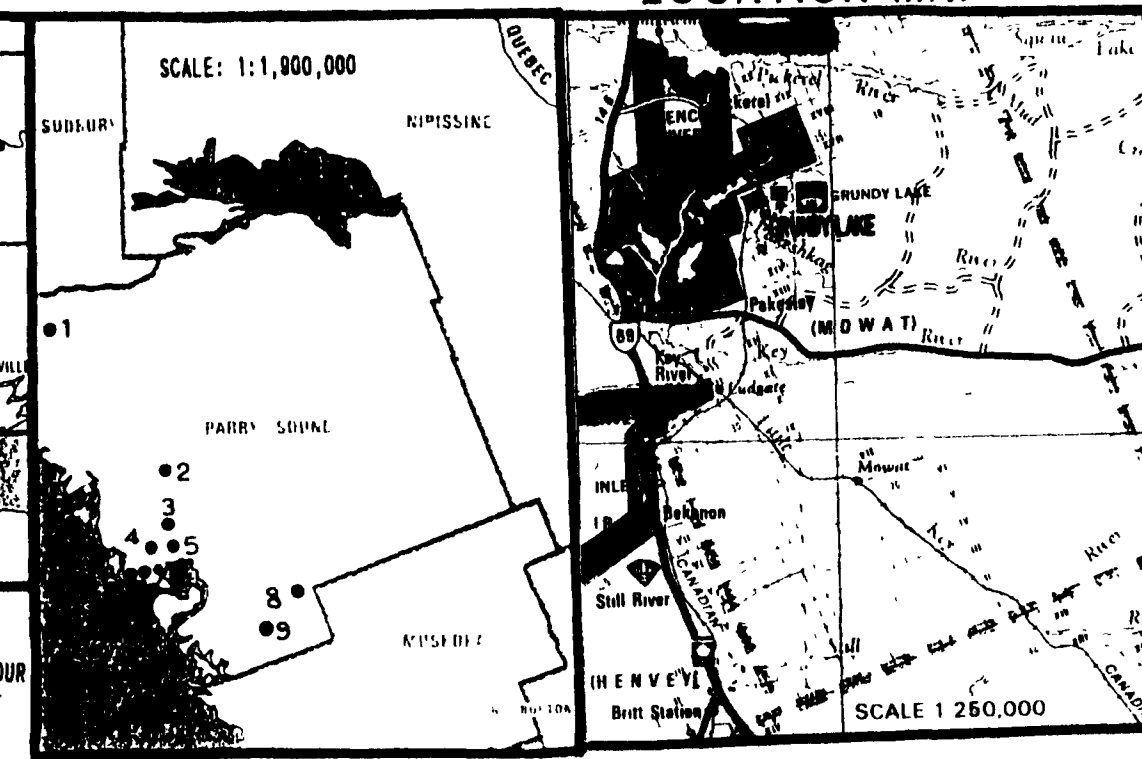


INDEX MAP



- PROPERTIES
- 1 GRUNDY LAKE
  - 2 BLACK LAKE
  - 3 WOODS ROAD
  - 4 DILLON ROAD
  - 5 SHEBESHEKONG LAKE
  - 6 JACKNIFE HARBOUR
  - 7 KILLBEAR POINT
  - 8 TURTLE LAKE
  - 9 BURNT LAKE

