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GEOLOGICAL

AND

LITHOGEOCHEMICAL REPORT

1984-85 WINTER AND FALL 1985 PROGRAMS

MANITOU LAKES PROJECT

N.T.S. 52-F-7

KENORA MINING DIVISION, ONTARIO

FOR

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JAN - 3 1986

MINING LANDS SECTION

COCHRANE OIL AND GAS LTD.

CALGARY, ALBERTA

BY

Michael Fox, B. SC., P. Geol.

CORDILLERAN RESOURCE MANAGEMENT LTD.

CALGARY, ALBERTA

November, 1985

52F07NE8318 2.8195 BOYER LAKE

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TABLE OF

LIST OF FIGURES

LIST OF MAPS

CERTIFICATE

I, the undersigned of the City of Calgary in the Province of Alberta do hereby certify that:

1. I am a Consulting Geologist with the firm of Cordilleran Resource Management Ltd. with offices at 120 Hawkwood Hill N.W., Calgary, Alberta;

2. I am a graduate of the University of British Columbia with a B. Sc. degree in Geology (1974) and I have practised my profession continuously since graduation;

3. I have worked in the field of mineral exploration since 1965;

4. I am a member in good standing of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta;

5. I personally participated in and supervised the work described in this report.

Respectfully submitted,

Michael Fox, B. Sc. Geol.

INTRODUCTION

LOCATION AND ACCESS

The claims are situated in the Manitou Lakes area, Kenora Mining Division, Ontario, and occupy portions of claim map-areas G-2683 (Lower Manitou Lake), G-2572 (Boyer Lake), and G-2584 (Harper Lake) in N.T.S. map-area 52-F-7.

Winter access into the area from Highway 502 is via a 5 km long skidoo trail into the settlement of Gold Rock. The trail leaves Highway #502 approximately 50 km south of Dryden, Ontario. Summer access is via float plane or by boat from Cedar Narrows, approximately 80 km to the south. The skidoo trail into Gold Rock is passable using ATC's but is not suitable for hauling boats.

OWNERSHIP, CLAIMS

A list of the claims surveyed is as follows:

1. Trafalgar Bay and Green Island Area

   687432 - 687451
   687455 - 687458
   687461
   745120 - 745123

2. Leuiller Island Area

   687476 - 687479
   696001 - 696005
   696031 - 696033

3. Manitou Straits Area

   687452 - 687454
   687459, 687460
   696014 - 696027
   696030
   687417 - 687419
   687570 - 687579
   687561 - 687565
   687554, 687555
   687483 - 687486
   687497, 687498
   687500, 687501

