REPORT ON

THE 1988 GEOLOGICAL MAPPING PROGRAM

HARDIMAN BAY PROPERTY

HORWOOD TOWNSHIP, ONTARIO

N.T.S. 41O/16, 42B/1

PREPARED FOR

HARDIMAN BAY RESOURCES INC.

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SUMMARY

Geological mapping of the Hardiman Bay property identified an east-west trending metavolcanic package of the Swayze-Deloro Belt consisting of iron-rich magnesium tholeiitic mafic metavolcanics. The syntectonic diapiric implacement of a granitic complex created metasomatic and regional structural patterns within this metavolcanic sequence. Subsequent implacement of small scale felsic to mafic intrusive bodies and a late stage quartz veining event completed the current stratigraphic succession seen on the property.

Geochemical rock sampling delineated two zones of interest in the area designated as Zone A and Zone B. The geochemical expression of these zones of interest is a cluster of moderately elevated gold values. Geophysically, these zones are associated with an area of generally localized high amplitude magnetic responses with accompanying conductivity effects.

Zone A occurs in the west-central part of the main grid near the shores of Hardiman Bay. This zone is in proximity to a northeast trending structure interpreted from geophysics and indicates a possible fault splayed off from the major Hardiman Bay Fault. Elevated geochemical gold values are distributed throughout the zone and are associated with finely disseminated pyrite in quartz veining striking northwest to northeast in the metavolcanics. Several small late stage intrusive bodies are also associated with this zone.

Zone B is located at the north end of the East Grid. This zone is just south of an anomalous magnetic response and coincident conductor. Values in this area range between 11 ppb to 126 ppb and were found in northeast striking quartz veins within well foliated mafic volcanics. The quartz veins contain finely disseminated pyrite, pyrrhotite and chalcopyrite with an unidentified silver sulphide present.

Although surface gold values are not strongly anomalous it is important to note that investigators of the Sangold (Keith Township) and Orofino (Silk Township) gold occurrences, reported "unimpressive surface gold values". In both cases, however, drilling and trenching returned significant gold values associated with quartz veining in mafic metavolcanics.

Two zones of geochemically anomalous gold values have been detected on the property which warrant further investigation. It is recommended that these zones be covered with grid lines every 100 m to facilitate a detailed mapping, stripping and sampling program.

The geochemically anomalous gold values detected in the west-central part of the main grid area have a spatial relationship to a structural break interpreted from the magnetic and electromagnetic responses. In some environments gold mineralization is associated with alteration and disseminated sulphide mineralization. Usually such mineralization can only be detected geophysically by the induced polarization (IP) survey method. It is recommended, therefore, that induced polarization profiling over the anomalous gold indications be completed in conjunction with the detailed geological investigations.

If the results of the mapping and sampling program suggest that there is significant potential for gold mineralization in the area a drill program would be warranted to properly evaluate the property.

Analysis of the results of the IP profiling, with respect to favourable gold mineralized zones, will determine if the method is suitable for delineating other overburden covered areas of possible gold mineralization. If the method proved successful it would be an important aid in defining drill targets.

INTRODUCTION

The following report is prepared by Derry, Michener, Booth & Wahl (DMBW) on behalf of Hardiman Bay Resources Inc. It is an evaluation and interpretation of the Phase I exploration program recommended by I. D. Trinder and M. J. Taylor in a report dated June, 1987, entitled "Report on the Hardiman Bay Property, Horwood Township, Ontario" (Ref. #87-40).

The program carried out during the summer and early fall of 1988 included two grids totalling 46.3 km of linecutting completed in May. A 5.4 km baseline was cut for the main grid at 050° with crosslines cut every 200 m and picketed at 25 m intervals. The east grid involved a baseline at 180° extending east from the northernmost line of the main grid. Lines were cut north from the baseline. During the period August 21, 1988 to August 30, 1988, a magnetic and VLF-Electromagnetic survey was completed by geophysical technicians under contract to DMBW. A prospecting and mapping program followed from September 16, 1988 to October 5, 1988. A total of 199 rock samples were collected for geochemical assay.

The mapping program was carried out on a scale of 1 to 2,500 by C. Lormand, W. Samuel and C. Alford, DMBW contract geologists.

PROPERTY LOCATION, DESCRIPTION AND ACCESS

The Hardiman Bay property is located on the east shore of Hardiman Bay on Horwood Lake in the township of Horwood, approximately 88 km southwest of Timmins and 30 km southeast of Foleyet (Figure 1).

The property consists of 59 contiguous claims (987395 to 987453 inclusive) covering approximately 944 hectares (Figure 2).

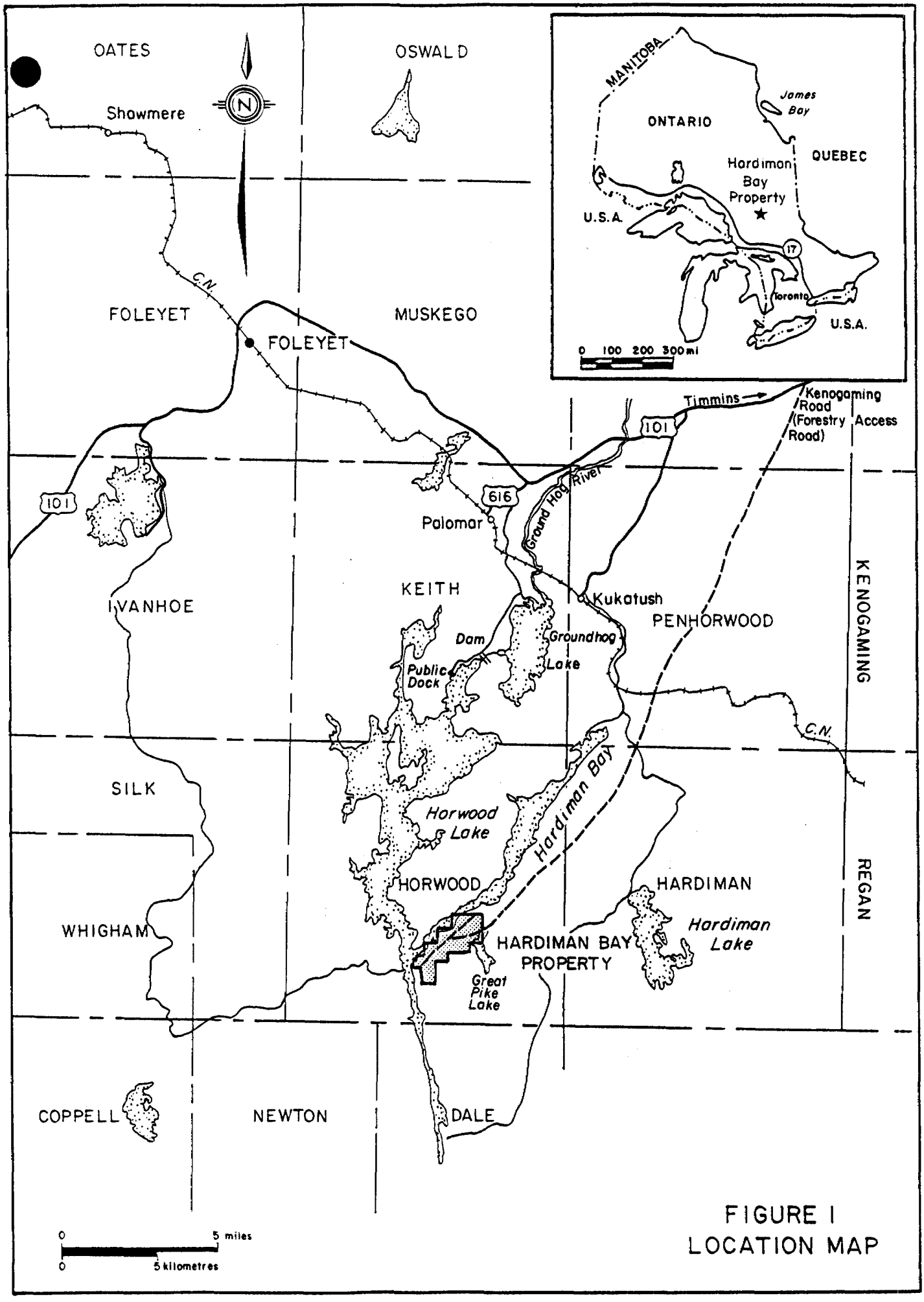


FIGURE 1
LOCATION MAP

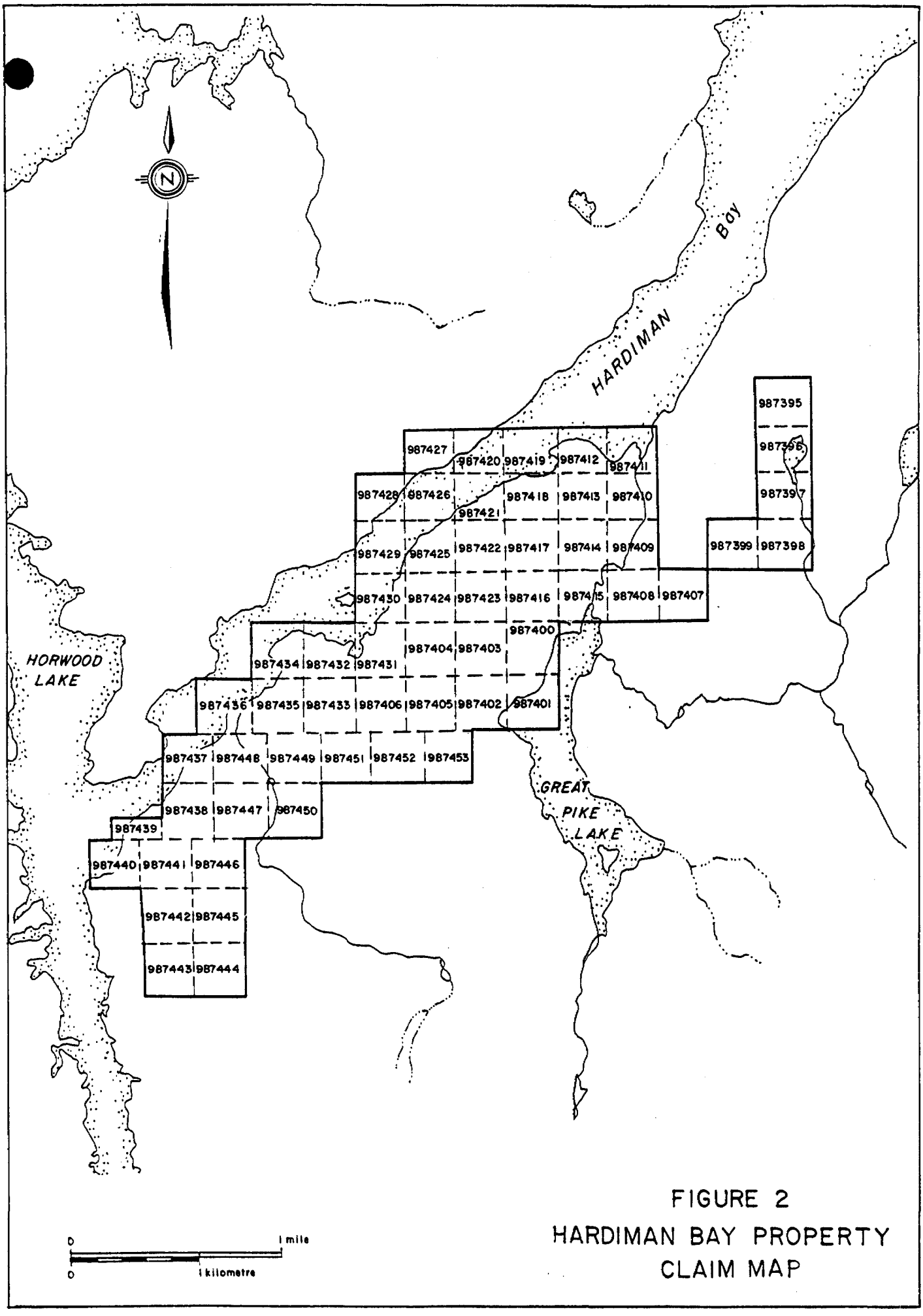


FIGURE 2
HARDIMAN BAY PROPERTY
CLAIM MAP

These claims were recorded April, 1987, and an extension of time was granted to October 31, 1988. DMBW has not examined title to the claims nor completely substantiated their physical boundaries and, accordingly, expresses no opinion as to the validity of title and property description.

Access to the property is available by float- or ski-equipped aircraft. However, the property can be accessed easily by boat and reasonably well maintained logging roads. Access to the public boat launching facilities near the Ground Hog Lake Dam in Keith Township is gained by an Ontario Division of Forests public access road via Highways 101 and 616 (see Figure 1).

The northern part of Hardiman Bay in Penhorwood Township is accessible via a secondary road which passes through Kukatush Station and merges with a short secondary road from Highway 101. Another secondary road branches off from Kukatush Station crossing the southeast corner of Horwood Township in the vicinity of Great Pike Lake and the Delahey Fire Tower continuing southwest to the southern end of Horwood Lake in central Dale Township.

A forestry road provides access to Hardiman Bay via the Orofino prospect at the Horwood-Silke Township line. A well maintained system of forestry roads accesses the east shore of Hardiman Bay via the Kenogaming Forestry Road approximately 70 km southwest of Timmins off Highway 101 (see Figure 1). This road system was constructed as part of a harvesting program carried out by Waferboard Corporation Limited, Timmins, Ontario. At the time of writing this report, Waferboard Corporation was still carrying out harvesting and silviculture operations in the area, consequently, an updated map of the road system in the area was not available.

TOPOGRAPHY

The Horwood Lake area typically has low relief, generally less than 15 m. The overall relief in Horwood Township is about 150 m with Horwood Lake at an elevation of 335 m above sea level.

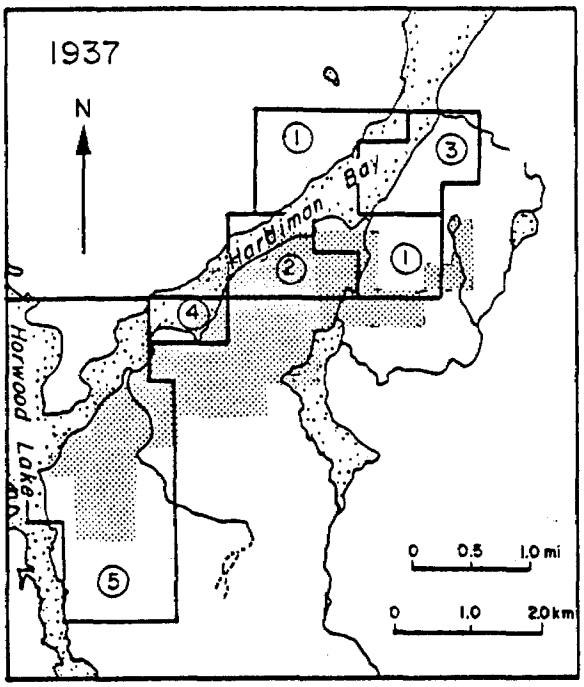
In the vicinity of the Hardiman Bay property, relief can be as great as 60 m, as in the case of the mafic ridges found on the northwest shore of Hardiman Bay and in the southeast portion of the claim block north of Great Pike Lake (Figure 2).

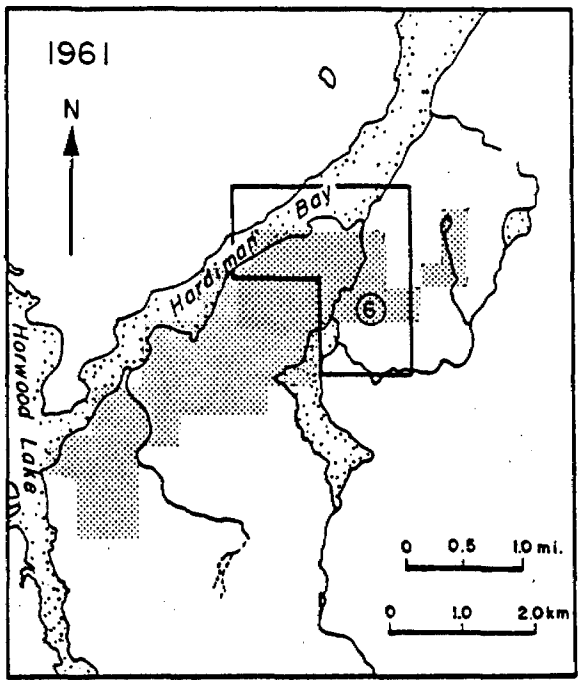
Drainage is to the north with some cedar bogs and swamps dispersed throughout the claim block. Soils found in the area are generally silty sand to sandy clay in composition with overburden in some areas as thick as 30 m. The thickest sequences of overburden are represented by generally east-west trending till ridges seen in the eastern portion of the property. Frost heave and boulders were commonly found on the property with boulder trains in the vicinity of the Hardiman Bay pluton.

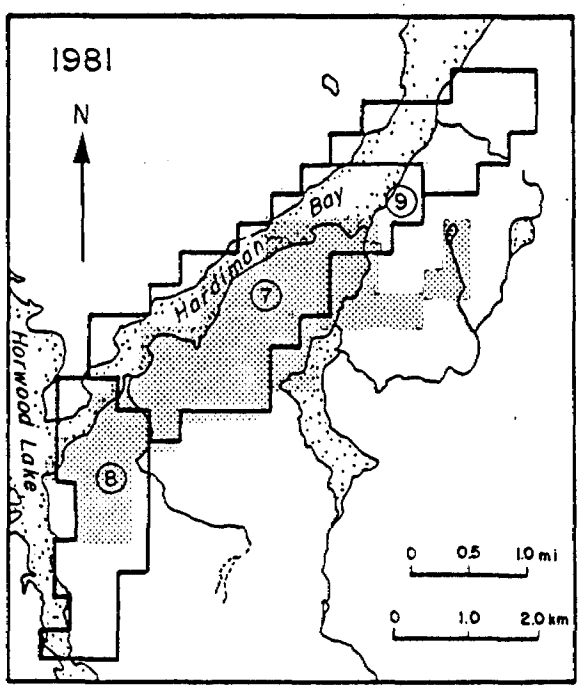
The combination of a forest fire some years ago and current logging operations has resulted in portions of the claim block appearing sparsely forested with moderate to dense underbrush. Deadfall is common throughout the claim block.

EXPLORATION HISTORY

Table 1 provides a chronological history of exploration for the Hardiman Bay/Horwood Lake area. Accompanying the table is a map showing relative locations of previous work in the area (Figure 3).







1) W.A.JACOBS-HORWOOD EXPLORATION SYNDICATE
2) GOULD-DUNN GROUP
3) A.H. SMITH
4) P.H. SILAMS
5) HOLLINGER OPTION
6) AJAX MINERALS LIMITED
7) KENNCO EXPLORATIONS LIMITED
8) NORTHGATE EXPLORATION LIMITED
9) FRED ROSS

HARDIMAN BAY PROPERTY

Note: Location of Historic Claim Blocks are Approximate. (Derived From Harding (1937) and Assessment Files.)

FIGURE 3: LOCATION OF HISTORIC CLAIM BLOCKS RELATIVE TO THE HARDIMAN BAY PROPERTY.

Table 1

EXPLORATION HISTORY

Year	Reference	Work Performed and Findings
1899	W. A. Parks	- described the rocks along the shores of Horwood Lake.
1909	Laird	- reports in 1935 publication that this was the first report of gold mineralization in the Horwood Lake area was recorded in this year (1909).
1917	Tanton	- produced the first geological map of the area based on survey conducted in 1916.
1918	T. Jessop	- first discovery of gold on vast shore of Horwood Lake. - first significant discovery of gold in area.
1930-34	H. M. Bannerman	- summarized the geology and mineral occurrences in southern part of township.
1930's		- discovery of gold in southeast portion of Silk Township created small staking rush. First exploration activity within and immediately adjacent to Hardiman Bay property location.
1933	W. Smith	- prospecting, geological survey, channel sampling. - gold discovered in massive quartz vein on east shore of Horwood Lake 435 m south of entrance to Hardiman Bay (Breaks, 1978). - quartz vein 75 cm wide, 18 mm long - 0.75 oz./ton over vein width.
1935	Arthur H. Smith	- staked 9 claims on southeast shore of Hardiman Bay. - set of five parallel quartz veins striking N10°E and dipping westerly was exposed over a 15.2 m wide zone. Veins varied in width from 0.3 m to 1.2 m over lengths up to 30.5 m. - mineralization includes pyrite and chalcopyrite. Pyrite locally abundant and disseminated in wall rock and veins. - low gold values reported.

Table 1

EXPLORATION HISTORY
(Continued)

Year	Reference	Work Performed and Findings
1935	Hollinger Gold Mines Limited	- optioned the Smith property and adjoining claims held by G. A. Thorne. - completed detailed sampling on showing. - established grade of 0.65 oz. Au/ton over 17 m length and 1.2 m wide.
1936		- shaft sinking commenced late 1935. - by 1936 a two-compartment 45° shaft with a depth of 183 m. - drifts were established at 61 m, 99 m and 174 m with a total of 220 m lateral work completed mostly at level 174. - in 1937 the Hollinger option was curtailed due to insufficient volume of gold mineralization.
1937	Tionaga Gold Mines	- deepened shaft of Smith-Thorne mine to 223 m.
1938-1939		- 2,299 oz. Au and 404 oz. Ag was produced from 6,653 tons of ore between 1938 and 1939 (Breaks, 1978).
1935-36	W. A. Jacobs	- staked ten claims in vicinity of Great Pike Lake.
1937	P. H. Silams	- held claims on southeast shore of Hardiman Bay. - sulphide bearing veins assayed as as high as $3.40 per ton for a grade of 0.10 oz. Au/ton.
1937	Horwood Exploration Syndicate	- held claims staked by Jacobs. - mineralized quartz vein N20°W, 75°NE intermittent over 9 m. - quartz, calcite, red orthoclase, pyrite, chalcopyrite, pyrrhotite and galena. - gold panned from vein material yielded low gold values. - other veins found on property.

Table 1

EXPLORATION HISTORY
(Continued)

Year	Reference	Work Performed and Findings
1937	Gould-Dunn Group	- held 9 claims including both shores of Hardiman Bay. - 1.6 km northwest of north end of Great Pike Lake on the west shore of Hardiman Bay, a northeast striking mineralized quartz vein 0.6 m to 1.8 m wide dipping northwest was exposed over 122 m containing locally abundant disseminated Py. - low gold values reported.
1961	Ajax Minerals	- conducted geological survey on claims north of Great Pike Lake. Same area as Horwood Exploration and Gould-Dunn claim groups in 1937. - an area of extensive quartz veining was located in eastern end of property. Veins were massive and unfractured. - random grab samples yielded trace or no gold. - a 1.5 m to 2.4 m quartz vein contained considerable pyrite and assays indicated minor gold present. - same vein zone described under Gold-Dunn group of 1937.
1981	Kennco Explorations	- airborne geophysical survey over Hardiman Bay. - several northeast and northwest trending VLF-EM conductors of first and second priority. Conductors recommended for follow-up. None reported.

Table 1

EXPLORATION HISTORY
(Continued)

Year	Reference	Work Performed and Findings
1981	Northgate Exploration	- staked 12 claims in southwestern claim group. - geological mapping and geophysical VLF-EM and magnetometer survey. - humus and soil geochemistry surveys were conducted as well as trenching over small areas requiring more detail. - area underlain by predominantly mafic volcanics striking east-west. - quartz veins were common; the two most significant, termed "North" vein and "South" vein. - best assay from grab samples of these veins was 0.005 Au/ton. - VLF-EM surveys indicated east-west trends with magnetic data indicating a number of small isolated anomalies. - only one VLF conductor received full coverage by soil sampling. - humus surveys returned erratic results, distribution difficult to interpret as no anomalous values. - the soil survey indicated four anomalous zones paralleling a VLF-EM conductor. - no further work has been completed.
1987	Fred Ross	- prospecting, blasting, trenching. - large quartz vein same as A. H. Smith occurrence, 1935. Limonite-stained quartz material with disseminated and euhedral pyrite in pods 10% abundance. Reports "good" gold values from assays. Report given verbally to author.

GEOLOGY AND MINERALIZATION

Regional Geology

The Hardiman Bay property is located within an east-west trending metavolcanic-metasedimentary greenstone belt, the Swayze-Deloro Belt, which occupies a narrow zone in the western portion of the Abitibi Subprovince near the boundary with the Kapuskasing Structural Zone (Breaks, 1978) (Figure 4). The rocks of the area are largely of Early Precambrian (Archean) age with the exception of the Proterozoic diabase dyke swarms present throughout the area.

The area is underlain by predominantly mafic metavolcanics with minor amounts of intercalated felsic to intermediate metavolcanics (Figure 5). Metasedimentary rocks are present in minor abundance and include metagreywackes (from reworked volcanogenic material), polymictic conglomerates, chert and narrow bands of meta-argillite.

The mafic metavolcanics vary texturally from massive, commonly pillowed and/or amygdaloidal rocks to rocks overprinted by a strong penetrative schistose fabric. The metavolcanic sequences are intruded by variably sized pretectonic mafic to ultramafic plutons believed to be consanguinous with the early Precambrian mafic volcanism. These plutons were most notably found in Horwood Township (Breaks, 1978). The most dominant feature of the southeastern Horwood Township is the syntectonic Hardiman Bay Pluton, a domical, predominantly foliated, trondhjemite pluton which intruded the supracrustal rocks imparting an east-west to north-south crossfold pattern to the rocks in the vicinity of Great Pike Lake (Figure 6). The numerous quartz and feldspar porphyry dykes appear to be a hypabyssal phase of the trondhjemite pluton. Late stage tectonic equigranular to porphyritic granitic stocks locally intrude the metavolcanics with Proterozoic diabase dykes crosscutting all of the abovementioned lithologies (Breaks, 1978) (Figures 5 and 6).

