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REPORT ON THE 1989  
PHASE I GEOLOGICAL EXPLORATION PROGRAM  
BANCROFT AREA GRAPHITE PROPERTIES  
HERSCHEL AND LYNDOKH TOWNSHIPS, ONTARIO  
N.T.S.: 31E/1 AND 31F/4

PREPARED FOR  
HARRINGTON SOUND RESOURCES INC.

DERRY, MICHENER, BOOTH & WAHL

*Richard Evoy*  
 R. W. Evoy, M.Sc.

*M. D. Weber*  
 M. D. Weber, B.Sc. 2.11484

*Tim Dickson*  
 T. B. Dickson, B.Sc. 2.11836

*I. D. Trinder*  
 I. D. Trinder, M.Sc. 2.11619

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SUMMARY

Harrington Sound Resources Inc. holds 14 unpatented mining claims in two separate blocks in the Bancroft area, eastern Ontario. Access to all claims is excellent via secondary roads.

The aim of the 1989 summer exploration program was to delineate graphite mineralization on the properties and provide well defined targets for follow-up investigation. The program consisted of geological mapping, prospecting, trenching and channel sampling.

The geological mapping program was successful in delineating the various rock types underlying the properties and determining the spacial distribution of the graphitic horizons.

The results from grab samples taken from the Lyndoch property are very encouraging and have an average combined grade of 10.94% Cg. This value is consistent with a high-grade type deposit and, in combination with previously defined geophysical conductors, provided ample targets for further investigation by trenching.

The results of the trenching and channel sampling program on the Lyndoch property are encouraging and have outlined two isolated zones which may have potential for a small tonnage, high-grade disseminated flake deposit. Further work is warranted on the Lyndoch Township property.

The results from grab samples taken from the Herschel property were. on

(ii)

To enable a further assessment of the economic viability of the Lyndoch property, additional information is required. In our opinion, additional trenching and channel sampling is required to define the surficial continuity of the two graphitic horizons partially delineated by trenches T.4, T.5 and T.6 and trench T.1. The additional information gained from this program would provide the necessary geological data to enable a decision as to the viability of implementing a diamond drilling program.

As this proposal is a revision of the original contingent Phase II diamond drill program, the estimated costs are \$19,200 as detailed in Appendix 5 and detailed below:-

Prefield Planning	\$ 945
Mob/Demob	\$ 1,400
Trenching (all inclusive)	\$ 11,460
Data Compilation and Reporting	<u>\$ 3,560</u>
Subtotal	\$ 17,365
Contingency	<u>\$ 1,835</u>
TOTAL	<u>\$ 19,200</u>

Should the results of the revised Phase II trenching program be encouraging, a Phase II diamond drilling program of shallow definition holes would be recommended.

## INTRODUCTION

This report, prepared by Derry, Michener, Booth & Wahl (DMBW) on behalf of Harrington Sound Resources Inc., summarizes the results of the 1989 Phase I exploration program carried out on the Bancroft area graphite properties located in Herschel and Lyndoch townships, Ontario. The program was carried out in two stages; the first, from May 30 to June 8, 1989, consisted of geological mapping, prospecting and grab sampling and the second stage, carried out from July 16 to July 22, 1989, consisted of trenching and channel sampling. Linecutting and geophysical surveying were completed prior to the implementation of the geological program. Mr. R. W. Evoy and Mr. M. D. Weber, DMBW contract geologists, performed the first stage of the program and Mr. T. B. Dickson, DMBW contract geologist, performed the trenching and channel sampling. Mr. I. D. Trinder, DMBW staff geologist, supervised the program.

## PROPERTY LOCATION, DESCRIPTION AND ACCESS

Harrington Sound Resources Inc. has optioned two graphite properties in the Bancroft area of southeastern Ontario from Mr. A. Dubblestein of Maple Leaf, Ontario. The two properties are located in Lyndoch and Herschel townships; property locations with respect to Bancroft and major highways in the area are presented in Figure 1.

The Lyndoch Township property is located approximately 50 km northeast of Bancroft and 120 km due north of Belleville, Ontario. The property consists of five contiguous, unpatented mining claims in south-central Lyndoch Township (Figure 2). Access to the the property is via Highways 62 and 515 from Bancroft to Quadville, for a road distance of approximately 80 km to 85 km. Accommodations and some services are available in Combermere at the junction of Highways 62 and 515, 20 km west of Quadville.

From Quadville, drive 6 km south-southeast to the boundary between Concessions VII and VIII, and then east along a local logging road for

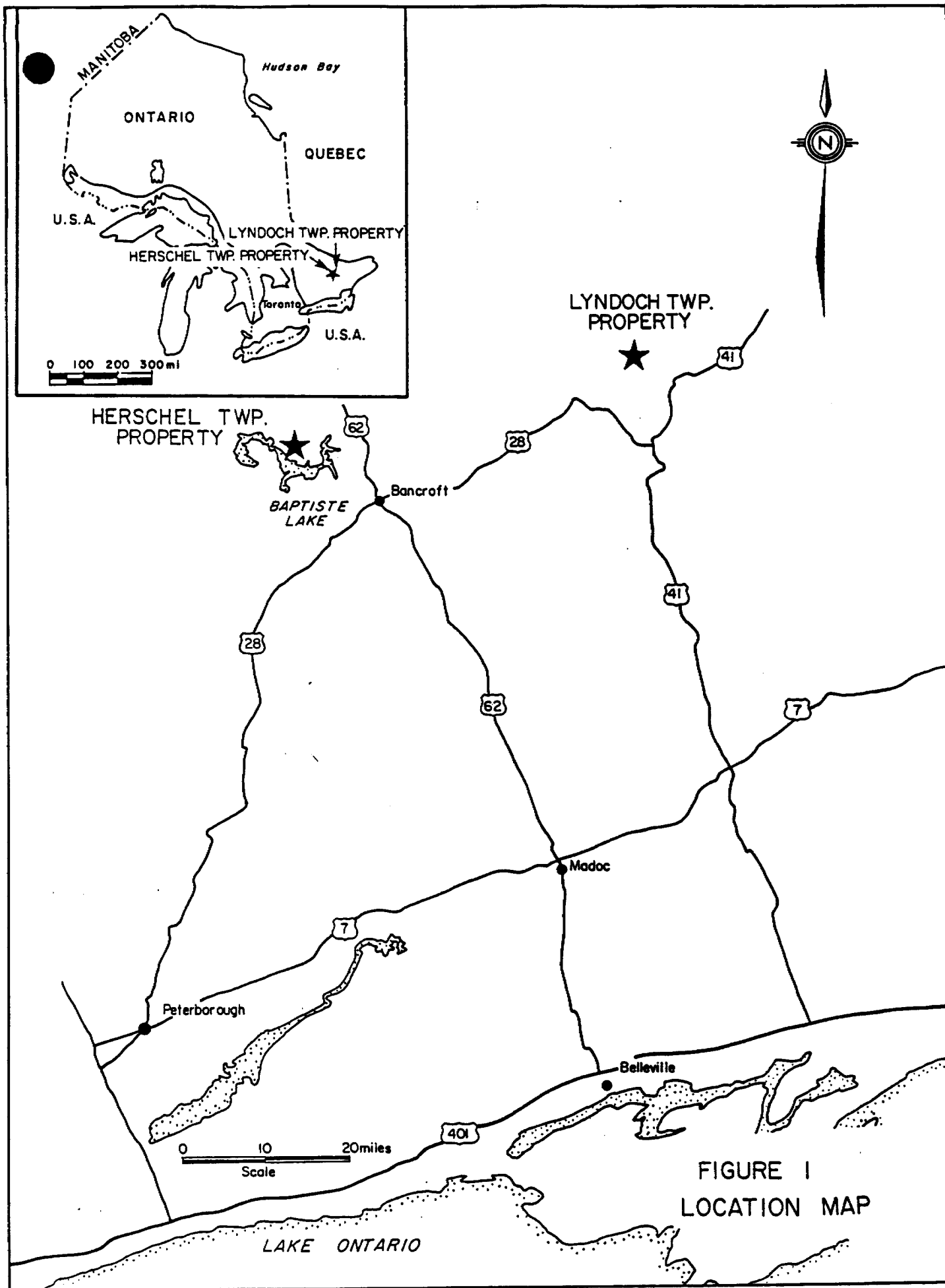


FIGURE 1  
LOCATION MAP

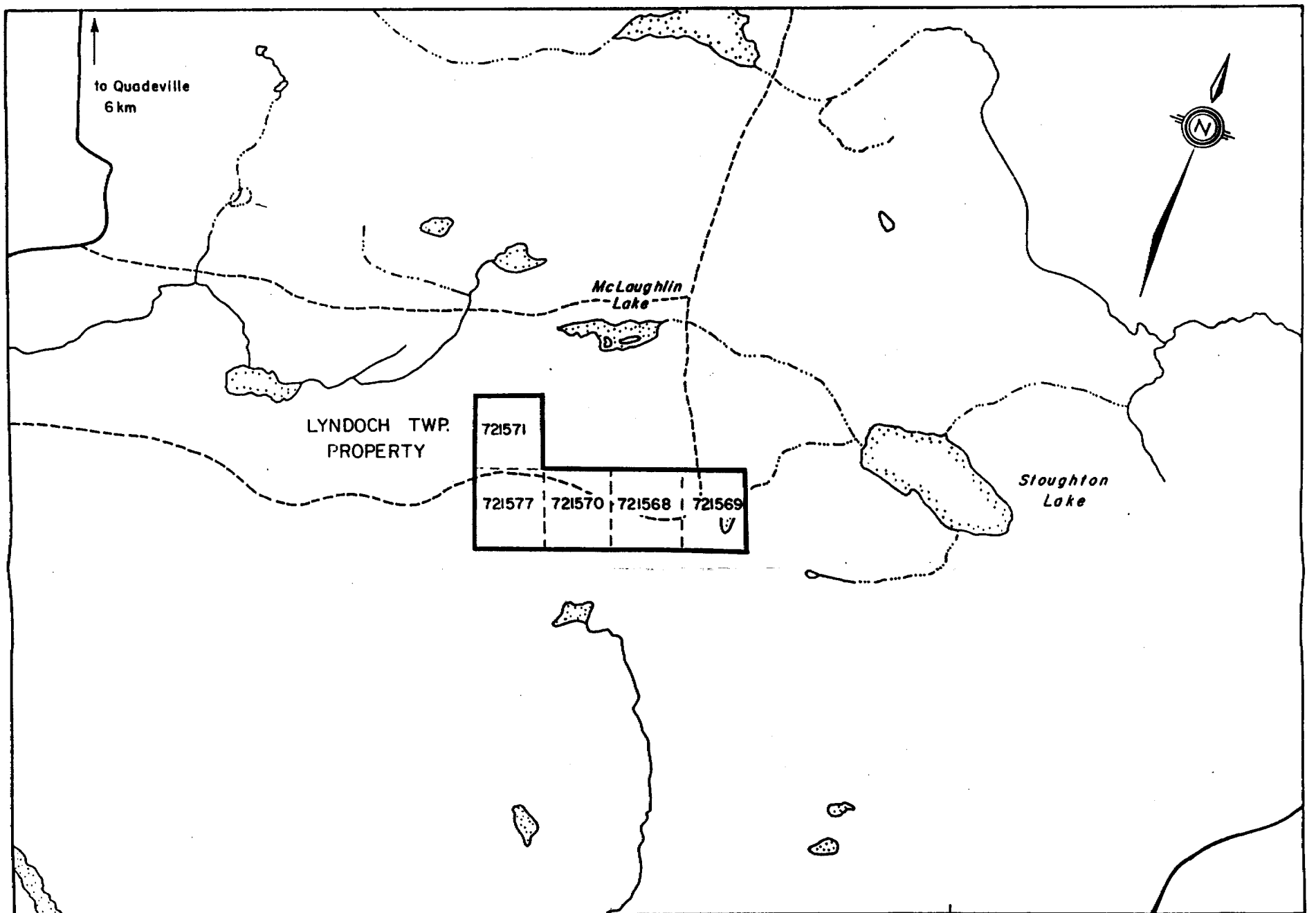
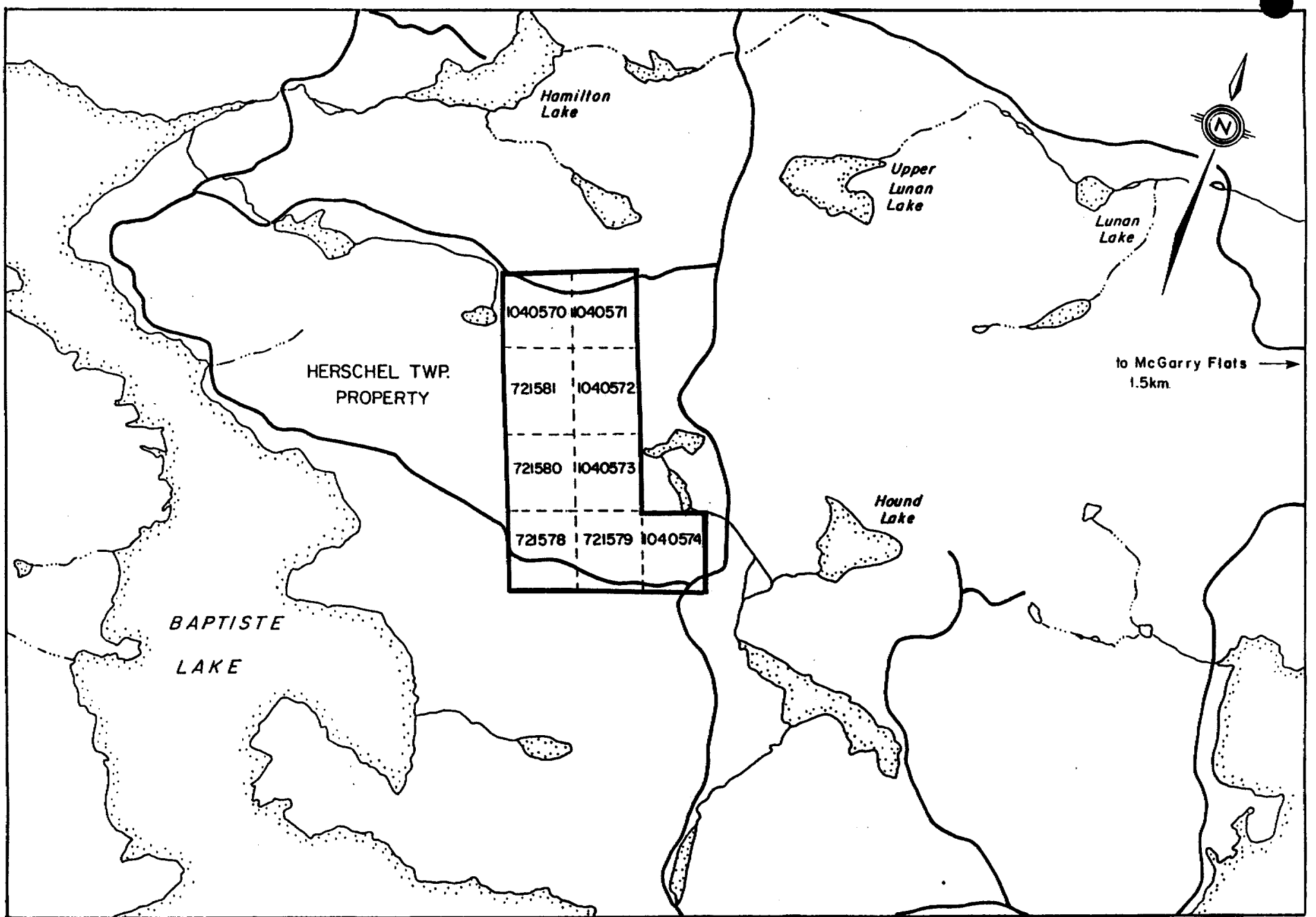