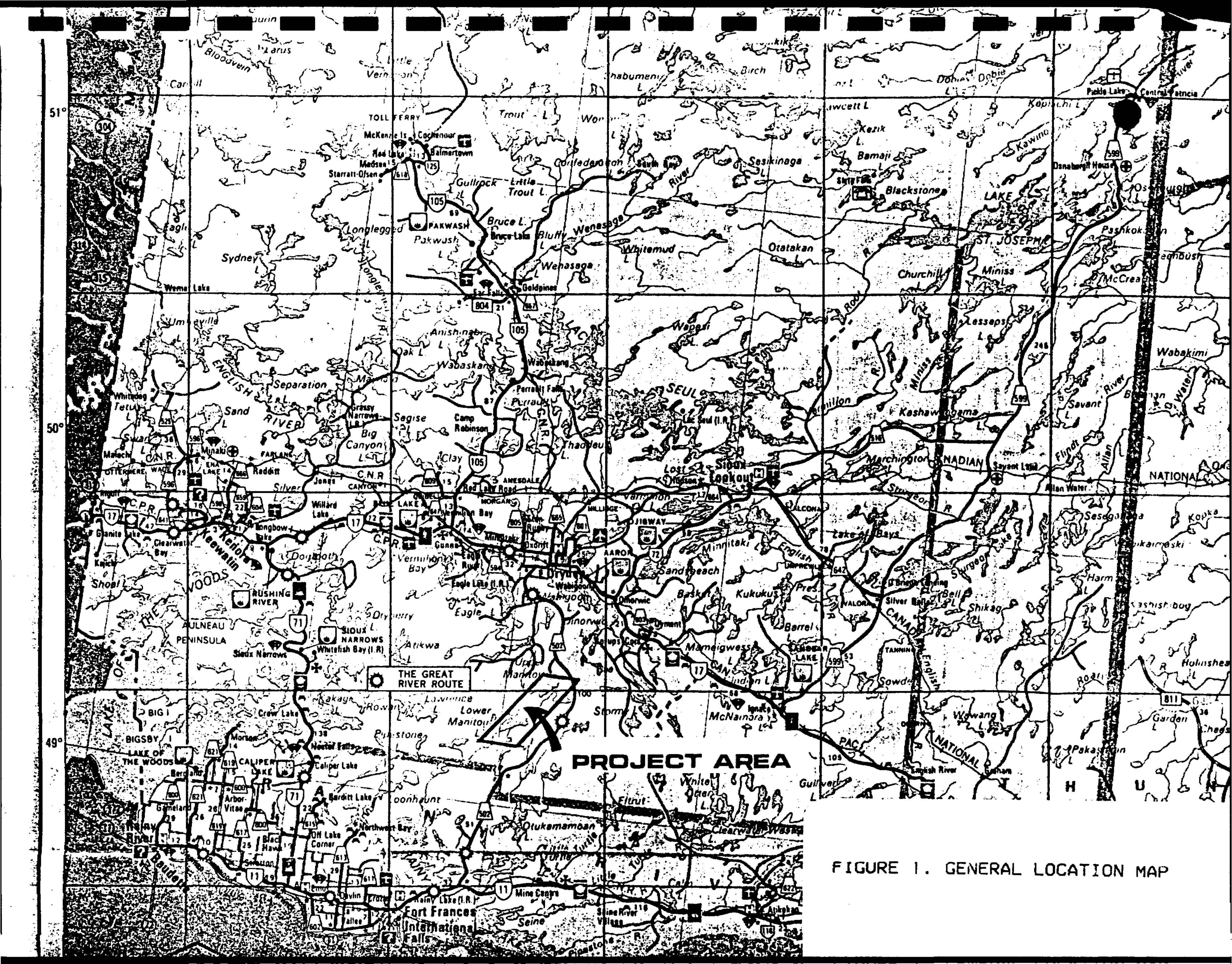

FIGURE 1. GENERAL LOCATION MAP

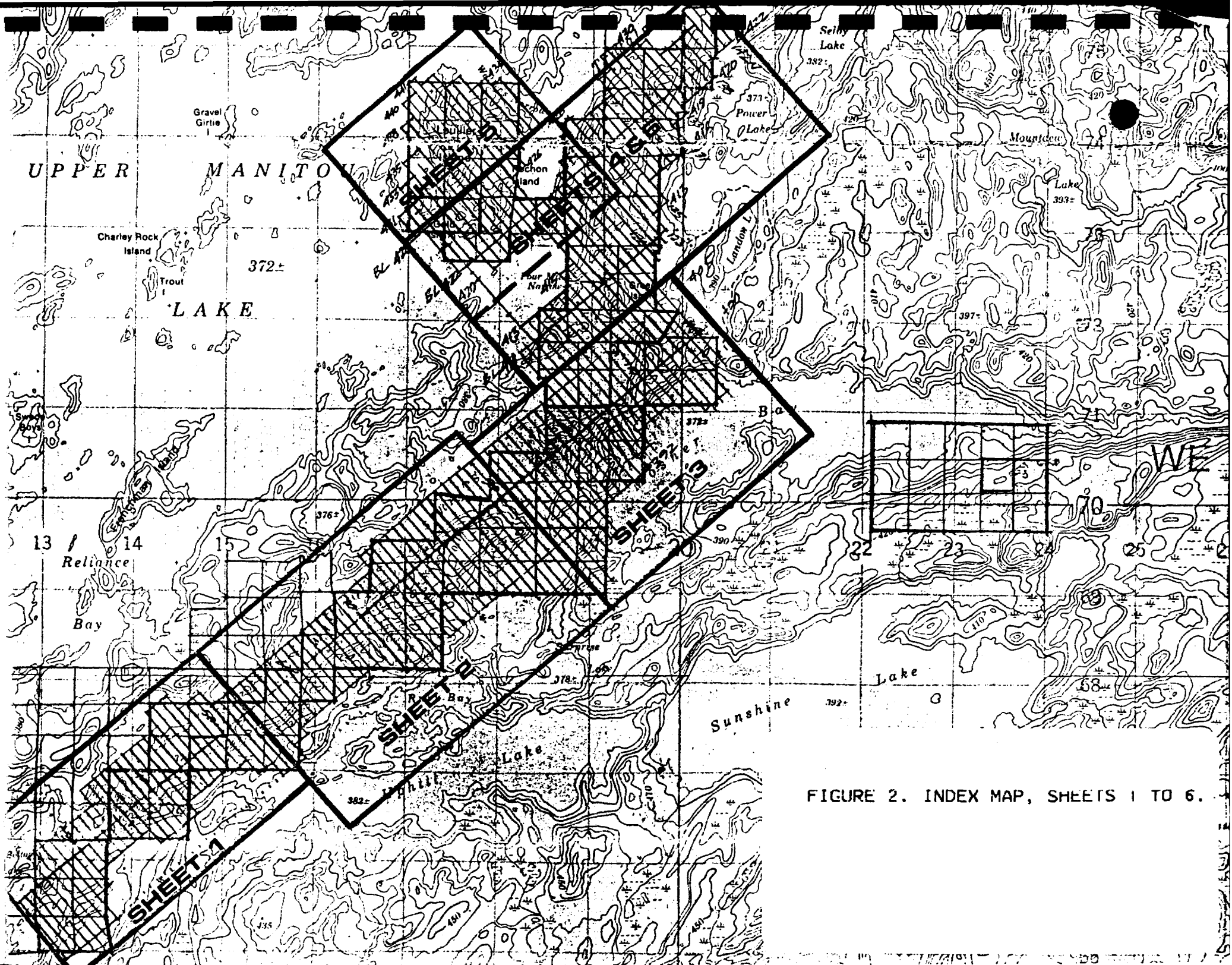

FIGURE 2. INDEX MAP, SHEETS 1 TO 6.

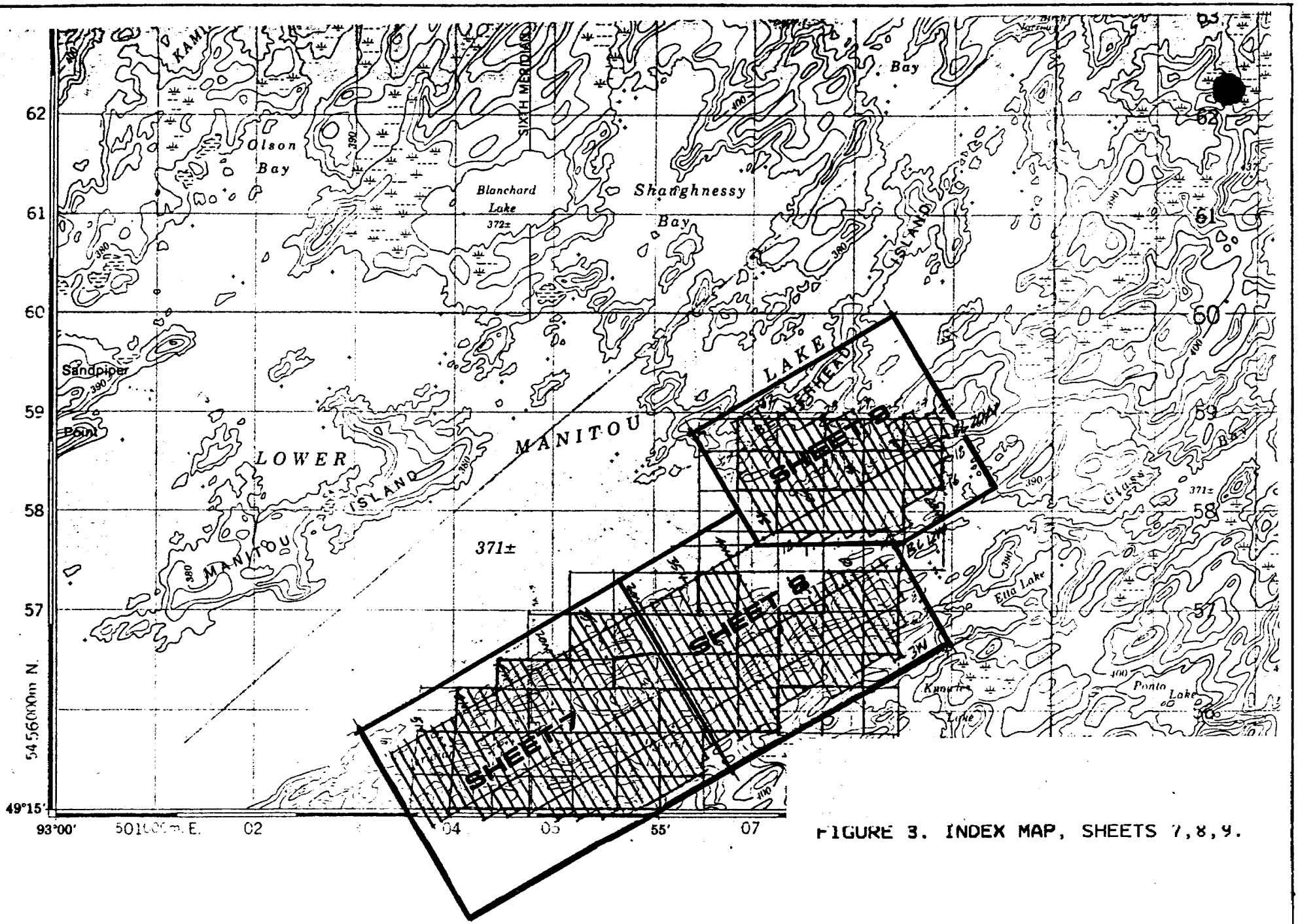

FIGURE 3. INDEX MAP, SHEETS 7, 8, 9.

4. Meridian Bay - Glass Bay Area

687340, 687341
687345 - 687347
687349, 687350
687352, 687353, 687356, 687359
687361, 687362, 687367
687370 - 687373
687375, 687376, 687379
687381 - 687384
687386 - 687391

5. Beaverhead Island Area

687397, 687398
687402 - 687407
687410 - 687414

All of the above listed claims are owned by:

Cochrane Oil & Gas ltd.
Suite 2100 First Canadian Centre
350 - 7th Avenue S.W.
CALGARY, Alberta, T2P 3N9

SUMMARY OF 1984 - 1985 WORK

During the period December 10, 1984 to March 29, 1985, a total of approximately 270 line kilometres of ground CEM, VLF-EM, and magnetic surveying was carried out over a 100m by 25m grid. Cross lines and base lines were slashed, blazed, chained, and flagged at 25m intervals. CEM and VLF-EM readings were taken at 25m intervals; magnetometer readings were taken at 12.5m intervals. Geological mapping of Map Sheets 1, 2, 3, 7, 8 and 9 was carried out under winter field conditions. Map Sheets 4, 5 and 6 were subsequently mapped under summer field conditions. Approximately 700 rock samples were collected and geochemically analyzed for Au. This work was performed by personnel of Cordilleran Resource Management Ltd. of Calgary, Alberta.

SUMMARY OF PREVIOUS WORK

Previous work by Cochrane Oil and Gas consisted of a number of small reconnaissance geophysical, geological, and geochemical surveys at various points within the present survey area, plus a number of Winkie drill holes at widespread locations within the present survey area. None of the reconnaissance grids exceeded a total of 2.5 line km. The total footage of the Winkie drill holes was 1,520'. The most significant results of this drilling were the intersection of a massive sulphides zone at the west end of Mosher Bay, and an intersection running up to 0.7 oz/ton gold in a hole at the south end of Leuiller Island. This work has been described in detail in an earlier report by the present writer.

REGIONAL GEOLOGY

Archean volcanic and sedimentary stratigraphy in the Manitou Lakes area is typical of the greenstone belts of Wabigoon Sub-province. In broad terms, a lower mafic volcanic unit is succeeded by a sequence of intermediate to felsic flows and related tuffs, which is in turn overlain by a package of clastic and chemical metasediments consisting of conglomerate, sandstone, siltstone-argillite, chert, and derived schists. In some areas there is evidence of a younger mafic volcanic unit capping the metasediments. These 'upper' mafic volcanics are probably related to numerous late stage gabbroic intrusions which occur as small stocks and elongated dykes or sills.

These rocks have been folded, faulted, and metamorphosed to green schist facies metamorphic grade, and are preserved in a northeasterly to easterly trending synclinorium herein referred to as the Manitou Lakes Synclinorium. This volcanic 'trough' is bounded on the southeast by the Irene-Eltrut Lakes batholithic complex and on the northwest by the Atikwa batholithic complex. Felsic metavolcanics and metasediments occur along the core of the synclinorium and are flanked

by broad belts of mafic volcanics.