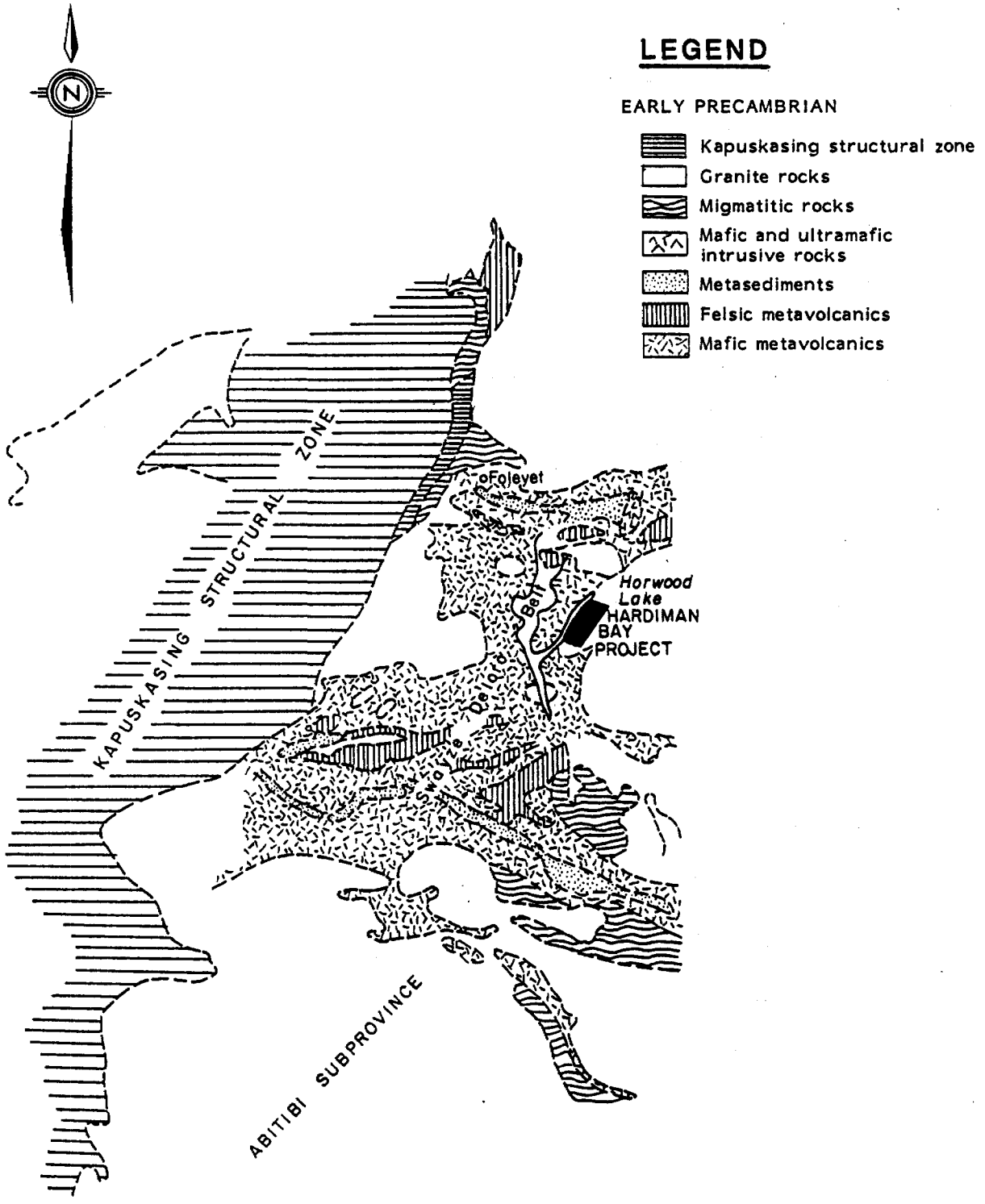


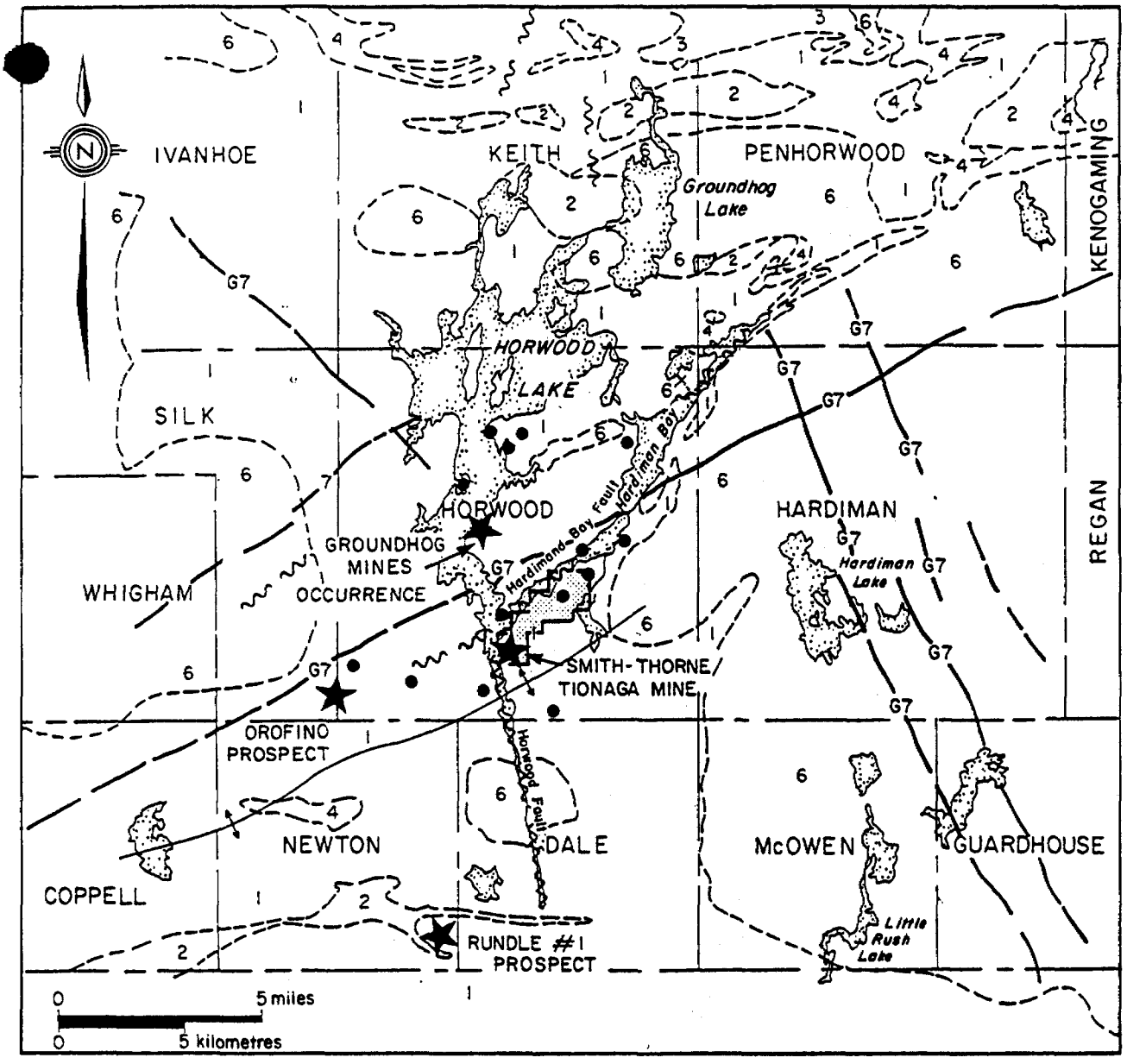
FIGURE 4

HARDIMAN BAY

GEOLOGY OF THE

SWAZYE DELORO BELT

DERRY MICHENER BOOTH & WAHL



LEGEND

EARLY TO MIDDLE PRECAMBRIAN

7 Diabase Dykes

EARLY PRECAMBRIAN

6 Felsic Intrusives

5 Migmatitic Rocks

4 Mafic to Ultramafic Intrusive Rocks

3 Metasediments

2 Felsic to Intermediate Metavolcanic Rocks

1 Mafic to Intermediate Metavolcanic Rocks

SYMBOLS

Fault

Anticlinal Axis

Major/Minor Gold Occurrences

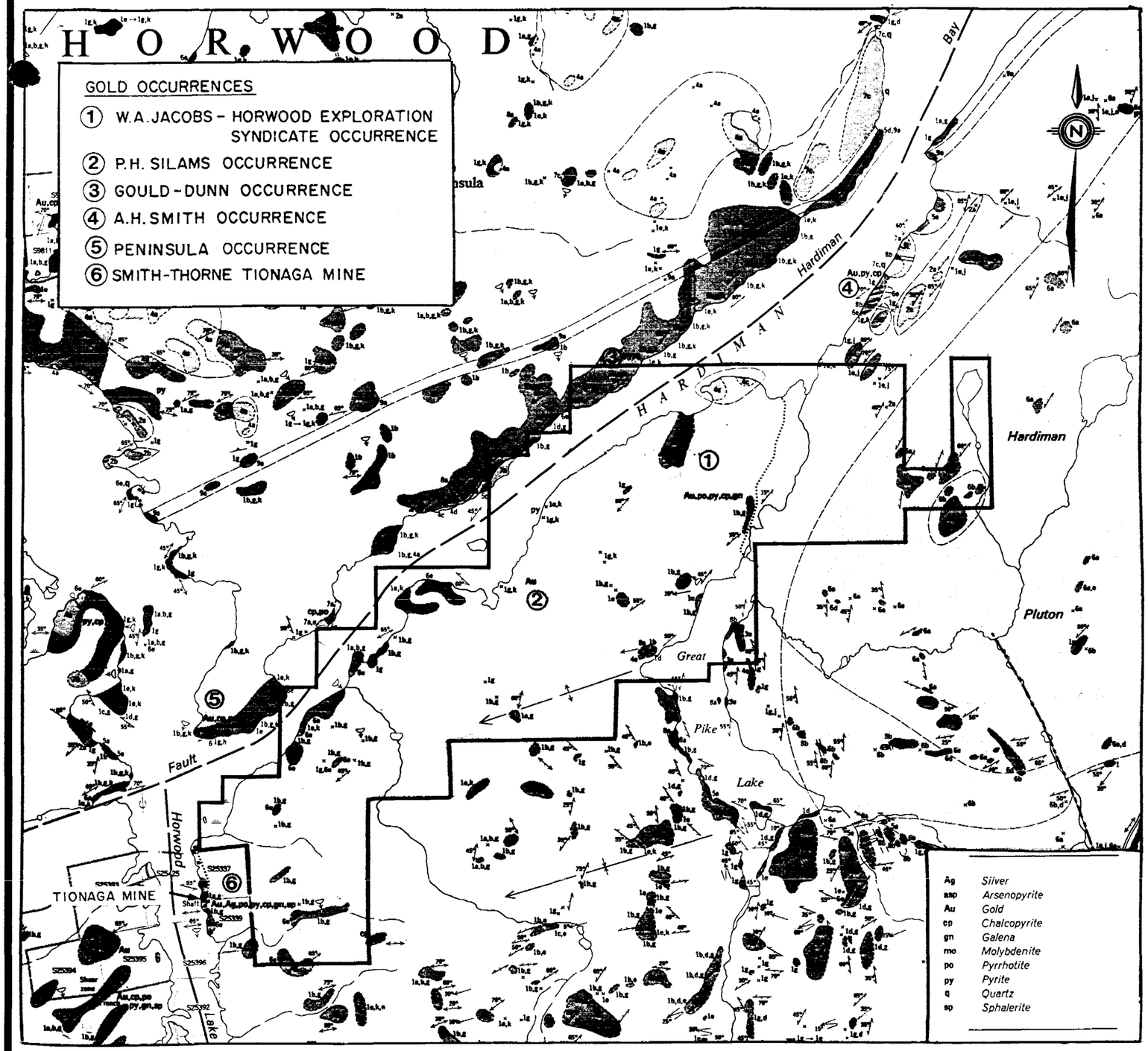
NOTE : The letter G preceding a rock unit number indicates an interpretation made on the bases of geophysical data.

FIGURE 5

HARDIMAN BAY PROPERTY

REGIONAL GEOLOGY

(After OGS Map 2221)



LEGEND

PRECAMBRIAN[b]

MIDDLE TO LATE PRECAMBRIAN (PROTEROZOIC)

MAFIC INTRUSIVE ROCKS

- 9 Diabase, unsubdivided.
- 9a Olivine diabase dikes (Abitibi-type).
- 8a Quartz diabase dikes.
- 8b Porphyritic quartz diabase dikes.

INTRUSIVE CONTACT

EARLY PRECAMBRIAN (ARCHEAN)

LATE FELSIC TO INTERMEDIATE INTRUSIVE ROCKS

- 7 Unsubdivided.
- 7a Equigranular biotite granodiorite.
- 7b Porphyritic biotite granodiorite.
- 7c Porphyritic to equigranular biotite quartz monzonite.
- 7d Muscovite granodiorite.
- 7e Aplite dikes.
- 7f Xenolithic granitic rocks.
- 7g Biotite-hornblende quartz diorite.
- 7h Hornblende monzonite.
- 7j Hornblende quartz monzonite.
- 7k Hornblende granodiorite.
- 7m Biotite-hornblende diorite.

INTRUSIVE CONTACT

EARLY FELSIC TO INTERMEDIATE INTRUSIVE ROCKS

- 6 Unsubdivided.
- 6a Biotite trondhjemite.
- 6b Biotite-hornblende trondhjemite.
- 6c Biotite-hornblende diorite.
- 6d Migmatite.
- 6e Quartz porphyry, feldspar porphyry, and quartz-feldspar porphyry.

INTRUSIVE CONTACT

MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS

ULTRAMAFIC INTRUSIVE ROCKS

- 5a Dark green-black serpentinite.
- 5b Light blue-green serpentinite.
- 5c Talc-carbonate serpentinite.
- 5d Sheared serpentinite.

MAFIC INTRUSIVE ROCKS

- 4a Metagabbro.
- 4b Xenolithic metagabbro.
- 4c Porphyritic to equigranular diorite.
- 4d Hornblendite.
- 4e Metagabbro dikes.

INTRUSIVE CONTACT

METAVOLCANICS AND METASEDIMENTS

METASEDIMENTS

- 3a Greywacke.
- 3b Conglomerate.
- 3c Chert, chert breccia.
- 3d Quartzite.
- 3e Arkose.
- 3f Slate.

FELSIC TO INTERMEDIATE METAVOLCANICS

- 2 Unsubdivided.
- 2a Tuff, lapilli-tuff.
- 2b Tuff-breccia, pyroclastic breccia.
- 2c Felsic flows.
- 2d Quartz-feldspar crystal tuffs.
- 2e Feldspar and/or quartz porphyry subvolcanic rocks.
- 2f Miarolitic subvolcanic rocks.

MAFIC TO INTERMEDIATE METAVOLCANICS

- 1 Unsubdivided.
- 1a Amygdaloidal metavolcanics.
- 1b Pillowed metavolcanics.
- 1c Crenulated metavolcanics.
- 1d Laminated (possibly mafic tuffs in part) metavolcanics.
- 1e Medium-to coarse-grained metavolcanics.
- 1g Fine-grained metavolcanics.
- 1h Mafic breccia.
- 1j Amphibolitized metavolcanics.
- 1k Massive metavolcanics.
- 1m Garnetiferous metavolcanics.
- 1n Variolitic metavolcanics.
- 1p Porphyritic andesite.
- 1q Migmatized metavolcanics.

SYMBOLS

- Glacial striae.
- Esker.
- Small bedrock outcrop.
- Area of bedrock outcrop.
- Bedding, top unknown; (inclined, vertical).
- Lava flow; top (arrow) from pillows shape and packing.
- Schistosity; (horizontal, inclined, vertical).
- Gneissosity, (horizontal, inclined, vertical).
- Foliation; (horizontal, inclined, vertical.
- Lineation with plunge.
- Geological boundary, observed.
- Geological boundary, position interpreted.
- Geological boundary, deduced from geophysics.
- Fault; (observed, assumed). Spot indicates down throw side, arrows indicate horizontal movement.
- Lineament.
- Drag folds with plunge.
- Anticline, syncline, with plunge.
- Drill hole; (vertical, inclined).
- Vein.
- Swamp.
- Motor road.
- Other road.
- Trail, portage, winter road.
- 9 Mining property, surveyed.

FIGURE 6
HARDIMAN BAY
GENERAL GEOLOGY
(After OGS Map 2329)

The regional metamorphic grade is greenschist facies with locally developed epidote to almandine amphibolite facies within the contact metamorphic aureoles of granitic plutons. Pleistocene deposits consist of outwash sands and gravels with glacial tills and varved clays locally dominant. A number of east-northeast trending eskers are present in the map area.

Property Geology

Overview

The geology of the Hardiman Bay property is presented on Maps 88-108-01 and 88-108-03.

In general, outcrop exposure on the property is approximately 10% to 15% with some areas displaying a higher density of surface exposure such as in the northeast section of the Main Grid east sheet and the area north of Great Pike Lake. These areas are predominantly comprised of large resistant ridges of mafic metavolcanics.

Since it is a generally accepted supposition that all rocks in Archean terrains have undergone some level of metamorphism, for brevity sake, the preface "meta" will be omitted in describing the lithological classifications. The overall stratigraphy trends east-west, however, the diapiric emplacement of the Hardiman Lake Pluton has had a local effect on the stratigraphic trend in the map area.

A relatively thick sequence of mafic volcanics represent the oldest rocks in the map area. These rocks are overlain by a thinner sequence of intermediate volcanics which, in turn, are overlain by felsic rocks. A silica (SiO_2) versus iron ($FeO+Fe_2O_3$) plot constructed from whole rock analysis of several rock types within the area confirm the existence of the abovementioned lithological groups (Figure 7). The volcanics have been subsequently intruded by mafic to felsic

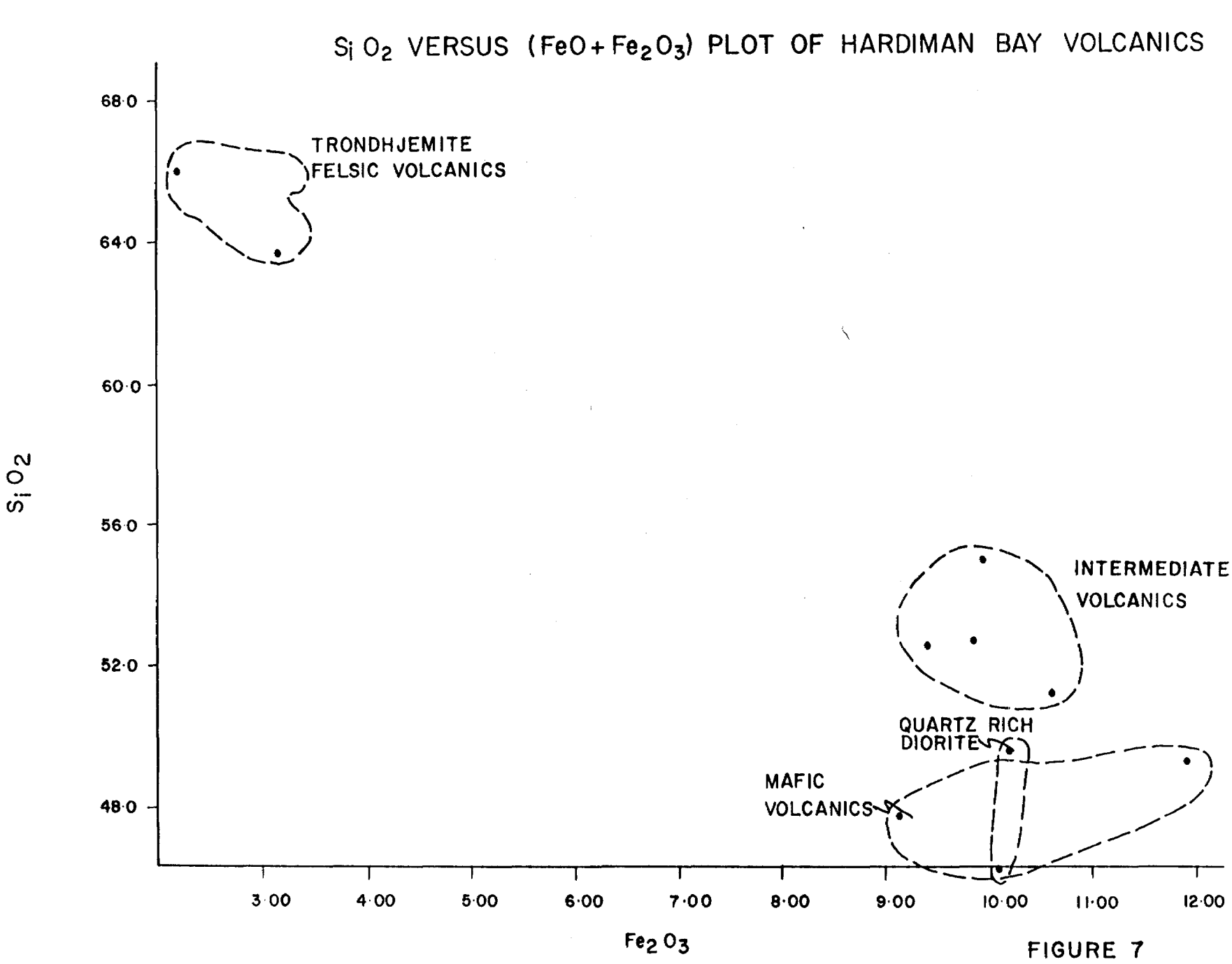

Si O2 VERSUS (FeO+Fe2O3) PLOT OF HARDIMAN BAY VOLCANICS
TRONDHJEMITE
FELSIC VOLCANICS
INTERMEDIATE
VOLCANICS
QUARTZ RICH
DIORITE
MAFIC
VOLCANICS
68·0
64·0
60·0
56·0
52·0
48·0
Si O2
3·00
4·00
5·00
6·00
7·00
8·00
9·00
10·00
11·00
12·00
Fe2 O3

FIGURE 7

intrusives as evidenced by the small, dispersed exposures of porphyritic to equigranular diorite as well as quartz porphyry units. Locally, a few sediment outcrops were observed.

The Hardiman Lake Pluton, an early felsic intrusive, occupies a large portion of the map area to the southeast on Main Grid east sheet and the majority of the map area on the East Grid sheet. As was noted in this program and previous exploration within the area (Breaks, 1978), Proterozoic diabase and quartz diabase dykes crosscut the stratigraphy with a generally northwesterly and, in some cases, northeasterly trend.

Mafic Volcanics

The Hardiman Bay property is underlain by a sequence of predominantly magnesium-rich tholeiitic mafic volcanics with a minor amount of calc-alkaline mafic volcanics (Figure 8). The mafic volcanics represent approximately 55% of outcrop exposure on the property. The massive to pillowed flows and tuffs weather dark to light green, are fine to coarse-grained and are often exposed in large resistant ridges. Pillows are generally plastically deformed and range in size from 15 cm to 2 m in diameter with the majority approximately 1 m in diameter and bun-shaped. Metasomatic carbonatization of the mafic metavolcanics imparts an orange colour to the weathered surface and is most often seen in the pillowed outcrops (Figure 9a). Reliable top indicators were difficult to locate due to the degree of deformation of the pillows, however, where discernible, the authors were able to confirm south top indicators recorded by previous workers. Pillow selveges are typically narrow and iron carbonate altered. Interpillow cavities are often infilled with white to smokey grey quartz (+/-carbonate). This quartz material is also found crosscutting the mafics in vein structures 1 cm to 15 cm in width.

Proximal to the contact zone of the Hardiman Bay Pluton, the mafic volcanics are amphibolitized and possess a highly schistose to gneissic fabric. In

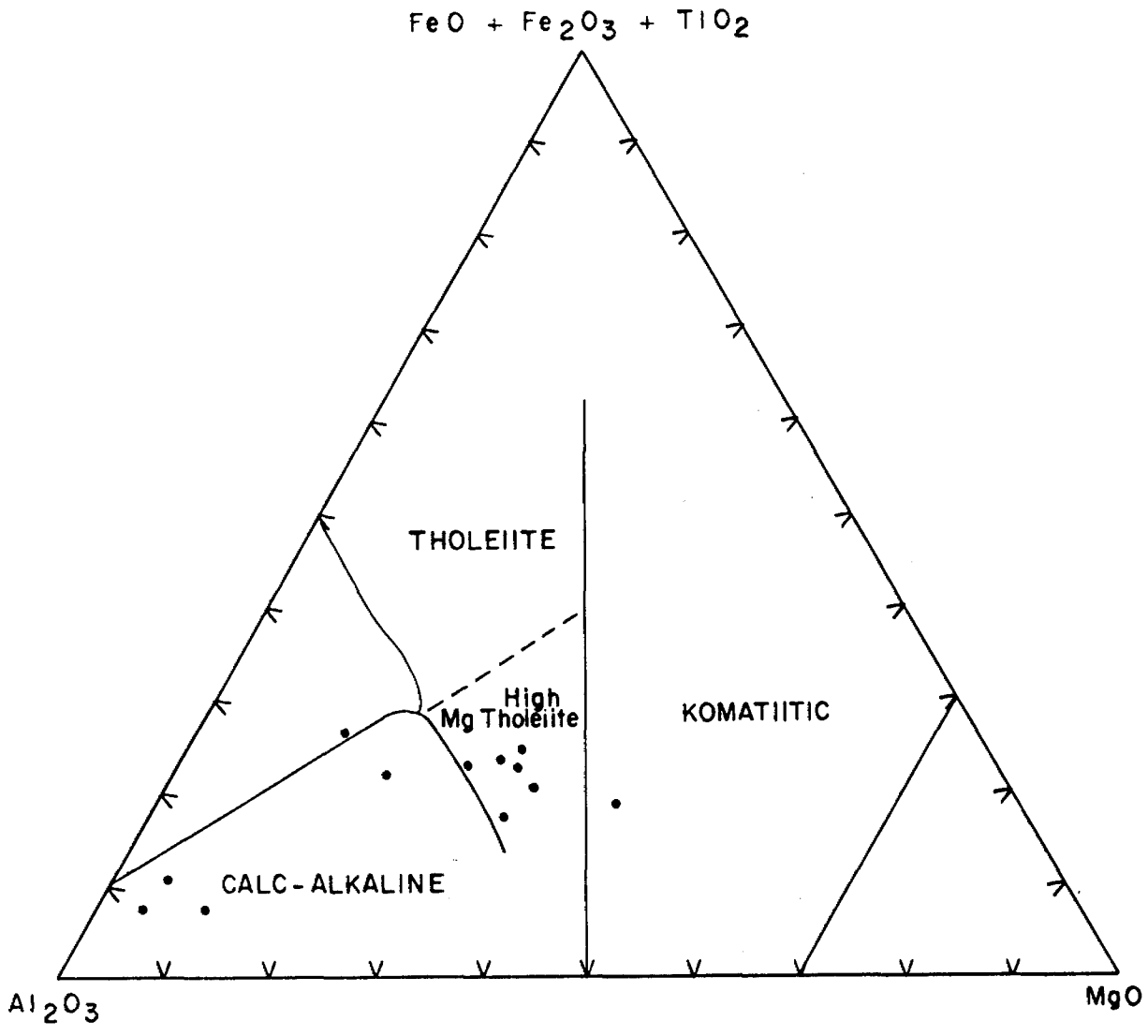


FIGURE 8
HARDIMAN BAY
JENSEN CATION PLOT OF
VOLCANICS

DERRY MICHENER BOOTH & WAHL

FIGURE 9a Typical deformed pillowed carbonatized mafic volcanics (pillow measures 60cm)

FIGURE 9b Contact zone between trondhjemite and mafic volcanics in 'burn area' near L4W 800m south baseline on east grid

the case of more carbonatized rocks, the fresh surface varies in colour from green to grey-green. Plagioclase, pyroxene and small hornblende needles are most abundant with lesser amounts of epidote, actinolite and minor magnetite present.

The high iron content of the rocks is evident by the predominance of rusty weathering in the mafic volcanics. The rocks commonly display fracturing and jointing as well as massive to well-foliated textures proximal to the Hardiman Bay Pluton.

Intermediate Volcanics

These rocks represent a gradational band of volcanics between the mafic and felsic volcanics and occupy less than 10% of the map area. They are largely andesitic in composition and are less resistant to erosion than the mafic volcanics, occurring primarily in smaller scattered outcrops. They vary from tuffaceous to pillowed in texture and are fine to medium-grained.

The intermediate volcanics weather a light grey-green to medium-green with some iron carbonate alteration which imparts a light orange tint to the rocks. Pillows are smaller than those of the mafic volcanics generally ranging in size from 5 cm to 20 cm in diameter and are elliptical to bun-shaped. The pillows also display plastic deformation and, as such, reliable top indicators are rare as is the case with the mafic pillows. Pillow selveges are aphanitic and range in thickness from 1 cm to 2 cm. The interflow sediments are sericitic and in some cases epidotized.

The intermediate volcanics are poorly to moderately foliated with some fracturing observed.

Felsic Volcanics

The felsic volcanics comprise 10% to 15% of the rocks in the map area. They are most abundant in the northern section of the Main Grid west sheet. These rocks are largely pyroclastic rocks with lapilli-sized fragments and in some areas bedding was observed.

A crystal tuff phase contained trace to 5% "quartz eyes" ranging from clear to smokey in colour. The quartz crystals were polygonitized in some cases, suggesting recrystallization.

The felsic volcanics weather a light grey to buff coloured with a weak porphyritic texture imparted by the quartz and plagioclase crystals. They are massive to moderately foliated with a powdery texture suggesting sericitization of the feldspars. The matrix is a pale green to grey-green and is aphanitic to glassy in appearance. Pyroclastic fragments comprise 10% to 35% of the rock in the case of the crystal tuff. Compositionally, these rocks are rhyodacitic in composition, having a greater abundance of quartz than most dacites.

Sediments

A small number of exposures of sedimentary units were noted on the property. Two argillaceous units were found on the east shore of Hardiman Bay. These rocks are aphanitic, dark grey to black and moderately to well foliated. Two outcrops of volcanogenic greywackes were observed on the property; one located on the Main Grid east sheet L4W in the lower eastern section, the other in the northern most section of the East Grid L8E. These exposures were small ranging in size from one metre across to 8-10 m across.

Reliable younging indicators were obtained from the greywackes because they were well bedded with a good graded bedding sequence. The weathered surfaces displayed alternating grey and dark grey green to black bands reflecting

the coarser clastic beds grading to the finer grained material. Within the biotite amphibolite grade of metamorphism close to the Hardiman Bay pluton metamorphically derived reverse graded bedding occurs within the sediments. The younging indicators obtained from these sequences indicated younging to be either north or south but with structural facing direction upward in compliance with the stratigraphic succession.

A small (less than 1 m wide) chert unit was found on the lakeshore in the Main Grid west sheet near L/42W.

Early Precambrian Mafic Intrusives

Two generations of diorite were observed on the property. One is a megacrystic amphibolitized diorite with megacrysts up to 5 mm. Plagioclase had been sericitized concurrent with the growth of the megacrysts which forced the plagioclase to rim the megacrysts. These diorites are thought to be closer to granodiorite in composition and are part of what has been referred to as the 'basement complex' (personal communciation to the authors by James Ireland, resident geologist, Timmins, Ontario). These megacrystic diorite units were found to contain trace amounts of disseminated fine grained pyrite.

The younger, second generation of diorite, possesses a more mafic composition with a more typical diorite grain size. The weathered surface is typically dark to medium green with porphyritic hornblende laths visible in some exposures. The fresh surface is medium to coarse-grained with the metasomatic hornblende phenocrysts.

The temporal relationship between the two phases of diorite is difficult to determine, however, from this and previous examination (Breaks, 1978) it is thought that the megacrystic diorite is older as the other diorite appears fresher on the unweathered surface.

Early Felsic to Intermediate Intrusives

Trondhjemite

Massive to gneissic in texture, the Hardiman Bay Pluton represents a 3 km to 4 km wide domical re-entrant of the extensive granitic batholith complex to the east of the Swayze-Deloro Belt.

Compositionally, the trondhjemite is biotite-hornblende rich and weathers white to white-grey in elongated resistant ridges (Figure 9b). The fresh surface is white-pink to light grey white. The most abundant mineral is a weakly to moderately sericitized plagioclase feldspar with some textural evidence of recrystallization. Magnetite and very minor amounts of epidote are present as accessory minerals. Finely disseminated pyrite is present throughout the unit in trace amounts.

These rocks are massive to well foliated grading to gneissic textures proximal to the contact with the country rocks. Alignment of mafic and micaceous minerals within the trondhjemite result in a banding texture observed in some outcrops. This alignment of elongate minerals is the result of stresses during tectonic implacement.

This unit represents a dominant structural feature in the map area and imparts a 'wrap around' foliation to the rocks in the area proximal to the pluton as well as a pervasive metasomatic carbonatization throughout the map area.

Quartz Feldspar Porphyry

Quartz feldspar porphyry units are widely dispersed throughout the map area. They occur as homogeneous, massive to well foliated (paper schist) narrow discordant intrusives measuring a metre or more in width. The rock is porphyritic with a glassy aphanitic matrix. The quartz and feldspar phenocrysts vary in size

and are largely subhedral to rounded. Sericitic alteration of the plagioclase is prevalent.