FIGURE 2  
CLAIM MAPS OF THE  
HERSCHEL TWP. AND LYNDOCH TWP.  
PROPERTIES

0 1 2 Km  
SCALE



approximately 4 km past McLaughlin Lake. At this point an old drill road leads 1 km south onto the property. This road is only passable by truck during optimal conditions, but is a simple walk during summer and an excellent snowmobile trail in winter.

Several moderate hills and easterly trending ridges characterize the Lyndoch property area. Topographic relief is locally steep but the entire property is readily traversible by foot. Vegetation consists primarily of open, mature mixed forest with only minor low-lying swampy areas.

The Herschel Township property is located in west-central Herschel Township, approximately 16 km northwest of Bancroft and 120 km north-northwest of the town of Belleville, Ontario. The property consists of nine contiguous unpatented mining claims in east-central Herschel Township, 1 km to 2 km east of the north arm of Baptiste Lake (Figure 2).

Access to the property by road is via Highway 62 north from Bancroft 17 km to the McGarry Flats access road, then west 5 km to McGarry Flats. From McGarry Flats, the property is accessed by a network of logging roads and footpaths.

The property is characterized by moderate to gentle hills in the south becoming progressively flatter to the north. Vegetation is mature mixed forest with moderate secondary growth.

DMBW has not examined title to the claims nor substantiated their physical boundaries and, accordingly, expresses no opinion as to validity of title and property description. A list of claims is provided in Table 1.

Table 1

LIST OF CLAIMS

<u>Claim Number</u>	<u>Recording Date</u>	<u>Anniversary Date*</u>
<u>Herschel Township (9 claims)</u>		
S0721578	March 14, 1988	March 14, 1991
S0721579	March 14, 1988	March 14, 1991
S0721580	March 14, 1988	March 14, 1991
S0721581	March 14, 1988	March 14, 1991
S01040570	March 14, 1988	March 14, 1991
S01040571	March 14, 1988	March 14, 1991
S01040572	March 14, 1988	March 14, 1991
S01040573	March 14, 1988	March 14, 1991
S01040574	March 14, 1988	March 14, 1991
<u>Lyndoch Township (5 claims)</u>		
S0721568	September 9, 1987	September 9, 1990
S0721569	September 9, 1987	September 9, 1990
S0721570	September 9, 1987	September 9, 1990
S0721571	September 9, 1987	September 9, 1990
S0721577	September 9, 1987	September 9, 1990

\* As of May 26, 1989.

## GEOLOGY OF THE GRENVILLE PROVINCE

The Grenville Province, a distinct structural entity, is some 1,600 km long and averages 400 km in width, constituting the southeastern part of the Canadian Shield. It is marked by the sudden transition from supracrustal rocks in the Superior Province to quartzo-feldspathic gneisses across the Grenville Front. The structural province is typified by its prevailing high grade of metamorphism, abundance of coarse-grained pegmatites and a preponderance of coarse marbles.

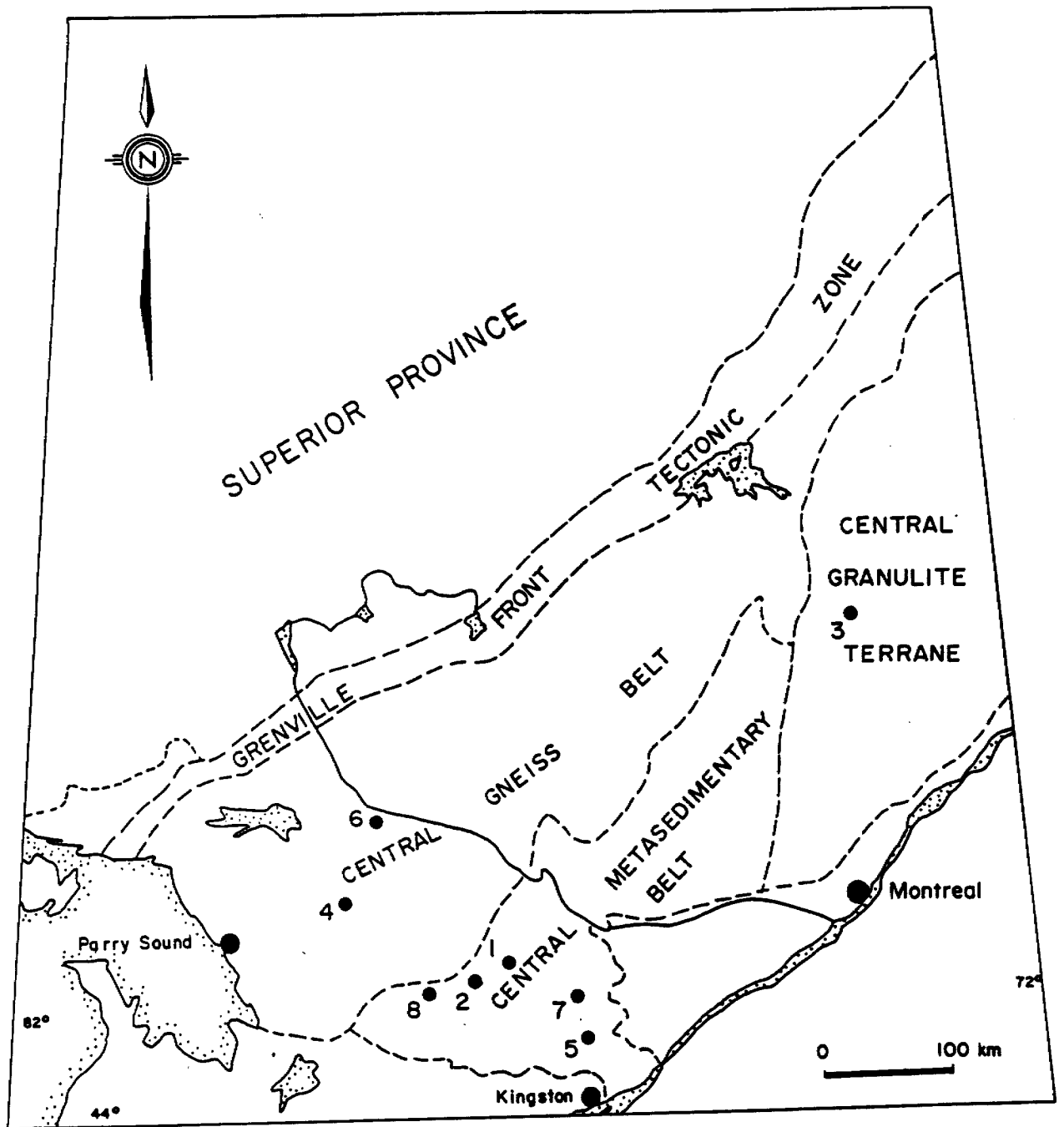
Both basement and cover rocks have been penetratively deformed and thoroughly recrystallized. Wavelengths of basement folds are on the order of 15 km with low amplitude, whereas supracrustal folding is characterized by greater amplitudes but wavelengths of only 4 km to 5 km. The dominant structural fabric is northeasterly trending and dips are predominantly to the south (Wynne-Edwards, 1972).

The Grenville Province in southeastern Ontario can be readily subdivided into three major structural zones; the Central Gneiss Belt, the Central Metasedimentary Belt and the Grenville Front or Grenville Front Tectonic Zone (Figure 3).

## GEOLOGY AND ECONOMICS OF ONTARIO GRAPHITE

Graphite is a naturally occurring, crystalline form of carbon typically found in carbonaceous rocks which have been subjected to metamorphic regimes characterized by very high temperatures, and moderate to high pressures. Graphite's unique physical and chemical properties result in a wide variety of industrial applications in refractories, foundries and manufacturing (Appendix 1).

In Ontario, graphite is common in both the Superior and Grenville structural provinces. In the Superior Province, graphite frequently exercises an important role in fixation of gold in Archean lode deposits and, consequently, has commonly been found in highly sheared carbonaceous metasediments and



- |                                  |  |
|----------------------------------|--|
| 1 Lyndoch Twp. Property          | 5 Stewart Lake Property                        |
| 2 Hershel Twp. Property          | 6 Princeton Resources Property                 |
| 3 Asbury Graphite de Quebec Mine | 7 Black Donald Mine                            |
| 4 Cal Graphite Property          | 8 Tonkin - Dupont - National Graphite Property |

**FIGURE 3** : Sketch map showing subdivisions of the Grenville Structural Province and graphite occurrences within the Central Metasedimentary Belt and the Central Gneiss Belt.

volcanics of the major gold camps. These zones are generally small and, therefore, have not been the focus of significant exploration or interest for their industrial minerals potential.

Due to the relative abundance of carbonaceous sediments and pervasively high metamorphic grade, the Grenville Province is the most significant source of graphite mineralization in Ontario.