Major schist zones related to folding and faulting parallel the trend of the synclinorium. These zones of weakness have been the focus of late stage (Kenoran) felsic dyking, further transcurrent faulting, and have acted as conduits for hydrothermal fluids which have produced intense hydrothermal alteration. Gold deposits in the Manitou Lakes area are closely related to these major structures.

The schist zones may be the result of penetrative deformation fabrics along major isoclinal (?) fold axes and/or may have been produced by transcurrent and vertical movements along a "mobile" zone separating the major crustal blocks represented by the Atikwa and Irene-Eltrut Lakes batholithic complexes.

PROPERTY GEOLOGY

1. Manitou Straits - Mosher Bay Area (Map Sheets 1, 2 and 3)

The Manitou Straits - Mosher Bay grid area extends from south of Watson's Narrows northeastwards to the west end of Mosher Bay, a distance of 10km. The west side of the grid area is underlain by a 200m to 1000m thick sequence of mafic flows and related tuffs which are interbedded with southeasterly facing intermediate metavolcanic rocks along the core zone of the Manitou Lakes Synclinorium (this author's nomenclature). Felsic (rhyodacitic to rhyolitic) metavolcanic flows and related pyroclastic rocks occur in restricted centres or "edifices" at various locations along the axis of the synclinorium. One of these felsic centres occupies the central portions of Map Sheets 2 and 3, and consists of a 500m wide to 700m wide belt of rhyodacitic to rhyolitic flows and related lapilli and crystal tuffs. A thin, intensely sheared and carbonatized mafic unit, 50m to 100m thick, occurs at the 'top' of the felsic metavolcanics, separating the latter unit from a thick succession of overlying

metasedimentary rocks consisting of conglomerate, sandstone, siltstone-argillite, and chemical sediments, including chert and oxide facies iron formation. (Although no iron formation is known to outcrop in the grid area, oxide (magnetite) facies iron formation is geophysically indicated on Map Sheet 1, in the area south of Watson's Narrows.

The Manitou Straits Fault (see regional mapping at 1:253,440 and 1:31,680 scales) transects the grid area and is marked by a zone of dynamic metamorphism along which all of the above lithologies have been altered to their schistose equivalents. Mafic volcanics have been altered to chloritic schist; intermediate volcanics are represented by chlorite-quartz schist; felsic volcanics have been altered to quartz-sericite schist and sericite schist, and metasediments have been altered to graphitic sericite-chlorite schist or graphitic sericite schist. Related, subsidiary (?) fault zones are marked by narrower schist zones, 25m to 100m wide.

These fault zones have acted as conduits for hydrothermal fluids, which have generated extensive zones of carbonate alteration and silicification both within the schist zones and in adjacent stockwork zones developed in fault bounded blocks of relatively competent lithologies. Lithogeochemical sampling carried out to date in these areas must be regarded as reconnaissance coverage, but has so far identified a number of geochemically anomalous zones which require more detailed evaluation.

Within the area of Map Sheet 2, anomalous Au-in-rock values occur in silicified, carbonatized, and pyritized mafic volcanics ., on the west side of Manitou Straits. On the east side of the Straits, Au-in-rock values occur in both intensely silicified weakly pyritized pyroclastic rocks (lapilli tuff) and in similar strongly silicified rocks which are also carbonatized. An extensive stockwork zone

(L80N-L86N) of carbonate and silica stringers has been developed on this side of the Straits in a fault bounded block of competent rhyolitic flows, which is enclosed by schist zones 25m to 100m wide, developed along subparallel and subsidiary structures of the Manitou Straits fault. This zone of hydrothermal alteration occurs near the 'base' of the felsic metavolcanics, close to the transition from tholeiitic to calc-alkaline volcanics.

the potential of this environment for hosting gold mineralization is excellent and many parallels can be drawn between this setting and that which hosts the recent Nuinsco-Lockwood discoveries in the Cameron-Rowan Lakes area.

A similar zone of carbonate alteration and silicification is hosted by felsic metavolcanics at the northern end of Map Sheet 3, and appears to extend onto a group of patented claims owned by Kenwest Mines Ltd., a subsidiary of Dickenson Mines Ltd.

In addition to the above described carbonate alteration zones and stockworks, excellent potential for hosting gold mineralization is provided by oxide facies (magnetite) banded iron formation which occurs south of Watson's Narrows on Map Sheet 1. This zone has not been found in outcrop, but is geophysically indicated (see earlier report by the writer, dated May, 1985). Further along strike to the south, at Beaverhead Island (see description elsewhere in this report), a carbonatized and sericitized stratabound(?) sulphide zone, closely associated with a magnetite iron formation, hosts anomalous Au-in-rock values along a 400M strike length, and is open in both directions along strike. At the Giant prospect (southeast side of Mosher Bay), a major fault transects an oxide facies (magnetic) iron formation, which hosts a stockwork of pyrite and silica veinlets (with hematite envelopes) and carries highly anomalous Au-in-rock geochemical values over a thickness of several tens of metres (across strike). The coincidence of strong CEM conductors with the magnetite iron formation south of Watson's Narrows indicates similar economic potential and warrants further detailed exploration.

2. Green Island - Trafalgar Bay Area

The Green Island-Trafalgar Bay Area was mapped under summer field conditions subsequent to the December, 1984 - March, 1985 winter geophysical survey, which covered the lake portions of the grid and small sections along the adjacent shorelines.

The grid-area mapped covers a 1km wide peninsula which separates Manitou Straits from the main body of Upper Manitou Lake. The peninsula is underlain by a northeasterly striking, southeasterly dipping sequence of interbedded mafic and intermediate flows and tuffs. These rocks lie in the southeasterly limb of the Manitou anticline and trend directly into correlative and equivalent lithologies in the Gold Rock camp, two kilometers to the north, where they host a number of gold occurrences, including several past producers.

"First Pass" mapping and rock geochemical sampling has identified approximately 14 zones carrying highly anomalous Au-in-rock geochemical values or exhibiting significant alteration with less strongly anomalous Au-in-rock geochemical values, all of which warrant further work.

3. Leuiller Island - Rochon Island area

The Leuiller Island and Rochon Island area is underlain by a northeasterly striking, vertically dipping sequence of interbedded mafic and intermediate flows and tuffs. Regional (1:31,680) mapping indicates that the island is transected by the axis of the Manitou Anticline. The only field evidence observed in support of this was the more or less symmetrical distribution of lithologies about the projected axial plane of the fold. The meta-volcanic rocks are intruded by a series of subconcordant quartz porphyry dykes and felsite bodies. At the southern end of Leuiller Island a narrow zone of gabbro intrudes the mafic and intermediate volcanics.

First pass mapping of Leuiller Island has partially delineated a brecciated and carbonatized pyroxenite at the core of the above-described gabbroic intrusion. This spectacular quartz-carbonate-pyrite +/- fuchsite +/- sericite alteration zone hosts gold values of up to 0.532 oz/ton (semi-reconnaissance sampling carried out to date). It has been traced intermittently along strike for 200m

and geophysical data (VLF-EM and CEM surveys) indicate a further strike extension of 600m. The high assays occur in a pyrite-rich section of the zone cut by quartz veins. The alteration zone is only partially exposed in outcrop and a good deal of stripping, trenching and blasting will be necessary to "open it up" across strike for detailed sampling.

At Rochon Island, first pass mapping and sampling has partially defined a 5m to 8m wide zone of quartz veining consisting partly of massive quartz and partly of a quartz-pyrite stringer stockwork hosted in a quartz porphyry to felsitic intrusive. Sulphide rich sections of the zone have assayed up to 0.500 oz/ton gold. A small amount of blasting on available exposures will facilitate detailed channel sampling across the full width of the zone.

4. Giant Prospect

Although no mapping, lithogeochemical sampling or geophysical surveying was carried out at the Giant prospect during the programs reported on herein, a brief description of the geological setting and exploration results to date is included here because of its relevance to other parts of the project area and to outline recommendations for further work at the Giant prospect within the framework of ongoing exploration of the project area.

Detailed geological mapping carried out at the Giant claims during October, 1983, identified a major easterly striking schist zone which appears to be a splay of the Manitou Straits Fault, following the easterly swing of the core zone of felsic metavolcanics and metasediments of the "Manitou Lakes Synclinorium", as it arcs eastwards and then southeastwards into the Stormy Lake - Bending Lake area.

Lithologies within the schist zone at the Giant prospect include

chlorite schist, chlorite-quartz schist, chlorite-sericite-quartz schist, sericite-chlorite-quartz schist, sericite-quartz schist, sericitic quartzose wacke, chert, sulphidic chert, oxide facies (magnetite) iron formation, quartz porphyry, and conglomerate.