LOCATION MAP



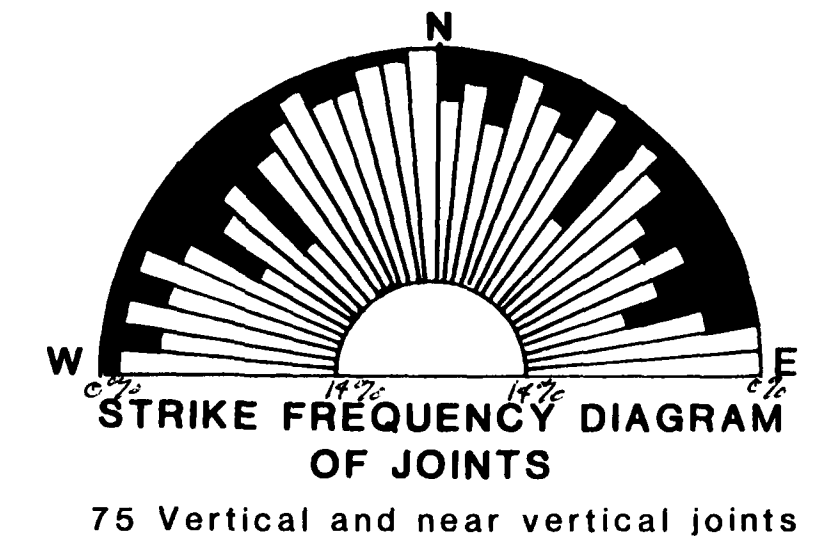
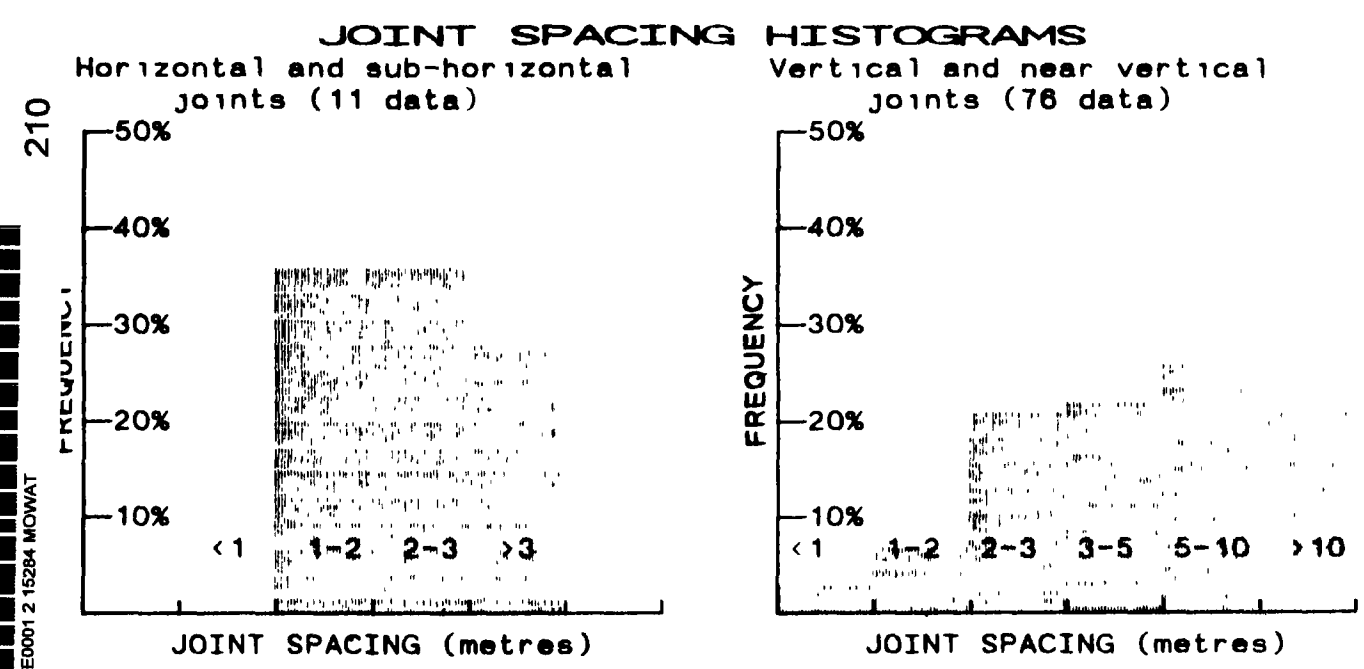
PROJECT AREA