The weathered surface is flesh pink to a more orange-pink colour. The fresh surface varies from a light grey-green to a blue-green. Occasional difficulty in discerning this unit from the felsic volcanics was experienced, however, foliation planes within the quartz feldspar porphyry have a more powdery greasy feel indicating a talcose alteration with some sericitization.

The quartz feldspar porphyry unit is thought to be a hypabyssal phase of the trondhjemite and as such is of a similar composition which was verified by field observation. During his examination of the map area, F. Breaks, O.G.S. geologist with the Precambrian Division, found these porphyritic intrusives to be products of early felsic volcanism, originating as narrow, relatively high level sheets, plugs and conduits within a previously consolidated mafic to intermediate metavolcanic edifice.

Late Felsic to Intermediate Intrusives

Crosscutting the trondhjemite and proximal mafic volcanics are a few narrow monzonite/aplite dykes. These dykes occur solely within the contact zone between the mafic volcanics and the pluton and measure 50 cm to 1 m wide and have a random orientation. They weather white, are medium-grained saccharoidal in texture and are predominantly composed of plagioclase and quartz. The plagioclase is sericitized in some cases.

Mafic Intrusives

Late stage diabase dykes intrude all aforementioned rock units and are thought to be a part of a large regional dyke swarm. The most spectacular

exposures of this unit are observed south of the claim boundary on the shores of Great Pike Lake and north of the claim boundary on the northwest shore of Hardiman Bay.

The Abitibi-type diabase present on the property is likely a younger phase of the diabase as suggested by the fresh equigranular appearance of the unweathered surface. Original diabasic textures are readily observable in the intergrowth of plagioclase and pyroxenes with some metamorphic hornblende lathes visible in some outcrops. Generally, the diabase is weakly metamorphosed. The dykes are narrow and measure approximately 1 m to 15 m across. Trace to minor finely disseminated pyrite is present within these dykes.

A few narrow occurrences of gabbro were found in the map area.

Structural Geology

A penetrative northeast-southwest striking foliation constitutes the most pervasive structural feature developed within the metavolcanic, metasedimentary and metaplutonic rocks on the Hardiman Bay property.

A plot of the poles to locally measured foliation planes on an equal area stereonet (Figure 10) displays two main features, the first, a concentration of the poles within the southeastern quadrant of the stereonet and second, an alignment of the poles along two distinct great circles, A and B.

The first feature simply reflects the predominant northeast-southwest strike and moderate northwest dip of the foliation throughout the property.

The alignment of the poles along the northeasterly striking great circle, A, (see Figure 10) reflects the deflecting of the foliation around the Hardiman Bay Trondjhemite-Granitic complex. The style of deflection or folding of the foliation would be open to tight, with a moderate to shallow westerly plunge.

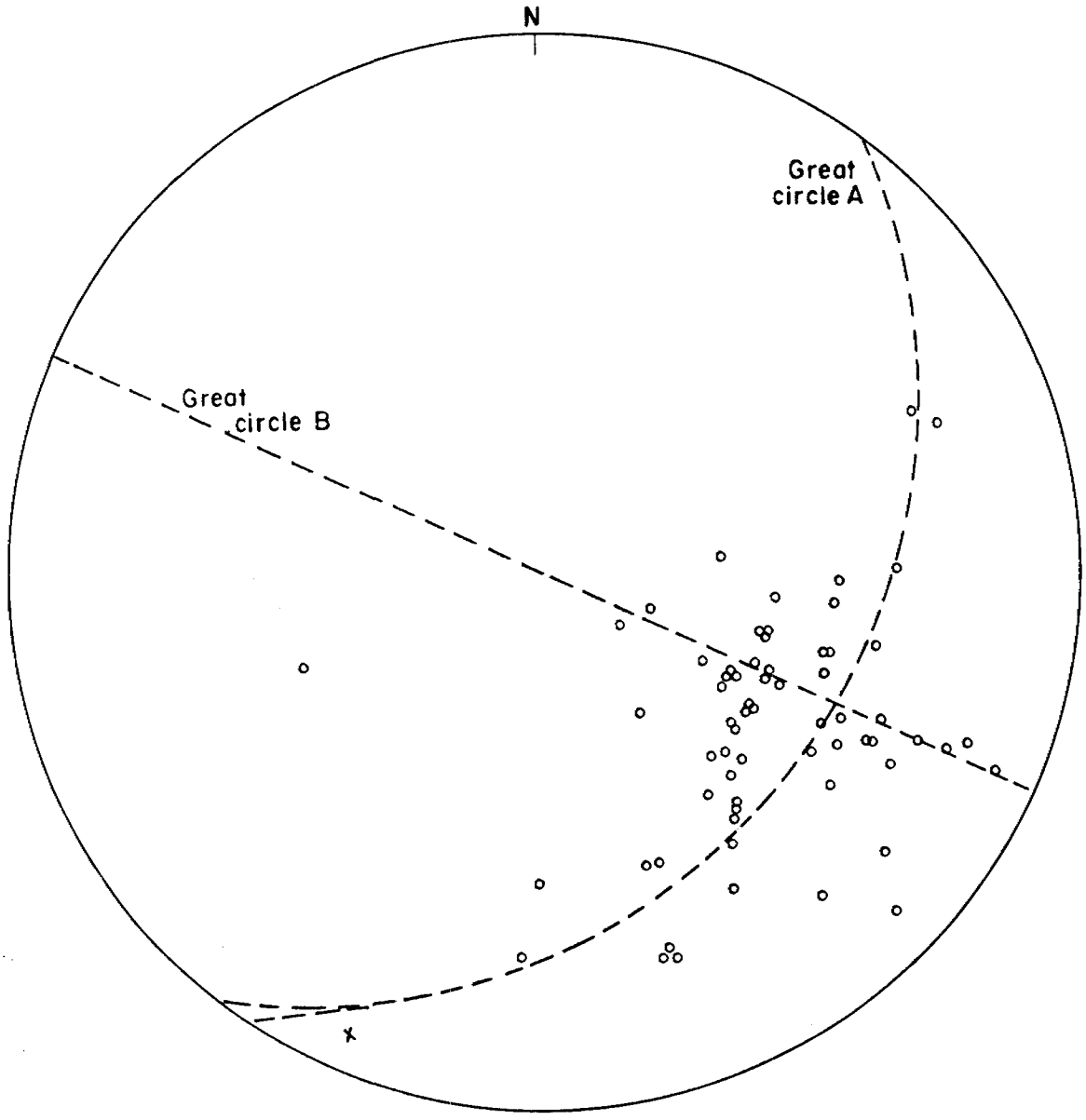


FIGURE 10
HARDIMAN BAY
REGIONAL PROPERTY FOLIATION
STEREONET PLOT

DERRY MICHENER BOOTH & WAHL

Regionally, this foliation is found to be concordant with the margin of the pluton, thus this folding of the penetrative foliation is most likely due to syntectonic diapiric emplacement of the granitic mass.

The alignment about the near vertical east-west great circle, B, reflect either variations in the dip of the pervasive foliation or a tight folding about a northeast-southwest striking axial plane with a subhorizontal northeast-southwest plunge. Figure 11a, displays a fold with just such an axial plane orientation. Located near to the trondhjemite-mafic volcanic boundary off of line 6W, a previous foliation (probably bedding parallel) is folded about an axial plane which is coplannar to the pervasive foliation orientation. The plunge of the fold axis is subhorizontal and is plotted on Figure 10. Thus the pervasive foliation both steepens away from the pluton and is axial planar to tight to isoclinal folds which have limbs of similar orientation (Figure 11b).

Except for a few bedding planes recorded within the minor metasedimentary units, bedding planes were not observed in most of the units observed. A plot of the poles to measured bedding planes with one minor fold axis (Figure 12) does not present any significantly correlatable results. For the most part, stratigraphic orientation has been inferred from the general lithological (Figure 13). With this model, the general stratigraphic sequence is illustrated, i.e., those units nearest to the pluton (mafic volcanics) would be oldest and progressing outward from the pluton the units would get younger.

Several younging indicators (pillows, graded bedding) from this and previous studies generally indicate southerly top directions. When younging is transposed from those beds upon the foliation it presents an upwards structural facing direction. This combined with the information provided from the block diagram infers that the volcanic sequence as a whole youngs away from the pluton and is upward facing.

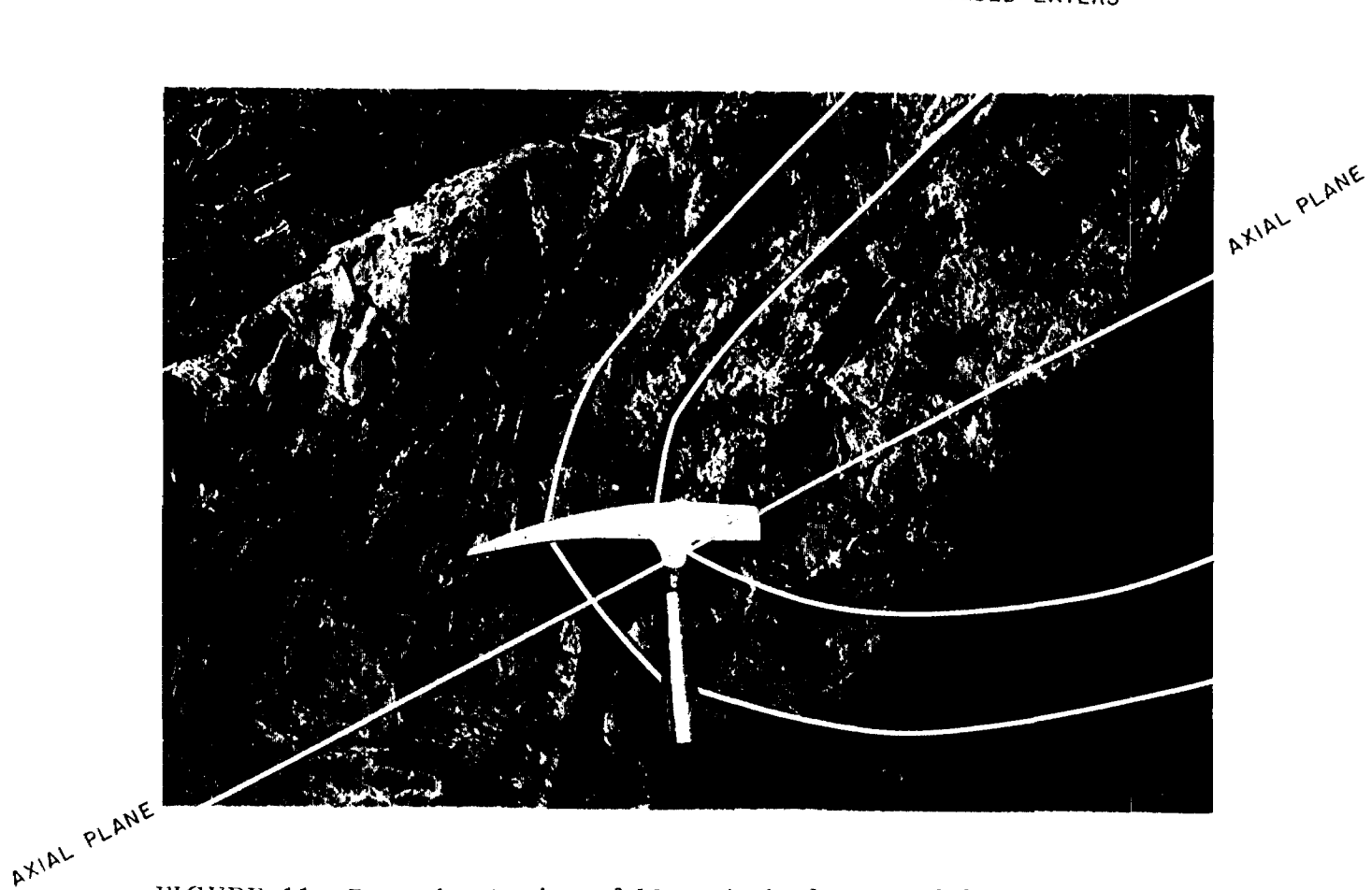


FIGURE 11a Recumbent minor fold typical of style of folding proximal to trondhjemite pluton

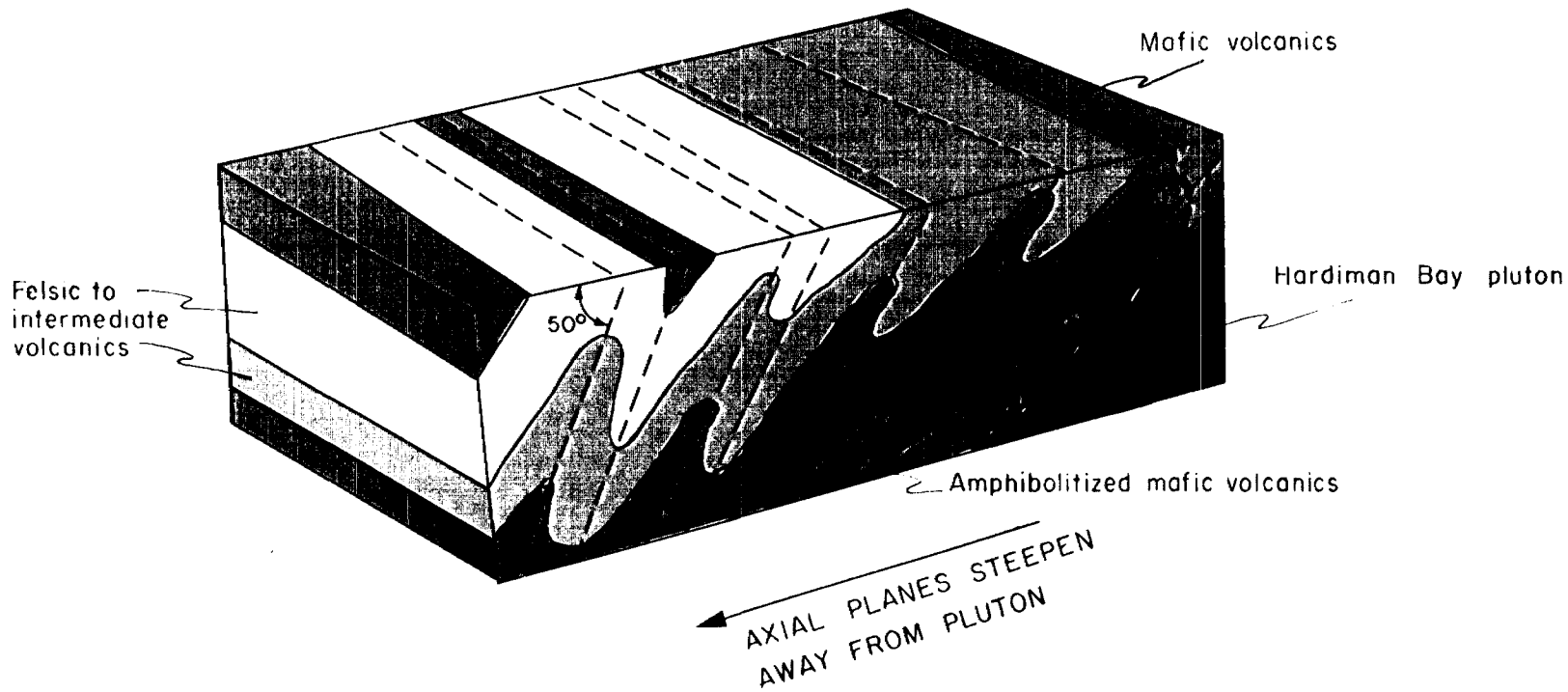


FIGURE 11b
HARDIMAN BAY
POSSIBLE FOLD STYLE

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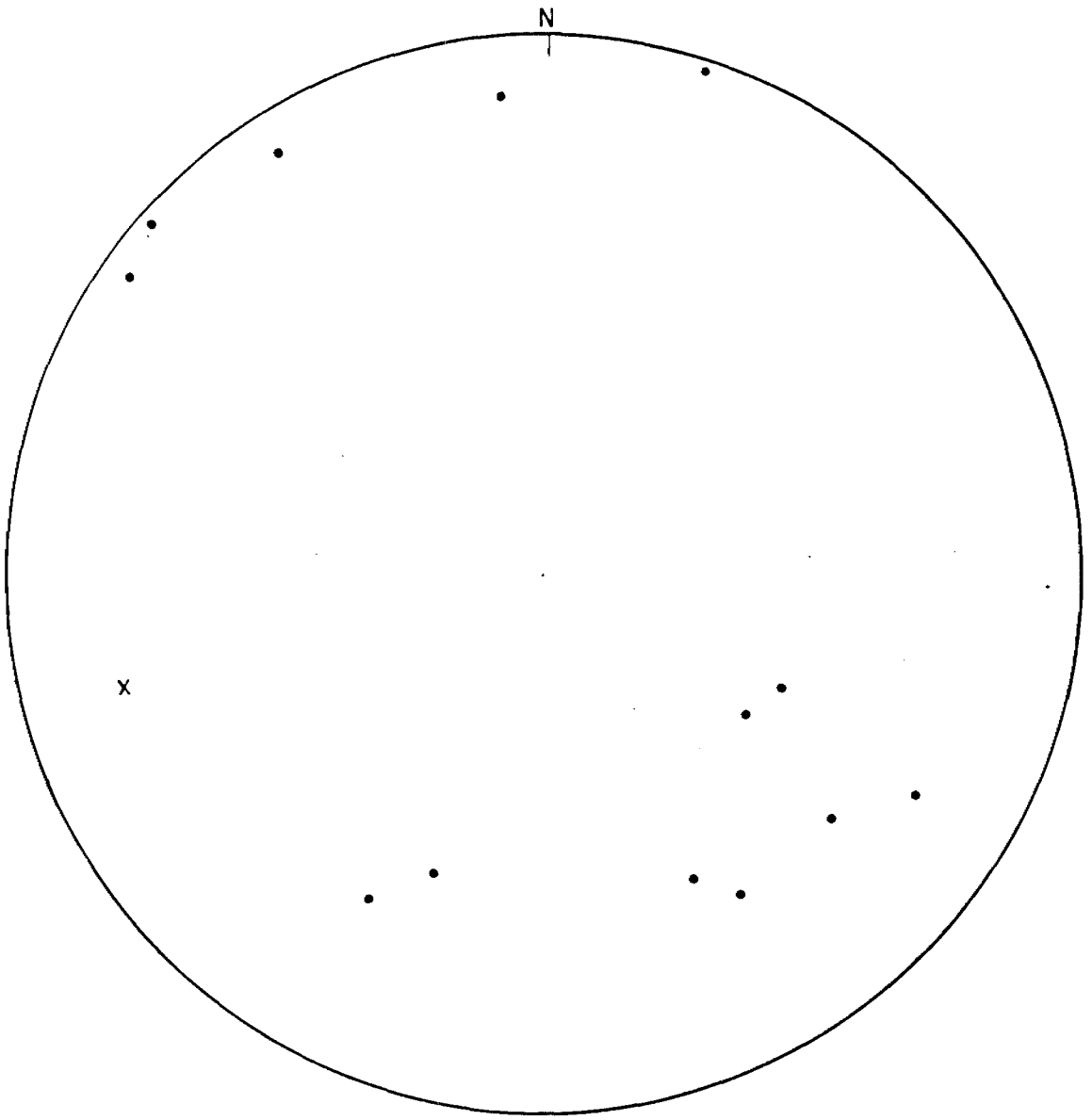

• Poles to S_0

x Minor fold axis

FIGURE 12
HARDIMAN BAY
REGIONAL PROPERTY BEDDING
STEREONET PLOT

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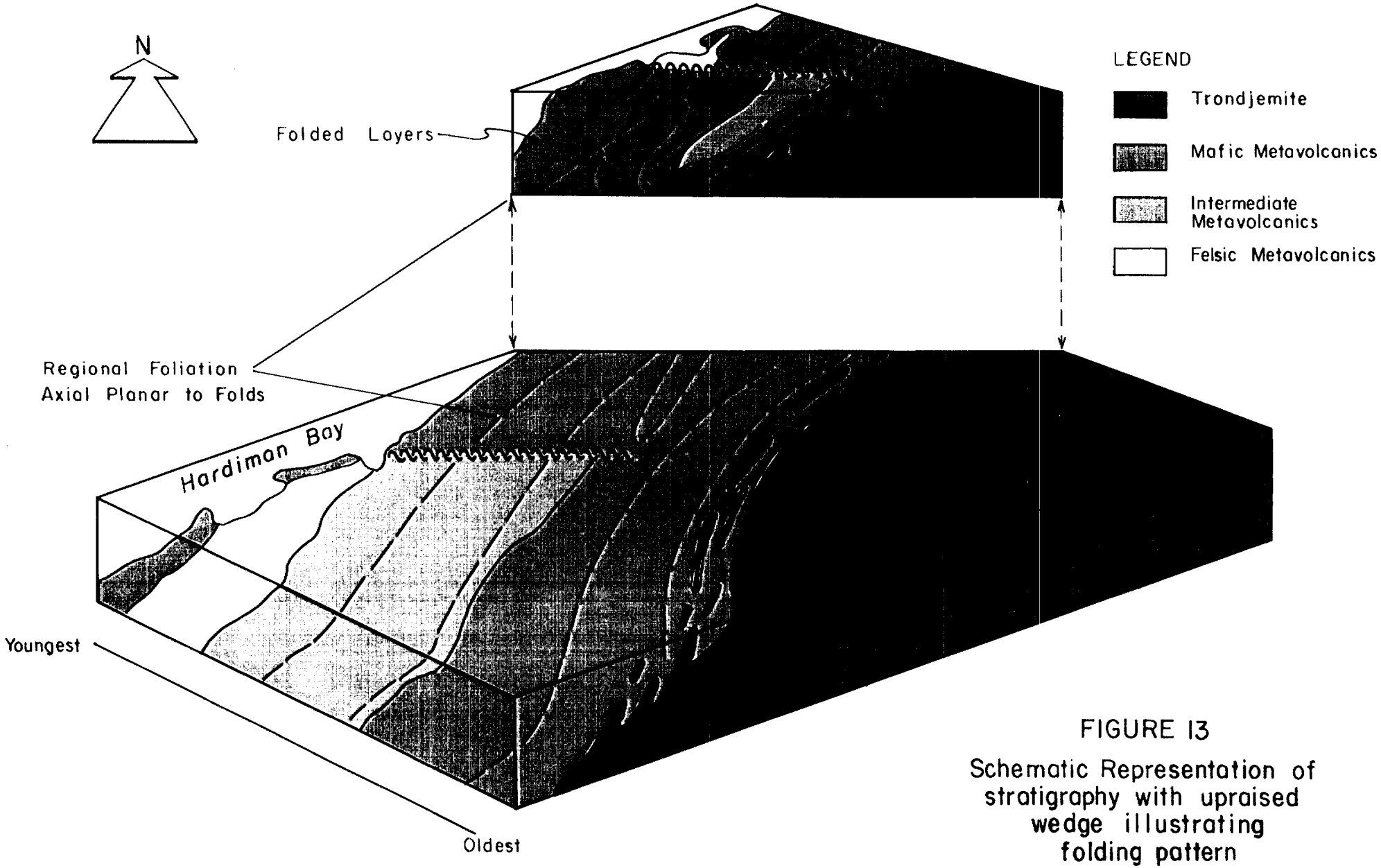

FIGURE 13

Schematic Representation of stratigraphy with upraised wedge illustrating folding pattern

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Jointing

Stereographic projection of local jointing/fracturing measurements roughly establishes three major joint sets within the Hardiman Bay property (Figure 14). Set one, (open squares) strike north-south to northeast-southwest, set two (dark squares) strike southeast-northwest and set three (partly shaded) strike approximately 70°-85°. Note that no inference is made by numerical order to chronological sequence.

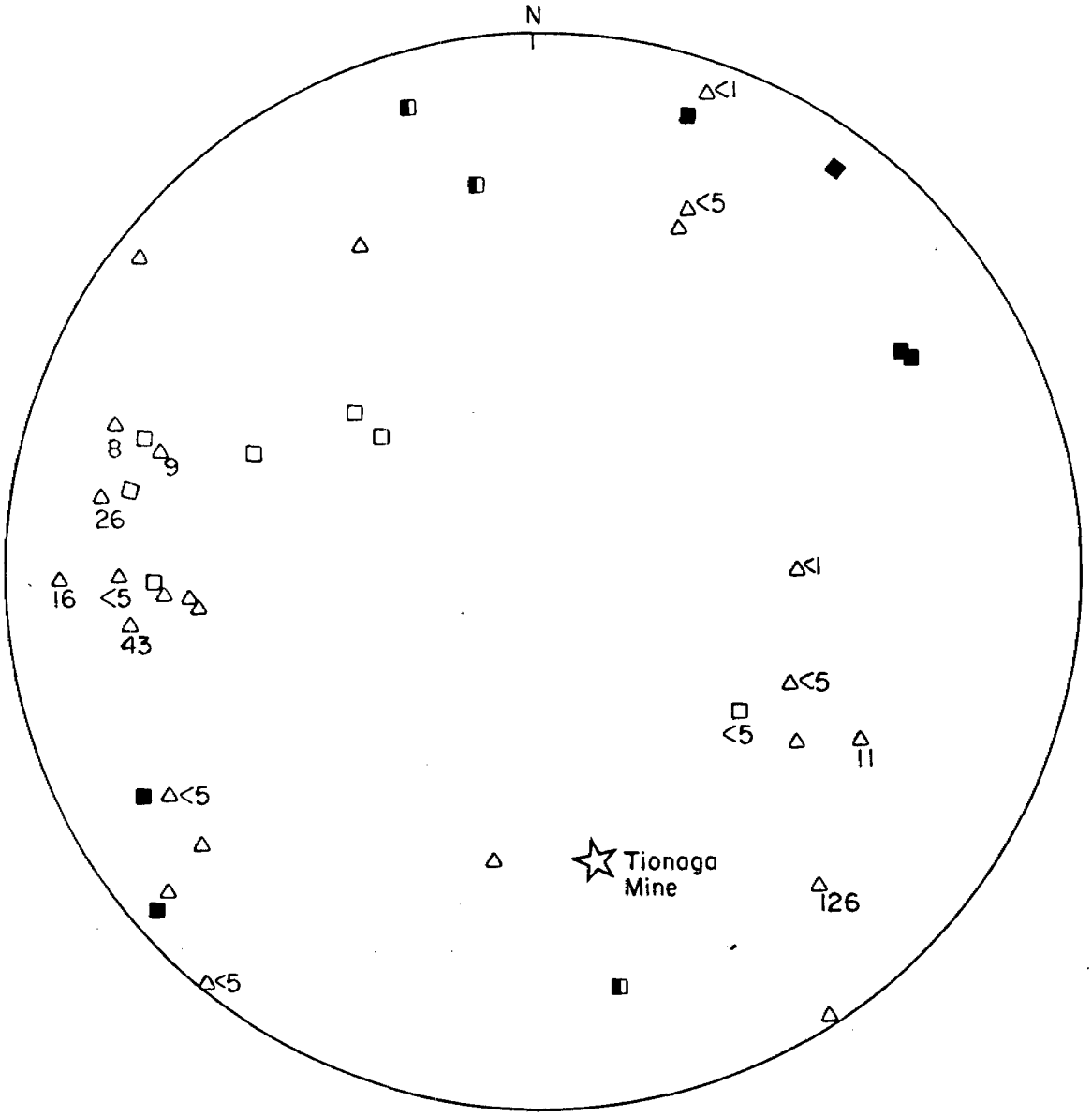
Quartz vein orientations, some with geochemical results, are plotted along with the joint/fracture sets (see Figure 14). The orientation of the quartz veins plotted appear to correspond to the existing fracture/joint sets. The orientation of the nearby Smith-Thorne/Tionaga gold bearing vein is plotted. This vein relates to the third fracture set, unfortunately no geochemical results are available for any similarly oriented veins.

Alteration/Metamorphism

The map area generally exhibits a greenschist grade of metamorphism, however, a contact metamorphic aureole exists around the Hardiman Bay Pluton and is characterized by an increase in metamorphic grade to amphibolite facies within the mafic volcanics proximal to the pluton.

Amphibolitization of the diorite present on the property is reflected by the development of well-formed hornblende laths. Megacrystic development occurs in the units of a more granodiorite composition.

Development of actinolite needles and serpentinization in the wall rock adjacent to quartz veins is commonly observed in mafic units which have undergone some form of faulting and subsequent quartz-carbonate infilling.



JOINTING/FRACTURING

- □ Set one
- ■ Set two
- ◧ Set three
- △<1 Quartz veining with assay values

FIGURE 14

HARDIMAN BAY
JOINTING & QUARTZ VEINING
STEREONET PLOT

DERRY MICHENER BOOTH & WAHL

A pervasive metasomatic carbonatization of the rocks in the area is associated with the implacement of the pluton. The mafic volcanics exhibit some local weak to moderate talc alteration on the weathered surface often associated with zones of weak to moderate iron carbonate alteration. Hematite staining and alteration found on the property is thought to be largely attributed to the high iron content of the country rocks.

Limonitic staining and weak gossanous zones are localized and found throughout the grid area largely in the mafic volcanics and in a few instances the intermediate volcanics. The locallized gossanous zones and small patches are associated with finely disseminated pyrite. Also associated with the mafic volcanics is a weak silica alteration, this too is a localized feature with no specific association or orientation.

Sericitic alteration of the feldspars is found in all units but it is particularly evident in the intermediate to felsic intrusives and felsic volcanics. The more intensely foliated felsic to intermediate units display a talcose and sericitic alteration on the foliation planes.