Within or adjacent to the schist zone, stockworks of sulphide stringers are developed in the quartzose wacke and magnetite iron formation. The quartz porphyry sills or dykes occur as two discrete zones separated by an intensely silicified chert breccia or fault breccia carrying highly anomalous gold values of 10x to 40x background over a width of 4m. Au-in-rock geochemical values in the quartz porphyry range up to 840 ppb over an anomalous zone 25m to 30m thick adjacent to the chert breccia. The quartz porphyries here are characterized by a dense 'micro-stockwork' of hairline quartz-sulphide stringers resulting in an overall sulphide content of 4% to 15%. In diamond drill hole G-84-6, anomalous gold values ranging up to 650 ppb occurred almost continuously in a zone of brecciated, banded iron formation some 12m thick. Anomalous Au-in-rock values are also associated with banded and disseminated sulphide zones in quartz-sericite schist and sericite schist in several of the drill holes.

The texture of the quartz porphyries is enigmatic in that the micro-stockwork and associated silicification has replaced and blurred the outlines of the original crystals to the point where the rock more closely resembles a quartz lapilli tuff. The original genesis may well have been fragmental, as evidenced by an apparent transition along strike and up section into a pinkish chert, which is in close stratigraphic proximity to the oxide/sulphide facies iron formation (exhalative).

The model provided by the gold enriched association of chert, quartz porphyry, iron formation, and major structures at the Giant prospect has important implications for the rest of the project area. In

particular, this reinforces the importance of the Beaverhead Island zone (described below) as an exploration target, although this latter zone differs from the Giant in that no major quartz porphyry mass is present and there is extensive and strong carbonatization accompanying the silicification. The iron formation south of Watson's Narrows (Map Sheet 2) does have quartz porphyry dykes associated with it to the south and deserves a thorough evaluation.

Further work at the Giant prospect should consist of CEM ground electromagnetic surveying at 50m or closer line spacings to identify disseminated, stringer, and massive sulphide zones, plus a very detailed ground magnetic survey (5m x 25m grid) to identify local thickenings of the magnetite iron formation which might be related to folding. Such zones might provide favorable sites for an increased tenor and thickness of gold mineralization. The controls of gold enrichments in the quartz porphyries are not yet understood, as no obvious features such as quartz veins, more concentrated zones of sulphides or fractures were noted in the sections of core that yielded significantly higher anomalous values. A trenching and bulk sampling program designed to open up surface exposures of the quartz porphyry and chert breccia would be an appropriate next step.

5. Meridian Bay - Glass Bay Areas (Lower Manitou Lake)
(Map Sheets 7 and 8)

The geological setting of the Meridian Bay and Glass Bay areas differs in important respects from the settings of the Upper Manitou claim blocks. Intermediate to felsic metavolcanics are virtually absent, occurring only as thin interbeds. Several bands of metasediments, mainly arkosic sandstone, 50m to 400m thick, are intercalated with the mafic volcanics and are occasionally heavily pyritized. Anomalous geochemical values in the metasediments seem to be related to the pyrite content.

A 50m to 200m wide, fine-grained to coarse-grained gabbroic sill underlies the southeast sides of Map Sheets 7 and 8 and is characterized by a prominent magnetic high. About 50m to 100m northwest of this sill, a second thinner sill, approximately 50m thick, parallels this zone and extends from Holcroft Lake to Glass Bay. These two sills are separated by a horizon of quartz sandstone, which is intermittently pyritized along strike and carries anomalous Au-in-rock values in the pyritized zones. Several other major gabbroic sills are also present in the section and extend most of the length of the two map sheets. Although mapping to date has produced evidence of sheared contacts between the meta-sedimentary rocks and gabbroic sills, it is the ground magnetic data which provides evidence for an intrusive origin for the sills, which, based upon the magnetic data, exhibit gently cross-cutting discordancies with the enclosing rocks.

Mafic volcanic rocks underlying the two map areas tend to be quite fine-grained and tuffaceous and can be distinguished even from the finer-grained sections of the gabbroic sills, which still retain a porphyritic texture and characteristic magnetic signature. The mafic volcanics appear to actually be concordant with the metasediments, but may be sometimes confused with the gabbroic sills where dynamometamorphic effects along major faults and shear zones have altered the gabbroic units to fine to coarse-grained chloritic schists.

At the west end of Meridian Bay (Map Sheet 7) an area of considerable structural complexity is present in the folded(?) and faulted hinge area of a regional strike change. Strong shearing, quartz porphyry dykes, and carbonate and sulphide mineralization occur in the area. Several CEM conductors occur in close association with the projected strike trends of sulphidic chert horizons and earlier work (October, 1983) identified anomalous Au-in-rock and Au-in-soil values along the trend of the quartz porphyries at the northeast corner of Merdian Bay.

The old Glass Reef prospect, which was explored by several hundred feet of underground workings around the turn of the century, is present within the area of Map Sheet 8. As at the Giant prospect, a coincidence of quartz porphyry dykes, iron formation (silicate(chert) and sulphide facies), and a major structure enhance the potential of the area. Anomalous to highly anomalous Au-in-rock values were obtained during the winter program over a broad area surrounding the old workings, from a variety of rock types, pointing to a general enrichment of gold in the vicinity. A limited amount of follow-up sampling carried out in the fall of 1985 has further delineated several major alteration zones carrying highly anomalous gold values (ranging up to 1,000+ ppb). Existing pits and trenches (dating back to the turn of the century) on these zones should be cleaned out to facilitate channel sampling across strike.

6. Beaverhead Island Area (Map Sheet 9)

The Beaverhead Island area (within this survey area) is underlain on the southeast by a thick sequence of volcanic clastic and polymictic conglomerate beds. Overlying the conglomerates is a 50m to 100m thick sandstone unit which fines upwards, through a series of siltstone and argillite interbeds, into a banded iron formation containing interlaminated oxide (magnetite) and sulphide (pyrite) facies. This entire metasedimentary section dips southeasterly but is overturned and "up-section" is to the northwest. The metasedimentary package comprises the overturned southeasterly limb of a northeasterly trending synclinal fold and is truncated, along and parallel to the banded iron formation, by a major schist zone (Manitou Straits Fault) which has been developed along the axis of the syncline. To the northwest, the banded iron formation is in contact with intermediate and mafic metavolcanics which in part also exhibit a strong axial planar(?) penetrative deformation fabric. Flow tops (determined in pillowed lavas) indicate that these rocks are not overturned and constitute the northwesterly, upthrown(?) limb of the syncline from which the sedimentary package has been removed.

Across the width of the schist zone, numerous quartz-carbonate-pyrite alteration lenses and quartz-pyrite stringers, veinlets, and lenses have developed. Highly anomalous Au-in-rock geochemical values ranging up to 1,000+ ppb occur across a 50m wide carbonatized and sericitized section of the schist zone on the southern tip of Beaverhead Island. A strongly sheared silicate-carbonate facies iron formation may constitute part of the alteration. One hundred metres to the southeast, a subparallel, less well exposed zone of strong shearing and quartz-carbonate-sulphide mineralization some 25m to 40m in width also carries anomalous Au-in-rock values. These two zones exhibit many similarities to the environments hosting the ore horizons both at Hemlo and Joutel (Agnico Eagle Mine). Surface sampling to date is of a semi-reconnaissance nature; surface stripping and trenching will be required for a proper evaluation.

CONCLUSIONS AND RECOMMENDATIONS

Map Sheets 1 to 9

The December, 1984 to March, 1985 program of winter CEM, VLF-EM, and ground magnetic geophysical surveying, combined with the 1984-85 winter and 1985 fall mapping and lithogeochemical sampling program has laid the groundwork for a systematic, detailed evaluation of specific areas of interest at the two main claim groups.

On Map Sheets 1 and 2 (Manitou Straits area) a number of geophysical and geological targets associated with a zone of oxide-sulphide facies iron formation and quartz porphyry sills duplicate the environment drilled at the Giant prospect. Follow-up sampling and prospecting will be required to select areas for trenching.

Several anomalous Au-in-rock geochemical values associated with strong shearing (quartz-sericite schist), carbonate alteration (stockworks), and sulphide mineralization in rhyolitic flows and related pyroclastic rocks constitute an extremely favorable environment (resembling the geological setting of the recent Nuinsco discoveries in the Rowan Lake - Cameron Lake areas) for the development of gold mineralization, in the area of Map Sheet 2.

A similar zone of carbonate alteration and shearing in rhyolitic flows and pyroclastics is present in the area of Map Sheet 3 at about the same stratigraphic level, and directly along strike from several deposits hosted by the same strata-structure in the Gold Rock camp.

Additional follow-up mapping and sampling under summer field conditions is required to further delineate the trends and structural controls of the stockworks and carbonate alteration zones. An induced polarization survey over selected portions of these zones should identify any "blind" or overburden-covered concentrations of sulphides within the stockwork zones and provide targets for trenching and/or drilling.