The Grenville Front Tectonic Zone is predominantly composed of highly metamorphosed, pervasively sheared granitoid units. Carbon content is minimal and, therefore, the Grenville Front is known to contain virtually no graphite. Economically significant graphite occurrences and/or deposits in the Grenville Province are thus restricted to the Central Metasedimentary Belt (CMB) and the Central Gneiss Belt (Figure 3).

Graphite, in the Grenville Province, occurs in four distinct styles (Story and Vos, 1981):

- (1) Carbonate-hosted disseminated and massive deposits.
- (2) Clastic paragneiss-hosted disseminated deposits.
- (3) Vein-type deposits.
- (4) Graphite disseminated in pegmatite and intrusive syenitic rocks.

Only the first two styles of mineralization are volumetrically or economically significant in the Grenville Province. Vein-type deposits, although very high grade, have been far too small to develop to date and intrusive-hosted deposits are often large but are generally extremely low grade.

The Central Metasedimentary Belt is dominated by carbonaceous chemical metasediments. The most important graphite deposits in the CMB are relatively high grade, disseminated to massive deposits where the source of carbon ( $\text{CaCO}_3$ ) is much more concentrated than in clastic sediments. The

Kirkham (Stewart Lake Resources) deposit north of Kingston, Ontario, is a large, but otherwise typical graphite deposit of the CMB.

Recent drilling on the Kirkham deposit has outlined reserves of over 1.6 million tons grading better than 10% graphite (Northern Miner, August 14, 1989). A small, high grade deposit of this type is more likely to capture the relatively small, but more lucrative, coarse flake graphite markets.

The past-producing Black Donald Graphite Mine is a second example of mineralization in the CMB (Figure 3). The mine opened in 1896, and produced a total of 85,164 short tons of graphite from about 130,000 tons of ore. Average grade was 65% flake graphite (Storey and Vos, 1981). Production ceased in 1954.

The Central Gneiss Belt contains a large proportion of clastic metasediments and, for this reason, clastic paragneiss-hosted disseminated graphite deposits are prevalent. These deposits tend to be large and relatively lower grades than carbonate-hosted deposits. The Cal Graphite deposit south of North Bay, Ontario, is an example of this type of deposit. Recently published estimates of reserves are 29.5 million tons grading 4% graphitic carbon (Northern Miner, October 26, 1987).

#### EXPLORATION HISTORY

Mineral exploration in Lyndoch Township has been sporadically undertaken at least since the earliest 1900's, and probably dates from the mid-1800's. Minor molybdenum production from the Jamieson Mine 5.0 km east-northeast of Harrington Sound's property predates 1925. However, little documentation exists prior to the 1950's when the general area witnessed a renaissance fueled in part by interests in radioactive and rare earth elements, and base metals, as well as an increasing market for industrial minerals.

To date, the most significant program off the property is a diamond drill program completed by Noranda Mines in 1961 on the Simon Copper property

6.0 km south-southwest of Harrington Sound's property. This program consisted of 2,188 ft. of diamond drilling in 11 holes and intersected values of up to 2.6% Cu over 10.1 ft., and 1.6% Zn plus 0.4% Cu over 13.3 ft.

In 1979, Cominco completed 801 ft. of diamond drilling in four holes in a uranium exploration program 1.5 km north of the Lyndoch property. No significant mineralization was reported.

Significant graphite mineralization in Lyndoch Township has previously been documented at three different occurrences; the Beidel-Lyall, Dupuis Creek and Little-Bryan showings. The first two occurrences are marble-hosted, disseminated to massive graphite, whereas the Little-Bryan occurrence is hosted conformably in a pyritic gneiss.

During the early 1970's, two diamond drill holes (Q-1 and Q-2 on Map 89-39-02) were collared on the Lyndoch property to test a graphite showing. Drilled to the north, these holes intersected a variably mineralized sequence of gneiss, quartzite and marble. Hole Q-2 returned an average of 3.77% Cg over 4.18 m including 85 cm grading 8.57% Cg. Drill hole Q-1 also encountered minor graphitic mineralization; one interval assayed 3.26% Cg over 0.91 m and a second interval assayed 3.64% Cg over 0.88 m.

Although not mapped in detail, several graphite occurrences in Herschel Township were visited by Thompson (1943). The largest historic showing in the area occurs on the Herschel property in Concession X, Lot 24. This showing consists of flatly-dipping graphitic gneiss ranging from 1.2 m to 2.1 m in true width. A representative grab sample taken by Thompson returned 5.3% graphite. Much of the material reportedly contains "large thick flakes" of graphite but the mineralized zones exposed in the workings were too small for commercial development.

To the north of this showing a 5 m long adit was driven into the side of a ridge to expose a zone of disseminated graphite in a "leached gneiss" host rock. A chip sample taken by Thompson across the zone reportedly returned 6.4% graphite over 3.7 m. This adit was not encountered during the current program.

### PRESENT EXPLORATION PROGRAM

The geological program was carried out in two stages; the first, from May 30 to June 8, 1989, consisted of geological mapping, prospecting and grab sampling on both Lyndoch and Herschel properties and the second stage, from July 16 to July 22, consisted of follow-up trenching and channel sampling on the Lyndoch property. Please refer to Appendix 2 for the technical data statement regarding this program. The geological program was implemented subsequent to the completion of linecutting and complete geophysical coverage of the properties consisting of magnetometer and VLF-EM surveys. The results of the geophysical survey are presented in a separate DMBW report (Ref. 89-32).

Geological mapping was controlled by cut grids on each of the properties which provided easy access over their entire extent. The Herschel property was mapped at a scale of 1:5,000 (Map 89-39-01) and the Lyndoch property at a scale of 1:2,500 (Map 89-39-02) to gain an understanding of the spatial distribution of the graphitic horizons and the various rock types underlying the properties. All pertinent geological data was recorded on scaled sheets amenable to in-field use and, subsequently, transferred onto a base map.

A total of seven trenches were excavated on the Lyndoch property, ranging in length from 10 m to 30 m with an average width of 2 m (Map 89-39-02). The trenches were located on the basis of: site accessibility; the presence of grab samples with highly anomalous graphitic carbon values; and the presence of geophysical conductive trends which suggest the presence of a potential graphitic horizon. Trenches were excavated using a Case 580 backhoe and then manually cleaned to bedrock with shovels. The excellent exposures that resulted facilitated detailed mapping and sampling.

Sampling of the graphitic horizons on the properties was conducted using two methods. To sample the exposed trenches on the Lyndoch property, channels 3 cm wide and 6 cm deep were cut using a Sthil portable rocksaw equipped with a dry-cut diamond blade. The channels were then chipped out using a rock chisel and crack hammer and bagged in 1 m to 2 m intervals for assay. A total of



38 channel samples were taken; see Appendix 3 for the assay certificates. Table 2 provides a tabulation of the results from each of the trenches; all trenches were sampled from north to south.

Forty-two grab samples were taken from outcrop over the extent of the graphitic horizons on the properties where channel samples were either impractical or unnecessary. Outcrops were stripped to expose as much rock as possible and a grab sample was composited from rock chips collected from each outcrop, thereby providing for more representative results. Thirty-one samples were taken from the Herschel property and eleven from the Lyndoch property. Grab sample assay certificates are presented in Appendix 4 and illustrated on Maps 89-39-01 and -02.

In addition to graphitic carbon content, three grab samples from the Lyndoch property were analysed for copper, lead, zinc and molybdenum (Appendix 4) and eight trench samples were analysed for gold (Appendix 3). The results, however, are not economically significant.

Table 2  
**TABULATION OF ASSAY RESULTS**  
**FROM TRENCHES ON LYNDOSCH PROPERTY**

<u>Sample Number</u>	<u>Interval Length</u>	<u>Graphitic Carbon (wt.%)</u>	
Trench T.1-1	2 m	8.89	
T.1-2	1 m	3.18	
T.1-3	1 m	4.86	
T.1-4	1 m	4.78	
T.1-5	1 m	4.06	5.15% Cg over 6 m
T.1-6	1 m	1.41	
T.1-7	2 m	1.79	3.79% Cg over 11 m
T.1-8	2 m	1.31	
T.1-9	NS		
T.1-10	2 m	0.72	
T.1-11 to -17	NS		
Trench T.2-1 to -5	NS		
T.2-6 & 7	4 m	0.70	
Trench T.3-1	2 m	0.52	
T.3-2	2 m	0.33	
T.3-3 to -10	NS		
Trench T.4-1	2 m	2.96	
T.4-2	2 m	7.36	
T.4-3	2 m	3.89	
T.4-4	2 m	0.49	
T.4-5	2 m	3.21	
T.4-6	2 m	1.32	
T.4-7	2 m	1.50	
T.4-8	2 m	1.33	
T.4-9	2 m	5.04	
T.4-10	2 m	5.90	
T.4-11	2 m	7.96	3.72% Cg over 22 m
Trench T.5-1	2 m	4.35	
T.5-2	2 m	1.71	
T.5-3	2 m	16.83	
T.5-4	2 m	3.14	
T.5-5	2 m	1.35	
T.5-6	1 m	1.07	4.74% Cg over 11 m
Trench T.6-1	2 m	3.32	
T.6-2	2 m	4.70	
T.6-3	2 m	9.98	
T.6-4	2 m	2.99	
T.6-5	2 m	3.67	4.93% Cg over 10 m
Trench T.7-1	2 m	0.99	
T.7-2	2 m	0.23	
T.7-3	2 m	0.22	
T.7-4 to -7	NS		

## PROPERTY GEOLOGY AND MINERALIZATION

### Herschel Township Property

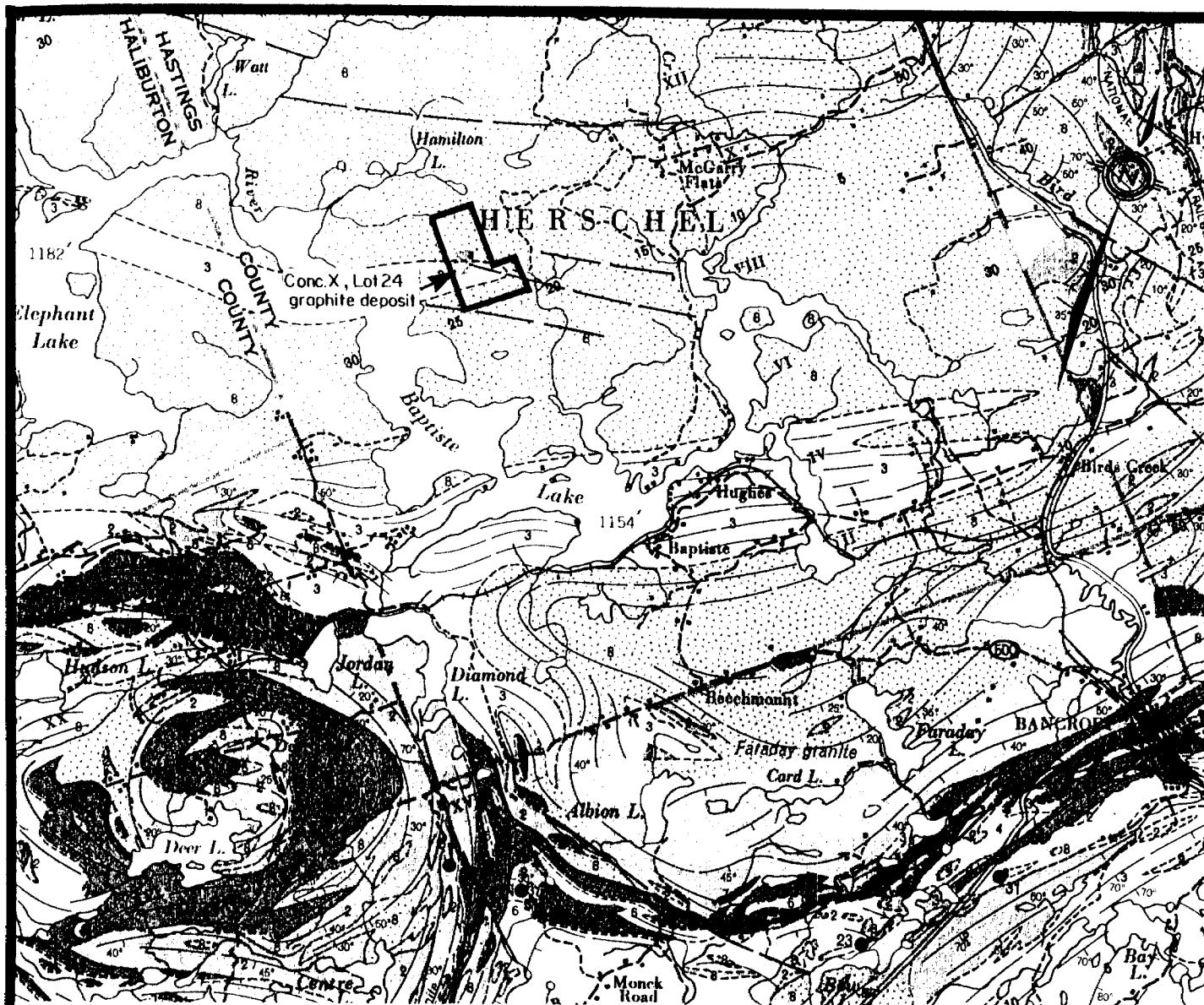
The Herschel Township property area is underlain by interbedded clastic metasediments and carbonaceous chemical metasediments (Bright, 1983). Biotite-rich, quartzose, pyroxene-rich and amphibole-rich sediments are all noted locally. The units strike approximately east-west and have variable dips; metamorphic grade is lower to middle amphibolite facies.