Veining

Veining follows three main orientations as is outlined in the stereonet projection in Figure 14. Close to the Hardiman Bay pluton, veining is generally concordant with jointing patterns, however, distal from the pluton the quartz veining trend becomes concordant with foliation.

Of the third set of veining which parallels the northeasterly strike of the auriferous Smith-Thorne-Tionaga quartz veins, only a few veins were located and sampled. Compositionally, the veining is quartz+/-carbonate+/-tourmaline in composition. The volume of quartz exceeds that of carbonate in the veins. The veins appear white to smokey grey, black and have a vitreous lustre. Finely disseminated tourmaline is thought to be responsible for the black colour of the

veins. Veining crosscuts most units and is particularly notable in the mafic volcanics where they often carry finely disseminated pyrite. In the pillowed outcrops quartz-carbonate veins infill the interpillow cavities as well as crosscut the pillow structures.

Vein density is low and the veins range in size from less than 1 cm to 30 cm wide. Few alteration haloes were noted adjacent to veins; however, those present were largely 2 cm to 3 cm wide carbonate zones.

Some weak epidote alteration and serpentization associated with the veining was observed. Development of actinolite needles in mafic wall rock was observed in instances where quartz carbonate material infilled small shear structures or fractures.

Veining is late stage as it crosscuts most units or is seen infilling structural features which resulted from late stage tectonic activity.

Mineralization

Mineralization on the property largely consists of trace to 5% finely disseminated pyrite associated with quartz veining and infillings. Trace pyrite is ubiquitous throughout the rock units.

Less than 1% finely disseminated pyrrhotite is locally associated with pyrite. Some rock units are weakly magnetic probably caused by the presence of pyrrhotite and magnetite.

The Abitibi-type late stage diorite dyke also carries trace amounts of finely disseminated pyrite locally. Minor chalcopyrite is associated with finely disseminated pyrite in a few instances. An isolated occurrence of a sulphide thought to be arsenopyrite, was found on L/8/E, North Grid.

Geochemical sampling delineated two zones of interest in the area designated as Zone A and Zone B (see Appendix 1 and Maps 88-108-04 and 88-108-06). The geochemical expression of these zones of interest is a cluster of moderately elevated gold values from 11 ppb to 164 ppb Au. Geophysically, these zones are associated with an area of generally localized high amplitude magnetic responses with accompanying conductivity effects.

Zone A occurs in the west-central part of the main grid near the shores of Hardiman Bay. This zone is in proximity to a north-east trending structure interpreted from geophysics and indicates a possible fault splayed off from the major Hardiman Bay Fault. Geochemical values, from 11 ppb to 164 ppb Au in 12 samples, are distributed throughout the zone and are associated with finely disseminated pyrite in quartz veining striking northwest to northeast in the metavolcanics. Several small late stage intrusive bodies are also associated with this zone.

Zone B is located at the north end of the East Grid. This zone is characterized by an anomalous magnetic response and coincident conductor. Values in this area range between 11 ppb to 126 ppb in three samples and were found in northeast striking quartz veins within well foliated mafic volcanics. The quartz veins contain finely disseminated pyrite, pyrrhotite and chalcopyrite with an unidentified silver sulphide present.

Although surface gold values are not strongly anomalous it is important to note that investigators of the Sangold (Keith Township) and Orofino (Silk Township) gold occurrences, reported "unimpressive surface gold values". In both cases, however, drilling and trenching returned significant gold values associated with quartz veining in mafic metavolcanics.

Conclusions

Gold occurrences in Horwood Township are closely related to the Horwood Lake and Hardiman Bay Faults. The Hardiman Bay property is geologically well situated, directly north of the junction between these faults. As well, the Hardiman Bay property has a geological environment similar to that of nearby gold producers and occurrences located within a 10 km radius of the property. The closest of these is the Smith-Thorne-Tionaga Mine directly to the southwest of the property (Figure 15). These gold producers and occurrences are generally within large mafic volcanic units cut by northeasterly to east-west striking gold-bearing quartz veins with related quartz feldspar porphyry and diorite dyke units present.

To date, the current exploration program has delineated two zones with elevated gold values which warrant further work.

GEOPHYSICS

Survey Parameters and Presentation

Magnetic Survey

A Scintrex MP-2 proton magnetometer was used to measure the total magnetic field (see Instrument Specifications, Appendix 2). Readings were taken every 25 m along the grid lines. Except in areas of high magnetic gradient where 12.5 m station intervals were measured. Diurnal correction control was obtained by looping through pre-established base stations at intervals that did not exceed one and one-half hours. Survey line separation was 200 m. A total, on both grids, of 38.1 line km of magnetic data was obtained in this way for a total of approximately 1,540 readings.

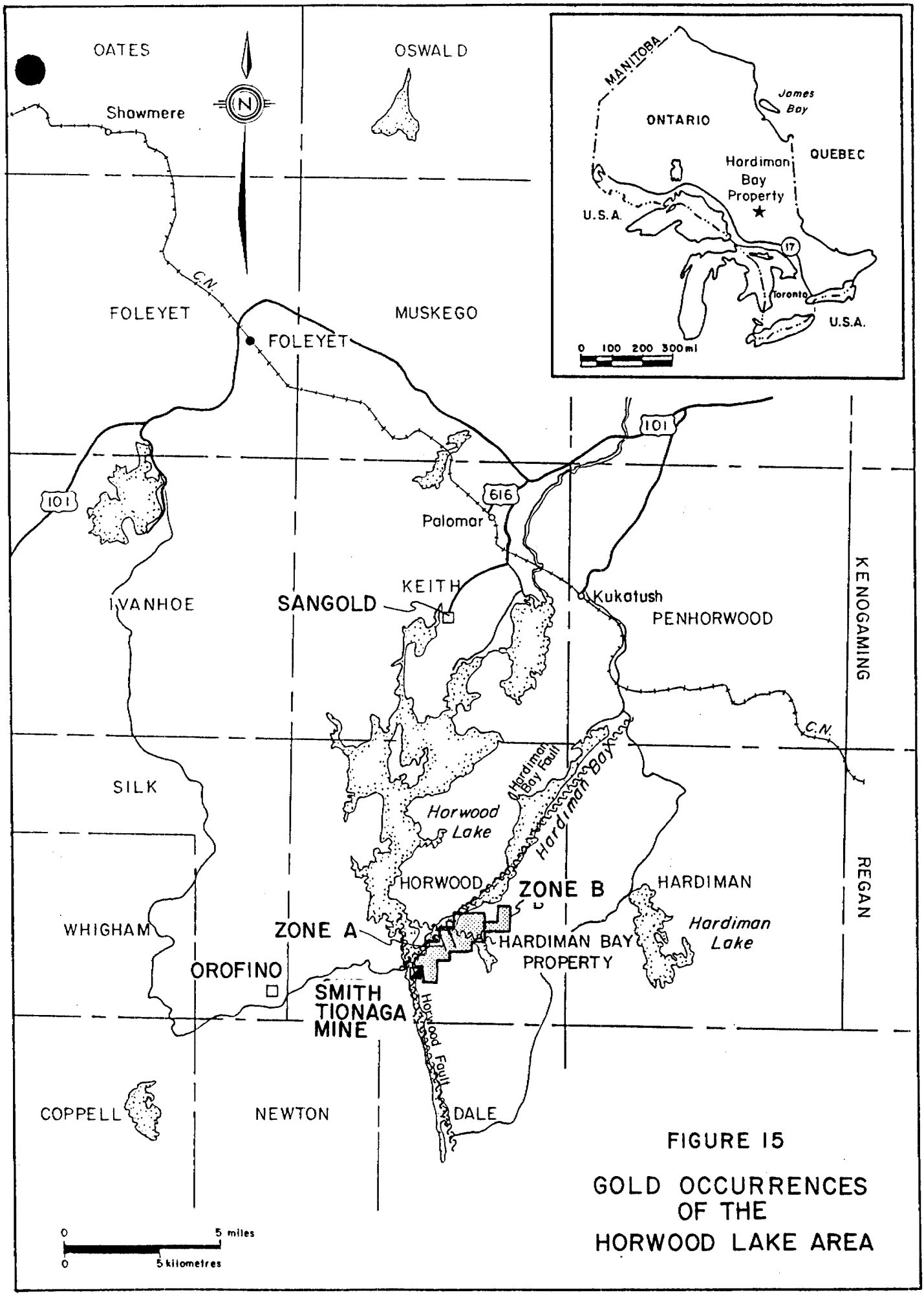


FIGURE 15

GOLD OCCURRENCES OF THE HORWOOD LAKE AREA

A regional value of 58,000 nT was subtracted from all the corrected magnetic values. Subsequently, office compilation consisted of entry of the data values into a computer controlled plotting system. Survey maps of magnetic values and contour maps, at an interval of 100 nT, were generated at a scale of 1:5,000 (see Maps 88-108-07 to 88-108-10, inclusive).

VLF-Electromagnetic Survey

The VLF-electromagnetic survey utilized a Geonics EM-16 instrument to measure the secondary field components produced by the primary field from the VLF transmitter station at Cutler, Maine (24.0 KHz) (see Specifications in Appendix 2). Measurements of the in-phase and quadrature values were taken every 25 m along the survey lines. A total of 38.1 line km of data, or about 3,050 readings, were collected in this way.

Subsequently, office compilation consisted of entry of the data values on the field maps into a computer system for machine plotting. The conductors detected by the survey are indicated by negative to positive profile slopes proceeding in a grid north direction as shown on Maps 88-108-11 to 88-108-12, inclusive. A technical data statement is contained in Appendix 3.

Results and Conclusions

In order to illustrate the various magnetic and conductive structures interpreted from the geophysical surveys, an interpretive geophysical map has been compiled as shown on Map 88-108-13. This figures illustrates only the structures present in the main grid area flanking Hardiman Bay as the strip of claims in the east extension grid have limited regional extent.

Magnetic Survey

The total field magnetic background is approximately 58,700 nanotesla (nT) throughout the property with local variations of +/-50 nT. Anomalous responses from 200 to 500 nT above background occur in the south half of the main grid with some line-to-line continuity present in a few areas. Proceeding northwards magnetic activity increases considerably to amplitudes of 500 to 1,500 nT above background. Anomalous responses are generally localized and erratic with poor line-to-line strike continuity. The highest amplitude and most extensive magnetic responses occur in the extreme north part of the main grid on lines 200 and 400 west as well as in an area at the east end of line 2,800 west. To the north and west of this latter area geochemically anomalous gold values in rock were reported.

Mapping has shown that the magnetic areas are related to the presence of magnetite in gabbro and diorite and, to some extent, probable magnetite and pyrrhotite mineralized selvages around pillows in the lavas. Diorite occurs as a major outcrop area in the north part of the grid where most of the magnetic activity was measured. Because of the apparent erratic nature of the magnetic responses structural trends are not obvious. The complexity of the magnetic responses may have been increased because of alteration processes occurring as a result of several phases of intrusive activity. An airborne magnetic survey of the area in 1981, by other interests, shows a dominant sinuous north-northeast trend direction of three magnetic zones. The grid survey line direction on the property is subparallel to this direction, thus, such magnetic trends will be poorly defined by the present survey explaining the generaly erratic magnetic patterns.

Very little magnetic structure can be discerned from the east extension grid because of the limited area involved. An apparent narrow magnetic anomalous zone trending east-west occurs at the extreme north part of the grid. A large diorite outcrop was mapped in this area and some phases of it may contain magnetite. Some gossaniferous material was also reported in the general area and just south of the anomaly, approximately 100 m, geochemically anomalous values in gold were obtained from three rock samples.

VLF-Electromagnetic Survey

Major high amplitude conductive responses occur in the south part of the main grid area. They trend in an east-west to east-northeast direction. The most striking feature trends from line 5,400 west, station 400 south to line 4,400 west, station 1,000 south and continues off the grid to the east. Numerous lower amplitude but significant conductive responses are seen throughout the grid area. Many have some line-to-line continuity generally in a northeast direction. The multiplity of conductors makes the selection of a line-to-line trend ambiguous in many areas. Except for some regional spacial relationships, there are no significant correlations of the conductive trends with the magnetic anomalies.

Many of the conductors may be related to underlying conductive overburden effects in part caused by conductive clays within glacial drift cover. Nevertheless, interruption of the conductive trend patterns suggests the presence of fault or fold structures in several localities. One such structure is postulated between lines 4,000 west and 4,200 west while another trends east and west from line 1,600 west, 600 south to about 400 north on line 2,400 west as shown on Map 88-108-13. A sharp interruption in magnetic activity just to the north of this latter structure helps to substantiate that some type of structural break is present. The airborne total field VLF electromagnetic survey flown in 1981 shows a conductive response trending in the same direction in the general area. The trace of this structure parallels the east-west shoreline of Hardiman Bay from lines 2,600 west to 3,000 west suggesting some topographical evidence for a fault structure in this area. Geochemically anomalous gold values were obtained in outcrop from this area suggesting that the structure may have some relationship to the gold mineralization.

In the east extension grid area there are several significant conductive responses which appear to have a definite northwest trend direction. In addition, the eastern part of the magnetic anomaly at the north end of lines 400 to 800 east has a direct correlation with a conductor. Gossaniferous material including pyrite and some base metal mineralization were reported in this area which may account for the conductive response.

RECOMMENDATIONS

Two zones of geochemically anomalous gold values have been detected on the property which warrant further investigation. It is recommended that these zones be covered with grid lines every 100 m to facilitate a detailed mapping, stripping and sampling program.

The geochemically anomalous gold values detected in the west-central part of the main grid area have a spatial relationship to a structural break interpreted from the magnetic and electromagnetic responses. In some environments gold mineralization is associated with alteration and disseminated sulphide mineralization. Usually such mineralization can only be detected geophysically by the induced polarization (IP) survey method. It is recommended, therefore, that induced polarization profiling over the anomalous gold indications be completed in conjunction with the detailed geological investigations.

If the results of the mapping and sampling program suggest that there is significant potential for gold mineralization in the area a drill program would be warranted to properly evaluate the property.

Analysis of the results of the IP profiling, with respect to favourable gold mineralized zones, will determine if the method is suitable for delineating other overburden covered areas of possible gold mineralization. If the method proved successful it would be an important aid in defining drill targets.

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CERTIFICATE OF QUALIFICATION

I, Carol J. Lormand of the City of Thunder Bay, Province of Ontario, do hereby certify that:-

(1) I am an independent consulting geologist resident at 69 Regent Street, Thunder Bay, Ontario P7A 5G7.

(2) I graduated from Lakehead University, Thunder Bay, Ontario in 1986 with an Honours Bachelor of Science degree.

(3) I have been practising my profession continuously since graduation.

(4) I have no direct or indirect interest, nor do I expect to receive any, in the properties or securities of Hardiman Bay Resources Inc.

(5) This report and the conclusions and recommendations made are based on examination of available data. I have carried out geological mapping and prospecting on the property.

(6) I hereby consent to the use of this report in a Statement of Material Facts of the Company and for the preparation of a prospectus for submission to the Ontario Securities Commission and other regulatory authorities.

Carol J. Lormand, B.Sc.

Toronto, Ontario
October 1988

CERTIFICATE OF QUALIFICATION

I, Craig S. Alford of the City of Thunder Bay, Province of Ontario, do hereby certify that:-

(1) I am an independent consulting geologist resident at 69 Regent Street, Thunder Bay, Ontario P7A 5G7.

(2) I graduated from Lakehead University, Thunder Bay, Ontario in 1988 with a Masters degree in Science.

(3) I have been practising my profession continuously since graduation.

(4) I have no direct or indirect interest, nor do I expect to receive any, in the properties or securities of Hardiman Bay Resources Inc.

(5) This report and the conclusions and recommendations made are based on examination of available data. I have carried out geological mapping and prospecting on the property.

(6) I hereby consent to the use of this report in a Statement of Material Facts of the Company and for the preparation of a prospectus for submission to the Ontario Securities Commission and other regulatory authorities.

Craig Alford

Craig S. Alford, M.Sc.

Toronto, Ontario
October 1988

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.

3. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the properties or securities of Hardiman Bay Resources Inc.

4. The statements contained in this report and the conclusion and recommendations made are based upon my review of all data available. I have not visited the property.

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.

Ian D. Trinder, B.Sc.

Toronto, Ontario
October 31, 1988

CERTIFICATE OF QUALIFICATION

I, Roderick W. Woolham of the town of Pickering, Province of Ontario, do hereby certify that:-

1. I am a geophysicist and reside at 1463 Fieldlight Blvd., Pickering, Ontario, L1V 2S3.

2. I graduated from the University of Toronto in 1961 with a degree of Bachelor of Applied Science, Engineering Physics, Geophysics Option.

3. I am a member in good standing of the following organizations: The Association of Professional Engineers of the Province of Ontario (Mining Branch); Society of Exploration Geophysicists; South African Geophysical Association.

4. I have been practising my profession for a period of more than 25 years.

5. I am an Associate with Derry, Michener, Booth & Wahl, Consulting Geologists and Engineers.

6. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the properties or securities of Hardiman Bay Resources Inc. or any affiliate.

7. I personally was involved with the technical supervision of the geophysical surveys and wrote the report.

8. I consent to the use of this report in submissions for assessment credits and for similar regulatory requirements.

R. W. Woolham, P.Eng.

REGISTERED PROFESSIONAL R. W. WOOLHAM PROVINCE OF ONTARIO

Toronto, Ontario
October 31, 1988

APPENDIX 1

ZONES A AND B - ANOMALOUS VALUES

TABLE OF ANOMALOUS GEOCHEMICAL RESULTS

Zone A - L30W to L24W - Main Grid

Sample #	Location		Au/ppb	Unit
3522	L26W	2+50N	18	Quartz carbonate in Mafic Vx
3523	L26+30W	2+50N	28	Quartz carbonate in Mafic Vx
3524	L26+00W	2+25N	41	Quartz carbonate vein in Mafic Vx
3528	L28+00W	5+79N	13	Quartz carbonate vein in Mafic Vx
3529	L28+00W	5+50N	164	Quartz carbonate vein in felsic Vx
3530	L28+00W	5+00N	19	Felsic Vx
3532	L28+00W	2+65N	28	Diabase boulder
3535	28W 2S		38	Quartz carbonate vein in tuff
3536	L28+00W	5+25S	71	Diabase or Mafic Vx
3537	L28+00W	1+78N	24	Carbonate intermediate tuff
3561	L28+00W	Lakeshore	64	Mafic Vx
3567	L26+03W	1+45S	11	Quartz carbonate vein in Mafic Vx

Zone B - East Grid

3651	L8+05E	14+50N	126	Felsic dyke in sheared Mafic
3652	L4+00E	13+75N	11	Quartz carbonate in Mafic Vx
3654	L4+00E	13+70N	11	Quartz float

Abbreviations

Vx = volcanic

APPENDIX 2

INSTRUMENT SPECIFICATIONS

TECHNICAL DESCRIPTION OF MP-2 MAGNETOMETER

SCINTREX

RESOLUTION	1 Gamma.
TOTAL FIELD ACCURACY	± 1 Gamma over full operating range.
RANGE	20,000 to 100,000 gammas in 25 overlapping steps.
INTERNAL MEASURING PROGRAMME	Single reading — 3.7 seconds. Recycling feature permits automatic repetitive readings at 3.7 seconds intervals.
EXTERNAL TRIGGER	External trigger input permits use of sampling intervals longer than 3.7 seconds.
DATA OUTPUT	5 digit LED (Light Emitting Diode) readout displaying total magnetic field in gammas or normalized battery voltage. Multiplied precession frequency and gate time outputs for base-station recording using interfacing optionally available from Scintrex.
GRADIENT TOLERANCE	Up to 5000 gammas/metre.
POWER SOURCE	8 alkaline "D" cells provide up to 25,000 readings at 25° C under reasonable signal/noise conditions (less at lower temperatures). Premium carbon-zinc cells provide about 40% of this number.
SENSOR	Omnidirectional, shielded, noise-cancelling dual coil, optimized for high gradient tolerance.
HARNESS	Complete for operation with staff or back pack sensor.
OPERATING TEMPERATURE RANGE	−35°C to +60°C.
SIZE	Console, with batteries: 80 x 160 x 250mm. Sensor: 80 x 150mm. Staff: 30 x 1550mm. (extended) 30 x 600 mm. (collapsed)
WEIGHTS	Console, with batteries: 1.8kg. Sensor: 1.3kg. Staff: 0.6kg.

SCINTREX LIMITED
222 Snidercroft Road,
Concord, Ontario, Canada L4K 1B5

EM16

VLF Electromagnetic Unit

Pioneered and patented exclusively by Geonics Limited, the VLF method of electromagnetic surveying has been proven to be a major advance in exploration geophysical instrumentation.

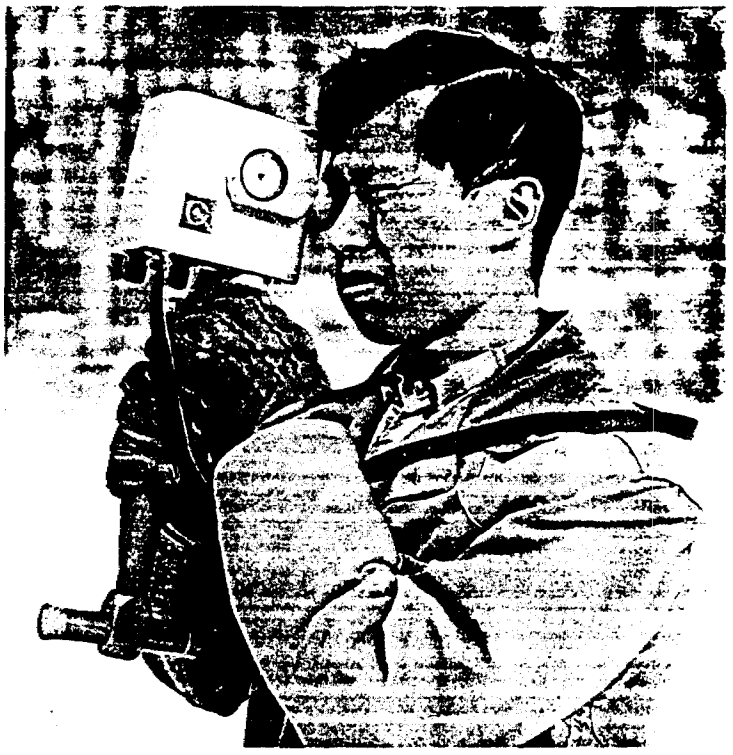
Since the beginning of 1965 a large number of mining companies have found the EM16 system to meet the need for a simple, light and effective exploration tool for mining geophysics.

The VLF method uses the military and time standard VLF transmissions as primary field. Only a receiver is then used to measure the secondary fields radiating from the local conductive targets. This allows a very light, one-man instrument to do the job. Because of the almost uniform primary field, good response from deeper targets is obtained.

The EM16 system provides the *in-phase* and *quadrature* components of the secondary field *with the polarities indicated.*

Interpretation technique has been highly developed particularly to differentiate deeper targets from the many surface indications.

Principle of Operation
The VLF transmitters have vertical antennas. The magnetic signal component is then horizontal and concentric around the transmitter location.



Specifications

Source of primary field	VLF transmitting stations.
Transmitting stations used	Any desired station frequency can be supplied with the instrument in the form of plug-in tuning units. Two tuning units can be plugged in at one time. A switch selects either station.
Operating frequency range	About 15-25 kHz.
Parameters measured	(1) The vertical in-phase component (tangent of the tilt angle of the polarization ellipsoid). (2) The vertical out-of-phase (quadrature) component (the short axis of the polarization ellipsoid compared to the long axis).
Method of reading	In-phase from a mechanical inclinometer and quadrature from a calibrated dial. Nulling by audio tone.
Scale range	In-phase ± 150%; quadrature ± 40%.
Readability	± 1%.
Reading time	10-40 seconds depending on signal strength.
Operating temperature range	−40 to 50° C.
Operating controls	ON-OFF switch, battery testing push button, station selector, switch, volume control, quadrature, dial ± 40%, inclinometer dial ± 150%.
Power Supply	6 size AA (penlight) alkaline cells. Life about 200 hours.
Dimensions	42 x 14 x 9 cm (16 x 5.5 x 3.5 in.)
Weight	1.6 kg (3.5 lbs.)
Instrument supplied with	Monotonic speaker, carrying case, manual of operation, 3 station selector plug-in tuning units (additional frequencies are optional), set of batteries.
Shipping weight	4.5 kg (10 lbs.)

GEONICS LIMITED
Designers & manufacturers of geophysical instruments
~~subsidiary of Bearing Milliken Inc.~~
2 Thorncliffe Park Drive
Toronto/Ontario/Canada
M4H 1H2
Tel: (416) 425-1821
Cables: Geonic's

APPENDIX 3

TECHNICAL DATA STATEMENT

Ontario

Ministry of Natural Resources

File _____

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

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

Type of Survey(s) Geophysical and Geological

Township or Area Horwood Twp.

Claim Holder(s) HARDIMAN BAY RESOURCES INC.

Survey Company Derry, Michener, Booth, & Wahl

Author of Report Lormand, Alford, Woolham

Address of Author 20 Richmond St. E, Toronto, Ont.

Covering Dates of Survey May 1, Aug, Sept, Oct. 5/88
(linecutting to office)

Total ~~Miles~~ of Line Cut 46.3 Km

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

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

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

DATE: Nov. 1/88 SIGNATURE: K.M. Lormand
Author of Report or Agent

Res. Geol. _____ Qualifications 63.1718

Previous Surveys

File No.	Type	Date	Claim Holder

FOR USE ONLY

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P987395	P987436
96	37
97	38
98	39
99	P987440
P987400	41
01	42
02	43
03	44
04	45
05	46
06	47
07	48
08	49
09	P987450
P987410	51
11	52
12	P987453
13	
14	
15	
16	
17	
18	
19	
P987420	
21	
22	
23	
24	
25	
26	
27	
28	
29	
P987430	
31	
32	
33	
34	
35	

TOTAL CLAIMS 59

If space insufficient, attach list

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations Mag 1540 VLF 1525 Number of Readings Mag 1540 VLF 3050

Station interval Mag 12.5/25m VLF 25m Line spacing 200m

Profile scale VLF 1cm = 20%

Contour interval Mag 100 nT

MAGNETIC

Instrument Scintrex MP-2

Accuracy – Scale constant See Appendix 2

Diurnal correction method Loop Base Station

Base Station check-in interval (hours) 1 – 1½

Base Station location and value

ELECTROMAGNETIC

Instrument Geonics EM-16

Coil configuration See Appendix 2

Coil separation

Accuracy

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency 24.0 KHz Cutler, Maine
(specify V.L.F. station)

Parameters measured

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION / RESISTIVITY

Instrument

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time Frequency

– Off time Range

– Delay time

– Integration time

Power

Electrode array

Electrode spacing

Type of electrode

GEOCHEMICAL LAB REPORTS

Bondar-Clegg & Company Ltd.
5420 Canotek Road
Ottawa, O[redacted]
K1J 8X5
(613) 749-2220 Telex 053-3233

BONDAR-CLEGG

Geochemical Lab Report

REPORT: 088-52594.0 PROJECT: HBR 104 PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	SiO2 PCT	TiO2 PCT	Al2O3 PCT	Fe2O3* PCT	MnO PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	LOI PCT	Total PCT
3505		47.80	0.42	17.50	9.14	0.14	9.47	8.62	0.59	<0.01	0.11	4.20	97.99
DUPLICATE		48.80	0.45	17.30	9.21	0.14	9.33	8.64	0.54	<0.01	0.15	4.25	
3506		49.70	0.45	13.80	10.20	0.16	12.43	9.82	0.84	0.09	0.09	3.05	100.63
3507		68.20	0.09	15.20	2.00	0.04	1.50	2.21	3.41	2.28	0.19	3.05	98.17
3508		52.40	0.59	13.30	9.86	0.17	7.52	9.92	1.59	0.29	0.10	2.90	98.64
3509		51.30	0.63	14.20	10.60	0.19	7.34	9.78	2.33	0.05	0.24	2.00	98.66
3510		49.00	0.49	14.50	10.00	0.18	8.88	10.90	1.85	0.07	0.05	2.85	98.77
3611		49.40	0.62	14.30	11.90	0.23	8.15	9.78	1.59	0.09	0.28	2.85	99.19
3621		52.70	0.56	14.00	9.41	0.17	6.06	9.82	1.94	0.53	0.19	1.85	97.23

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Geochemical Lab Report

REPORT: 088-52993.0 PROJECT: HBR 104 PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	SAMPLE NUMBER	ELEMENT UNITS	Au PPB
3501		<1	3708		<1
3502		12	3709		<1
3503		<1	3710		<1
3504		<1	3711		73
3510		80	3712		20
3511		<1	3713		<1
3512		<1	3714		<1
3513		<1	3715		<1
3514		<1	3716		<1
3515		14	3717		<1
3516		<1	3718		<1
3517		<1	3719		<1
3518		<1	3720		1
3601		1	3721		<1
3602		<1	3722		2
3603		<1			
3604		<1			
3605		<1			
3606		<1			
3607		<1			
3608		<1			
3609		<1			
3610		3			
3612		2			
3613		3			
3614		2			
3615		11			
3616		<1			
3617		<1			
3618		3			
3619		<1			
3620		<1			
3622		<1			
3701		3			
3702		<1			
3703		<1			
3704		<1			
3705		<1			
3706		<1			
3707		<1			