On Map Sheets 4 and 6 (combined) a total of 14 separate zones, carrying highly anomalous gold values or consisting of very strong alteration zones accompanied by less strongly anomalous Au-in-rock geochemical values have been identified to date.

A varied program of trenching, blasting, stripping and further prospecting is recommended in the text of this report, according to the characteristics, topography, etc., of each of the zones.

On Map Sheet 5, two separate zones, one at Leuiller Island and one at Rochon Island, carry potentially economic gold values ranging up to

0.532 oz/ton. Further evaluation of the Rochon Island zone will be straightforward, but considerable stripping and blasting will be required to prepare the Leuiller Island zone for channel sampling.

On Map Sheet 7 (Meridian Bay area), areas of considerable structural complexity (strong shearing, quartz porphyry sills or dykes and carbonate and sulphide mineralization) occur near the folded(?) and faulted hinge of a regional strike change. Sulphidic chert strata occur in nearby metasediments. Limited follow-up prospecting and sampling has so far not defined any zones warranting trenching.

On Map Sheet 8, a number of anomalous Au-in-rock values have been obtained over a broad area around (but not necessarily related to) the old Glass Reef Mine workings. On both Map Sheets 7 and 8, pyritic sandstones extend the full length of the grid-areas and have associated anomalous Au-in-rock values. A limited amount of follow-up mapping and sampling carried out in the fall of 1985 has further delineated several major alteration zones carrying highly anomalous Au-in-rock geochemical values (hanging up to 1,000+ ppb). Existing workings (circa 1900) should be rehabilitated to facilitate channel sampling across these zones.

At Beaverhead Island (Map Sheet 9) highly anomalous Au-in-rock values ranging up to 1,000+ ppb have been obtained across a 50m wide section of one of the very strongly sheared zones of carbonatized and sericitized pyritic metasediments present at the southern end of the island. The carbonatized quartz-sericite and sericitic schists appear to include boudined lenses of carbonate-silicate facies iron formation. A geological environment bearing many similarities to the Hemlo and Joutel (Quebec) districts is indicated. A second subparallel zone of carbonatized metasediments, some 100m to the southeast also carries anomalous Au-in-rock values and similarly warrants stripping, trenching and systematic channel sampling.

Giant Prospect (East Mosher Bay Area)

Towards the west end of the group of claims covering the Giant Prospect, a broad schist zone, (a major splay of the Manitou Straits fault) contains quartz sericite schist which grades along strike into a chert breccia (variably pyritized) where the schist zone transects a pair of competent quartz porphyry sills. Geochemically anomalous Au-in-rock values of up to 30 or 40 times background were discovered in this zone during the course of the early 1984 drilling program. The quartz porphyry sills or dykes outcrop 'behind' the old Giant workings and should be 'opened up' by trenching and blasting in order to carry out more representative sampling of the chert breccia and to investigate the possible widening of the zone along strike to the west.

CORDILLERAN RESOURCE MANAGEMENT LTD.

Dear Dennis,

Enclosed is the long awaited assessment data. Thankyou for your patience.
This will arrive after Christmas, but trust you had a good one and best wishes for the New Year.

Yours very truly,
Michael

(RE: YOUFICE: 2.8195)

- Geological report and maps are being shipped under separate cover.

BOX 1015, POSTAL STATION G, CALGARY, ALBERTA (403) 239-3669

52F07NE8318 2.8195 BOYER LAKE

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GEOPHYSICAL REPORT

DECEMBER, 1984 - MARCH, 1985

WINTER EXPLORATION PROGRAM

MANITOU LAKES PROJECT

N.T.S. 52-F-7

KENORA MINING DIVISION, ONTARIO

FOR

COCHRANE OIL AND GAS LTD.

CALGARY, ALBERTA

BY

Michael Fox, B.Sc., P.Geol.

CORDILLERAN RESOURCE MANAGEMENT LTD.

CALGARY, ALBERTA

MAY, 1985

RECEIVED

JUN 10 1985

MINING LANDS SECTION

Dual 2.7191

52F07NE8318 2.8195 BOYER LAKE

TABLE C

CERTIFICATE

I, the undersigned, of the City of Calgary in the Province of Alberta do hereby certify that:

1. I am a Consulting Geologist with the firm of Cordilleran Resource Management Ltd. with offices at 120 Hawkwood Hill N.W., Calgary, Alberta;

2. I am a graduate of the University of British Columbia with a B.Sc. degree in Geology (1974) and I have practised my profession continuously since graduation;

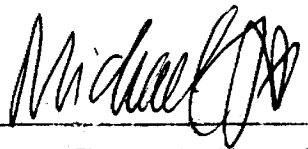
3. I have worked in the field of mineral exploration since 1965;

4. I am a member in good standing of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta;

5. I personally participated in and supervised the work described in this report;

6. Geophysical survey work described in this report was also carried out by and under the supervision of Mr. David C. Bingham, B.Sc. (Geophysics - University of British Columbia, 1977) while in the employ of Cordilleran Resource Management Ltd.

Respectfully submitted,



Michael Fox, B.Sc., P.Geol.

INTRODUCTION

LOCATION AND ACCESS

The claims are situated in the Manitou Lakes area, Kenora Mining Division, Ontario, and occupy portions of claim map-areas G-2683 (Lower Manitou Lake), G-2572 (Boyer Lake), and G-2584 (Harper Lake) in N.T.S. map-area 52-F-7.
Winter access into the area from Highway 502 is via a 5 km long skidoo trail into the settlement of Gold Rock. The trail leaves Highway # 502 approximately 50 km south of Dryden, Ontario.

OWNERSHIP, CLAIMS

A list of the claims surveyed is as follows:

1. Trafalgar Bay and Green Island Areas

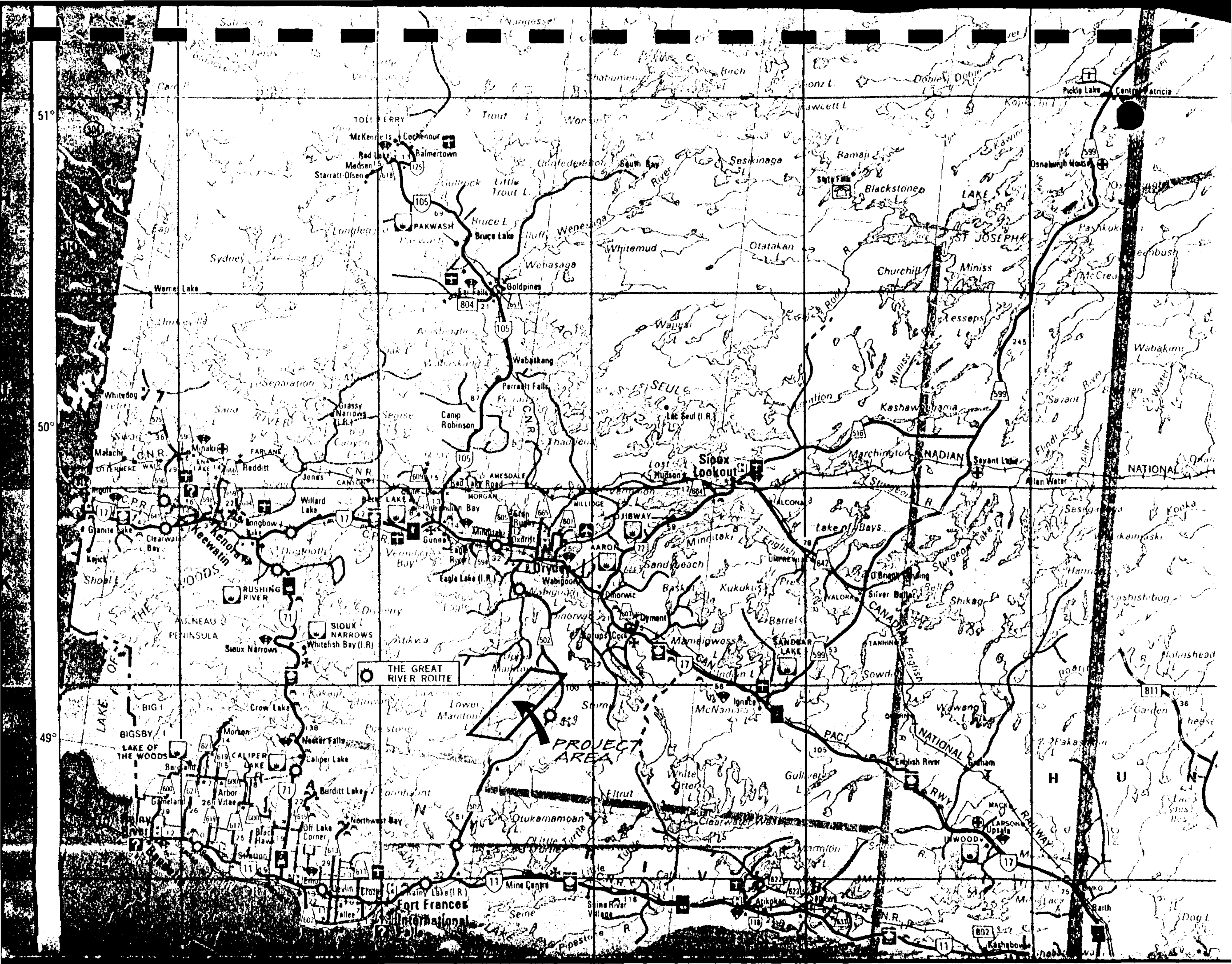
   687432 - 687451
   687455 - 687458
   687461
   745120 - 745123