LEGEND

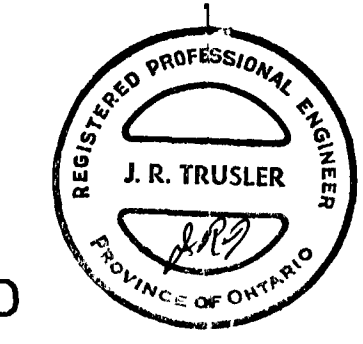
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| <p>1 FELSIC GNEISS<sup>1</sup> - layered to massive rock mainly composed of quartz, plagioclase and microcline with minor matrix biotite and variable accessory magnetite, hematite and almandine: a) coarse grained equigranular rock, very weakly layered; b) unit 1a with coarse reddish-mauve speckles of hematite; c) strongly layered fine to coarse grained cataclastic rock; d) unit 1a containing very large breccia fragments of pegmatite which show no internal strain; e) fine to medium grained massive pink to rose coloured rock with thin biotite-rich partings; f) unit 1a more thinly layered and containing mauve hematite-bearing laminae</p> <p>2 AMPHIBOLITE GNEISS - layered to massive, fine to coarse grained, greyish black to black rock generally comprising 40 to 70% amphiboles with plagioclase in its unaltered state: a) fine to coarse grained, thinly to thickly layered uniform gneiss occasionally with some biotite rich partings; b) lit par lit migmatite comprising unit 2a the paleosome constituent and parallel bands of late tectonic pegmatite; c) migmatite breccia comprising clasts of late tectonic pegmatite within unit 2a</p> <p>3 BIOTITE HORNBLLENDE MIGMATITE - a fine to coarse grained, highly variable rock of multicomponent origin generally lit par lit layered and frequently comprising similar intrafolial folds; the paleosome constituent comprises biotite, hornblende, feldspar and quartz and frequently has a relict foliated or thinly laminated texture; the neosome constituent is generally coarser and comprises a syntectonic, cataclastic, originally pegmatitic aggregate of quartz, feldspar and minor hornblende and/or biotite: a) variegated pale and dark grey with mafic content &gt;20%; b) variegated pale and medium grey with mafic content &gt;10% &lt;20%; c) variegated pink and medium grey with mafic content &gt;10% &lt;20%; d) variegated pale and light grey with biotite content &lt;10%; e) variegated pink and light grey with biotite content &lt;10%; f) intense pink schlieren with biotite content &lt;5%; g) minor purple hematite spotting; h) late tectonic pegmatite &gt;10%; i) late tectonic pegmatite &lt;10%; j) hornblende dominant mafic mineral; k) biotite dominant mafic mineral</p> <p>4 PURPLE AND PINK MIGMATITE - variegated rock with laminations of medium to coarse grained unit 1a or 3f and a fine to medium grained reddish mauve layer comprising quartz, feldspar, biotite, almandine and hematite; often a milky to buff late tectonic granulated quartzo-feldspathic pegmatitic material forms conformable layers which generally exhibit pinch and swell textures: a) thinly laminated or layered pink and mauve or pink, mauve and buff rock; b) 4a with brecciated mauve fragments in pink or buff layers or crenulations of mauve layers in the pink or buff layers; c) 4a or 4b with &gt;5% biotite or hornblende-rich mafic layers</p> <p>5 GABBRO - coarse grained mafic to ultramafic rock: a) Coronitic megagabbro having relict outlines of original pyroxene phenocrysts or oikocrysts and a massive to slightly foliated texture; b) amphibolite gneiss - foliated and generally layered rock with &gt;40% amphiboles</p> | <p>6 TONALITE - coarse grained intermediate rock with &gt;20% &lt;50% mafic minerals generally with some relict plagioclase phenocrysts and a strained to uniform gneissic fabric: a) variegated medium to dark grey and pale grey, regularly layered rock generally medium to coarse grained usually having patches of relict phenocrysts; b) porphyritic rock with elongated pink feldspar phenocrysts within a foliated to gneissic medium to coarse grained matrix of amphibole, feldspar and quartz</p> <p>7 MEGACRYSTIC GRANITE - Porphyritic rock with relict, strained, orthoclase phenocrysts within a medium to coarse grained matrix of quartz, plagioclase, orthoclase and biotite and/or hornblende: a) pink phenocrysts with prestrained diameters of &lt;math&gt;\approx 2\text{cm}&lt;/math&gt;; b) pink phenocrysts with prestrained diameters of &lt;math&gt;\approx 5\text{cm}&lt;/math&gt;; c) &gt;5% &lt;math&gt;\approx 20\%&lt;/math&gt; pink, fine to medium grained, syntectonic pegmatite; d) folding, stretching, rolling and rodding of preexisting phenocrysts and pegmatite stringers</p> <p>8 GRANITE PEGMATITE - fine to coarse grained quartz, microcline, plagioclase, and biotite-bearing rock varying in texture in response to its tectonic history: a) very coarsely crystalline, unstrained, post-tectonic rock; b) very coarse crystalline tectonic breccia; c) medium to coarse grained cataclastic rock with occasional large clasts; identical to unit 1d in appearance. No origin is inferred by this name. No relative ages are inferred by this order of the legend</p> |
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SYMBOL LIST

- Gneissic foliation: with dip; vertical; horizontal
- Joints: horizontal; vertical with average spacing; with dip, minimum and maximum spacing and average separation.
- Schistosity or foliation
- Lineation: with plunge
- Property boundary
- Highway, road
- Secondary road
- Abandoned road or trail
- Road allowance
- Railroad
- Concession line
- Lot line
- Electric power line
- Topographic contour (5 metre interval ASL)
- Swamp
- Clearing
- Outcrop
- Quarry
- Buildings
- Geological contact inferred



SCALE  
1:5,000  
feet



15284

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GRUNDY LAKE PROPERTY

GEOLOGICAL MAP