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Geochemical Lab Report

REPORT: 088-53094.0

PROJECT: HBR 104 PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	SiO2 PCT	TiO2 PCT	Al2O3 PCT	Fe2O3t PCT	MnO PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	LOI PCT	Total PCT
3520		46.30	1.76	20.00	10.10	0.13	5.55	9.61	3.53	0.70	0.47	0.10	99.05
DUPLICATE		46.90	1.79	19.70	10.30	0.13	5.53	9.14	3.35	0.72	0.78	0.05	
3541		55.10	0.92	15.70	9.94	0.14	2.97	9.40	2.48	0.71	0.24	0.75	98.35
3542		63.70	0.41	18.60	3.15	0.04	0.96	4.55	4.18	1.01	0.15	0.70	97.46
3543		66.00	0.26	18.90	2.19	0.03	0.75	2.88	4.88	1.20	0.32	0.60	98.00

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REPORT: 088-53201.0 | PROJECT: NONE | PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au PPB
3570		27
3571		<5
3665		7
3666		<5
3750		<5

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Geochemical Lab Report

REPORT: 088-53095.0 | PROJECT: HBK 104 | PAGE 1A

SAMPLE NUMBER	ELEMENT UNITS	TiO2 PCT	Al2O3 PCT	Fe2O3t PCT	MnO PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	Li PPM	Be PPM
3521		0.533	11.510	9.67	0.179	7.717	7.405	2.177	0.272	0.037	25	<4.0
DUPLICATE												
3522		0.518	13.020	9.02	0.162	8.287	6.937	3.131	0.604	0.039	31	<4.0
3523		0.943	14.340	10.93	0.187	5.033	10.210	2.155	0.419	0.061	7	<4.0
3524		0.670	14.580	9.72	0.168	6.695	8.733	2.988	0.358	0.044	15	<4.0
3525		0.721	12.930	10.82	0.209	6.262	9.281	1.757	0.053	0.047	13	<4.0
3526		0.770	12.720	11.40	0.212	6.370	9.737	1.580	0.135	0.050	9	<4.0
3527		0.774	12.950	11.41	0.211	6.411	9.818	1.572	0.134	0.050	9	<4.0
3528		0.856	13.730	12.61	0.241	7.150	6.592	2.864	0.250	0.060	13	<4.0
3529		0.193	13.920	1.95	0.032	1.839	0.880	0.801	2.624	0.046	28	<4.0
3530		0.352	16.110	8.05	0.157	9.040	7.507	1.110	0.140	0.025	24	<4.0
3531		0.483	10.969	9.57	0.221	5.783	11.610	0.980	0.029	0.036	22	<4.0
DUPLICATE												
3532		1.073	11.900	8.37	0.131	8.671	6.695	3.017	0.616	0.131	20	<4.0
3533		0.514	13.860	9.58	0.167	8.737	9.095	1.915	0.150	0.028	11	<4.0
3534		0.728	12.410	10.22	0.199	5.959	9.323	2.533	0.063	0.051	10	<4.0
3535		0.610	12.640	9.71	0.205	5.453	7.851	2.133	0.385	0.037	10	<4.0
3536		1.350	12.060	13.67	0.213	5.110	8.755	2.069	0.584	0.143	8	<4.0
3537		0.743	9.936	11.71	0.192	6.005	5.711	1.988	0.092	0.065	13	<4.0
3538		0.504	8.603	7.60	0.131	4.266	6.358	1.326	0.450	0.040	11	<4.0
3539		0.604	13.920	5.63	0.095	3.611	4.781	5.184	0.775	0.249	14	<4.0
3540		0.787	12.840	8.14	0.145	5.777	6.857	2.891	1.304	0.538	49	<4.0
3544		0.071	1.780	1.24	0.019	0.151	0.474	0.331	0.158	0.026	2	<4.0
3545		1.401	16.850	6.99	0.094	2.995	6.124	4.616	1.264	0.320	34	<4.0
3546		0.029	12.880	0.67	0.128	0.033	0.670	3.440	4.855	<0.002	3	<4.0
3547		0.007	0.664	0.50	0.019	0.012	0.072	0.129	0.043	0.005	<1	<4.0
3548		0.559	11.930	8.25	0.166	7.085	6.960	4.610	0.033	0.036	17	<4.0
3549		0.310	15.210	4.10	0.076	1.435	3.304	3.114	2.321	0.060	9	<4.0
3550		0.200	7.350	7.05	0.158	8.941	13.090	0.037	0.075	0.028	5	<4.0
3551		0.677	11.010	10.59	0.187	5.704	7.890	0.648	0.023	0.047	11	<4.0
3552		0.526	12.830	9.38	0.210	6.805	9.761	2.026	0.032	0.036	11	<4.0
3553		0.558	13.360	9.86	0.185	8.171	7.447	2.076	0.785	0.036	13	<4.0
3554		0.466	10.450	8.97	0.150	10.600	6.771	3.418	0.029	0.055	26	<4.0
3555		0.567	11.490	8.18	0.173	8.006	7.417	5.046	0.055	0.039	20	<4.0
3556		0.531	9.835	6.78	0.123	8.594	6.230	4.175	0.383	0.140	13	<4.0
3557		0.210	7.333	1.95	0.067	0.575	1.795	8.515	0.231	0.061	7	<4.0
3558		1.196	12.170	8.52	0.128	9.915	5.568	4.003	0.170	0.117	14	<4.0
3559		0.612	10.190	7.75	0.126	10.690	7.373	3.353	0.303	0.121	11	<4.0
3560		0.499	8.432	7.92	0.122	14.340	8.137	2.604	0.133	0.069	13	<4.0
DUPLICATE												

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Geochemical Lab Report

REPORT: 008-53095.0 | PROJECT: HBK 104 | PAGE 1B

SAMPLE NUMBER	ELEMENT UNITS	B PPM	Sc PPM	V PPM	Cr PPM	Co PPM	Ni PPM	Cu PPM	Zn PPM	Ga PPM	Rb PPM	Sr PPM
3521		<2	32	192	193	33	95	93	75	7	<50	48
DUPLICATE												
3522		<2	37	194	260	36	107	53	65	6	54	72
3523		<2	42	209	147	36	88	18	51	13	<50	98
3524		<2	43	233	238	35	93	62	55	10	92	152
3525		<2	45	249	81	36	58	56	82	10	63	79
3526		<2	45	252	77	36	54	63	61	10	<50	64
3527		<2	45	253	77	36	51	81	80	11	<50	63
3528		<2	48	268	68	41	56	61	90	10	64	49
3529		<2	3	21	85	4	14	13	38	20	171	156
3530		<2	39	148	200	34	121	37	56	4	<50	79
3531		<2	22	187	163	34	66	117	90	11	<50	81
DUPLICATE												
3532		<2	24	147	315	37	200	50	101	12	<50	343
3533		<2	40	203	263	30	101	33	67	8	<50	102
3534		<2	42	245	72	36	55	124	76	11	<50	146
3535		<2	37	225	93	32	49	87	66	12	<50	80
3536		<2	38	303	105	41	52	145	96	15	87	87
3537		<2	27	229	38	38	36	123	71	12	<50	28
3538		<2	25	154	132	21	40	46	58	9	<50	95
3539		<2	15	99	109	17	34	31	73	20	<50	654
3540		<2	22	167	162	25	49	59	121	16	<50	965
3544		<2	2	12	336	2	13	29	17	4	<50	59
3545		<2	9	136	79	19	29	30	68	21	122	432
3546		<2	4	4	136	<2	3	12	20	18	<50	107
3547		<2	<1	3	311	<2	7	11	9	2	<50	11
3548		<2	37	200	232	32	55	95	64	9	<50	15
3549		<2	6	36	115	3	7	23	34	21	115	186
3550		<2	22	103	1100	66	756	72	102	5	66	44
3551		<2	43	241	80	38	43	119	83	10	<50	102
3552		<2	39	204	193	35	72	59	80	9	89	46
3553		<2	42	215	221	37	67	102	117	9	<50	64
3554		<2	29	170	697	44	206	36	51	7	<50	45
3555		<2	35	165	2399	89	1632	45	95	5	<50	212
3556		<2	15	111	326	36	272	43	95	12	<50	354
3557		<2	2	24	62	4	16	14	55	20	<50	340
3558		<2	43	241	336	40	200	71	84	13	<50	295
3559		<2	34	149	405	43	262	163	196	8	<50	297
3560		<2	19	134	341	51	674	92	61	<2	68	99
DUPLICATE												

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BONDAR-CLEGG

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SAMPLE NUMBER	ELEMENT UNITS	Y PPM	Zr PPM	Nb PPM	Mo PPM	Ag PPM	Cd PPM	Sn PPM	Sb PPM	Te PPM	Ba PPM	La PPM
3521		12	14	7	<5	<0.5	1	37	<5	<20	42	<1
DUPLICATE												
3522		13	20	7	<5	<0.5	<1	41	<5	<20	85	<1
3523		23	46	5	<5	<0.5	<1	33	<5	<20	81	2
3524		17	28	6	<5	<0.5	<1	51	<5	<20	75	<1
3525		19	32	5	<5	<0.5	<1	<30	<5	<20	16	<1
3526		19	33	5	<5	<0.5	<1	<30	<5	<20	39	<1
3527		19	34	5	<5	<0.5	<1	<30	<5	<20	43	<1
3528		20	19	7	<5	0.6	<1	37	<5	<20	79	<1
3529		2	45	5	<5	0.5	<1	<30	<5	<20	683	2
3530		13	23	7	<5	<0.5	<1	<30	<5	<20	34	<1
3531		11	15	2	<5	<0.5	<1	35	<5	<20	11	<1
DUPLICATE												
3532		13	73	11	<5	0.7	<1	41	<5	<20	210	8
3533		14	19	6	<5	<0.5	<1	<30	<5	<20	57	<1
3534		18	34	5	<5	<0.5	<1	<30	<5	<20	32	<1
3535		15	19	5	<5	<0.5	<1	<30	<5	<20	75	<1
3536		29	106	8	<5	<0.5	<1	<30	<5	<20	164	6
3537		14	10	7	<5	0.6	1	41	<5	<20	38	<1
3538		12	19	5	<5	<0.5	<1	<30	<5	<20	165	<1
3539		13	110	9	<5	0.9	<1	<30	<5	<20	436	29
3540		24	147	10	<5	0.6	<1	<30	<5	<20	1102	52
3544		2	7	3	7	<0.5	<1	<30	<5	<20	98	2
3545		9	107	13	<5	0.5	<1	<30	<5	<20	372	12
3546		16	25	5	<5	<0.5	<1	<30	<5	<20	303	2
3547		<1	1	1	<5	<0.5	<1	<30	<5	<20	10	<1
3548		14	21	6	<5	<0.5	<1	45	<5	<20	28	<1
3549		5	66	7	<5	0.6	<1	<30	<5	<20	430	11
3550		6	16	2	<5	<0.5	<1	58	<5	<20	43	<1
3551		17	28	6	<5	<0.5	<1	34	<5	<20	18	<1
3552		14	17	4	<5	<0.5	<1	<30	<5	<20	16	<1
3553		14	20	7	<5	<0.5	<1	42	<5	<20	230	<1
3554		12	34	8	<5	<0.5	<1	55	<5	<20	24	<1
3555		12	23	6	28	0.6	<1	35	<5	<20	203	<1
3556		10	74	11	<5	<0.5	<1	45	<5	<20	453	15
3557		5	123	9	<5	0.8	<1	<30	<5	<20	519	19
3558		17	74	13	<5	0.7	<1	40	<5	<20	172	15
3559		13	76	10	<5	<0.5	<1	36	<5	<20	186	15
3560		11	40	10	16	1.1	<1	67	<5	<20	143	4
DUPLICATE												

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BONDAR-CLEGG

Geochemical Lab Report

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SAMPLE NUMBER	ELEMENT UNITS	Ce PPM	Ta PPM	W PPM	Tl PPM	Pb PPM	Bi PPM	As PPM	Au PPB
3521		<5	<10	<10	<20	10	<5	<50	<5
DUPLICATE									
3522		<5	<10	<10	<20	<10	<5	<50	18
3523		10	<10	<10	<20	<10	<5	<50	28
3524		<5	<10	<10	<20	<10	<5	<50	41
3525		<5	<10	<10	<20	<10	<5	<50	6
3526		<5	<10	<10	<20	<10	<5	<50	<5
3527		5	<10	<10	<20	<10	<5	<50	<5
3528		<5	<10	<10	<20	<10	<5	<50	13
3529		<5	<10	<10	<20	<10	<5	<50	164
3530		<5	<10	<10	<20	<10	<5	<50	19
3531		5	<10	<10	<20	12	<5	<50	<5
DUPLICATE									
3532		24	<10	<10	<20	13	<5	<50	28
3533		7	<10	<10	<20	<10	<5	<50	<5
3534		<5	<10	<10	<20	<10	<5	<50	<5
3535		<5	<10	<10	<20	<10	<5	<50	30
3536		23	<10	<10	<20	<10	<5	<50	71
3537		<5	<10	11	<20	12	<5	<50	24
3538		<5	<10	<10	<20	<10	<5	<50	34
3539		69	<10	<10	<20	11	<5	<50	<5
3540		115	<10	<10	<20	19	<5	<50	64
3544		6	<10	<10	<20	<10	<5	<50	<5
3545		26	<10	<10	<20	10	<5	<50	26
3546		<5	<10	<10	<20	16	<5	<50	16
3547		<5	<10	<10	<20	<10	<5	<50	<5
3548		<5	<10	<10	<20	<10	<5	<50	<5
3549		18	<10	<10	<20	<10	<5	<50	<5
3550		9	<10	<10	<20	<10	<5	<50	<5
3551		<5	<10	<10	<20	11	<5	<50	11
3552		<5	<10	<10	<20	10	<5	<50	7
3553		<5	<10	<10	<20	<10	<5	<50	5
3554		<5	<10	<10	<20	<10	<5	<50	<5
3555		<5	<10	<10	<20	<10	<5	<50	<5
3556		36	<10	<10	<20	13	<5	<50	<5
3557		33	<10	<10	<20	12	<5	<50	<5
3558		37	12	<10	<20	<10	<5	<50	<5
3559		35	<10	<10	<20	<10	<5	<50	<5
3560		13	<10	<10	<20	<10	<5	<50	<5
DUPLICATE									

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BONDAR-CLEGG

Geochemical Lab Report

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SAMPLE NUMBER	ELEMENT UNITS	TiO2 PCT	Al2O3 PCT	Fe2O3x PCT	MnO PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	Li PPM	Be PPM
3623		0.661	13.420	6.58	0.129	5.159	7.405	4.392	0.030	0.275	6	<4.0
3624		0.576	13.560	9.70	0.199	7.387	8.700	1.639	0.443	0.045	13	<4.0
3625		0.537	12.040	9.53	0.173	8.168	10.430	1.231	0.237	0.028	13	<4.0
3626		0.535	10.700	9.00	0.177	6.173	6.885	2.603	0.130	0.039	14	<4.0
3627		0.284	13.610	6.08	0.102	3.315	5.570	2.945	3.901	0.045	15	<4.0
3628		0.077	3.290	1.84	0.090	0.744	8.413	0.472	0.293	0.009	4	<4.0
3629		0.072	2.567	2.13	0.045	1.102	1.357	0.101	0.051	0.013	4	<4.0
3630		0.195	4.973	4.08	0.082	1.799	3.063	0.226	0.096	0.018	5	<4.0
3631		0.132	3.380	2.98	0.082	1.838	0.586	0.343	0.206	0.019	6	<4.0
3632		0.832	11.670	11.64	0.162	5.716	7.339	1.639	0.245	0.064	12	<4.0
DUPLICATE												
3633		0.177	4.667	2.30	0.051	0.878	1.332	0.802	0.198	0.037	4	<4.0
3634		0.854	10.504	10.97	0.192	5.787	7.689	1.972	0.613	0.096	9	<4.0
3635		0.540	11.850	9.21	0.182	5.765	10.380	1.088	0.105	0.040	14	<4.0
3636		0.872	12.350	8.78	0.150	7.038	7.472	4.492	0.628	0.264	16	<4.0
3637		1.061	13.560	9.65	0.149	5.143	4.536	5.439	0.253	0.362	15	<4.0
3638		0.546	11.630	11.13	0.162	6.530	5.817	3.773	0.064	0.057	12	<4.0
3639		0.493	10.760	8.94	0.162	9.249	8.042	0.836	0.147	0.039	9	<4.0
3640		0.054	1.667	1.19	0.020	0.370	0.825	0.153	0.131	0.006	7	<4.0
3641		0.990	10.780	10.92	0.177	6.111	10.340	1.360	0.249	0.067	5	<4.0
3642		0.388	14.020	5.12	0.030	1.543	2.555	4.845	0.996	0.106	19	<4.0
3643		0.177	5.486	2.63	0.043	0.576	1.327	1.433	0.395	0.049	9	<4.0
3644		0.263	3.289	3.52	0.055	1.743	1.732	0.266	0.177	0.035	19	<4.0
3645		0.027	0.604	0.70	0.015	0.088	0.192	0.071	0.020	0.005	2	<4.0
3646		0.059	2.110	1.09	0.020	0.462	0.074	0.028	0.591	0.011	28	<4.0
3647		0.060	3.684	0.97	0.017	0.067	1.027	1.072	0.327	0.011	5	<4.0
3648		0.247	10.720	2.21	0.023	0.390	1.307	6.072	1.678	0.066	11	<4.0
3649		0.032	2.272	0.58	0.011	0.029	0.299	0.765	0.287	0.007	3	<4.0
3650		1.307	9.158	11.73	0.188	3.491	5.773	1.741	0.511	0.081	15	<4.0
3651		0.711	4.798	5.71	0.083	1.388	2.579	1.045	0.506	0.056	6	<4.0
3652		0.263	6.046	3.26	0.056	1.050	3.063	0.862	0.754	0.061	7	<4.0
3653		1.225	12.630	11.98	0.193	4.694	5.603	3.501	0.503	0.130	16	<4.0
3654		0.364	6.885	4.19	0.065	1.600	2.304	1.263	0.516	0.142	11	<4.0
3655		0.801	13.230	6.69	0.112	3.534	4.905	5.672	0.588	0.386	19	<4.0
3656		1.519	14.660	11.86	0.223	3.920	9.923	2.272	0.331	0.095	11	<4.0
3657		0.937	13.380	9.30	0.167	4.623	6.408	3.447	0.727	0.250	21	<4.0
3723		0.439	10.030	6.13	0.143	4.640	9.055	2.167	0.230	0.017	16	<4.0
DUPLICATE												
3724		0.465	11.470	10.29	0.192	12.820	9.905	0.761	0.277	0.032	30	<4.0
3725		0.824	12.900	9.92	0.183	7.465	8.391	2.329	0.176	0.049	10	<4.0

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BONDAR-CLEGG

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SAMPLE NUMBER	ELEMENT UNITS	B PPM	Sc PPM	V PPM	Cr PPM	Co PPM	Ni PPM	Cu PPM	Zn PPM	Ga PPM	Rb PPM	Sr PPM
3623		<2	23	145	137	24	79	72	60	15	<50	550
3624		<2	41	212	232	37	75	80	87	9	<50	53
3625		<2	36	202	335	34	92	31	61	9	79	82
3626		<2	28	203	290	32	58	71	63	11	<50	62
3627		<2	15	219	114	17	34	268	43	24	114	75
3628		<2	6	39	107	5	14	20	34	5	<50	18
3629		<2	5	31	209	7	20	8	30	7	<50	19
3630		<2	15	83	356	11	27	32	37	11	<50	25
3631		<2	10	54	250	11	29	16	36	7	<50	8
3632		<2	42	241	84	34	27	41	72	11	<50	41
DUPLICATE												
3633		<2	7	45	212	7	16	16	29	9	<50	39
3634		<2	23	221	114	37	65	140	120	14	<50	95
3635		<2	37	199	238	35	84	87	70	11	<50	92
3636		<2	24	186	137	34	107	89	96	15	54	693
3637		<2	22	216	55	31	32	53	80	18	67	595
3638		<2	38	196	291	27	42	116	66	9	<50	56
3639		<2	35	180	435	35	231	49	64	7	<50	75
3640		<2	2	17	290	5	21	34	16	7	<50	12
3641		<2	34	228	169	13	22	55	68	16	<50	148
3642		<2	9	59	117	12	35	122	48	20	<50	308
3643		<2	4	30	190	5	6	27	43	10	<50	93
3644		<2	9	52	196	15	19	36	42	9	<50	41
3645		<2	1	10	186	2	7	11	17	3	<50	9
3646		<2	3	27	225	<2	17	11	25	8	<50	3
3647		<2	2	13	234	<2	5	14	16	8	<50	181
3648		<2	2	20	133	6	6	17	34	23	<50	536
3649		<2	<1	5	161	<2	4	11	30	5	<50	61
3650		<2	35	293	97	28	12	204	134	16	<50	58
3651		<2	16	141	172	18	9	240	95	13	<50	36
3652		<2	7	60	117	7	10	31	51	12	<50	125
3653		<2	38	279	142	16	15	117	161	17	68	161
3654		<2	8	63	258	11	22	65	38	10	<50	164
3655		<2	14	115	50	18	15	27	97	20	60	973
3656		<2	47	312	119	25	16	46	124	20	<50	137
3657		<2	26	187	65	23	19	66	182	16	<50	531
3723		<2	47	181	300	34	<143	67	62	<9	<50	85
DUPLICATE												
3724		<2	36	188	494	53	244	80	70	3	<50	76
3725		<2	41	213	153	35	66	90	95	10	<50	69

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BONDAR-CLEGG

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SAMPLE NUMBER	ELEMENT UNITS	Y PPM	Zr PPM	Nb PPM	Mo PPM	Ag PPM	Cd PPM	Sn PPM	Sb PPM	Te PPM	Ba PPM	La PPM
3623		24	118	10	<5	0.6	<1	<30	<5	<20	68	57
3624		15	24	6	<5	<0.5	<1	<30	<5	<20	59	<1
3625		13	8	6	<5	<0.5	<1	33	<5	<20	60	<1
3626		12	4	6	<5	0.7	<1	32	<5	<20	47	<1
3627		7	5	5	<5	0.7	<1	<30	<5	<20	1624	<1
3628		4	3	<1	<5	<0.5	<1	<30	<5	<20	135	4
3629		2	4	3	<5	0.7	<1	<30	<5	<20	16	<1
3630		5	5	4	<5	0.8	<1	<30	<5	<20	22	<1
3631		3	5	4	<5	0.8	<1	<30	<5	<20	30	<1
3632		21	30	6	<5	0.6	1	<30	<5	<20	37	<1
DUPLICATE												
3633		4	18	4	<5	0.7	<1	<30	<5	<20	73	3
3634		14	53	8	<5	<0.5	<1	<30	<5	<20	122	1
3635		14	7	4	<5	<0.5	<1	43	<5	<20	37	<1
3636		25	95	12	<5	0.6	<1	<30	<5	<20	621	36
3637		30	111	13	<5	1.3	<1	<30	<5	<20	199	42
3638		13	19	7	<5	0.8	<1	<30	<5	<20	50	<1
3639		12	20	6	<5	<0.5	<1	38	<5	<20	47	<1
3640		1	3	3	15	0.6	<1	<30	<5	<20	19	<1
3641		15	25	5	<5	<0.5	<1	36	<5	<20	73	<1
3642		7	89	7	<5	1.2	<1	<30	<5	<20	674	4
3643		4	24	4	<5	0.8	<1	<30	<5	<20	82	2
3644		7	10	6	<5	0.9	<1	<30	<5	<20	53	2
3645		<1	1	2	<5	<0.5	<1	<30	<5	<20	7	<1
3646		<1	<1	2	<5	<0.5	<1	<30	<5	<20	237	<1
3647		1	6	3	155	<0.5	<1	<30	<5	<20	161	1
3648		3	103	6	<5	0.7	<1	<30	<5	<20	844	8
3649		<1	6	2	7	<0.5	<1	<30	<5	<20	115	<1
3650		26	21	7	131	1.1	1	<30	<5	<20	93	<1
3651		12	10	6	395	1.5	<1	<30	<5	<20	60	<1
3652		6	26	5	5	0.9	<1	<30	<5	<20	167	6
3653		22	57	8	<5	0.9	<1	<30	<5	<20	216	<1
3654		7	40	5	13	0.9	<1	<30	<5	<20	244	9
3655		17	119	11	<5	0.9	<1	<30	<5	<20	670	42
3656		28	33	6	<5	<0.5	1	<30	<5	<20	91	<1
3657		21	83	10	<5	0.9	1	<30	<5	<20	507	23
3723		16	25	5	<5	<0.5	<1	<30	<5	<20	30	<1
DUPLICATE												
3724		11	15	6	<5	<0.5	<1	54	<5	<20	63	<1
3725		16	24	6	<5	<0.5	<1	36	<5	<20	32	<1

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SAMPLE NUMBER	ELEMENT UNITS	Ce PPM	Ta PPM	W PPM	Tl PPM	Pb PPM	Bi PPM	As PPM	Au PPB
3623		126	<10	<10	<20	11	<5	<50	<5
3624		<5	<10	<10	<20	<10	<5	<50	<5
3625		<5	<10	<10	<20	<10	<5	<50	<5
3626		<5	<10	<10	<20	<10	<5	<50	11
3627		<5	<10	<10	<20	<10	<5	<50	15
3628		7	<10	<10	<20	<10	<5	<50	<5
3629		<5	<10	<10	<20	<10	<5	<50	<5
3630		<5	<10	<10	<20	<10	<5	<50	6
3631		<5	<10	<10	<20	<10	<5	<50	23
3632		<5	<10	<10	<20	<10	<5	<50	9
DUPLICATE									
3633		8	<10	<10	<20	<10	<5	<50	<5
3634		10	<10	<10	<20	11	<5	<50	<5
3635		<5	<10	<10	<20	11	<5	<50	7
3636		89	<10	<10	<20	16	<5	<50	<5
3637		104	<10	<10	<20	12	<5	<50	8
3638		<5	<10	<10	<20	<10	<5	<50	19
3639		<5	<10	<10	<20	<10	<5	<50	7
3640		5	<10	<10	<20	<10	<5	<50	<5
3641		<5	<10	<10	<20	11	<5	<50	9
3642		11	<10	16	<20	12	<5	<50	<5
3643		7	<10	<10	<20	<10	<5	<50	<5
3644		7	<10	<10	<20	<10	<5	<50	<5
3645		<5	<10	<10	<20	<10	<5	<50	6
3646		<5	<10	<10	<20	<10	<5	<50	11
3647		<5	<10	<10	<20	<10	<5	<50	6
3648		15	<10	<10	<20	16	<5	<50	<5
3649		<5	<10	<10	<20	<10	<5	<50	9
3650		8	<10	<10	<20	24	<5	<50	<5
3651		6	<10	<10	<20	11	<5	<50	126
3652		16	<10	<10	<20	<10	<5	<50	11
3653		9	<10	<10	<20	<10	<5	<50	8
3654		25	<10	<10	<20	<10	<5	<50	11
3655		95	<10	<10	<20	22	<5	<50	11
3656		10	<10	<10	<20	10	<5	<50	5
3657		58	<10	<10	<20	37	<5	<50	6
3723		<5	<10	<10	<20	<10	<5	<50	7
DUPLICATE									
3724		<5	<10	<10	<20	<10	<5	<50	9
3725		<5	<10	<10	<20	<10	<5	<50	11

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Geochemical Lab Report

REPORT: 088-53095.0

PROJECT: HBK 104 PAGE 3A

SAMPLE NUMBER	ELEMENT UNITS	TiO2 PCT	Al2O3 PCT	Fe2O3t PCT	MnO PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	Li PPM	Be PPM
3726		0.037	1.024	1.19	0.030	0.575	0.172	0.025	0.015	0.012	2	<4.0
3727		0.784	15.240	4.67	0.074	2.421	5.503	4.831	0.521	0.266	10	<4.0
3728		0.649	15.050	8.16	0.136	6.499	8.899	3.153	0.743	0.072	9	<4.0
3729		0.018	2.342	0.73	0.029	0.100	0.791	0.603	0.475	0.007	<1	<4.0
3730		0.702	13.070	10.41	0.172	7.106	9.243	1.600	0.099	0.048	10	<4.0
3731		0.751	12.730	10.62	0.212	6.102	9.921	2.067	0.126	0.059	8	<4.0
3732		0.363	16.020	6.85	0.139	7.931	5.861	6.142	0.019	0.025	24	<4.0
3733		0.796	11.960	5.91	0.086	2.680	3.038	6.051	1.050	0.158	12	<4.0
DUPLICATE												
3734		0.204	11.900	1.86	0.036	0.620	1.450	7.372	0.723	0.037	5	<4.0
3735		0.471	16.240	5.92	0.112	3.359	6.350	4.894	0.964	0.116	16	<4.0
3736		0.353	10.540	8.43	0.181	11.250	11.900	0.972	0.476	0.015	10	<4.0
3737		0.185	14.650	7.73	0.154	12.140	11.080	1.136	0.615	<0.002	23	<4.0
3738		0.495	14.520	3.64	0.055	2.199	4.885	6.533	0.875	0.097	16	<4.0
3739		0.025	1.482	1.07	0.020	0.368	0.352	0.234	0.094	0.013	4	<4.0
3740		0.197	18.670	2.76	0.043	0.919	2.344	8.928	0.723	0.046	18	<4.0
3741		0.240	11.300	2.03	0.033	0.610	2.650	5.183	0.632	0.036	10	<4.0
3742		0.825	14.230	7.93	0.137	6.060	6.579	4.448	1.305	0.785	43	<4.0
3743		0.030	0.557	0.96	0.021	0.182	0.261	0.068	0.034	0.011	2	<4.0
3744		0.012	0.435	0.56	0.013	0.040	0.125	0.072	0.029	0.005	<1	<4.0
3745		0.682	14.830	7.14	0.147	3.962	6.366	3.653	1.326	0.216	34	<4.0
3746		0.039	1.252	0.77	0.012	0.030	0.316	0.223	0.261	0.009	2	<4.0
3747		0.095	2.407	2.17	0.040	1.110	0.841	0.403	0.029	0.010	6	<4.0
3748		0.194	7.330	1.50	0.026	0.502	1.917	3.953	1.316	0.048	13	<4.0
3749		0.488	8.767	8.83	0.181	7.399	8.624	2.678	0.292	0.033	17	<4.0
3750		0.234	7.808	2.16	0.038	1.067	1.015	5.363	1.230	0.050	8	<4.0
3751		0.573	9.110	8.71	0.173	6.591	6.937	1.870	0.334	0.053	16	<4.0
3752		0.358	12.000	8.53	0.193	8.693	5.578	1.456	0.048	0.029	26	<4.0
3753		0.320	10.970	9.08	0.182	10.640	3.916	1.527	0.351	0.044	48	<4.0