The supracrustal sequence is intruded by metamorphosed alkalic and granitic rocks. Graphite mineralization occurs within or adjacent to the carbonaceous metasediments and calcareous marbles along the flanks of the intrusives. Figure 4 is taken from a regional geology map published by the Ontario Department of Mines (1953) and summarizes the regional geology.

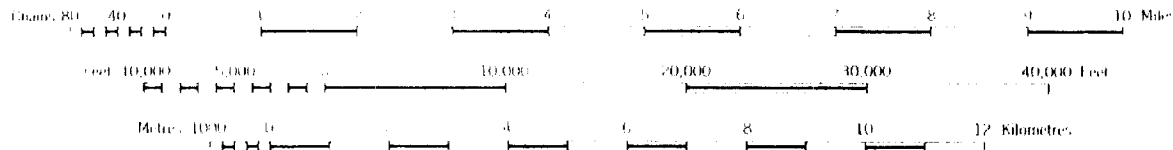
The predominant lithologies on the property consist of quartzo-feldspathic metasediments with variable amounts of ferro-magnesian contaminants, primarily biotite and/or hornblende. Gneissic fabrics are weakly developed, becoming slightly more definitive with increasing biotite contents. Original carbonate lithologies are present as coarsely crystalline calcitic marbles in the northernmost portion of the property (Map 89-39-01), or as dirty calc-silicate skarns in the central and southern portions of the property. Skarn mineralogy appears to be quartz + feldspar + hornblende + wollastonite(?) + tremolite + calcite.

Bedding on the Herschel property strikes generally east-northeasterly; however, the dominant foliation strikes north-south to northwesterly. This latter orientation likely reflects an overprinted metamorphic foliation related to emplacement of the Cardiff Dome on adjacent Cardiff Township (Figure 4).

Graphitic mineralization on the Herschel property is present in two distinct styles. The economically most significant is fine- to medium-flake disseminated graphite hosted in fine-grained, quartzo-feldspathic paragneisses. Assays in these units range from less than 1% Cg to 10.56% Cg in Sample No. 8620 in the northwestern corner of the property (Map 89-39-01). Distribution of



Scale 1:126,720 or 1 Inch to 2 Miles



## LEGEND

### PALEOZOIC

#### ORDOVICIAN

- 10 Limestone, dolomite, shale, basal clastics.

#### PRECAMBRIAN

##### PLUTONIC ROCKS

- 8 Granite, granite gneiss, granite pegmatite.
- 9 Hybrid granite gneiss, migmatite, granite pegmatite.
- 10 Syenite, syenite gneiss, syenite pegmatite.
- 11 Hybrid syenite gneiss, migmatite, syenite pegmatite.
- 6 Nepheline gneiss, nepheline pegmatite.
- 4 Diorite, gabbro, hornblende, pyroxenite, anorthosite; metagabbro, amphibolite.

##### SEDIMENTS

- 3 Crystalline limestone or dolomite, silicated limestone, lime-silicate rock, metapyroxenite, skarn.
- 2 Amphibolite, paragneiss, quartzite, argillite, pelitic schist, conglomerate, arkose.

##### VOLCANICS

- 1 Basic volcanics: pillow lava, andesite, basalt, amphibolite, hornblende gneiss or schist, chlorite schist, hornblende-chlorite schist; Acid volcanics: rhyolite, rhyodacite, tuff.

FIGURE 4

REGIONAL GEOLOGY MAP

HERSCHEL TOWNSHIP

grade is erratic and may vary by an order-of-magnitude within a single pit; however, semi-continuous horizons in excess of 200 m in length can be inferred.

The second style of mineralization consists of medium-coarse graphite flake hosted in calcite marbles. This mineralization is located in the northernmost property area, and appears to be restricted to a single, laterally continuous marble over at least 400 m. Within this unit, mineralization is discontinuous, and all assays are less than 2% Cg.

#### Lyndoch Township Property

The geology of the Lyndoch Township area is underlain by a series of hornblende-rich metasediments and granitic gneiss (Figure 5). Dominant lithologies on the Lyndoch property are a sequence of hornblende and quartz-feldspar-biotite gneisses, or paragneiss, interbedded with quartz-hornblende hornfels (Map 89-39-02). A hornblende metaquartzite dominates the extreme southwestern grid area and is locally intercalated with a hornblende gneiss, and intruded by medium to coarse-grained quartz-feldspar dykes. The latter occur as irregular lensoid inclusions in the hornblende metaquartzite. The units strike in a general east-west direction and dip moderately to steeply to the south. Metamorphic grade is lower to mid-amphibolite facies; however, float consisting of coarse kyanite schists attests to higher metamorphic grades locally.

Within the hornblende gneiss, hornblende-rich zones (80%) up to 1 m in width are present exhibiting sharp, distinct contacts with lesser hornblende zones (30%-50%). These zones, although locally irregular, are concordant with the general foliation of the property.

Four distinct, apparently discontinuous layers of calcite marble with variable quartz and/or muscovite contents have been identified on the property. These marbles appear to strike in a northeast/southwest direction and have interpreted strike lengths up to 500 m. The calcite marble mapped on the property dominates the extreme northwestern and eastern portions of the grid



area. Minor outcroppings of marble were also noted on L1E and L2E in the vicinity of the baseline.

A topographic high in the southwestern portion of the grid area is underlain by massive outcropping of a fine- to medium-grained quartzite containing up to 10% anhedral to subhedral hornblende porphyroblasts. A hornblende granitic gneiss and coarser-grained pegmatitic-textured unit are also intercalated with the hornblende metaquartzite, as described previously. Calcareous rims are locally present around the hornblende.

Geophysics has suggested the presence of a dominant northwest/southeast trending fault structure of approximately 1,300 m offset by one of three subparallel northeast/southwest trending fault structures (Woolham, 1989). Little evidence was visible in outcrop for dominant faulting or shearing; however, localized shearing is visible on an outcrop scale. Bull quartz veins are present within the gneissic and pegmatitic units but are barren.

Graphite mineralization on the Lyndoch property is present in both clastic sediments and, less frequently, in calcitic marbles. In the calcite marble it occurs as local disseminated coarse-grained flakes ranging from trace to 2%. In the quartz-feldspar biotite gneiss it is present as both medium-grained flake and as fine-grained disseminated graphite. Associated with this latter style of graphite mineralization is up to 10% to 15% sulphide mineralization, notably pyrite and pyrrhotite. Only minor sulphides are present elsewhere on the property.

## DISCUSSION OF RESULTS

### Herschel Township Property

The results from 31 grab samples taken over the extent of graphitic horizons delineated on the property are, with the exception of seven samples, all below 3% graphitic carbon and are not particularly encouraging. Graphite mineralization within the carbonate-hosted horizon at the northernmost portions

of the property occurs as discontinuous, isolated pods of disseminated medium-grade flake. Based on the lack of encouraging results from grab samples taken from this horizon, trenching was not undertaken.

In addition to the marble-hosted mineralization, four distinct and seemingly continuous graphitic horizons exist on the property, hosted within a gossanous quartz-feldspar-biotite paragneiss. These all occur on the western portions of the property centred on 3+50S, 3+00N, 9+50N and 11+50N, respectively. Samples taken from within these zones did reveal anomalous graphite values of up to 10.56% Cg; however, the results show that the grade is erratic, even at outcrop scale. This is best demonstrated by three samples taken within a single pit, blasted by previous exploration interests in the area. Two samples ranged in the order of 1.08% Cg to 1.50% Cg, while a third sample assayed 10.56% Cg. The nature of the graphite mineralization, is discontinuous and restricted to narrow graphite-rich lenses. Again, because of the lack of anomalous graphite values over definable widths and lengths, trenching was not undertaken on these horizons.

#### Lyndoch Township Property

The results of eleven grab samples taken from the property are very encouraging, ranging from 0.63% Cg to 34.06% Cg, with an average grade of all composite grab samples of 10.94% Cg (Map 89-39-02). The graphite mineralization is hosted by a gossanous quartz-feldspar-biotite-hornblende paragneiss (Unit 1a) that has been defined by surface mapping and sampling for a strike length in excess of 900 m. Graphite occurs as both medium to coarse grained disseminated flake and as very fine grained concentrations. Pyrite, and to a lesser degree pyrrhotite, occur throughout the unit in concentrations varying from trace to 15%. Grab samples taken approximately 50 m south of old drill hole Q-1 assayed 23.11% Cg and 14.47% Cg. These samples were taken on a steep north-facing slope and further investigation by trenching proved to be impossible, due to inaccessibility. Three samples collected from outcrop approximately 5 m north of old drill hole Q-2 assayed 34.06% Cg, 26.90% Cg and 4.94% Cg. A third



zone of interest exists at L2+60E/0+35N where samples taken from an old pit assayed 5.95% Cg and 3.30% Cg.

The results for each of the trenches, tabulated in Table 2 and illustrated on Map 89-39-02, are summarized below:

Trench 1:	3.79% Cg over 11 m including 5.15% over 6 m
Trench 4:	3.72% Cg over 22 m
Trench 5:	4.74% Cg over 11 m
Trench 6:	4.93% Cg over 10 m.

Trench 1 was excavated beside an old pit (L2+60E/0+35N) and confirmed the continuation of the graphite mineralization. A conductive trend, associated with this mineralization, continues both east and west of the trench and represents a possible target for follow-up trenching and/or diamond drilling. Trench 2 and Trench 3, located to test a conductive anomaly, failed to encounter any graphite mineralization. Trenches 4, 5 and 6, representing of a strike length of 140 m, all encountered significant graphite mineralization over widths of up to 22 m and represent an area for further investigation by trenching and/or diamond drilling. Trench 7 was located to test a conductor and the possible extension of the graphitic horizon as defined by samples 8640 and 8641 on L12+00E. No anomalous mineralization was encountered.

#### CONCLUSIONS AND RECOMMENDATIONS

The geological mapping program was successful in delineating the various rock types underlying the properties and determining the spacial distribution of the graphitic horizons.

The results from grab samples taken from the Lyndoch property are very encouraging and have an average combined grade of 10.94% Cg. This value is consistent with a high-grade type deposit and, in combination with previously

defined geophysical conductors, provided ample targets for further investigation by trenching.

The results of the trenching and channel sampling program on the Lyndoch property are encouraging and have outlined two isolated zones which may have potential for a small tonnage, high-grade disseminated flake deposit. Further work is warranted on the Lyndoch Township property.

The results from grab samples taken from the Herschel property were, on the whole, not encouraging. With a lack of anomalous values over defineable widths and strike lengths, follow-up trenching was not undertaken. No further work is recommended at this time for the Herschel Township property.

To enable a further assessment of the economic viability of the Lyndoch property, additional information is required. In our opinion, additional trenching and channel sampling is required to define the surficial continuity of the two graphitic horizons partially delineated by trenches T.4, T.5 and T.6 and trench T.1. The additional information gained from this program would provide the necessary geological data to enable a decision as to the viability of implementing a diamond drilling program.