2. Leuiller Island Area

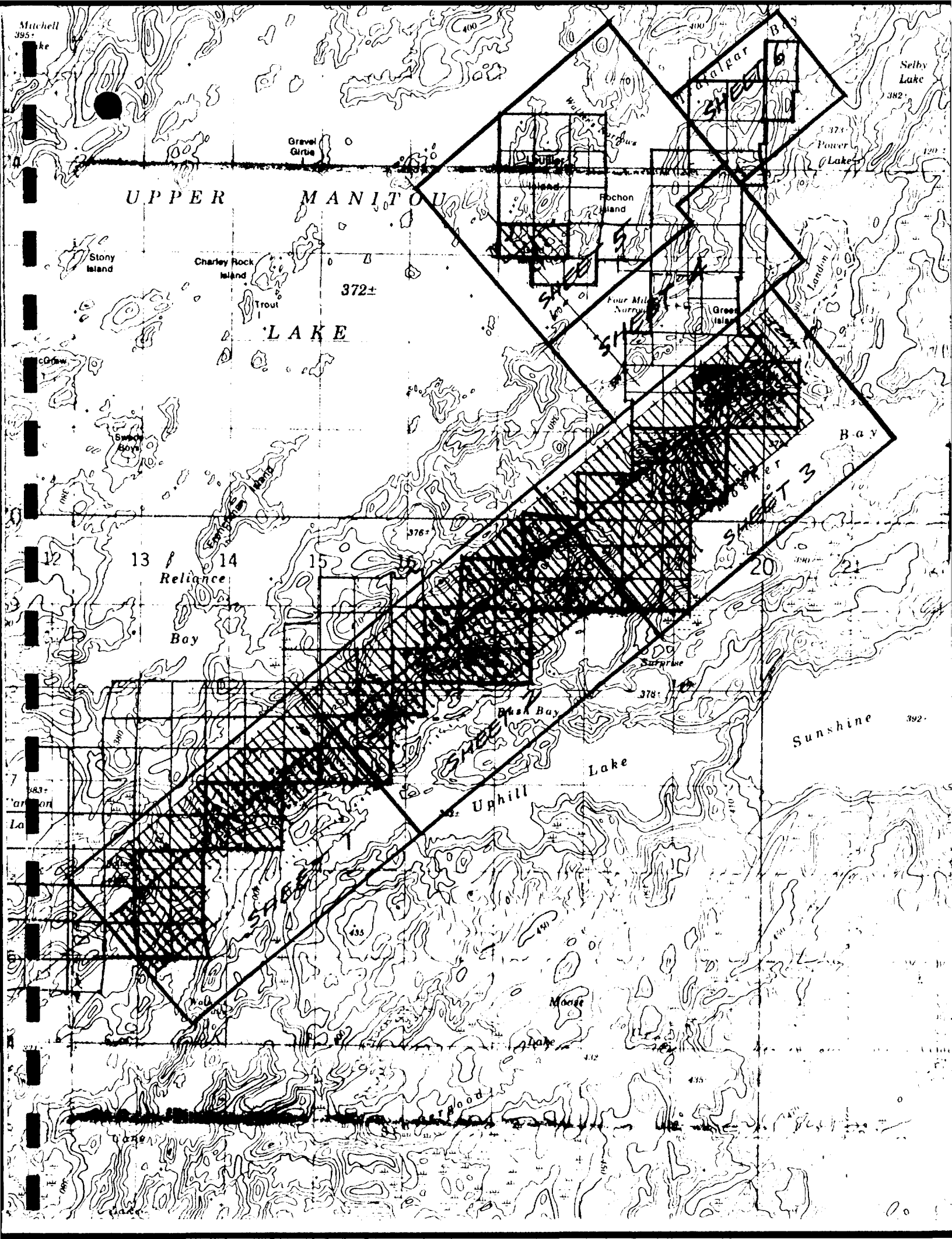
   687476 - 687479
   696001 - 696005
   696031 - 696033

3. Manitou Straits Area

   687452 - 687454
   687459, 687460
   696014 - 696027
   696030
   687417 - 687419
   687570 - 687579
   687561 - 687565
   687554, 687555
   687483 - 687486
   687497, 687498
   687500, 687501



51°
50°
49°
Pickle Lake
Central Patricia
Osnaburgh House
TOLL FERRY
McKenzie Is
Cochenour
Red Lake
Balmertown
Madsen
Starratt-Olsen
PAKWASH
Bruce Lake
Ear Falls
Goldpines
Wabaskang
Perrault Falls
Camp Robinson
Grassy Narrows (I.R.)
Werner Lake
Whitedog
Minaki
Redditt
Malachi
C.N.R.
C.P.R.
Jones
Willard Lake
Granite Lake
Clearwater Bay
Kenora
Keewatin
Kejick
Longbow Lake
RUSHING RIVER
AULNEAU PENINSULA
SIOUX NARROWS
Sioux Narrows
Whitefish Bay (I.R.)
THE GREAT RIVER ROUTE
Crow Lake
BIGSBY
LAKE OF THE WOODS
Morson
CALIPER LAKE
Caliper Lake
Nestor Falls
Burditt Lake
Northwest Bay
Off Lake Corner
Arbor Vitae
Emo
Devlin
Fort Frances
International Falls
Rainy Lake (I.R.)
Mine Centre
Seine River Village
Atikokan
Kashabowie
Raith
Upsala
English River
Graham
Ignace
Dinorwic
Dyment
SANDBAR LAKE
Wabigoon
Dryden
Oxdrift
Eagle River
Eagle Lake (I.R.)
Gunne
Vermilion Bay
AMESDALE
Red Lake Road
MORGAN
MILLIDGE
OJIBWAY
AARON
Lac Seul (I.R.)
Hudson
Sioux Lookout
Savant Lake
Allan Water
NATIONAL
Silver Dollar
O'Brien Landing
VALORA
UMFREVILLE
FALCONA
Lake of Days
Sturgeon Lake
Churchill
Miniss
Otatakan
Whitemud
Weinasaga
Blackstone
Bamaji
Sesikinaga
South Bay
ST JOSEPH
Kashawgama
Marchington
Wabakimi
Wawang
Mameigwess
McNamara
Gulliver
Otukamamoan
Clearwater West
White Otter
Eltrut
Lower Manitou
Upper Manitou
Kakagi
Pipestone
PROJECT AREA


Mitchell
Gravel Girtie
UPPER MANITOU
LAKE
Stony Island
Charley Rock Island
Trout
372±
Rochon Island
Four Mile Narrows
Green Island
Selby Lake
Power Lake
Landon L.
Swede Bays
Bay
376±
12
13
14
15
16
20
21
Reliance
Boy
Surprise
378±
Bush Bay
Sunshine
392±
Lake
Uphill
435
Moose
Lake
Flood
SHEET 1
SHEET 2
SHEET 3
SHEET 4
SHEET 5
SHEET 6