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Geochemical Lab Report

REPORT: 068-53095.0 | PROJECT: HBR 104 | PAGE 38

SAMPLE NUMBER	ELEMENT UNITS	B PPM	Sc PPM	V PPM	Cr PPM	Co PPM	Ni PPM	Cu PPM	Zn PPM	Ga PPM	Rb PPM	Sr PPM
3726		<2	2	14	184	4	20	12	42	4	<50	4
3727		<2	10	76	109	31	<20	135	90	<21	<50	235
3728		<2	40	204	308	34	82	133	57	12	68	137
3729		<2	1	8	179	<2	7	26	17	4	<50	18
3730		<2	44	240	111	35	59	99	91	10	<50	64
3731		<2	43	243	73	37	56	113	114	12	<50	92
3732		<2	38	144	207	39	<154	51	99	<6	<50	13
3733		<2	11	96	70	16	22	32	257	25	57	389
DUPLICATE												
3734		<2	3	23	74	4	7	12	60	21	51	176
3735		<2	13	97	60	19	<25	23	81	<19	<50	567
3736		<2	44	179	512	38	131	39	57	5	<50	52
3737		<2	27	102	653	45	278	36	49	3	97	81
3738		<2	10	74	107	11	28	61	50	22	<50	477
3739		<2	2	9	236	3	9	8	13	6	<50	26
3740		<2	3	80	49	9	<9	8	28	<19	76	359
3741		<2	4	34	74	5	7	10	49	21	76	360
3742		<2	18	146	103	25	45	42	105	18	<50	815
3743		<2	1	10	136	3	11	11	22	5	<50	11
3744		<2	<1	5	251	<2	5	8	9	2	<50	8
3745		<2	18	133	83	17	11	18	89	19	63	966
3746		<2	<1	7	241	<2	4	8	8	5	<50	43
3747		<2	7	36	218	7	19	17	32	8	<50	23
3748		<2	2	22	49	4	12	13	62	21	<50	195
3749		<2	25	207	209	35	69	67	64	10	<50	66
3750		<2	3	36	66	7	14	30	43	21	<50	210
3751		<2	25	214	139	31	46	85	66	11	<50	92
3752		<2	29	156	346	42	178	33	83	7	<50	65
3753		<2	29	151	424	43	210	13	92	6	<50	68

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Geochemical Lab Report

REPORT: 088-53095.0 | PROJECT: HBR 104 | PAGE 3C

SAMPLE NUMBER	ELEMENT UNITS	Y PPM	Zr PPM	Nb PPM	Mo PPM	Ag PPM	Cd PPM	Sn PPM	Sb PPM	Te PPM	Ba PPM	La PPM
3726		<1	1	2	<5	<0.5	<1	<30	<5	<20	6	<1
3727		12	163	14	<5	0.8	<1	<30	<5	<20	128	23
3728		18	50	7	<5	<0.5	<1	<30	<5	<20	124	1
3729		<1	<1	2	<5	<0.5	<1	<30	<5	<20	290	<1
3730		18	24	6	<5	<0.5	1	<30	<5	<20	60	<1
3731		19	33	5	<5	<0.5	<1	<30	<5	<20	27	<1
3732		13	27	8	<5	0.6	<1	<33	<5	<20	14	<1
3733		11	107	8	<5	1.2	<1	<30	<5	<20	493	11
DUPLICATE												
3734		3	45	5	<5	0.9	<1	<30	<5	<20	250	5
3735		6	10	6	<5	<0.5	<1	<30	<5	<20	242	6
3736		9	8	3	<5	<0.5	<1	49	<5	<20	40	<1
3737		5	3	4	9	<0.5	1	63	<5	22	70	<1
3738		5	44	6	<5	0.8	<1	<30	<5	<20	269	5
3739		<1	2	2	<5	<0.5	<1	<30	<5	<20	84	<1
3740		3	89	5	<5	0.9	<1	<30	<5	21	410	7
3741		3	64	5	<5	0.9	<1	<30	<5	<20	320	3
3742		19	95	12	8	0.9	<1	37	<5	<20	829	41
3743		<1	1	2	<5	<0.5	<1	<30	<5	<20	11	<1
3744		<1	1	2	<5	<0.5	<1	<30	<5	<20	12	<1
3745		20	98	10	<5	0.7	<1	<30	<5	<20	918	37
3746		<1	3	3	<5	<0.5	<1	<30	<5	<20	128	<1
3747		2	4	3	<5	1.2	<1	<30	<5	<20	17	<1
3748		2	38	5	<5	0.9	<1	<30	<5	<20	287	4
3749		12	5	6	<5	<0.5	<1	<30	<5	<20	54	<1
3750		2	34	5	<5	0.9	<1	<30	<5	<20	251	6
3751		13	8	7	<5	0.6	<1	42	<5	<20	61	<1
3752		11	13	8	<5	0.7	<1	<30	<5	<20	18	<1
3753		12	8	9	<5	0.9	<1	52	<5	<20	31	<1

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Geochemical Lab Report

REPORT: 088-53095.0 | PROJECT: HBK 104 | PAGE 3D

SAMPLE NUMBER	ELEMENT UNITS	Ce PPM	Ta PPM	W PPM	Tl PPM	Pb PPM	Bi PPM	As PPM	Au PPB
3726		<5	<10	<10	<20	<10	<5	<50	47
3727		<47	<10	<10	<20	<10	<5	<50	10
3728		7	<10	<10	<20	<10	<5	<50	6
3729		<5	<10	<10	<20	<10	<5	<50	<5
3730		<5	<10	<10	<20	<10	<5	<50	<5
3731		5	<10	<10	<20	<10	<5	<50	9
3732		<5	<10	<10	<20	<10	<5	<50	<5
3733		20	<10	13	<20	12	<5	<50	<5
DUPLICATE									
3734		11	<10	<10	<20	<10	<5	<50	36
3735		<14	<10	<10	<20	10	<5	<50	11
3736		<5	<10	<10	<20	<10	<5	<50	<5
3737		<5	<10	<10	<20	<10	<5	<50	<5
3738		10	<10	<10	<20	11	<5	<50	<5
3739		<5	<10	<10	<20	<10	<5	<50	<5
3740		<14	<10	<10	<20	<10	<5	<50	<5
3741		7	<10	<10	<20	15	<5	<50	<5
3742		93	<10	<10	<20	15	<5	<50	15
3743		<5	<10	<10	<20	<10	<5	<50	<5
3744		<5	<10	<10	<20	<10	<5	<50	11
3745		84	<10	<10	<20	19	<5	<50	<5
3746		<5	<10	<10	<20	<10	<5	<50	5
3747		<5	<10	<10	<20	<10	<5	<50	<5
3748		9	<10	<10	<20	<10	<5	<50	<5
3749		<5	<10	<10	<20	<10	<5	<50	<5
3750		11	<10	<10	<20	<10	<5	<50	11
3751		<5	<10	<10	<20	<10	<5	<50	14
3752		<5	<10	<10	<20	<10	<5	<50	69
3753		<5	<10	<10	<20	<10	<5	<50	23

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Geochemical Lab Report

REPORT: 088-53126.0 PROJECT: H&R 104 PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au PPB
3561		64
3562		7
3563		4
3564		8
3565		7
3566		4
3567		11
3568		6
3569		8
3658		6
3659		2
3660		1
3661		3
3662		4
3663		<1
3664		6
3754		2
3755		<1
3756		1
3757		4
3759		4
3760		14
3761		2
3762		2

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DERRY, MICHENER, BOOTH & WAHL
IAN TRINDER
410 CONFEDERATION SQUARE
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

SEP 19 1988

Invoice : 0142040, Page 1

Date : 27-SEP-88

Report No: 088-52994.0
Project : HBR 104
Reference:

8 Analyses of DCP WHOLE ROCK	at $25.00	$ 200.00	$ 200.00
Alumina (Al2O3)	Calcium (CaO)		
Total Iron (Fe2O3*)	Potassium (K2O)		
Loss on Ignition	Magnesium (MgO)		
Manganese (MnO)	Sodium (Na2O)		
Phosphorous (P2O5)	Silica (SiO2)		
Titanium (TiO2)	Whole Rock Total		
Sample Preparation			
8 Samples of Crush,Pulverize -200	at $ 3.75	$ 30.00	
Subtotal		$ 30.00	$ 30.00
	Invoice Total:		$ 230.00 Cdn

13373

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HBR 104
8332
D.J.

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OCT - 3 1988

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I.D. TRINDER
ST. 410 CONFEDERATION SQ.
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

Invoice : 0142126, Page 1

Date : 29-SEP-88

Report No: 088-52993.0
Project : HBR 104
Reference:

55 Analyses of Gold	at $ 8.25	$	453.75	
Subtotal		$	453.75	$ 453.75
Less: 10.0% Contract Discount		$	45.37	$ 45.37
Discounted Subtotal		$	408.38	$ 408.38
Sample Preparation				
55 Samples of Crush,Pulverize -200	at $ 3.75	$	206.25	
Subtotal		$	206.25	$ 206.25
Invoice Total:				$ 614.63 Cdn

13661

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Invoice : 0142501, Page 1

DERRY, MICHENER, BOOTH & WAHL
DAVE WAHL
ST. 410 CONFEDERATION SQ.
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

Date : 12-OCT-88

Report No: 088-53094.0
Project : HBR 104
Reference:

HBR 104
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J.J.

4 Analyses of DCP WHOLE ROCK at $25.00	$ 100.00	$ 100.00
Alumina (Al2O3)	Calcium (CaO)		
Total Iron (Fe2O3*)	Potassium (K2O)		
Loss on Ignition	Magnesium (MgO)		
Manganese (MnO)	Sodium (Na2O)		
Phosphorous (P2O5)	Silica (SiO2)		
Titanium (TiO2)	Whole Rock Total		
Sample Preparation			
4 Samples of Crush,Pulverize -200 at $ 3.75	$ 15.00		
Subtotal	$ 15.00	$ 15.00
Miscellaneous Charges			
Shipping Charges	$ 7.90		
Subtotal	$ 7.90	$ 7.90
Invoice Total:		$ 122.90 Cdn

13833
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DERRY, MICHENER, BOOTH & WAHL
I.D. TRINDER
ST. 410 CONFEDERATION SQ.
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

Invoice : 0142480, Page 1

Date : 12-OCT-88

Report No: 088-53201.0
Project : NONE
Reference:

5 Analyses of Gold at $ 7.50	$ 37.50		
Subtotal	$ 37.50	$	37.50
Less: 10.0% Contract Discount	$ 3.75	$	3.75
Discounted Subtotal	$ 33.75	$	33.75
Sample Preparation			
5 Samples of Crush,Pulverize -200 at $ 3.75	$ 18.75		
Subtotal	$ 18.75	$	18.75
Miscellaneous Charges			
Shipping Charges	$ 9.05		
Subtotal	$ 9.05	$	9.05
Invoice Total:		$	61.55 Cdn

HBR 104
8332
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13834

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OCT 1 8 1988

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IAN TRINDER
410 CONFEDERATION SQUARE
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

Invoice : 0142533, Page 1

Date : 14-OCT-88

Report No: 088-53095.0
Project : HBR 104
Reference:

103 Analyses of ICP-2T Package	at $ 0.00	$ 0.00	$ 0.00
Silver	Alumina (Al203)		
Arsenic	Boron		
Barium	Beryllium		
Bismuth	Calcium (CaO)		
Cadmium	Cerium		
Cobalt	Chromium		
Copper	Total Iron (Fe203)		
Gallium	Potassium (K20)		
Lanthanum	Lithium		
Magnesium (MgO)	Manganese (MnO)		
Molybdenum	Sodium (Na20)		
Niobium	Nickel		
Phosphorous (P20S)	Lead		
Rubidium	Antimony		
Scandium	Tin		
Strontium	Tantalum		
Tellurium	Titanium (Ti02)		
Thallium	Vanadium		
Tungsten	Yttrium		
Zinc	Zirconium		
103 Analyses of Gold	at $ 7.50	$ 772.50	
Subtotal		$ 772.50	$ 772.50
Less: 10.0% Contract Discount		$ 77.25	$ 77.25
Discounted Subtotal		$ 695.25	$ 695.25
Sample Preparation			
103 Samples of Crush,Pulverize -200	at $ 3.75	$ 386.25	
Subtotal		$ 386.25	$ 386.25

HBR 104
8332
D.J.
13832 $386.25
ENTERED OCT 2 6 1988

$738.30
14143
ENTERED NOV - 9 1988

Continued on next page

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OCT 1 8 1988

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Invoice : 0142533, Page 2

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IAN TRINDER
410 CONFEDERATION SQUARE
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

Date : 14-OCT-88

Report No: 088-53095.0
Project : HBR 104
Reference:

Miscellaneous Charges		
Shipping Charges	$ 43.05	
Subtotal	$ 43.05	$ 43.05

Invoice Total: $ 1124.55 Cdn

HBR 104
8332
L.J.

REGISTERED PROFESSIONAL ENGINEER
R.W. WOOLHAM
PROVINCE OF ONTARIO

THIS IS A PROFESSIONAL SERVICE
ACCOUNTS DUE WHEN RENDERED

BONDAR-CLEGG

OCT 2 1 1988

Bondar-Clegg & Company Ltd.
5420 Canotek Road
Ottawa, Ontario
K1J 8X5
(613) 749-2220 Telex 053-3233

DERRY, MICHENER, BOOTH & WAHL
I.D. TRINDER
ST. 410 CONFEDERATION SQ.
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

Invoice : 0142635, Page 1

Date : 18-OCT-88

Report No: 088-53126.0
Project : HBR 104
Reference:

24 Analyses of Gold	at $ 8.25	$ 198.00	
Subtotal		$ 198.00	$ 198.00
Less: 10.0% Contract Discount		$ 19.80	$ 19.80
Discounted Subtotal		$ 178.20	$ 178.20
Sample Preparation			
24 Samples of Crush,Pulverize -200	at $ 3.75	$ 90.00	
Subtotal		$ 90.00	$ 90.00
Miscellaneous Charges			
Shipping Charges		$ 12.65	
Subtotal		$ 12.65	$ 12.65
Invoice Total:			$ 280.85 Cdn

HBR 104 13835
8332
J.J.

ENTERED OCT 2 6 1988

REGISTERED PROFESSIONAL ENGINEER
R.W. WOOLHAM
PROVINCE OF ONTARIO

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INVOICES FOR GEOCHEMICAL ANALYSES

BONDAR-CLEGG

Bondar-Clegg & Company Ltd.
5420 Canotek Road
Ottawa, Ontario
K1J 8X5
(613) 749-2220 Telex 053-3233

Invoice : 0142040, Page 1

DERRY, MICHENER, BOOTH & WAHL
IAN TRINDER
410 CONFEDERATION SQUARE
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

SEP 30 1988

Date : 27-SEP-88

Report No: 088-52994.0
Project : HBR 104
Reference:

8 Analyses of DCP WHOLE ROCK	at $25.00	$ 200.00	$ 200.00
Alumina (Al2O3)	Calcium (CaO)		
Total Iron (Fe2O3*)	Potassium (K2O)		
Loss on Ignition	Magnesium (MgO)		
Manganese (MnO)	Sodium (Na2O)		
Phosphorous (P2O5)	Silica (SiO2)		
Titanium (TiO2)	Whole Rock Total		
Sample Preparation			
8 Samples of Crush,Pulverize -200	at $ 3.75	$ 30.00	
Subtotal		$ 30.00	$ 30.00
	Invoice Total:		$ 230.00 Cdn

13373

OCT - 1 1988

ENTERED

REGISTERED PROFESSIONAL ENGINEER
R. W. WOOLHAM
PROVINCE OF ONTARIO

HBR 104
8332
J.J.

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ACCOUNTS DUE WHEN RENDERED

BONDAR-CLEGG

Bondar-Clegg & Company Ltd.
5420 Canotek Road
Ottawa, Ontario
K1J 8X5
(613) 749-2220 Telex 053-3233

OCT - 3 1988

DERRY, MICHENER, BOOTH & WAHL
I.D. TRINDER
ST. 410 CONFEDERATION SQ.
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

Invoice : 0142126, Page 1

Date : 29-SEP-88

Report No: 088-52993.0
Project : HBR 104
Reference:

55 Analyses of Gold	at $ 8.25	$ 453.75	
Subtotal		$ 453.75	$ 453.75
Less: 10.0% Contract Discount		$ 45.37	$ 45.37
Discounted Subtotal		$ 408.38	$ 408.38
Sample Preparation			
55 Samples of Crush,Pulverize -200	at $ 3.75	$ 206.25	
Subtotal		$ 206.25	$ 206.25
Invoice Total:			$ 614.63 Cdn

13661

ENTERED OCT 11 1988

REGISTERED PROFESSIONAL ENGINEER
R. W. WOOLHAM
PROVINCE OF ONTARIO

HBR 104
8332
J.J.

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ACCOUNTS DUE WHEN RENDERED

BONDAR-CLEGG

Bondar-Clegg & Company Ltd.
5420 Canotek Road
Ottawa, Ontario
K1J 8X5
(613) 749-2220 Telex 053-3233

DERRY, MICHENER, BOOTH & WAHL
DAVE WAHL
ST. 410 CONFEDERATION SQ.
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

HBR 104
8332
J.J.

Invoice : 0142501, Page 1

Date : 12-OCT-88

Report No: 088-53094.0
Project : HBR 104
Reference:

4 Analyses of DCP WHOLE ROCK	at $25.00	$ 100.00	$ 100.00
Alumina (Al2O3)	Calcium (CaO)		
Total Iron (Fe2O3*)	Potassium (K2O)		
Loss on Ignition	Magnesium (MgO)		
Manganese (MnO)	Sodium (Na2O)		
Phosphorous (P2O5)	Silica (SiO2)		
Titanium (TiO2)	Whole Rock Total		
Sample Preparation			
4 Samples of Crush,Pulverize -200	at $ 3.75	$ 15.00	
Subtotal		$ 15.00	$ 15.00
Miscellaneous Charges			
Shipping Charges		$ 7.90	
Subtotal		$ 7.90	$ 7.90
	Invoice Total:		$ 122.90 Cdn

13833
ENTERED OCT 2 6 1988

REGISTERED PROFESSIONAL ENGINEER
R.W. WOOLHAM
PROVINCE OF ONTARIO

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BONDAR-CLEGG

Bondar-Clegg & Company Ltd.
5420 Canotek Road
Ottawa, Ontario
K1J 8X5
(613) 749-2220 Telex 053-3233

Invoice : 0142480, Page 1

DERRY, MICHENER, BOOTH & WAHL
I.D. TRINDER
ST. 410 CONFEDERATION SQ.
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

Date : 12-OCT-88

Report No: 088-53201.0
Project : NONE
Reference:

5 Analyses of Gold at $ 7.50	$ 37.50		
Subtotal	$ 37.50	$ 37.50	
Less: 10.0% Contract Discount	$ 3.75	$ 3.75	
Discounted Subtotal	$ 33.75	$ 33.75	
Sample Preparation			
5 Samples of Crush,Pulverize -200 at $ 3.75	$ 18.75		
Subtotal	$ 18.75	$ 18.75	
Miscellaneous Charges			
Shipping Charges	$ 9.05		
Subtotal	$ 9.05	$ 9.05	
Invoice Total:		$ 61.55 Cdn	

HBR 104
8332
J.J.

13834

ENTERED OCT 26 1988

REGISTERED PROFESSIONAL ENGINEER
R.W. WOOLHAM
PROVINCE OF ONTARIO

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ACCOUNTS DUE WHEN RENDERED

BONDAR-CLEGG

Bondar-Clegg & Company Ltd.
5420 Canotek Road
Ottawa, Ontario
K1J 8X5
(613) 749-2220 Telex 053-3233

OCT 18 1988

DERRY, MICHENER, BOOTH & WAHL
IAN TRINDER
410 CONFEDERATION SQUARE
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

Invoice : 0142533, Page 1

Date : 14-OCT-88

Report No: 088-53095.0
Project : HBR 104
Reference:

103 Analyses of ICP-2T Package	at $ 0.00	$ 0.00	$ 0.00

Silver	Alumina (Al203)
Arsenic	Boron
Barium	Beryllium
Bismuth	Calcium (CaO)
Cadmium	Cerium
Cobalt	Chromium
Copper	Total Iron (Fe203)
Gallium	Potassium (K20)
Lanthanum	Lithium
Magnesium (MgO)	Manganese (MnO)
Molybdenum	Sodium (Na20)
Niobium	Nickel
Phosphorous (P205)	Lead
Rubidium	Antimony
Scandium	Tin
Strontium	Tantalum
Tellurium	Titanium (TI02)
Thallium	Vanadium
Tungsten	Yttrium
Zinc	Zirconium

103 Analyses of Gold	at $ 7.50	$ 772.50	
Subtotal		$ 772.50	$ 772.50
Less: 10.0% Contract Discount		$ 77.25	$ 77.25
Discounted Subtotal		$ 695.25	$ 695.25

Sample Preparation			
103 Samples of Crush,Pulverize -200	at $ 3.75	$ 386.25	
Subtotal		$ 386.25	$ 386.25

HBR 104
8332
D.J.
13832 $386.25
ENTERED OCT 26 1988

$738.30
14143
ENTERED NOV - 9 1988

Continued on next page

REGISTERED PROFESSIONAL ENGINEER
R. W. WOOLHAM
PROVINCE OF ONTARIO

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ACCOUNTS DUE WHEN RENDERED

BONDAR-CLEGG

OCT 18 1988

Bondar-Clegg & Company Ltd.
5420 Canotek Road
Ottawa, Ontario
K1J 8X5
(613) 749-2220 Telex 053-3233

Invoice : 0142533, Page 2

DERRY, MICHENER, BOOTH & WAHL
IAN TRINDER
410 CONFEDERATION SQUARE
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

Date : 14-OCT-88

Report No: 088-53095.0
Project : HBR 104
Reference:

Miscellaneous Charges		
Shipping Charges	$ 43.05	
Subtotal	$ 43.05	$ 43.05

Invoice Total: $ 1124.55 Cdn

HBR 104
8332
D.J.

REGISTERED PROFESSIONAL ENGINEER
R.W. WOOLHAM
PROVINCE OF ONTARIO

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ACCOUNTS DUE WHEN RENDERED

BONDAR-CLEGG

Bondar-Clegg & Company Ltd.
5420 Canotek Road
Ottawa, Ontario
K1J 8X5
(613) 749-2220 Telex 053-3233

OCT 2 1 1988

Invoice : 0142635, Page 1

DERRY, MICHENER, BOOTH & WAHL
I.D. TRINDER
ST. 410 CONFEDERATION SQ.
20 RICHMOND ST. EAST
TORONTO, ONT. M5C 2R9

Date : 18-OCT-88

Report No: 088-53126.0
Project : HBR 104
Reference:

24 Analyses of Gold	at $ 8.25	$ 198.00	
Subtotal		$ 198.00	$ 198.00
Less: 10.0% Contract Discount		$ 19.80	$ 19.80
Discounted Subtotal		$ 178.20	$ 178.20
Sample Preparation			
24 Samples of Crush,Pulverize -200	at $ 3.75	$ 90.00	
Subtotal		$ 90.00	$ 90.00
Miscellaneous Charges			
Shipping Charges		$ 12.65	
Subtotal		$ 12.65	$ 12.65
Invoice Total:			$ 280.85 Cdn

HBR 104
8332
J.J.

13835

ENTERED OCT 2 6 1988

REGISTERED PROFESSIONAL ENGINEER
R. W. WOOLHAM
PROVINCE OF ONTARIO

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ACCOUNTS DUE WHEN RENDERED

Ontario

900

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

880 Bay Street
3rd Floor
Toronto, Ontario

(416) 965-4888

April 3, 1989

Your File : W8906-146
Our File : 2.11947

Mining Recorder
Ministry of Northern Development and Mines
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

Re: Data for Assaying submitted under Section 77(19)
of the Mining Act R.S.O. 1980 on Mining Claims
P 987395 et al, in Horwood Township

The enclosed statement of assessment work credits for Assaying has been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

W.R. Cowan
Provincial Manager, Mining Lands
Mines & Minerals Division
R.M.
Encl:

cc: Hardiman Bay Resources Inc
Suite 500
67 Richmond Street West
Toronto, Ontario
M5H 125

cc: Resident Geologist
Timmins, Ontario

Derry, Michener, Booth & Wahl
Toronto, Ontario

Ian Trinder
Toronto, Ontario

Lormand, Alford, Woolham
Toronto, Ontario

Ministry of Northern Development and Mines

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

Mining Act

DOCUMENT No. W 8806 · 50125

Dec 16

Instructions: – Please type or print.
– If number of mining claims traversed exceeds space on this form, attach a list.
Note: – Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
– Do not use shaded areas below.

Type of Survey(s)	Township or Area
GEOPHYSICAL SURVEYS, PROSPECTING & GEOLOGICAL MAPPING	HORWOOD TOWNSHIP

Claim Holder(s): HARDIMAN BAY RESOURCES INC. — Prospector's Licence No.: T4938

Address: 67 RICHMOND ST. W, SUITE 500, TORONTO M5H 1Z5

Survey Company: DERRY, MICHENER, BOOTH & WAHL

Date of Survey (from & to): 15 09 88 (Day, Mo., Yr.) — 7 10 88 (Day, Mo., Yr.)

Total Miles of line Cut: 28.2 miles

Name and Address of Author (of Geo-Technical report): CAROL LORIMAND · 410 20 RICHMOND ST. E TORONTO. ONT M5C 2R9

Credits Requested per Each Claim in Columns at right

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

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

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

RECEIVED
DEC 7 1988
MINING LANDS SECTION

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.

RECEIVED
OCT 26 1988
RECORDED
OCT 26/1988

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	987395	
	987396	
	987397	
	987398	
	987399	
	987400	
	987401	
	987402	
	987403	
	987404	
	987405	
	987406	
	987407	
	987408	
	987409	
	987410	
	987411	
	987412	
	987413	
	987414	
	987415	
	987416	
	987417	

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	987418	
	987419	
	987420	
	987421	
	987422	
	987423	
	987424	
	987425	
	987426	
	987427	
	987428	
	987429	
	987430	
	987431	
	987432	
	987433	
	987434	
	987435	
	987436	
	987437	
	987438	
	987439	
	987440	

CONTINUED ON SHEET 11 FINISHED

Total number of mining claims covered by this report of work: 59

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
4,720	Oct 26/88	
	Date Approved as Recorded	Branch Director
		see revised work statement.

Date: 17. Oct. 1988 — Recorded Holder or Agent (Signature): Carol Lorimand

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

HARDIMAN GAY
RESOURCES INC.

Claim.

P 987441
987442
987443
987444
987445
987446
987447
987448
987449
987450
987451
987452
987453

Ministry of Northern Development and Mines
Ontario

Technical Assessment Work Credits

File: 2.11947

Date: April 3, 1989

Mining Recorder's Report of Work No.: W 8906-146

Recorded Holder: HARDIMAN BAY RESOURCES INC

Township or Area: HORWOOD

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological _____ days Geochemical _____ days Man days ☐ Airborne ☐ Special provision ☐ Ground ☐ ☐ Credits have been reduced because of partial coverage of claims. ☐ Credits have been reduced because of corrections to work dates and figures of applicant.	$2434.48 spent on assaying samples taken from mining claims: P 987395 to 399 inclusive 987401 987403 to 406 inclusive 987408 987410 987412 - 413 987416 987421 to 424 inclusive 987429 to 433 inclusive 987436 - 437 9877441 to 443 inclusive 987447 - 448 987451 162 days credit allowed which may be grouped in accordance with Section 76(6) of the Mining Act R.S.O. 1980.

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

☐ not sufficiently covered by the survey ☐ insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

828 (85/12)

Ministry of Northern Development and Mines
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

Mining Act

DOCUMENT No. W 8906·146

2.11947

Instructions: -- Please type or print.
- If number of mining claims traversed exceeds space on this form, attach a list.
Note: - Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
- Do not use shaded areas below.

Type of Survey(s): GEOCHEMICAL ANALYSES

Township or Area: HORWOOD

Claim Holder(s): HARDIMAN BAY RESOURCES INC.

Prospector's Licence No.: T4938

Address: SUITE 500 - 67 RICHMOND STREET WEST, TORONTO ONTARIO

Survey Company: DERRY, MICHENER, BOOTH & WAHL

Date of Survey (from & to): 16 09 88 (Day | Mo. | Yr.) — 05 10 88 (Day | Mo. | Yr.)