As this proposal is a revision of the original contingent Phase II diamond drill program, the estimated costs are \$19,200 as detailed in Appendix 5 and detailed below:-

Prefield Planning	\$ 945
Mob/Demob	\$ 1,400
Trenching (all inclusive)	\$ 11,460
Data Compilation and Reporting	<u>\$ 3,560</u>
Subtotal	\$ 17,365
Contingency	<u>\$ 1,835</u>
TOTAL	<u>\$ 19,200</u>

Should the results of the revised Phase II trenching program be encouraging, a Phase II diamond drilling program of shallow definition holes would be recommended.

REFERENCES

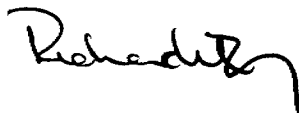
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CERTIFICATE OF QUALIFICATION

I, Richard W. Evoy, of 360 Ridelle Avenue, Apt. 1117, Toronto, Ontario, do hereby certify that:-

1. I am an exploration geologist working as a consultant for Derry, Michener, Booth & Wahl, Consulting Geologists and Engineers, of Toronto.
2. I am a graduate of Lake Superior State University, Sault Ste. Marie, Michigan, in Honours Geology with the degree of B.Sc. in 1984 and of the University of Missouri-Columbia with the degree M.Sc. in 1988/89.
3. I have been practising my profession since 1984.
4. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the properties or securities of Harrington Sound Resources Inc.
5. The statements contained in this report and the conclusions and recommendations made are based upon my review of all data available. I have visited the properties and conducted or supervised all the field mapping.
6. I hereby consent to the use of this report in a Statement of Material Facts of the Company for the preparation of a prospectus for submission to the Ontario Securities Commission and other regulatory authorities.

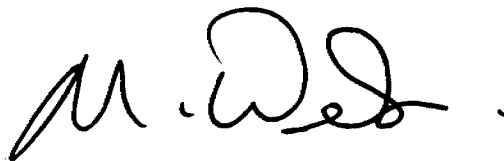
  
R. W. Evoy, M.Sc.

Toronto, Ontario  
August 18, 1989

CERTIFICATE OF QUALIFICATION

I, Michael D. Weber, residing at 84 Birch Avenue, Toronto, Ontario, do hereby certify that:-

1. I am an exploration geologist under contract to Derry, Michener, Booth & Wahl, Consulting Geologists and Mining Engineers, Toronto, Ontario.
2. I am a graduate of Queen's University in Honours Geology with the degree of Bachelor of Science, 1985.
3. I have been practising my profession since graduation.
4. I have not received, nor do I expect to receive, any interest, direct or indirect, in the properties or securities of Harrington Sound Resources Inc.
5. I have visited the properties.
6. I hereby consent to the use of this report in a Statement of Material Facts of the company and for the preparation of the prospectus for submission to the Ontario Securities Commission and other regulatory authorities.



M. D. Weber, B.Sc.

Toronto, Ontario  
August 18, 1989

CERTIFICATE OF QUALIFICATION

I, Timothy B. Dickson, of 105-212 St. George Street, Toronto, Ontario, do hereby certify that:

- (1) I am an exploration geologist working as consultant for Derry, Michener, Booth & Wahl, Consulting Geologists and Engineers of Toronto.
- (2) I am a graduate of the University of Western Ontario, London, Ontario, in Honours Geology with the degree of B.Sc. in 1985.
- (3) I have been practising my profession since 1982 and full-time since graduating in 1985.
- (4) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the properties or securities of Harrington Sound Resources Inc.
- (5) The statements contained in this report and the conclusions and recommendations made are based upon my review of all data available. I have visited the properties.
- (6) I hereby consent to the use of this report in a Statement of Material Facts of the Company for the preparation of a prospectus for submission to the Ontario Securities Commission and other regulatory authorities.

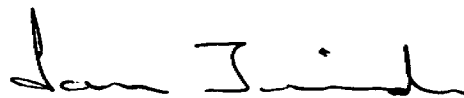
  
T. B. Dickson, B.Sc.

Toronto, Ontario  
August 18, 1989

CERTIFICATE OF QUALIFICATION

I, Ian D. Trinder, of Apt. 2025, 30 Denton Avenue, Scarborough, Ontario do hereby certify that:-

1. I am an exploration geologist employed with Derry, Michener, Booth & Wahl, Consulting Geologists and Engineers of Toronto.
2. I graduated from the University of Manitoba in 1983 with a degree of Bachelor of Science, Honours Geology and from the University of Western Ontario in 1989 with a degree of Master of Science, Geology. I have been practising my profession since graduation.
3. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the properties or securities of Harrington Sound Resources Inc.
4. The statements contained in this report and the conclusions and recommendations made are based upon my review of all data available. I have not visited the properties.
5. I hereby consent to the use of this report in a Statement of Material Facts of the Company for the preparation of a prospectus for submission to the Ontario Securities Commission and other regulatory authorities.



I. D. Trinder, M.Sc.

Toronto, Ontario  
August 18, 1989



APPENDIX 1

GRAPHITE - TYPES, PRICES, USES AND MARKET ABILITY

(From: Hartwick, 1988)

APPENDIX 1GRAPHITE - TYPES, PRICES, USES AND MARKET ABILITY

Graphite occurs in five basic forms of which three occur naturally and two are produced synthetically. The three natural forms of graphite are amorphous, crystalline vein and crystalline flake. Synthetic graphite is available in powder and fibre form and can be tailored to a particular consumer's needs. The pricing and marketability of all types of graphite is dependant upon the grain size and the purity of the product being sold with the coarsest and more pure varieties commanding the high prices. As the price for a particular form of graphite is often negotiated between the supplier and consumer, a standard pricing index for graphite is difficult to establish.

The three naturally occurring forms of graphite are categorized strictly according to grain size and purity as all varieties of the mineral are chemically and structurally identical. Arranged from coarse to fine, the three naturally occurring forms of graphite are crystalline vein, crystalline flake and amorphous. A listing of various types of naturally occurring graphite and their respective grain size and price ranges is given in Table 1-1.

Synthetic graphite is produced in powder and fibre form to meet specific industry demands. Synthetic graphite powder is made from petroleum coke in high temperature furnaces (2200°C) and is used in industry when pure homogeneous graphite is required (Garland, 1987). Synthetic graphite fibres are produced by the pyrolyzation of threads spun from rayon, polyacrylonitrile, or pitch materials (Garland, 1987). The uses of these strong lightweight fibres range from parts on aircraft and ships to sporting goods. As both the synthetic powder and fibres are specialty products, they tend to be extremely expensive and cannot be priced on a bulk form basis.

Graphite has a wide range of industrial uses which take advantage of one or more of the unique properties of this mineral. Some of the characteristics that this mineral possesses are: high thermal conductivity; high thermal shock

resistance, non-weltability; anisotropic conduction of heat and electricity; resistance to oxidation; and an increase in strength with temperature (Garland, 1987). The uses and breakdown of amount of graphite used in each case are given on Figure 3 and the specific type(s) of graphite required for each particular use is given in Table 1-2.

**Table 1-1: Price Ranges for Graphite Varieties**  
 (After Garland, 1987)

	<u>US\$/tonne</u>
Crystalline lump, 92/97% C	\$550 - \$1,100
Crystalline large flake, 85/90% C	\$630 - \$1,000
Crystalline medium flake, 85/90% C	\$490 - \$860
Crystalline small flake, 80/95% C	\$300 - \$800
Powder (200 mesh), 80/85% C	\$250 - \$275
90/92% C	\$410 - \$460
95/97% C	\$550 - \$750
97/99% C	\$750 - \$1,000
Amorphous Powder, 80/85% C	\$175 - \$350

**Table 1-2: Specifications for Graphite Production**

<u>Use</u>	<u>Size &amp; Type</u>	<u>Carbon Content</u>
<b>REFRACTORIES</b>		
<u>Crucibles</u>		
a) Clay/Graphite	- flake - 45% must be flake larger than 250 um	90% C
b) Silicon-carbide/ Graphite	- flake - 30% must be medium-large flake - larger than 150 um	80% C
<u>Mag-Carbon Bricks</u>	- flake - medium-large - 150 um - 170 um - aspect ratio 20:1	87% - 90% C
<u>Alumina-Carbon</u>	- flake - larger than 420 um	85% C
<b>POWDERS</b>		
<u>Brake Linings</u>	- flake, vein, synthetic - often blended 60:40 natural to synthetic ratio - flake smaller than 75 um - synthetic granules 1 mm	98% C (90% C if abrasives very low)
<u>Batteries</u>		
a) Dry Cell zinc/carbon	- ground natural graphite - smaller than 75 um	88% C
b) Alkaline	- ground natural graphite or synthetic - 5 - 75 um	98% C
<u>Brushes</u>	- fine powdered graphite - natural (vein or amorphous) or synthetic - 150 um or less - prefer finer than 50 um	95% - 99% C

**Table 1-2: Specifications for Graphite Production**  
(Continued)

<u>Use</u>	<u>Size &amp; Type</u>	<u>Carbon Content</u>
<u>Powder Metallurgy</u> <u>(Sintering)</u>	- fine powdered graphite - natural or synthetic - average particle size 5 um	96% - 99% C (98% - 99% preferred)
<u>Lubricants</u>	- fine natural flake - 50 - 150 um	96% - 99% C used, 98% - 99% preferred
<u>Paints and Conductive</u> <u>Coatings</u>	- amorphous - powdered flake - very finely ground	50% C (amor.) 70% C (powder flake)
<u>Pencils</u>	- amorphous	80% - 82% for cheaper leads 90%+ for better pencils
<u>Foundries</u>		
a) <u>Facings</u>	- vein or amorphous - dust from refining mills - reground rejected graphites - 50 - 75 um	40% - 70% C
b) <u>Recarburising</u> <u>Steel</u>	- synthetic, amorphous, and petroleum coke (depends (on availability)	- high purity desirable
<u>Mechanical Engineering</u> <u>Components</u>	- amorphous (temp <300°C) - electrographitized material (>300°C)	- purity depends on product
<u>Insulating Agents</u>	- flake graphite treated chemically (Dow Chemical pat.) - weakens bonds between plates - allows graphite to expand when heated - 1.8 mm to 250 um	85% C min.

APPENDIX 2

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) Geological  
Township or Area HERSCHEL AND ~~LYNDON~~ LYNDON Twp.  
Claim Holder(s) Harrington Sound Resources Inc  
500-67 Richmond St. W Toronto  
Survey Company Derry, Michener, Booth & Wahl  
Author of Report TIM DICKSON  
Address of Author 410-20 Richmond St. E. Toronto  
Covering Dates of Survey May 30/89 → July 22/89  
(linecutting to office)  
Total Miles of Line Cut \_\_\_\_\_

SPECIAL PROVISIONS  
CREDITS REQUESTED

ENTER 40 days (includes  
line cutting) for first  
survey.

ENTER 20 days for each  
additional survey using  
same grid.

	DAYS per claim
Geophysical	
-Electromagnetic _____	
-Magnetometer _____	
-Radiometric _____	
-Other _____	
Geological <u>20</u>	
Geochemical _____	

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

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: Aug 18/89 SIGNATURE: *Tim Dickson*  
Author of Report or Agent

Res. Geol. \_\_\_\_\_ Qualifications 2.11836

Previous Surveys

File No.	Type	Date	Claim Holder

**MINING CLAIMS TRAVERSED**  
List numerically  
HERSCHEL

SO	721578
(prefix)	(number)
	721579
	721580
	721581
SO	1040570
	1040571
	1040572
	1040573
	1040574
	<u>LYNDON</u>
SO	721568
	721569
	721570
	721571
	721577
<b>TOTAL CLAIMS</b> <u>14</u>	

If space insufficient, attach list



APPENDIX 3

CERTIFICATES OF ANALYSIS - CHANNEL SAMPLES



# ASSAYERS ONTARIO LABORATORIES

A DIVISION OF ASSAYERS CORPORATION LTD.