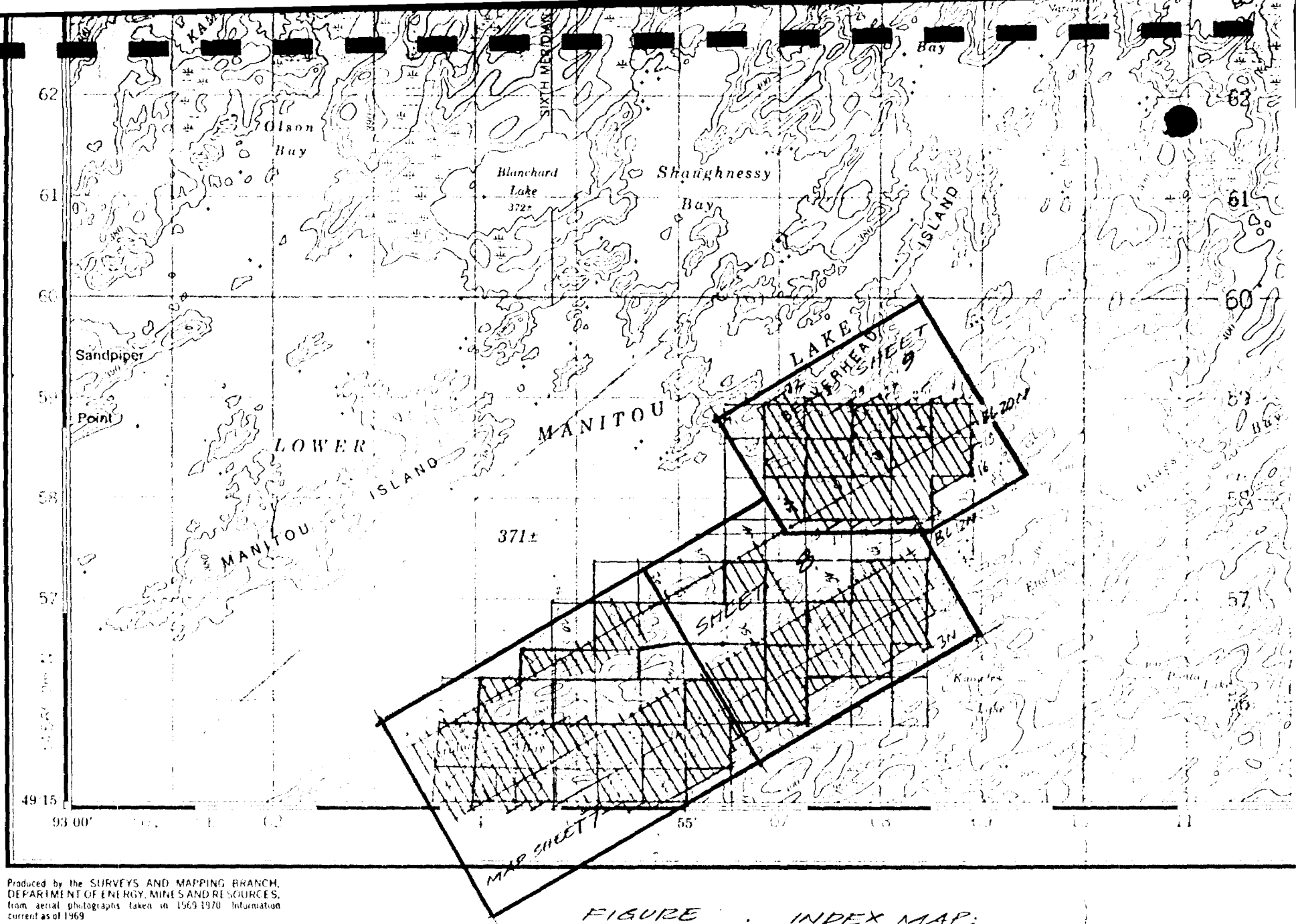


FIGURE . INDEX MAP; MAP SHEETS 7, 8, 9

Produced by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES, from aerial photographs taken in 1969-1970. Information current as of 1969

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Roads	Routes
loose or stabilized surface, all weather	gravier aggloméré, toute saison
loose surface, dry weather and unclassified streets	de gravier, temps sec et rues hors classe
cart track	de terre
trail, cut line or portage	sentier, percée ou portage

4. Meridian Bay - Glass Bay Area
   687340, 687341
   687345 - 687347
   687349, 687350
   687352, 687353, 687356, 687359
   687361, 687362, 687367
   687370 - 687373
   687375, 687376, 687379
   687381 - 687384
   687386 - 687391

5. Beaverhead Island Area
   687397, 687398
   687402 - 687407
   687410 - 687414

All of the above listed claims are owned by :

Cochrane Oil and Gas Ltd.
2100 - 350 7th Ave. S.W.
Calgary, Alberta, T2P 3N9

SUMMARY OF 1984 - 1985 WORK

During the period December 10, 1984 to March 29, 1985, a total of approximately 270 line kilometres of ground CEM, VLF-EM, and magnetic surveying was carried out over a 100m by 25m grid. Cross lines and base lines were slashed, blazed, chained, and flagged at 25m intervals. CEM and VLF-EM readings were taken at 25m intervals; magnetometer readings were taken at 12.5 m intervals. This work was performed by personnel of Cordilleran Resource Management Ltd. of Calgary, Alberta.

SUMMARY OF PREVIOUS WORK

Previous work by Cochrane Oil and Gas consisted of a number of small reconnaissance geophysical, geological, and geochemical surveys at various points within the present survey area, plus a number of Winkie drill holes at widespread locations within the present survey area. None of the reconnaissance grids exceeded a total of 2.5 line km. The total footage of the Winkie drill holes was 1,520'. The most significant results of this drilling were the intersection of a massive

sulphides zone at the west end of Mosher Bay, and an intersection running up to 0.7 oz/ton gold in a hole at the south end of Leuiller Island. This work has been described in detail in an earlier report by the present writer.

GEOLOGY

In conjunction with the geophysical survey work described in this report, geological mapping was carried out over the claims at a scale of 1:2500, utilizing the same survey grid. Despite the winter field conditions, the survey was very successful in delineating major lithological units and zones of alteration and strong deformation. An accompanying lithogeochemical sampling program (reconaissance sampling density) has identified a number of zones of anomalous Au-in-rock values that warrant more detailed follow up work. The above mapping and sampling will be supplemented by more detailed work in selected areas under summer field conditions. Accordingly, it is not reported on herein, although in the interpretation of the geophysical data, liberal reference is made to the results of the winter mapping program.

GEOPHYSICS

SURVEY STATISTICS, INSTRUMENTATION, METHODS

A total of approximately 270 line km of ground CEM, VLF-EM, and magnetic surveying were carried out at nominal line spacings of 100m. CEM and VLF-EM readings were taken at 25m intervals; magnetometer readings were taken at 12.5m intervals.

CEM readings were taken utilizing the horizontal shootback technique at a coil separation of 100m, using the 'high' frequency (5010 Hz) and the 'medium' frequency (1830 Hz). Survey results are plotted in profile format on the accompanying maps at a vertical scale of 1cm : 10 degrees.

VLF-EM readings were taken with the operator facing in a northerly direction at each station; lines were traversed facing westerly. The transmitting station used was Anapolis (NSS), transmitting on a frequency of 21.4 kHz. In-phase and quadrature readings are plotted in profile format on the accompanying maps at a vertical scale of 1cm : 20%. "Positive" readings are plotted on the northerly side of the lines, and "crossovers" occur where readings change from positive to negative (in a relative sense) along the direction in which the lines were traversed.

Ground magnetometer readings were taken at 12.5m intervals utilizing a Geometrics G-816 total field magnetometer, which reads directly to an accuracy of one gamma. Diurnal control was provided by a Geometrics G-826 A base station, which cycled automatically at 1 minute intervals. Survey data is plotted on the accompanying maps in stacked profile format. Readings of about 60,500 gammas and less are plotted at a vertical scale of 1 cm : 100 gammas with a base level (on the grid line) of 59,800 gammas. Readings greater than about 60,500 gammas are plotted at a vertical scale of 1 cm : 1000 gammas with a base level of 60,000 gammas, and are distinguished by a small circle at the plot point. The two scales are sometimes over-lapped for clarity of interpretation

GEOPHYSICS - INTERPRETATION

MAP SHEET 1 - MANITOU STRAITS AREA

1. MAGNETOMETER SURVEY

a) Anomalies Associated With Metasediments

i) Anomaly "Am"

A very strong 61,000 - 65,000 gamma anomaly occurs along the east side of the grid in an area underlain by metasediments. Geophysical coverage along this trend is interrupted at the boundaries of patented claim HW 676, but the anomaly is probably continuous across Map Sheet 1. The stratigraphic position is approximately the same as that at which oxide (magnetite) facies iron formation occurs along strike to the south in the Beaverhead Island area. Between L38N and L42N, the magnetic expression of the iron formation indicates intense folding, and this is supported by available geological data. The width of the anomaly decreases northwards, indicating a progressive thinning of the zone. Lenses of disseminated to massive sulphides occur sporadically along strike in close srati graphic proximity to the magnetite zone and probably represent a related phase and/or eH-pH transition of an iron-rich exhalative event. Sulphidic cherts also occur at about the same stratigraphic position, regionally. The known association of geochemically anomalous gold values at several areas in the Manitou Lakes region with the oxide/sulphide facies iron formation make it a regional stratigraphic marker horizon of particular economic importance.

ii) Anomaly "Bm"