Total Miles of line Cut:

Name and Address of Author (of Geo-Technical report): FOR REPORT SEE YOUR FILE 2.11947 / W8806-50125
LORMAND, ALFORD, WOOLHAM - SUITE 410 20 RICHMOND ST. EAST, TORONTO, ONT

Credits Requested per Each Claim in Columns at right

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

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

RECORDED JAN 27 1989
RECEIVED MAR 15 1989
MINING LANDS SECTION

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

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	987395	6
	987396	4
	987397	4
	987398	4
	987399	4
	987400	4
	987401	4
	987402	4
	987403	4
	987404	4
	987405	4
	987406	4
	987407	4
	987408	4
	987409	4
	987410	4
	987413	4
	987414	4
	987415	4
	987416	4
	987417	4
	987418	4
	987421	4
	987422	4
	987423	4
	987425	4
	987430	4
	987431	4
	987432	4
	987433	4
	987434	4
	987435	4
	987424	4
	987412	4
	987411	4
	987436	4
	987437	4
	987448	4
	987449	4
	987451	4

Total number of mining claims covered by this report of work: 40

Expenditures (excludes power stripping)

Type of Work Performed: GEOCHEMICAL ANALYSES

Performed on Claim(s): SEE ATTACHED LIST

Calculation of Expenditure Days Credits

Total Expenditures: $ 2434.48 ÷ 15 = Total Days Credits: 162

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.

PORCUPINE MINING DIVISION
RECEIVED
JAN 27 1989
12:55 p.m.

For Office Use Only
Total Days Recorded: 162
Date Recorded: JAN 27/89
Date Approved as Recorded: See second statement.
Mining Recorder: [signature]
Branch Director: [signature]

Date: JAN 26 1989

Recorded Holder or Agent (Signature): [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: JAN TRINDER SUITE 410 - 20 RICHMOND ST. EAST. TORONTO ONTARIO M5C 2R9

Date Certified: JAN 26. 1989

Certified by (Signature): [signature]

1362 (85/12)

MINING CLAIMS ON WHICH WORK WAS PERFORMED:

P - 987395	P - 987425
P - 987396	P - 987426
P - 987397	P - 987427
P - 987398	P - 987428
P - 987399	P - 987429
P - 987400	P - 987430
P - 987401	P - 987431
P - 987402	P - 987432
P - 987403	P - 987433
P - 987404	P - 987434
P - 987405	P - 987435
P - 987406	P - 987436
P - 987407	P - 987437
P - 987408	P - 987438
P - 987409	P - 987439
P - 987410	P - 987440
P - 987411	P - 987441
P - 987412	P - 987442
P - 987413	P - 987443
P - 987414	P - 987444
P - 987415	P - 987445
P - 987416	P - 987446
P - 987417	P - 987447
P - 987418	P - 987448
P - 987419	P - 987449
P - 987420	P - 987450
P - 987421	P - 987451
P - 987422	P - 987452
P - 987423	P - 987453
P - 987424	

59 Claims Total

Hardiman Bay Resources Inc. - Hardiman Bay Property

This report of Work is supplemental to our report of Work recorded on October 26, 1988 (Your file W8806-50125). You are referred to our technical report entitled Report on the 1988 Geological Mapping Program, Hardiman Bay Property, Horwood Township, Ontario submitted December 19, 1988 (Your file 2.11947/W8806-50125). Your are referred to this report for technical details, conclusions and recommendations regarding the geochemical analyses.

Attached are geochemical lab reports and invoices pertinent to this report.

MINING LANDS: PLEASE COMPLETE THIS FORM & RETURN IT WITH REPORT TO THE ASSESSMENT FILES OFFICE

DATE REMOVED: (from AFO) Mar 16/89 DATE RETURNED: (to AFO') _____

REPORT # : 2.11947

FICHE NO. : _____ (where applicable)

REASON FOR REQUESTING REPORT (complete #1-4 below):

1. INFORMATION ADDED TO EXISTING PAGES OF REPORT: ☒

IF YES, SPECIFY PAGES: 38 pages
: invoices, assay units)
: report of work W8906-146

2. a) PAGES/MAPS ADDED TO THIS REPORT: 38 TOTAL PAGES ADDED
: ____ TOTAL MAPS ADDED

b) TYPE OF PGS ADDED:
_____ CORRESPONDENCE
_____ WORK REPORTS (AMENDED)
✓ WORK RPTS (NEW)
_____ MISSING PAGES OF TEXT
_____ OTHER (PLEASE SPECIFY)

3. a) REMOVAL OF PGS FROM REPORT: _____ TOTAL PGS REMOVED

b) TYPE OF PAGES REMOVED
_____ CORRESPONDENCE
_____ WORK REPORTS
_____ PGS OF TEXT
_____ OTHER (PLEASE SPECIFY)

4. REPORT NEEDED FOR REFERENCE ONLY: ☒

NO INFORMATION ALTERED : ☒

NO INFORMATION ADDED : ☐

NO INFORMATION DELETED : ☒

*NOTE: ENTER "X" IN APPLICABLE BOXES

Ontario

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Mining Lands Section
3rd floor, 880 Bay Street
Toronto, Ontario
M5S 1Z8

Telephone: (416) 965-4888

January 31, 1989

Your file: W8806-50125
Our file: 2.11947

Mining Recorder
Ministry of Northern Development and Mines
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

Re: Notice of Intent dated January 12, 1989 - Geological Survey
and Geophysical (Magnetometer & Electromagnetic) Survey
submitted on Mining Claims P 987395 et al in Horwood Township

The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

W.R. Cowan
Provincial Manager, Mining Lands
Mines & Minerals Division

D.K:DK:pl
Enclosure

cc: Mr. G.H. Ferguson
Mining and Lands Commissioner
Toronto, Ontario

Resident Geologist
Timmins, Ontario

Hardiman Bay Resources Inc.
67 Richmond Street W.
Suite 500
Toronto, Ontario
M5H 1Z5

Ministry of Northern Development and Mines
Ontario

Technical Assessment Work Credits

File 2.11947

Date January 12, 1989

Mining Recorder's Report of Work No. W8806-50125

Recorded Holder: Hardiman Bay Resources Inc.

Township or Area: Horwood Township

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic 28 days	P-987395 to 426 inclusive 987429 to 38 inclusive 987440 to 52 inclusive
Magnetometer 14 days	
Radiometric ____ days	
Induced polarization ____ days	
Other ____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological 14 days	
Geochemical ____ days	
Man days ☐ Airborne ☐	
Special provision ☒ Ground ☒	
☒ Credits have been reduced because of partial coverage of claims.	
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

☒ not sufficiently covered by the survey ☐ Insufficient technical data filed

P-987427-28
987439
987453

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

829 (85/12)

CLAIMS ON WHICH WORK WAS PERFORMED:

P - 987395
P - 987396
P - 987397
P - 987398
P - 987399
P - 987400
P - 987401
P - 987402
P - 987403
P - 987404
P - 987405
P - 987406
P - 987407
P - 987408
P - 987409
P - 987410
P - 987411
P - 987412
P - 987413
P - 987414
P - 987415
P - 987416
P - 987417
P - 987418
P - 987419
P - 987420
P - 987421
P - 987422
P - 987423
P - 987424
P - 987425
P - 987426
P - 987427
P - 987428
P - 987429
P - 987430
P - 987431
P - 987432
P - 987433
P - 987434
P - 987435
P - 987436
P - 987437
P - 987438
P - 987439
P - 987440
P - 987441
P - 987442
P - 987443
P - 987444
P - 987445
P - 987446
P - 987447
P - 987448
P - 987449
P - 987450
P - 987451
P - 987452
P - 987453

59 Claims Total

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

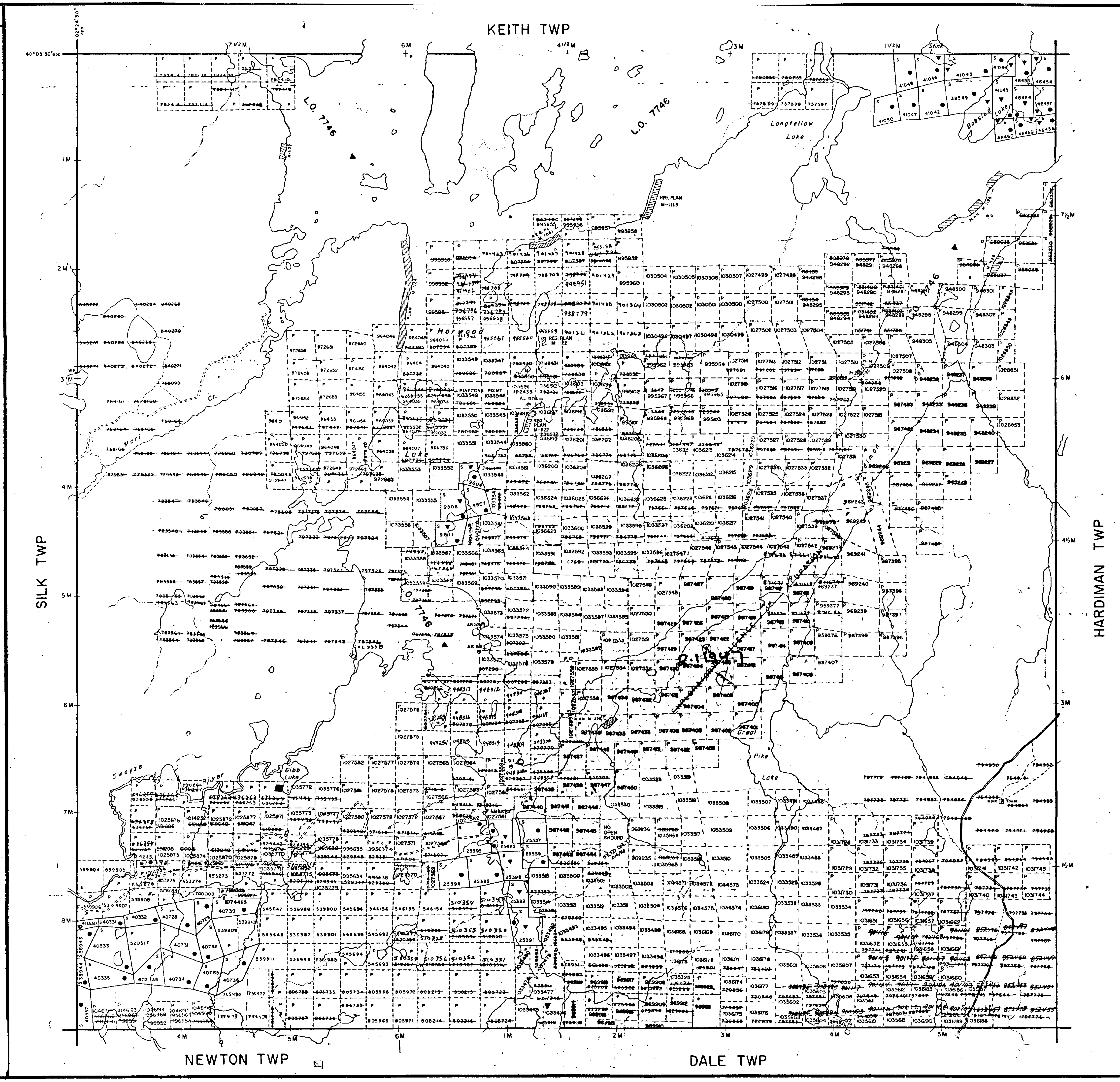
M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M.+ S. – MINING AND SURFACE RIGHTS

	Description	Order No.	Date	Disposition	File
R1	SEC. 36/80	W. 2/82	(re-opened N.R.O. 3/82)		
R2	BLO 14901	NRD 22/85	JUNE 7/85	MR + SR RE-OPENED JUNE 17/85 7:00 A.M.	

FLOODING

FLOODING RIGHTS ON HORWOOD LAKE & HARDIMAN BAY TO CONTOUR ELEV. 1117 FEET ARE RESERVED TO THE SPRUCE FALLS POWER AND PAPER CO. LTD. File: 75166 L.O. 7746

41O16NE0002 2.11947 HORWOOD 200



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	OC
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

FEET 0 1000 2000 4000 6000 8000
METRES 0 200 1000 (1 KM) 2000 (2 KM)

TOWNSHIP
HORWOOD

M.N.R. ADMINISTRATIVE DISTRICT
CHAPLEAU
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
SUDBURY

Ministry of Natural Resources
Ontario
Land Management Branch

Date MARCH 1985
Number G-3228

REFERENCES

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
(R1) SEC. 36/80	W 7/82	(re-opened N.R.O. 3/82)		
(R2) GLO 14901	NRD 22/85	JUNE 7/85	MR + SR RE-OPENED JUNE 17/85 7.00 A.M	

FLOODING

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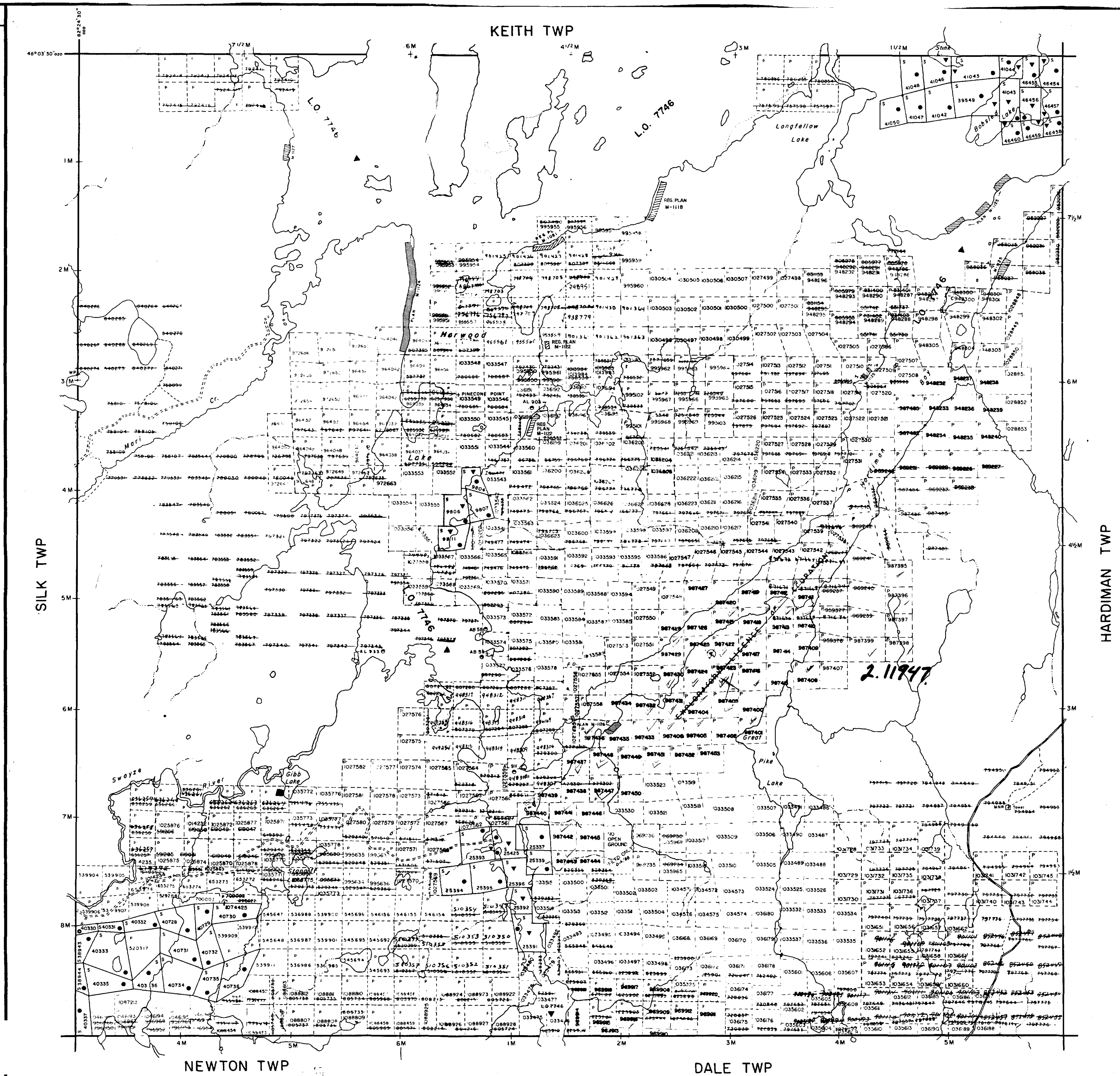
41016NE0002 2.11947 HORWOOD

210



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	OC
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

FEET 0 1000 2000 4000 6000 8000

0 200 1000 (1 KM) 2000 (2 KM) METRES

RECEIVED FEB 22 1989

TOWNSHIP

HORWOOD

M.N.R. ADMINISTRATIVE DISTRICT

CHAPLEAU

MINING DIVISION

PORCUPINE

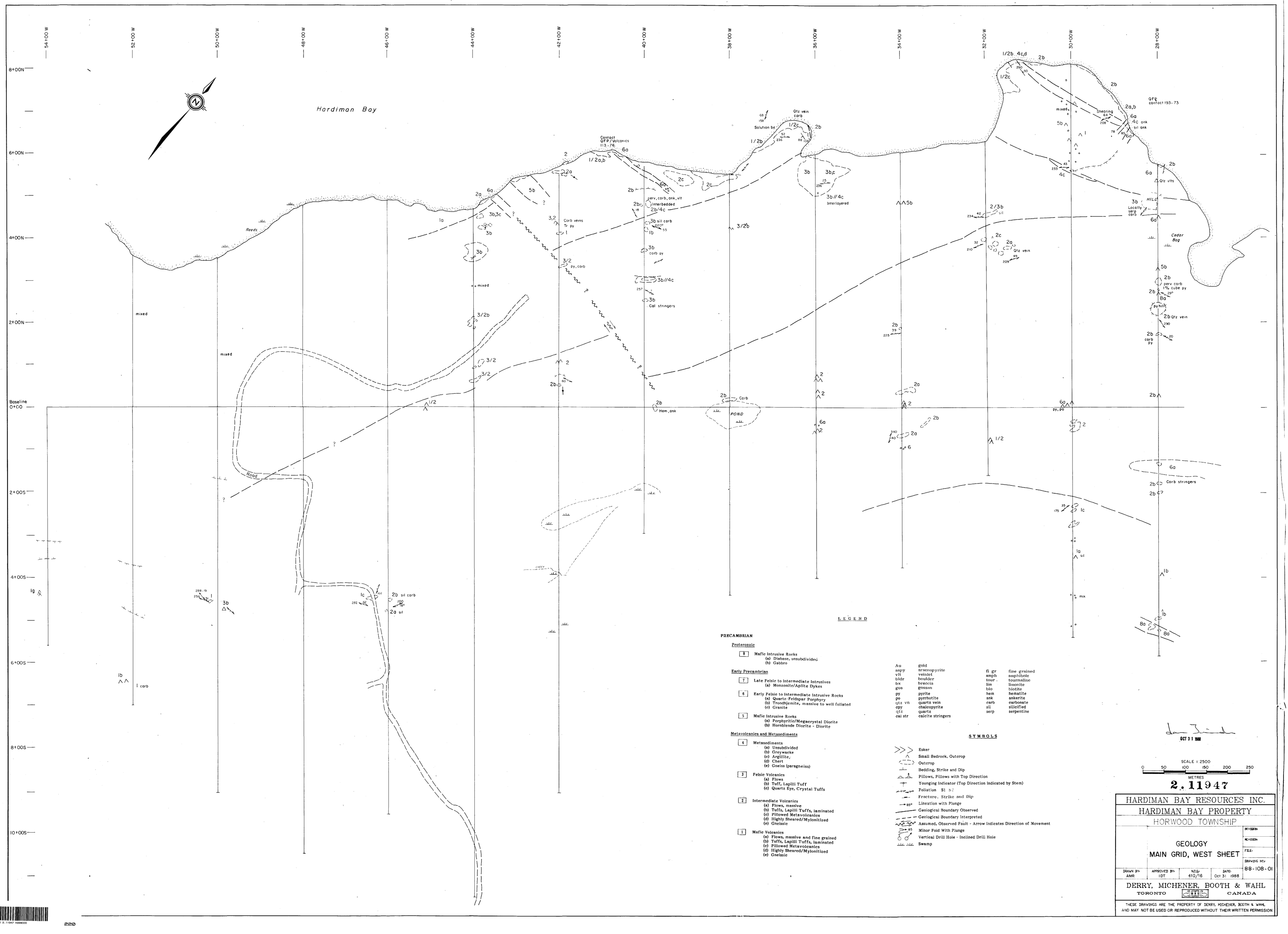
LAND TITLES / REGISTRY DIVISION

SUDBURY

Ontario Ministry of Natural Resources — Land Management Branch

Date MARCH 1985

Number G-3228



LEGEND

PRECAMBRIAN

Proterozoic

8 Mafic Intrusive Rocks
- (a) Diabase, unsubdivided
- (b) Gabbro

Early Precambrian

7 Late Felsic to Intermediate Intrusives
- (a) Monzonite/Aplite Dykes

6 Early Felsic to Intermediate Intrusive Rocks
- (a) Quartz-Feldspar Porphyry
- (b) Trondhjemite, massive to well foliated
- (c) Granite

5 Mafic Intrusive Rocks
- (a) Porphyritic/Megacrystal Diorite
- (b) Hornblende Diorite - Diorite

Metavolcanics and Metasediments

4 Metasediments
- (a) Unsubdivided
- (b) Greywacke
- (c) Argillite,
- (d) Chert
- (e) Gneiss (paragneiss)

3 Felsic Volcanics
- (a) Flows
- (b) Tuff, Lapilli Tuff
- (c) Quartz Eye, Crystal Tuffs

2 Intermediate Volcanics
- (a) Flows, massive
- (b) Tuffs, Lapilli Tuffs, laminated
- (c) Pillowed Metavolcanics
- (d) Highly Sheared/Mylonitized
- (e) Gneissic

1 Mafic Volcanics
- (a) Flows, massive and fine grained
- (b) Tuffs, Lapilli Tuffs, laminated
- (c) Pillowed Metavolcanics
- (d) Highly Sheared/Mylonitized
- (e) Gneissic

SYMBOLS

OCT 31 1988

SCALE 1:2500

0 50 100 150 200 250 METRES

2.11947

HARDIMAN BAY RESOURCES INC.

HARDIMAN BAY PROPERTY

HORWOOD TOWNSHIP

GEOLOGY

MAIN GRID, WEST SHEET

REVISED:

REVISED:

FILE:

DRAWING NO: 88-108-01

DRAWN BY: AMR	APPROVED BY: IDT	N.T.S. 410/16	DATE: Oct 31 1988

DERRY, MICHENER, BOOTH & WAHL

TORONTO CANADA

Hardiman Bay

Great Pike Lake

Baseline

8+00 N
6+00 N
4+00 N
2+00 N
2+00 S
4+00 S
6+00 S
8+00 S
10+00 S
12+00 S

24+00W
22+00W
20+00W
18+00W
16+00W
14+00W
12+00W
10+00W
8+00W
6+00W
4+00W
2+00W
0+00W

Logging Road

Creek

Cedar bog

Cedar swamp

Clear cut Area

Burnt area

Volcanics

Mylonatized Metamorphozed Volcanics

Sandy clay

Silty sand

Clay & silty sand

Mixed forest

Clay & bldrs

Sand

Clear cut & burn

LEGEND

PRECAMBRIAN

Proterozoic

8 Mafic Intrusive Rocks
- (a) Diabase, unsubdivided
- (b) Gabbro

Early Precambrian

7 Late Felsic to Intermediate Intrusives
- (a) Monzonite/Aplite Dykes

6 Early Felsic to Intermediate Intrusive Rocks
- (a) Quartz-Feldspar Porphyry
- (b) Trondhjemite, massive to well foliated
- (c) Granite

5 Mafic Intrusive Rocks
- (a) Porphyritic/Megacrystal Diorite
- (b) Hornblende Diorite - Diorite

Metavolcanics and Metasediments

4 Metasediments
- (a) Unsubdivided
- (b) Greywacke
- (c) Argillite
- (d) Chert
- (e) Gneiss (paragneiss)

3 Felsic Volcanics
- (a) Flows
- (b) Tuff, Lapilli Tuff
- (c) Quartz Eye, Crystal Tuffs

2 Intermediate Volcanics
- (a) Flows, massive
- (b) Tuffs, Lapilli Tuffs, laminated
- (c) Pillowed Metavolcanics
- (d) Highly Sheared/Mylonitized
- (e) Gneissic

1 Mafic Volcanics
- (a) Flows, massive and fine grained
- (b) Tuffs, Lapilli Tuffs, laminated
- (c) Pillowed Metavolcanics
- (d) Highly Sheared/Mylonitized
- (e) Gneissic

Au	gold	hem	hematite	bx	breccia
aspy	arsenopyrite	ank	ankerite	gos	gossan
vft	veinlet	carb	carbonate	fl gr	fine grained
bldr	boulder	sil	silicified	amph	amphibole
py	pyrite	serp	serpentine	tour	tourmaline
po	pyrrhotite			fin	fissile
qtz vn	quartz vein			bio	biotite
cpy	chalcopyrite				
qtz	quartz				
cal str	calcite stringers				

SYMBOLS

- Esker
- Small Bedrock, Outcrop
- Outcrop
- Bedding, Strike and Dip
- Pillows, Pillows with Top Direction
- Younging Indicator (Top Direction Indicated by Stem)
- Foliation S1 S2
- Fracture, Strike and Dip
- Lineation with Plunge
- Geological Boundary Observed
- Geological Boundary Interpreted
- Assumed, Observed Fault - Arrow Indicates Direction of Movement
- Minor Fold With Plunge
- Vertical Drill Hole - Inclined Drill Hole
- Swamp

OCT 3 1 1988

0 50 100 150 200 250
METRES

2.11947

HARDIMAN BAY RESOURCES INC.	
HARDIMAN BAY PROPERTY	
HORWOOD TOWNSHIP	
GEOLOGY MAIN GRID EAST SHEET	REVISION REVISION FILE DRAWING NO 88-108 - 02
DRAWN BY: AMR · APPROVED BY: IDT · NTS: 40/16 · DATE: Oct 31 1988	
DERRY, MICHENER, BOOTH & WAHL TORONTO CANADA	

0+00 | 2+00E | 4+00E | 6+00E | 8+00E

17+00 N | 16+00 N | 14+00 N | 12+00 N | 10+00 N | 8+00 N | 6+00 N | 4+00 N | 2+00 N | Baseline

LEGEND

PRECAMBRIAN

Proterozoic

[8] Mafic Intrusive Rocks
- (a) Diabase, unsubdivided
- (b) Gabbro

Early Precambrian

[7] Late Felsic to Intermediate Intrusives
- (a) Monzonite/Aplite Dykes

[6] Early Felsic to Intermediate Intrusive Rocks
- (a) Quartz-Feldspar Porphyry
- (b) Trondhjemite, massive to well foliated
- (c) Granite

[5] Mafic Intrusive Rocks
- (a) Porphyritic/Megacrystal Diorite
- (b) Hornblende Diorite - Diorite

Metavolcanics and Metasediments

[4] Metasediments
- (a) Unsubdivided
- (b) Greywacke
- (c) Argillite
- (d) Chert
- (e) Gneiss (paragneiss)

[3] Felsic Volcanics
- (a) Flows
- (b) Tuff, Lapilli Tuff
- (c) Quartz Eye, Crystal Tuffs

[2] Intermediate Volcanics
- (a) Flows, massive
- (b) Tuffs, Lapilli Tuffs, laminated
- (c) Pillowed Metavolcanics
- (d) Highly Sheared/Mylonitized
- (e) Gneissic

[1] Mafic Volcanics
- (a) Flows, massive and fine grained
- (b) Tuffs, Lapilli Tuffs, laminated
- (c) Pillowed Metavolcanics
- (d) Highly Sheared/Mylonitized
- (e) Gneissic

py	pyrite	Hem	hematite	Au	gold
po	pyrrhotite	ank	ankerite	aspy	arsenopyrite
qtz vn	quartz vein	carb	carbonate	vlt	veinlet
cpy	chalcopyrite	sil	silicified	bldr	boulder
qtz	quartz	serp	serpentine	bx	breccia
cal str	calcite stringers			gos	gossan
				fi gr	fine grained
				amph	amphibole
				tour	tourmaline
				lim	limonite
				bio	biotite

SYMBOLS

- Esker
- Small Bedrock, Outcrop
- Outcrop
- Bedding, Strike and Dip
- Pillows, Pillows with Top Direction
- Younging Indicator (Top Direction Indicated by Stem)
- Foliation S1 S2
- Fracture, Strike and Dip
- 85° Lineation with Plunge
- Geological Boundary Observed
- Geological Boundary Interpreted
- Assumed, Observed Fault - Arrow Indicates Direction of Movement
- 85 Minor Fold With Plunge
- Vertical Drill Hole - Inclined Drill Hole
- Swamp

17+28N | 16+10N | 17+50N | 4+61N | 2+97N | Petite Lac | Burn area | Slash area | Gravel pit | Mixed forest (burnt) | open bog | clay & bldrs | granite bldrs | mylonitized bldrs & subcrop | gneissic | qtz vn (15cms) | Au py cpy, aspy? rust gos | seds or clastic tuff rust lim hem | rust lim hem qtz vn | sil hem (15cms) | 3652-3653 | 040° qtz dykes | with xenolith of ld | well fol | 8a strike | amph | trondj | gn | co gr blo | bio seg | qtz pod lm | rose qtz | py