33 CHAUNCEY AVENUE, TORONTO, ONTARIO M8Z 2Z2 • TELEPHONE (416) 239-3527

FAX (416) 239-4012

## Certificate of Analysis

Certificate No. DMBW-07/02/9081

Date: July 26, 1989

Received 40 Samples of Rock

Submitted by Derry, Michener, Booth & Wahl Att'n: Mr. Tim Dickson  
c.c. Mr. Ian Trinder

PROJECT: HSR 104

Sample No.	Graphitic C %	Sample No.	Graphitic C %
T 1-1	8.89	T4 -7	1.50
-2	3.18	-8	1.33
-3	4.86	-9	5.04
-4	4.78	-10	5.90
-5	4.06	T4 -11	7.96
-6	1.41	T5 -1	4.35
-7	1.79	-2	1.71
-8	1.31	-3	16.83
T 1-10	.72	-4	3.14
R-1	3.30	-5	1.35
R-2	5.95	T5 -6	1.07
T2-67	.70	T6 -1	3.32
T3-1	.52	-2	4.70
T3-2	.33	-3	9.98
T4-1	2.96	-4	2.99
-2	7.36	-5	3.67
-3	3.89	T6 -5A	.92
-4	.49	T7 -1	.99
-5	3.21	-2	.23
T4-6	1.32	T7 -3	.22

ASSAYERS ONTARIO LABORATORIES

Per \_\_\_\_\_

J. van Engelen Mgr.



# ASSAYERS ONTARIO LABORATORIES

A DIVISION OF ASSAYERS CORPORATION LTD.

33 CHAUNCEY AVENUE, TORONTO, ONTARIO M8Z 2Z2 • TELEPHONE (416) 239-3527  
FAX (416) 239-4012

## Certificate of Analysis

Certificate No. DMBW-07/01/9081 Date: July 26, 1989

Received \_\_\_\_\_ 8 Samples of Rock

Submitted by Derry, Michener, Booth & Wahl Att'n: Mr. T. Dickson  
c.c. Mr. Ian Trinder

Project: HSR 104

Sample No.	Au ppb
T 1-2	35
-3	20
-4	15
T 1-5	40
T 4-2	22
-3	25
-4	19
T 4-5	38

ASSAYERS ONTARIO LABORATORIES

Per \_\_\_\_\_

*J. van Engelen*  
J. van Engelen Mgr.

APPENDIX 4

CERTIFICATES OF ANALYSIS - GRAB SAMPLES



# ASSAYERS ONTARIO LABORATORIES

A DIVISION OF ASSAYERS CORPORATION LTD.

33 CHAUNCEY AVENUE, TORONTO, ONTARIO M8Z 2Z2 • TELEPHONE (416) 239-3527  
FAX (416) 239-4012

## Certificate of Analysis

Certificate No. DMBW-06/8947 Date: June 16, 1989  
 Received \_\_\_\_\_ 40 \_\_\_\_\_ Samples of Rock  
 Submitted by Derry, Michener, Booth & Wahl Att'n: Mr. Richard Evoy

Sample No.	Graphitic C %	Sample No.	Graphitic C %
8601	2.60	8621	2.45
8602	1.35	8622	3.26
8603	1.74	8623	1.00
8604	4.06	8624	.63
8605	3.63	8625	2.01
8606	.63	8631	5.84
8607	2.76	8632	3.93
8608	1.71	8633	1.79
8609	1.39	8634	1.72
8610	1.37	8635	1.73
8611	1.10	8636	1.01
8612	.74	8637	.09
8613	3.37	8638	1.60
8614	1.32	8639	1.17
8615	.39	8640	14.47
8616	1.37	8641	23.11
8617	1.03	8642	.70
8618	1.08	8643	26.90
8619	1.50	8644	4.94
8620	10.56	8645	34.06

ASSAYERS ONTARIO LABORATORIES

Per \_\_\_\_\_

J. van Engelen Mgr.



# ASSAYERS ONTARIO LABORATORIES

A DIVISION OF ASSAYERS CORPORATION LTD.

33 CHAUNCEY AVENUE, TORONTO, ONTARIO M8Z 2Z2 • TELEPHONE (416) 239-3527  
FAX (416) 239-4012

## Certificate of Analysis

Certificate No. DMBW-06/02/8947

Date: June 16, 1989

Received \_\_\_\_\_ 40 Samples of Rock

Submitted by Derry, Michemer, Booth & Wahl Att'n: Mr. Richard Evoy

Sample No.	Cu ppm	Pb ppm	Zn ppm	Mo ppm
8643	320	69	45	42
8644	148	63	40	19
8645	678	95	56	54

ASSAYERS ONTARIO LABORATORIES

Per \_\_\_\_\_

*J. van Engelen*  
J. van Engelen Mgr.

APPENDIX 5

PROPOSED TRENCHING PROGRAM - DETAILED BUDGET

DEPPY, MICHELE BOOTH & WAHL

FINEST HOUR

HARRINGTON SOUND BANCROFT-TRENCHING

REPORT DATE 17AUG89 RUN NO. 5  
14:06

COST CONTROL ACTIVITY REPORT

START DATE 4SEP89 FIN DATE 24SEP89

PROJECT - DETAILED COST PER ACTIVITY

DATA DATE 4SEP89 PAGE NO. 1

ACTIVITY ID	RESOURCE	COST ACCOUNT	ACCOUNT CATEGORY	UNIT MEAS	BUDGET	PCT CMP	ACTUAL TO DATE	ACTUAL THIS PERIOD	ESTIMATE TO COMPLETE	FORECAST	VARIANCE
-----											
HSR104A101	PREFIELD PLANNING										
RD	3 ES	4SEP89	EF	6SEP89 LS	4SEP89 LF	6SEP89 TF	0				
GEO PROJ	M10	L		/HR	945.00	0	.00	.00	945.00	945.00	.00
TOTAL :					945.00	0	.00	.00	945.00	945.00	.00
-----											
HSR104A401	MOBILIZATION										
RD	1 ES	7SEP89	EF	7SEP89 LS	7SEP89 LF	7SEP89 TF	0				
GEO PROJ	F38	L		/HR	315.00	0	.00	.00	315.00	315.00	.00
GEO JR	F38	L		/HR	245.00	0	.00	.00	245.00	245.00	.00
MEALS	8300	X		/MD	50.00	0	.00	.00	50.00	50.00	.00
TRUCK	8304	X		/DAY	90.00	0	.00	.00	90.00	90.00	.00
TOTAL :					700.00	0	.00	.00	700.00	700.00	.00
-----											
HSR104A402	TRENCHING										
RD	10 ES	8SEP89	EF	17SEP89 LS	8SEP89 LF	17SEP89 TF	0				
GEO PROJ	F36	L		/HR	3150.00	0	.00	.00	3150.00	3150.00	.00
GEO JR	F36	L		/HR	2450.00	0	.00	.00	2450.00	2450.00	.00
LODGING	8322	X		/MD	800.00	0	.00	.00	800.00	800.00	.00
MEALS	8313	X		/MD	500.00	0	.00	.00	500.00	500.00	.00
TRUCK	8304	X		/DAY	900.00	0	.00	.00	900.00	900.00	.00
BACKHOE	8320	X		/HR	1280.00	0	.00	.00	1280.00	1280.00	.00
RSAW+KIT	8320	X		UNIT	300.00	0	.00	.00	300.00	300.00	.00
OFF SUP	8314	X		UNIT	30.00	0	.00	.00	30.00	30.00	.00
FD SUP	8315	X		UNIT	250.00	0	.00	.00	250.00	250.00	.00
RKASSAY	8332	X		/SAM	1800.00	0	.00	.00	1800.00	1800.00	.00
TOTAL :					11460.00	0	.00	.00	11460.00	11460.00	.00
-----											
HSR104A406	DEMOBILIZATION										
RD	1 ES	18SEP89	EF	18SEP89 LS	18SEP89 LF	18SEP89 TF	0				
GEO PROJ	F38	L		/HR	315.00	0	.00	.00	315.00	315.00	.00
GEO JR	F38	L		/HR	245.00	0	.00	.00	245.00	245.00	.00
MEALS	8313	X		/MD	50.00	0	.00	.00	50.00	50.00	.00
TRUCK	8304	X		/DAY	90.00	0	.00	.00	90.00	90.00	.00
TOTAL :					700.00	0	.00	.00	700.00	700.00	.00



DERRY, MICHELE BOOTH & WAHL

FINEST HOUR

HARRINGTON SOUND BANCROFT-TRENCHING

REPORT DATE 17AUG89 RUN NO. 5  
14:06

COST CONTROL ACTIVITY REPORT

START DATE 4SEP89 FIN DATE 24SEP89

PROJECT - DETAILED COST PER ACTIVITY

DATA DATE 4SEP89 PAGE NO. 2

ACTIVITY ID	RESOURCE	COST ACCOUNT	ACCOUNT CATEGORY	UNIT MEAS	BUDGET	PCT CMP	ACTUAL TO DATE	ACTUAL THIS PERIOD	ESTIMATE TO COMPLETE	FORECAST	VARIANCE
-----											
MSR104A409	DATA COMPILATION & REPORT										
RD	5	ES	19SEP89	EF	23SEP89	LS	19SEP89	LF	23SEP89	TF	0
GEO PROJ	M10	L		/HR	1575.00	0	.00	.00	1575.00	1575.00	.00
GEO SR	M10	L		/HR	385.00	0	.00	.00	385.00	385.00	.00
DRAFT	M21	L		/HR	750.00	0	.00	.00	750.00	750.00	.00
WPROCESS	M22	L		/HR	750.00	0	.00	.00	750.00	750.00	.00
PRINT/RE	8356	X		UNIT	100.00	0	.00	.00	100.00	100.00	.00
TOTAL :					3560.00	0	.00	.00	3560.00	3560.00	.00
-----											
MSR104A999	CONTINGENCY										
RD	0	ES	24SEP89	EF	24SEP89	LS	24SEP89	LF	24SEP89	TF	0
CONTING	CNTG	X			1835.00	0	.00	.00	1835.00	1835.00	.00
TOTAL :					1835.00	0	.00	.00	1835.00	1835.00	.00
REPORT TOTALS					19200.00	0	.00	.00	19200.00	19200.00	.00

1989  
SEP

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

SCHEDULE - TRENCHING PROGRAM

PREFIELD PLANNING

MOBILIZATION




TRENCHING

DEMOBILIZATION

DATA COMPILATION & REPORT

DERRY, MICHENER, BOOTH & WAHL

5 - 3

Inactive  
 Activity Bar/Early Dates  
 Critical Activity  
 Progress Bar

Planning Unit : Day

DERRY, MICHENER, BOOTH & WAHL  
 HARRINGTON SOUND BANCROFT-TRENCHING  
 BAR CHART SCHEDULE

Sheet 1 of 1

TRENCHING PROGRAM

Date	Revision	Checked	Approved

Primavera Systems, Inc 1984-1988

Project Start : 4SEP89  
 Project Finish: 24SEP89

Date Date: 4SEP89  
 Plot Date: 17AUG89



DOCUM  
W89



31E01NW0025 2.12748 HERSCHEL

W8909-79

Mining Act

- Do not use shaded areas below.

Type of Survey(s) <b>GEOLOGICAL</b> ✓	Township or Area <b>HERSCHEL &amp; LYNDROCH</b>
Claim Holder(s) <b>HARRINGTON SOUND RESOURCES INC.</b>	Prospector's Licence No. <b>(63440)</b>
Address <b>SUITE 500 - 67 RICHMOND ST. WEST TORONTO ONTARIO M5H 1Z5</b> ✓	
Survey Company <b>DERRY, MICHENER, ROOTH &amp; WAHL</b>	Date of Survey (from & to) <b>30 05 89 22 07 89</b>
Name and Address of Author (of Geo-Technical report) <b>ENCY, WEBER DICKSON &amp; TRINDER 410-20 RICHMOND ST EAST TORONTO</b>	

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence) **MSC 2R9**

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
For each additional survey: using the same grid: Enter 20 days (for each)	Geological	<b>20</b>
	Geochemical	

Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits	Geophysical	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
HERSCHEL & LYNDROCH	SO 721578				
	721579				
	721580				
	721581				
	1040570				
	1040571				
	1040572				
	1040573				
	1040574				
	SO 721568				
721569					
721570					
721571					

RECEIVED  
2 1989  
LANDS SECTION

MINING GEOLOGICAL SURVEY  
ASSESSMENT FILES  
OFFICE

SOUTH WEST ONTARIO DIVISION  
RECEIVED  
AUG 21 1989  
AM 7,8,9,10,11,12,13,14,15,16 PM

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures \$  ÷ 15 = Total Days Credits

Instructions  
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Total number of mining claims covered by this report of work. **14**

Date **AUGUST 21 '89** Recorded Holder or Agent (Signature) *[Signature]*

For Office Use Only

Total Days Cr. Recorded **280** Date Recorded **August 21, 1989** Mining Recorder *[Signature]*

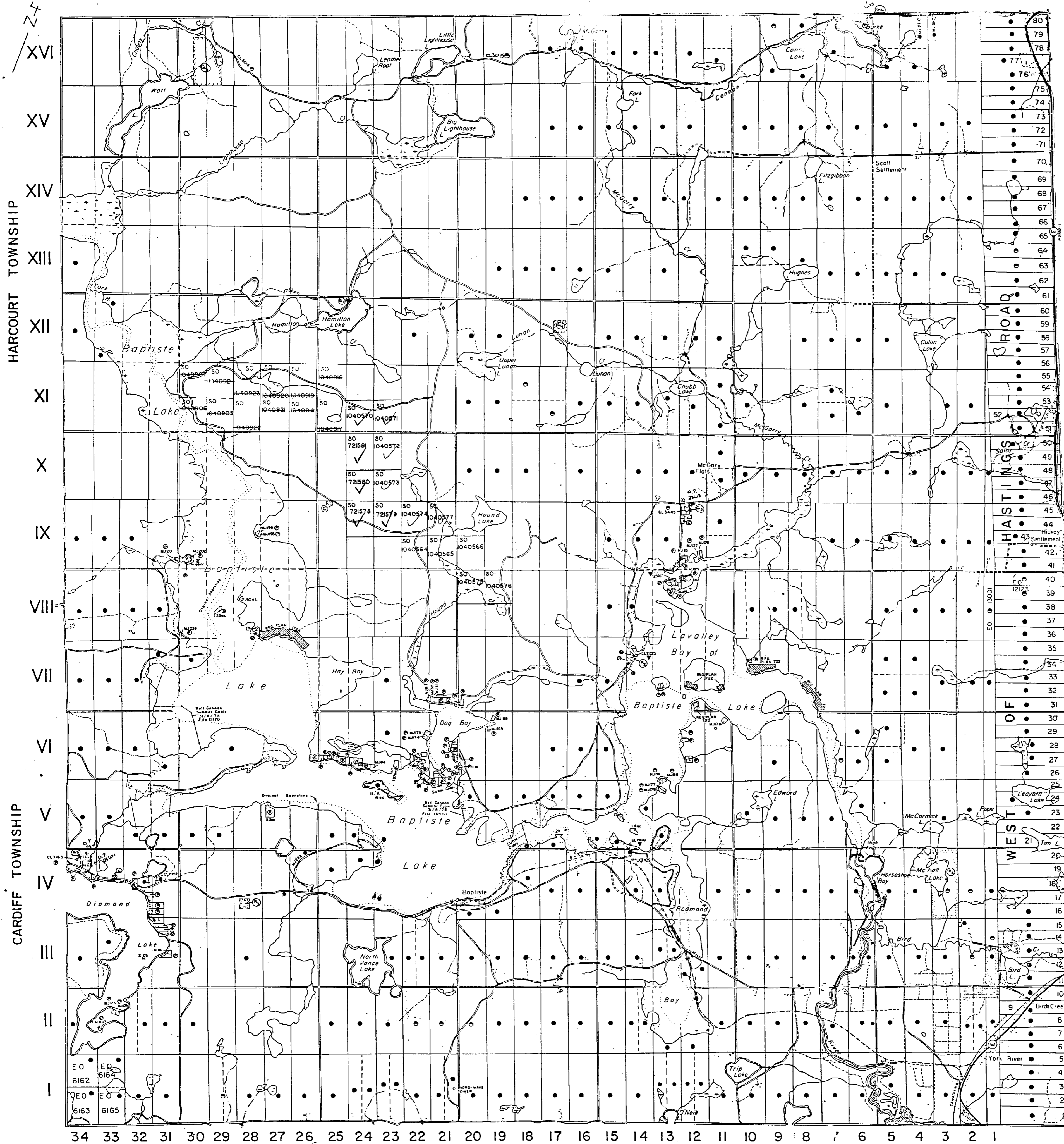
Date Approved as Recorded **17 Oct 89** Branch Director *[Signature]*

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying  
**IAN TRINDER SUITE 410-20 RICHMOND ST EAST TORONTO ONTARIO MSC 2R9**

Date Certified **AUGUST 21 1989** Certified by (Signature) *[Signature]*



LANDS 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	Disposition	File
MNR RESERVE	Public Acquis	June 15, 1978	S.R.	189505
SEC 34/70		16/2/85	S.R.O.	
431A.0/70	W.46/75	2/9/75	M.R.	22449

DATE OF ISSUE  
 SEP 05 1989  
 SOUTHERN ONTARIO  
 MINING DIVISION

- NOTES
- Original shoreline shown thus:
- F.R.I. shoreline shown thus:
- SAND & GRAVEL
- ① MNR P.T. # 101
  - ② GRAVEL FILE 21517
  - ③ GRAVEL FILE 25872
  - ④ MNR P.T. # 141
  - ⑤ GRAVEL P.T. # 164 FILE: 123233
  - ⑥ GRAVEL FILE 13856
  - ⑦ QUARRY PERMIT
- 400' SURFACE RIGHTS RESERVATION ALONG THE SHORES OF ALL LAKES AND RIVERS.

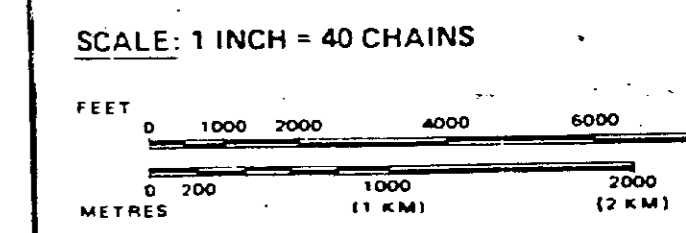
LEGEND

HIGHWAY AND ROUTE No.	
OTHER ROADS	
TRAILS	
SURVEYED LINES:	
TOWNSHIPS, BASE LINES, ETC.	
LOTS, MINING CLAIMS, PARCELS, ETC.	
UNSURVEYED LINES:	
LOT LINES	
PARCEL BOUNDARY	
MINING CLAIMS ETC.	
RAILWAY AND RIGHT OF WAY	
UTILITY LINES	
NON-PERENNIAL STREAM	
FLOODING OR FLOODING RIGHTS	
SUBDIVISION OR COMPOSITE PLAN	
RESERVATIONS	
ORIGINAL SHORELINE	
MARSH OR MUSKEG	
MINES	
TRAVERSE MONUMENT	

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
ORDER-IN-COUNCIL	
RESERVATION	
CANCELLED	
SAND & GRAVEL	
MICRO-WAVE TOWER	

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSECTION 1.



TOWNSHIP  
**HERSCHEL**  
 M.N.R. ADMINISTRATIVE DISTRICT  
**BANCROFT**  
 MINING DIVISION  
 SOUTHERN ONTARIO  
 LAND TITLES / REGISTRY DIVISION  
**HASTINGS**

Ministry of Natural Resources Ontario  
 Ministry of Northern Development and Mines

Date APRIL, 1987  
 Number G-3148





- ROADWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKIE
- MINES
- TRAVERSE MONUMENT

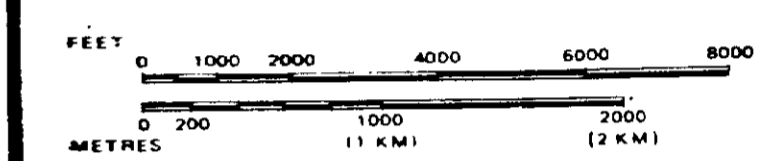


DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
ORDER-IN-COUNCIL	
RESERVATION	
CANCELLED	
SAND & GRAVEL	

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.

SCALE: 1 INCH = 40 CHAINS



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	Disposition	File
ONTARIO HYDRO POWER SITE RESERVE				
ONTARIO HYDRO POWER SITE RESERVE				
FAC. PLAN N 48/83	18/9/83	M+S		188534

DATE OF ISSUE  
 JUL 24 1989  
 SOUTHERN ONTARIO  
 MINING DIVISION

NOTES

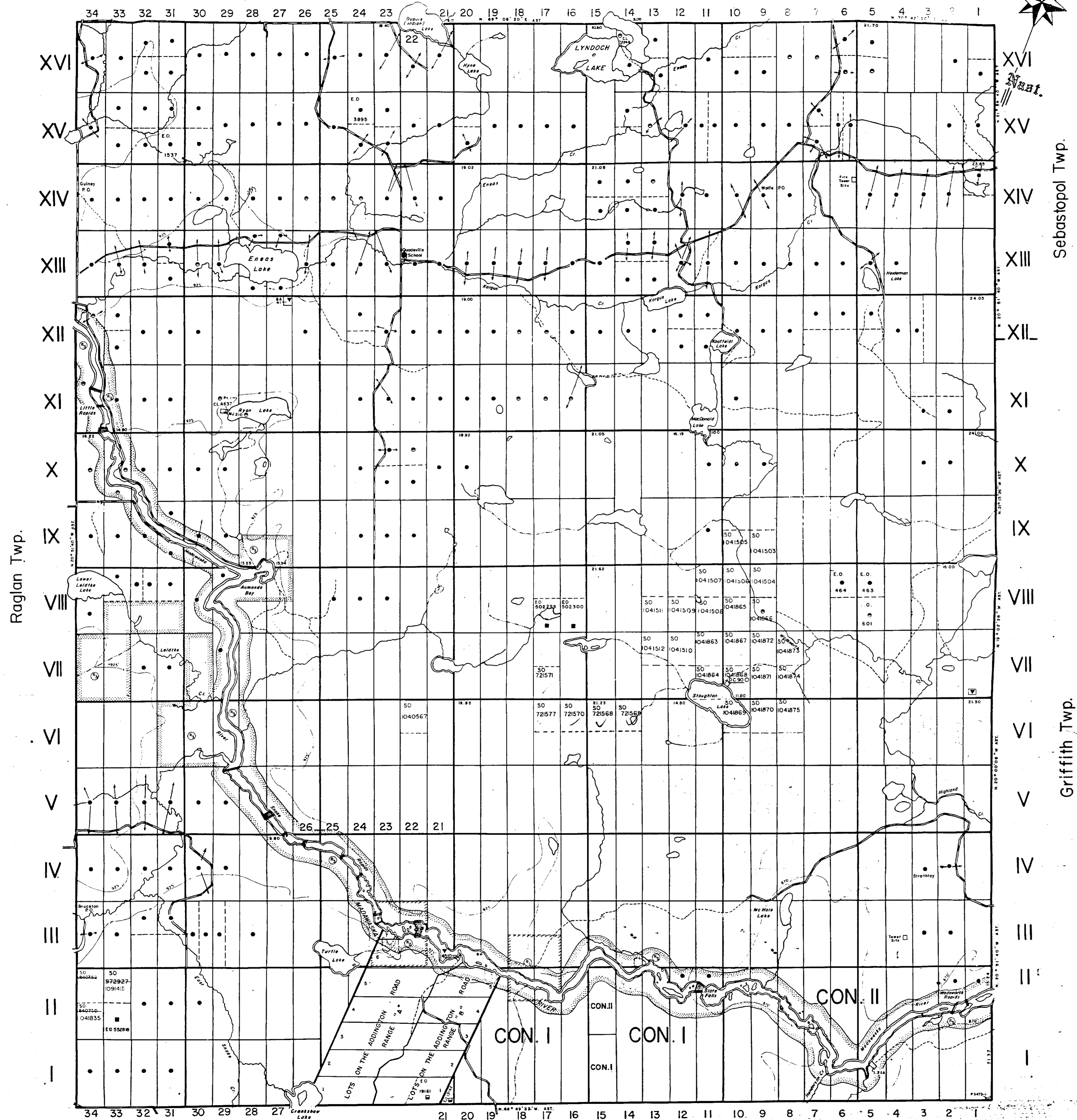
Flooding Rights on Madawaska River, Reserved to contour 817, 870' and 925' to Ontario Hydro. FILE# 83050 Vol 1 & 2.

400' SURFACE RIGHTS RESERVATION ALONG THE SHORES OF ALL LAKES AND RIVERS.