0 50 100 150 200 250 METRES

OCT 31 1988

2.11947

HARDIMAN BAY RESOURCES INC.
HARDIMAN BAY PROPERTY
HORWOOD TOWNSHIP

GEOLOGY
EAST GRID

DRAWN BY:	APPROVED BY:	N.T.S.:	DATE:	REVISION:	REVISION:	FILE:	DRAWING NO.:
AMR	IDT	410/16	Oct 31 1988				88-108-03

DERRY, MICHENER, BOOTH & WAHL
TORONTO CANADA

Hardiman Bay
Road
Baseline 0+00
LEGEND
Claim post, assumed
Claim post, observed
Sample no
py = corb sil
(Au ppb)
SCALE 1:2500
METRES
2.11947
HARDIMAN BAY RESOURCES INC.
HARDIMAN BAY PROPERTY
HORWOOD TOWNSHIP
GEOCHEMICAL
ROCK SAMPLE SITES
AND CLAIMS
MAIN GRID, WEST SHEET
DRAWN BY: AMR
APPROVED BY: IDT
N.T.S. 410/16
DATE Oct 31 1988
DRAWING NO. 88-108-04
DERRY, MICHENER, BOOTH & WAHL
TORONTO
CANADA
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OCT 31 1988
250


HARDIMAN BAY RESOURCES INC.
HARDIMAN BAY PROPERTY
HORWOOD TOWNSHIP
GEOCHEMICAL
ROCK SAMPLE SITES
AND CLAIMS
MAIN GRID, EAST SHEET
DRAWN BY: AMR
APPROVED BY: IDT
N.T.S.: 41O/16
DATE: Oct 31 1988
DRAWING NO: 88-108-05
DERRY, MICHENER, BOOTH & WAHL
TORONTO CANADA
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LEGEND
Claim Post, assumed
Claim Post, observed
Sample No.
(Assay Value Gold ppb)
METRES
2.11947
Hardiman Bay
Great Pike Lake
Logging Road
CUT AREA
Area Logged Balance of Claim Post Not Standing
no claim post located
Area has many N-S, E-W flagged lines probably plots for replanting
O.G.S. Au Showing # 3 NORTH SHORE Qtz ± Tour Vein in Mafic-Int
Baseline
987400
987401
987402
987403
987404
987405
987406
987409
987410
987411
987412
987413
987414
987415
987416
987417
987418
987419
987420
987421
987422
987423
987424
987425
987426
987429
987430
987431
987432
987433

0+00 | 2+00E | 4+00E | 6+00E | 8+00E

17+00 N
16+00 N
14+00 N
12+00 N
10+00 N
8+00 N
6+00 N
4+00 N
2+00 N
Baseline

987395
987396
987397
987399
987398

(11) 3652 py
(8) 3653 em, im, Rust
Tr (11) 3655
py (5) 3656
(6) 3657
lim 3654
hem (11)
rust
gossanous

Silver Sulphide
py (5) 3650 lim
3651 hem
(126)
3649(9)
(<5) 3648

Petite Loc

3543
3544 (<5) hem
3545 (26)
3546 (16)
3746 (5)
3547 (<5)

LEGEND
- Claim Post, assumed
- Claim Post, observed

Sample No.
py o carb
sil
(Assay Value Gold ppb)

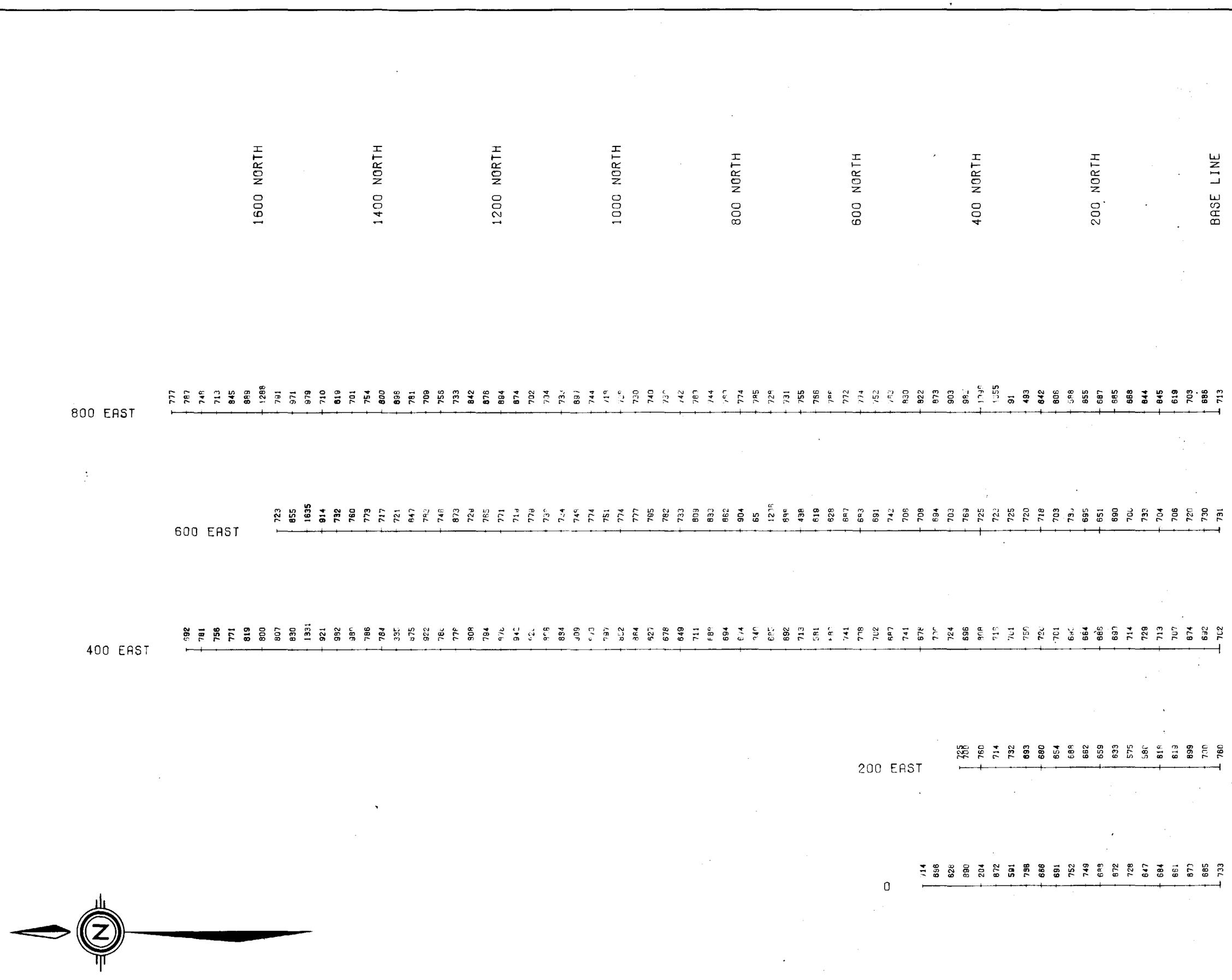
Jan 2, 1947
OCT 31 1988

0 50 100 150 200 250
METRES

HARDIMAN BAY RESOURCES INC.			
HARDIMAN BAY PROPERTY			
HORWOOD TOWNSHIP			
GEOCHEMICAL ROCK SAMPLE SITES AND CLAIMS EAST GRID			REVISION:
			REVISION:
			FILE:
			DRAWING NO.: 88-108-06
DRAWN BY: AMR	APPROVED BY: IDT	N.T.S.: 410/16	DATE: Oct 31 1988

DERRY, MICHENER, BOOTH & WAHL
TORONTO CANADA

HARDIMAN BAY RESOURCES INC.
HARDIMAN BAY PROPERTY
HORWOOD TOWNSHIP
TOTAL FIELD
MAGNETIC SURVEY
MAIN GRID
Background 58000 nT
POSTED VALUES
88-108-07
Oct-31-1988
DERRY, MICHENER, BOOTH & WAHL
TORONTO CANADA
2.11947
OCT 3 1 1988
0
200 WEST
400 WEST
600 WEST
800 WEST
1000 WEST
1200 WEST
1400 WEST
1600 WEST
1800 WEST
2000 WEST
2200 WEST
2400 WEST
2600 WEST
2800 WEST
3000 WEST
3200 WEST
3400 WEST
3600 WEST
3800 WEST
4000 WEST
4200 WEST
4400 WEST
4600 WEST
4800 WEST
5000 WEST
5200 WEST
5400 WEST
600 NORTH
400 NORTH
200 NORTH
BASE LINE
200 SOUTH
400 SOUTH
600 SOUTH
800 SOUTH
1000 SOUTH
1200 SOUTH



OCT 31 1988

2.11947

SCALE 1:5000

50 0 50 100 150 200

HARDIMAN BAY RESOURCES INC.

HARDIMAN BAY PROPERTY

HORWOOD TOWNSHIP

TOTAL FIELD
MAGNETIC SURVEY
EAST CLAIM BLOCK GRID
Background 58000 nT
POSTED VALUES

REVISION	
REVISION	
FILE	
DRAWING NO	88-108-08

DRAWN BY	APPROVED BY	N.T.S.	DATE
SLB	RWW	41O/16	Oct 31 1988

DERRY, MICHENER, BOOTH & WAHL
TORONTO CANADA

290

HARDMAN BAY RESOURCES INC.

HARDMAN BAY PROPERTY

HARWOOD TOWNSHIP

TOTAL FIELD

MAGNETIC SURVEY

MAIN GRID

Background 58000 nT

CONTOUR MAP

DRAWN BY:	APPROVED BY:	SCALE:	DATE:
SLB	RWW	1:5000	Oct 31 1988

REVISION

REVISION

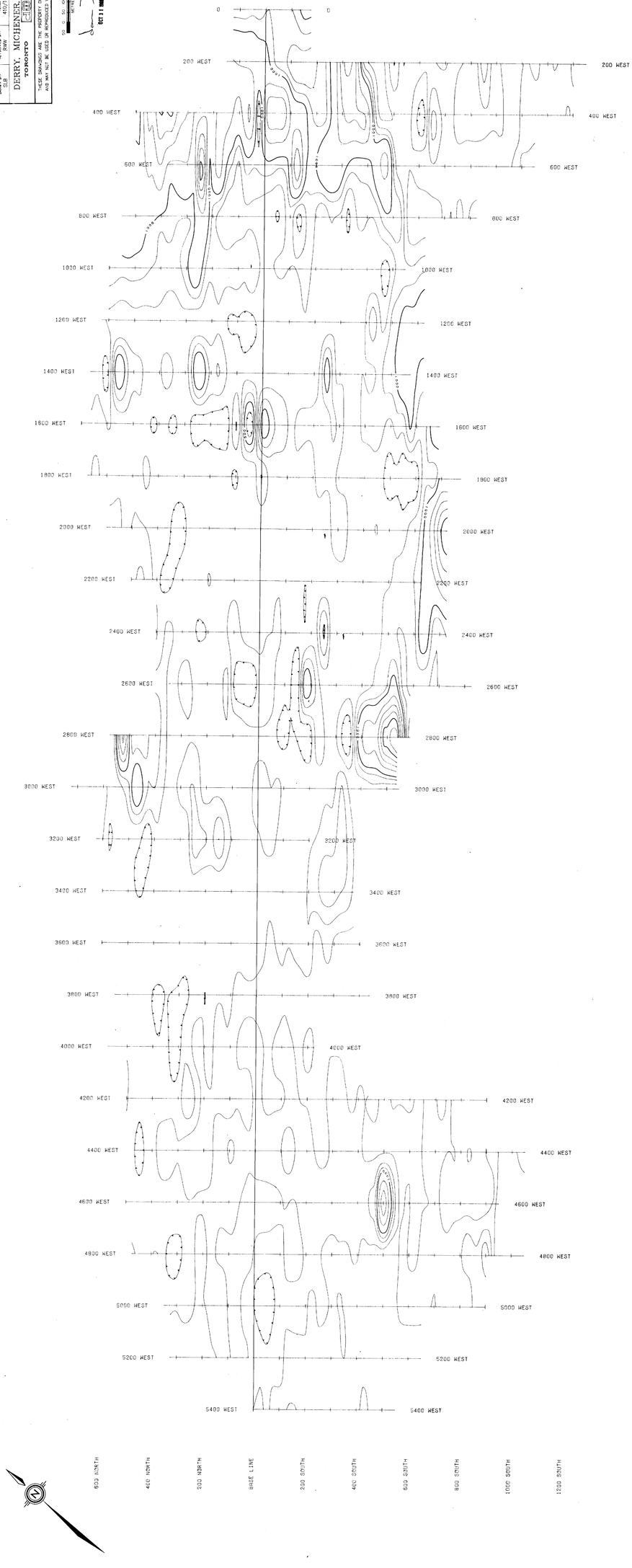
FILE:

DRAWING NO.

88-108-09

DERRY, MICHENER, BOOTH & WAHL

TORONTO CANADA



1600 NORTH

1400 NORTH

1200 NORTH

1000 NORTH

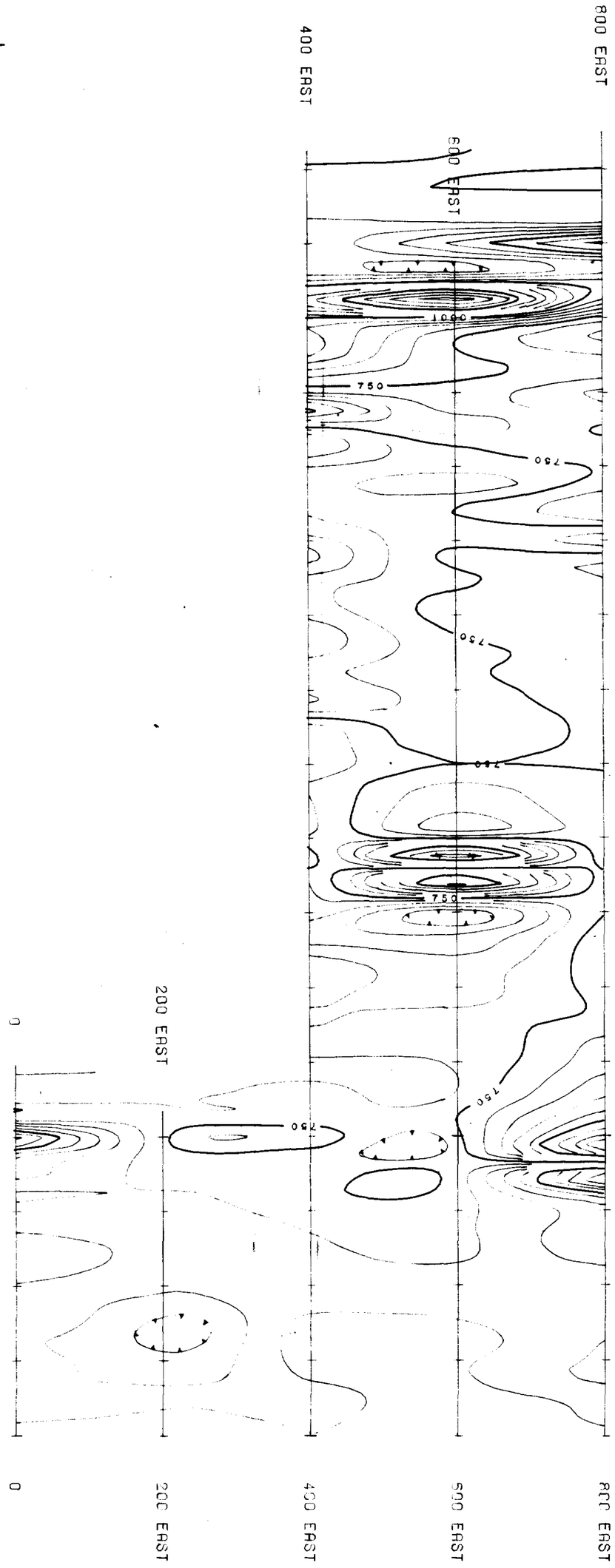
800 NORTH

600 NORTH

400 NORTH

200 NORTH

BASE LINE



1600 NORTH

1400 NORTH

1200 NORTH

1000 NORTH

800 NORTH

600 NORTH

400 NORTH

200 NORTH

BASE LINE

OCT 3 1 1988

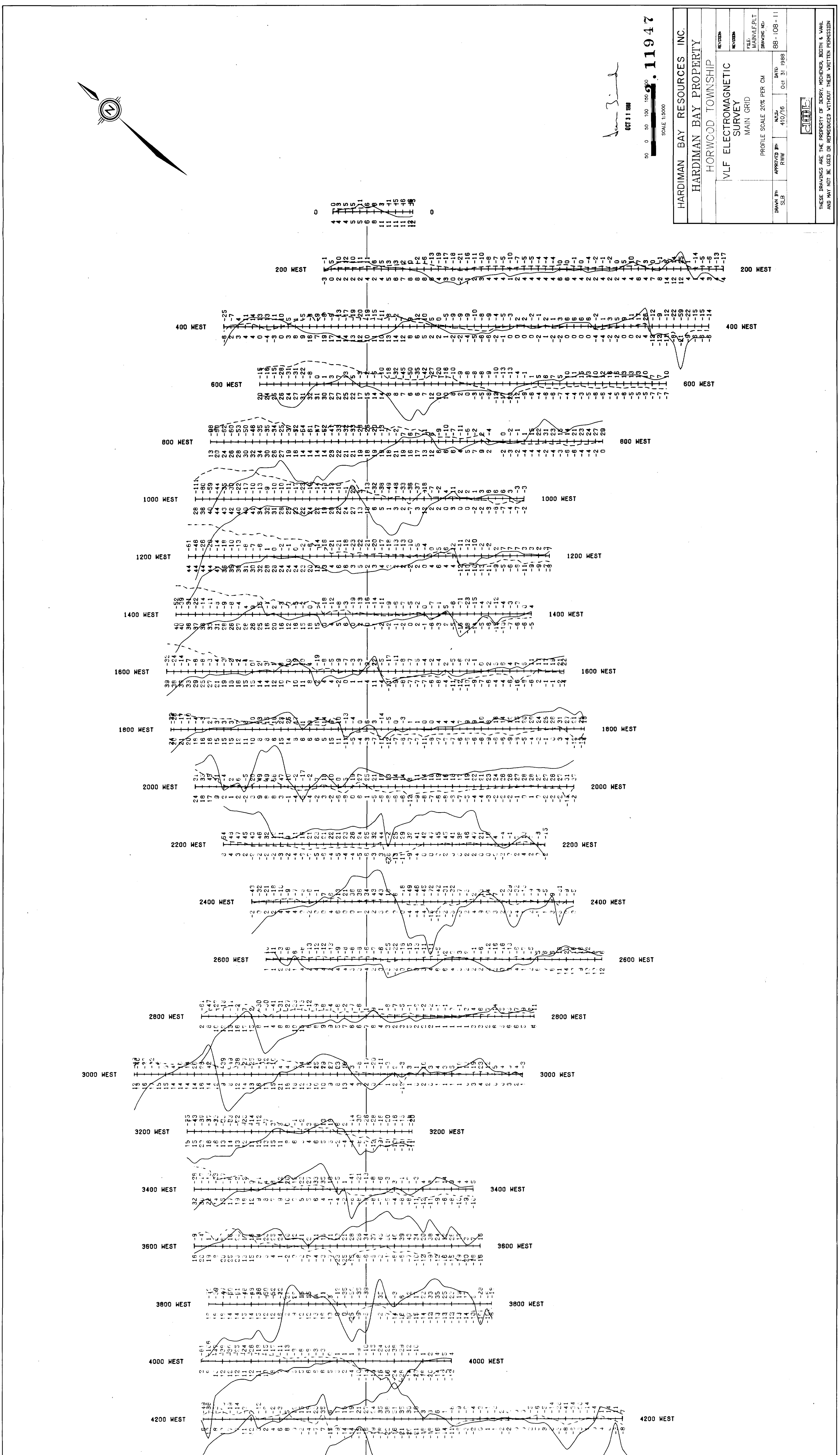
2.11947

50 0 50 100 150 200

SCALE 1:5000

HARDIMAN BAY RESOURCES INC.			
HARDIMAN BAY PROPERTY			
HORWOOD TOWNSHIP			
	TOTAL FIELD MAGNETIC SURVEY EAST CLAIM BLOCK GRID Background 58000 nT CONTOUR MAP		REVISION REVISION FILE: DRAWING NO: 88-108-10
DRAWN BY: SLB	APPROVED BY: RWW	N.T.S.: 410/16	DATE: Oct 31 1988

DERRY, MICHENER, BOOTH & WAHL
TORONTO CANADA


HARDIMAN BAY RESOURCES INC.
HARDIMAN BAY PROPERTY
HORWOOD TOWNSHIP
VLF ELECTROMAGNETIC SURVEY
MAIN GRID
PROFILE SCALE 20% PER CM
REVISION:
REVISION:
FILE: MAINVLF.PLT
DRAWING NO: 88-108-11
DRAWN BY: SLB
APPROVED BY: RWW
N.T.S.: 410/16
DATE: Oct 31 1988
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SCALE 1:5000
OCT 31 1988
11947
0
200 WEST
400 WEST
600 WEST
800 WEST
1000 WEST
1200 WEST
1400 WEST
1600 WEST
1800 WEST
2000 WEST
2200 WEST
2400 WEST
2600 WEST
2800 WEST
3000 WEST
3200 WEST
3400 WEST
3600 WEST
3800 WEST
4000 WEST
4200 WEST
4400 WEST
4600 WEST
4800 WEST
5000 WEST
5200 WEST
5400 WEST
800 NORTH
600 NORTH
400 NORTH
200 NORTH
BASE LINE
200 SOUTH
400 SOUTH
600 SOUTH
800 SOUTH
1000 SOUTH
1200 SOUTH

320

1600 NORTH

1400 NORTH

1200 NORTH

1000 NORTH

800 NORTH

600 NORTH

400 NORTH

200 NORTH

BASE LINE

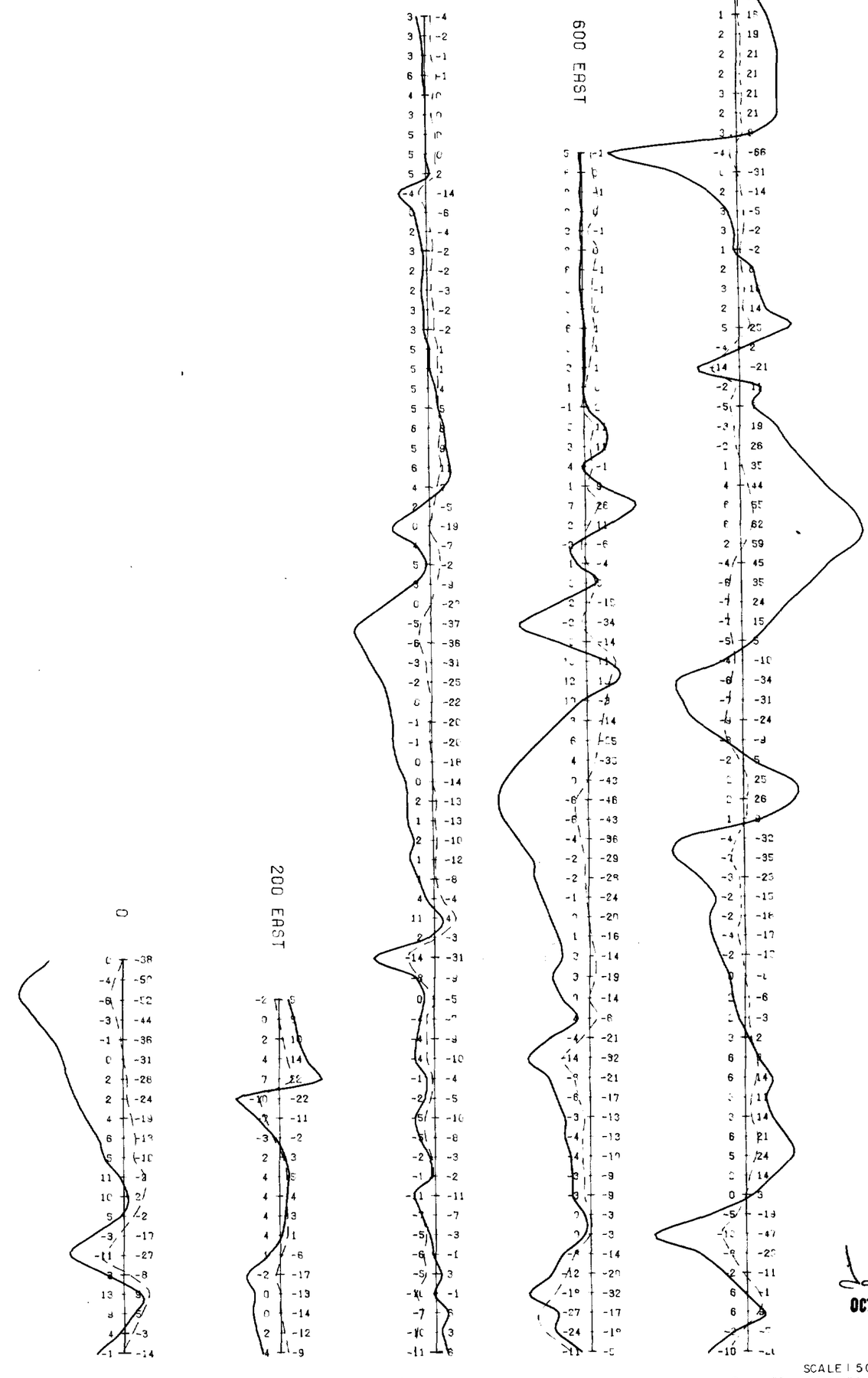
0

200 EAST

400 EAST

600 EAST

800 EAST



SCALE 1:5000

0 50 100 150 200 250

METRES

OCT 3 1 1988

2.11947

HARDIMAN BAY RESOURCES INC.				
HARDIMAN BAY PROPERTY				
HORWOOD TOWNSHIP				
	VLF ELECTROMAGNETIC SURVEY, PROFILES EAST GRID			REVISED
				REVISED
				FILE
				DRAWING NO. 88-108-12
DRAWN BY:	APPROVED BY	N.T.S. 41 O/16	DATE OCT. 31/1988	

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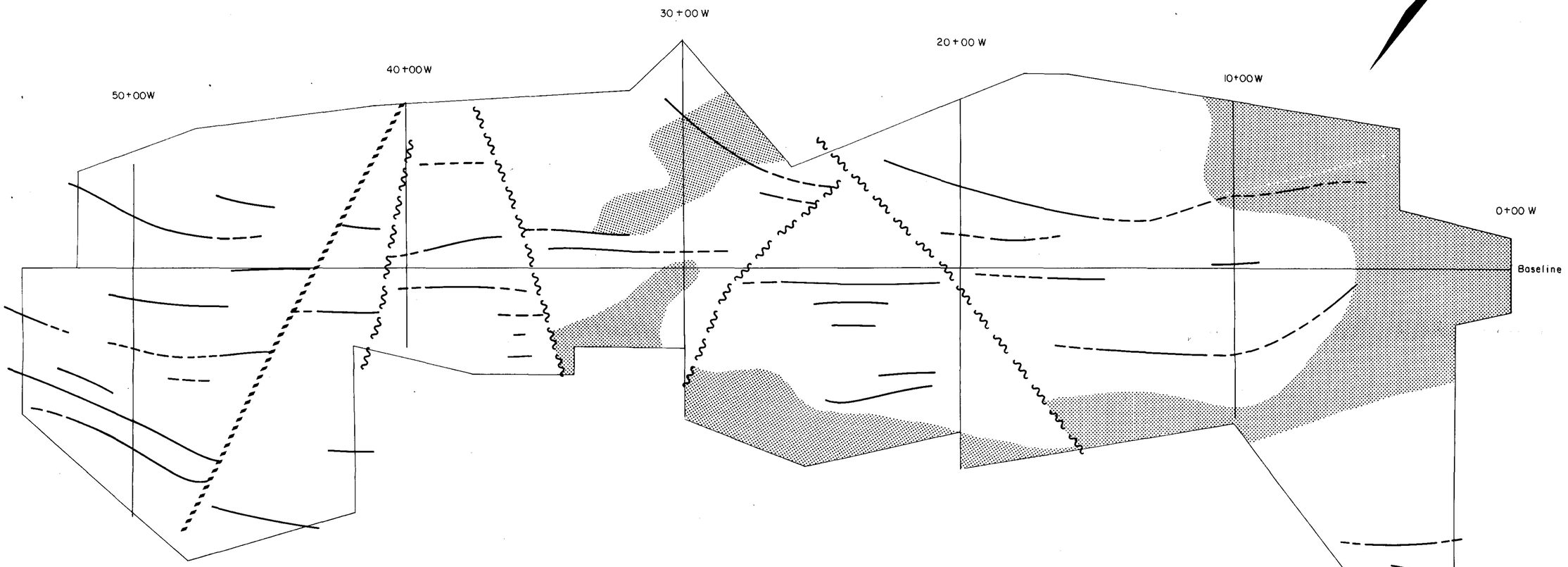
TORONTO CANADA



LEGEND

VLF Conductive Trends

- High amplitude
- Low amplitude
- High amplitude magnetic areas, diorite or gabbro ?
- Possible diabase dyke
- Fold/fault Structure

OCT 3 1 1988

SCALE 1:10 000

0 100 200 300 400 500

METRES

HARDIMAN BAY RESOURCES INC.			
HARDIMAN BAY PROPERTY			
HORWOOD TOWNSHIP			
	INTERPRETIVE GEOPHYSICAL COMPILATION		REVISED
			REVISED
			FILE
			DRAWING NO. 88-108-13
DRAWN BY S.C.A.	APPROVED BY R.W.W.	NTS 41 O/16	DATE OCT./31/1988

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TORONTO CANADA