TOWNSHIP  
**LYNDOCH**  
 M.N.R. ADMINISTRATIVE DISTRICT  
**PEMBROKE**  
 MINING DIVISION  
 SOUTHERN ONTARIO  
 LAND TITLES / REGISTRY DIVISION  
**RENFREW**

Ministry of Natural Resources Ontario  
 Ministry of Northern Development and Mines  
 Number **6-3400**

Date MARCH 1987



Raglan Twp.

XVI

XV

XIV

XIII

XII

XI

X

IX

VIII

VII

VI

V

IV

III

II

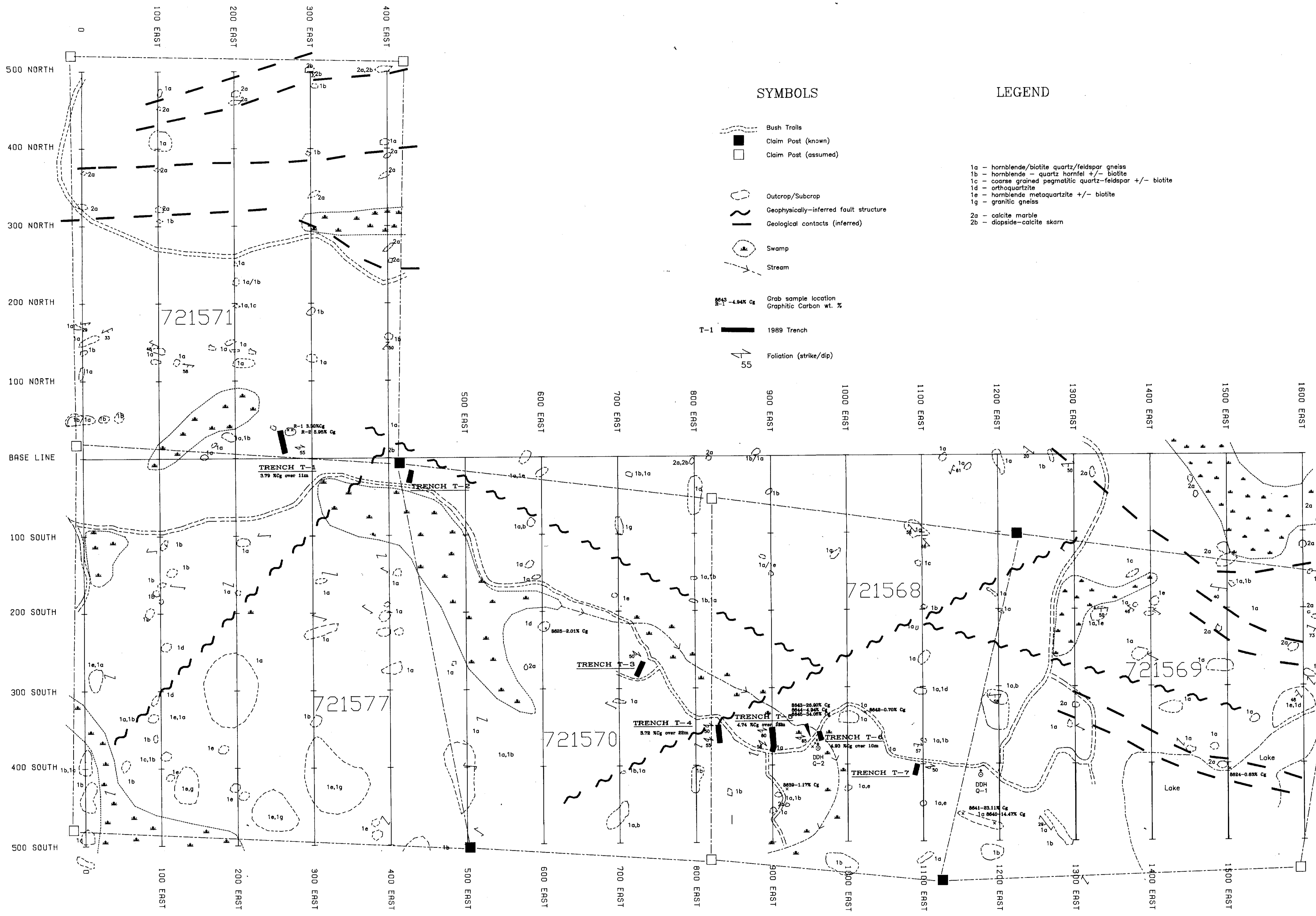
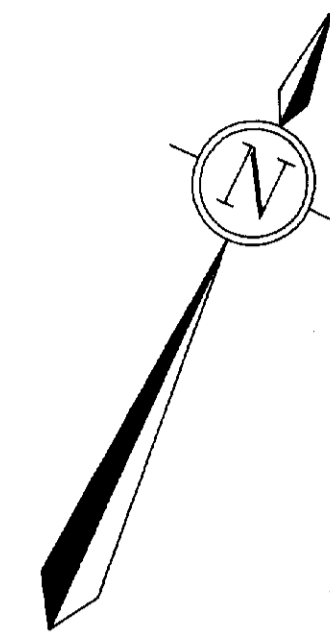
I

Sebastopol Twp.

Griffith Twp.

Denbigh Twp.





**SYMBOLS**

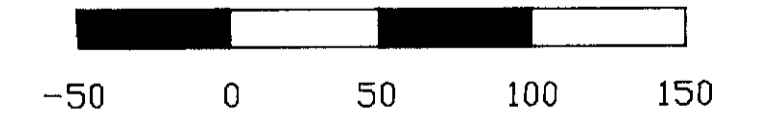
- Bush Trails
- Claim Post (known)
- Claim Post (assumed)
- Outcrop/Subcrop
- Geophysically-inferred fault structure
- Geological contacts (inferred)
- Swamp
- Stream
- Grab sample location
- Graphitic Carbon wt. %
- 1989 Trench
- Foliation (strike/dip)

**LEGEND**

- 1a - hornblende/biotite quartz/feldspar gneiss
- 1b - hornblende - quartz hornfel +/- biotite
- 1c - coarse grained pegmatitic quartz-feldspar +/- biotite
- 1d - orthoquartzite
- 1e - hornblende metaquartzite +/- biotite
- 1g - granitic gneiss
- 2a - calcite marble
- 2b - diopside-calcite skarn

**2.12748**

SCALE 1:2500

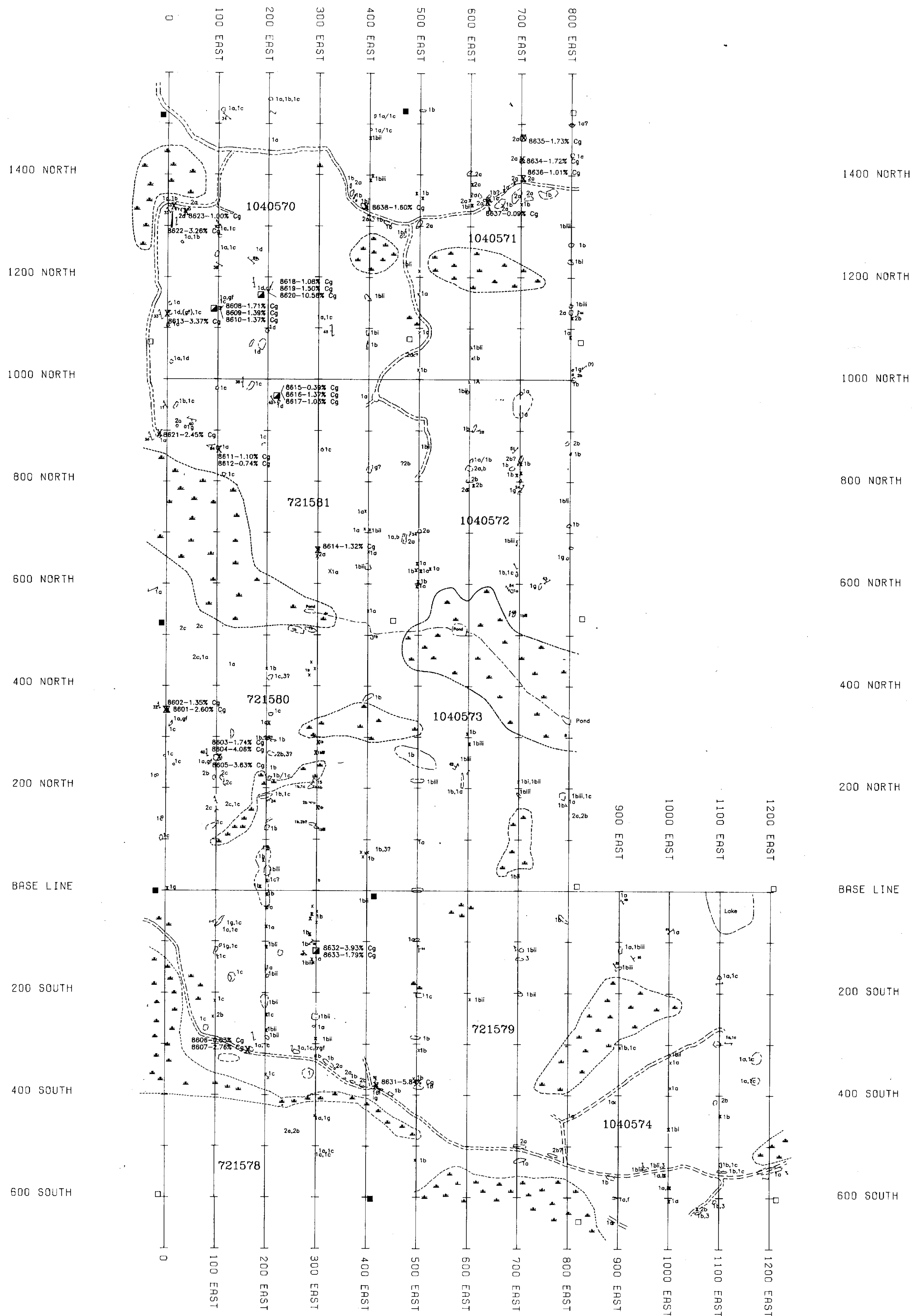
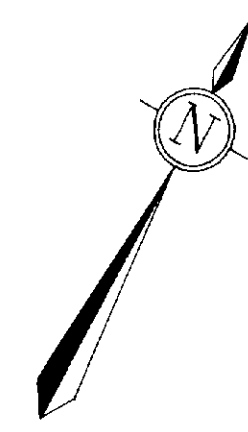


*Tim Dickson* AUG 13 1989

HARRINGTON SOUND RESOURCES INC.			
BANCROFT GRAPHITE PROPERTY			
LYNDOCH TOWNSHIP, ONTARIO			
PROPERTY GEOLOGY		REVISION	FILE
DRAWING NO.		DATE	89-39-02
DRAWN BY: S.L.B.	APPROVED BY:	N.T.S. 31 F/G	DATE
DERRY, MICHENER, BOOTH & WAHL			
TORONTO			CANADA

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**LEGEND**

- 3 Pegmatite Dykes
- 2 Carbonate Metasediments
  - 2c diopside-biotite-hornblende skarn
  - 2b calc-silicate skarn
  - 2a calcite marble
- 1 Clastic Metasediments
  - 1c coarse grained, unfoliated, "pegmatitic" quartz feldspar sediment
  - 1biii fine grained quartz-feldspar paragneiss; >10% biotite
  - 1bii fine grained quartz-feldspar paragneiss; <10% biotite
  - 1bi fine grained quartz-feldspar paragneiss
  - 1a quartz-feldspar paragneiss

**SYMBOLS**

- Foliation
- Old Pit
- Graphite
- Outcrop (small, large)
- Road, bush trail
- Swamp
- Claim Post (known)
- Claim Post (assumed)
- 8635-1.73% Cg  
Sample location- graphitic carbon wt. %

**2.12748**

50 0 50 100 150 200  
SCALE 1:5000

*Jim Dixon* AUG 18 1989

HARRINGTON SOUND RESOURCES INC.			
BANCROFT GRAPHITE PROPERTY			
HERSCHEL TOWNSHIP, ONTARIO			
PROPERTY GEOLOGY		REVISION	
		FILED	HERC/DWG
		DRAWING NO.	89-39-01
DRAWN BY:	APPROVED BY:	NLS:	DATE:
S.L.B.		31 E/1	JULY 1989
DERRY, MICHENER, BOOTH & WAHL			
TORONTO		CANADA	