Approximately 200m westerly from anomaly "Am", a subparallel magnetic high is characterized by narrow dipole peaks 25m - 50m apart. Between L25N and L28N some complexity in this trend is indicated and may be due to tight folding. "Point" CEM conductors at L26N-395+75W, L27N-395W, and L27N-396+80W may all be related to CEM anomaly "Ac" (see description below) if such folding is present. The possible strike extension of magnetic anomaly "Bm" occurs on land between L32N and L38N, with an offset to the west between L35N and L37N, which may again indicate a westwards displacement by folding. Significant geologic features spatially associated with the magnetic trend include a series of silicified and

sericitized siltstones. The magnetic trend is a little 'off' the alteration trend, though, and may indicate the presence of a closely adjacent and parallel or underlying sill or dyke.. If such an intrusive body is present, it would have been emplaced at about the same stratigraphic level as a number of quartz porphyry dykes and sills along strike to the north.

b) Anomalies Associated With Mafic Volcanics.

iii) Anomaly "Cm"

A twin-peaked, "rabbit eared" magnetic high extends almost the length of the map sheet from L22N to L48N. The twin-peaked characteristic is lost between L27N and L32N, where due to the depth of the lake, it is blurred into a single broad 'high', but reappears at L33N where the anomalous trend crosses a small island. At L34N and L35N there is no coverage, owing to open water at Watson's Narrows. A subdued expression of the anomaly can be traced from L36N-402W through to L41N. From L41N to L46N, the twin peaked form is again present where the anomaly 'traverses' a series of small islands. Along its length, the anomalous trend is associated with chloritized mafic volcanics and an amphibolitic "migmatite" (Unit Ik), which might represent a feeder zone for younger gabbroic flows and subvolcanic intrusions. Coarse-grained to porphyritic gabbroic intrusions, which might resemble an amphibolitic migmatite if they were strongly sheared, occur at about the same stratigraphic position along strike to the north (see Map Sheets 2 and 3).

iv) Anomaly "Dm"

A 200m wide, 60,000-63,000+ gamma anomaly occurs along the extreme west side of the grid and extends the full length of the surveyed area from L25N to L48N (Lines 49N to 54N do not extend far enough to cover the trend). From L39N to L44N, the peak of the anomaly is not defined, but its continuity along strike is inferred from a consistent, several hundred gamma rise above background, which characterizes the east flank of this zone. A similar expression is seen from L26N to L30N. Grid mapping and regional geology indicate that this is the expression of a porphyritic hornblende gabbro. Throughout the Manitou Lakes area, these late-stage gabbroic intrusions and their related(?) flows are characterized by strong magnetic 'highs'and pronounced magnetic relief. The contacts of these bodies are commonly strongly sheared and faulted and may host quartz veins.

2. VLF-EM SURVEY

i) Anomaly "Av" L21N-393+25W to L23N-393W

This 200m long conductive trend is coincident with the west flank of a geophysically indicated oxide (magnetite) facies iron formation in a water covered portion of the claims. CEM conductors in the vicinity exhibit a different strike trend, perhaps reflecting a trend of sulphide mineralization, whereas the VLF anomaly may be following a geologic contact.

ii) Anomaly "Bv"; L38N-396+25W to L39N-395+50W

This 100m+ long conductive trend transects the geophysically indicated trend of an oxide facies iron formation in an area underlain by metasediments. The iron formation is probably continuous with the zone described above (see Anomaly "Av"), although geophysical surveying coverage between the two magnetic zones is incomplete due to the presence of patented minera; claim HW 676. CEM conductors flank both sides of the indicated axis of the iron formation, and probably reflect the presence of sulphides.

iii) Anomaly "Cv"; L40N-399+50W to L41N-399W

This 100m long conductive trend occurs along the east side of Manitou Straits, just north of Watson's Narrows, and is approximately coincident with the strike extension of a felsic sill or dyke exposed along the shoreline at L42+50N-399+25W. A weak CEM conductive trend is coincident with the VLF-EM conductor. Some graphite was observed adjacent to a cherty or siliceous zone at the east contact of the sill or dyke.

iv) Anomaly "Dv"; L41N-403+50W to L47N-402W

This 600m+ long conductive trend occurs about 50m offshore from the east side of a group of islands in Manitou Straits. Strongly sheared (chloritized) mafic volcanics outcrop at numerous locations along the east side of the islands. The anomaly occurs within the main trend of a broad schist zone referred to as the "Manitou Straits Fault". For most of its length, the VLF conductive trend lies along the east flank of a small amplitude (100 gammas above background) magnetic anomaly.

3. CEM SURVEY

Lake and muskeg covered areas are almost all characterized by a classic high amplitude response, particularly on the high frequency, indicative of flat-lying conductive lake bottom sediments This response effectively masks the response from weaker bedrock conductors except in areas where the water is fairly shallow. Stronger bedrock conductors, as at Beaverhead Island, exhibit a sufficiently strong response as to be clearly recognizable through the conductive overburden response.

CEM anomalies (primarily over land areas) on Map Sheet 1 are described as follows:

i) Anomalies "Ac", "Bc", and "Cc"; L22N-L27N

Three subparallel weak to strong CEM conductors occur in this area underlain by metasediments. The westernmost, anomaly "Ac", is quite weak, but is discernible along a strike length of 400m. No cause of the conductor was identified in outcrop, but metasiltstones along the conductive trend are siliceous and sericite schist was noted at several locations. Magnetic features in the area exhibit some complexity, possibly related to strong folding. If this is the case, "point" CEM conductors at L26N-395+75W, L27N-395W, and L27N-396+80W may all be related to anomaly "Ac".

The middle (anomaly "Bc") and easternmost (anomaly "Cc") conductors occur along the opposite flanks of a very pronounced magnetic 'high' which is almost certainly caused by an oxide (magnetite) facies iron formation. Both of these conductors are moderate to strong and represent some of the best quality conductors obtained over water covered areas within the entire survey area. The conductive response is almost certainly due to concentrations of sulphides, which are associated with magnetite iron formation (i.e. occur in close stratigraphic proximity) wherever such oxide facies iron formations occur in the Manitou Lakes area. The known asociation of highly anomalous gold values in sulphide zones associated with iron formation at the Giant prospect and Beaverhead Island areas makes these CEM anomalies a high priority target for further evaluation.

None of the three conductors exhibits an associated VLF-EM anomaly, perhaps due to the masking ffects of the much stronger high frequency (21.4 kHz) VLF response to the conductive lake sediments.

ii) Anomalies "Dc" and "Ec"; L35N-L36N

Two short, subparallel, weak to moderately strong conductors of 150-200m strike length occur close to BL400W in an area of little outcrop on the peninsula on the east side of Watson's Narrows. The westernmost of the two trends, anomaly "Dc", occurs near or along the sheared contact of mafic volcanics and metasediments.

The adjacent conductive trend, anomaly "Ec", occurs along the projected strike extension of a chert horizon and may represent a zone of massive to disseminated exhalative(?) sulphides associated with the cherty (exhalative?) strata. The short strike length may reflect a localized concentration of sulphides along the chert zone, which may contain disseminated sulphides of a concentration too weak to produce a CEM response over a greater strike length. A narrow, 'sharp-peaked' magnetic anomaly occurs along the trend of CEM anomaly "Ec" and extends some 500m to the southeast.
Follow-up work consisting of more detailed mapping and sampling is warranted in the vicinity of these two conductors, particularly along the strike trend of anomaly "Ec", as the indicated geological conditions here have the potential for hosting strata-bound gold mineralization.

iii) Anomalies "Fc", "Gc", and "Hc"; L39N-L42N, L42N-L43N

Two subparallel, weak but significant conductive trends (anomalies "Fc" and "Gc") of some 300m strike length occur between 395+00W and 397+00W on L39N-L42N in an area underlain by metasediments. These conductors are similar to anomalies "Bc" and "Cc", described above, in that they occur along the opposite flanks of a pronounced magnetic 'high', which appears to be the strike extension (or another zone at the same stratigraphic level) of the oxide facies iron formation geophysically indicated in the vicinity of anomalies "Bc" and "Cc". A 50m wide quartz porphyry sill or dyke intrudes the metasedimentary sequence some 25m to 50m south of CEM conductor "Gc", resulting in a geological setting closely resembling the main zone of interest at the Giant prospect. The generally weak conductive response may be due to the presence of sulphides as disseminations or stockwork zones, which do not produce as strong a response as massive sulphide zones. More detailed mapping and sampling is warrantred in this area. The quartz porphyry dyke or sill and intervening areas should also be closely examined.

Anomaly "Hc" is a weak conductive trend some 200m long, which occurs at L42N-L43N near 398+50W. This conductor lies along the westernmost limb of a strong magnetic 'high' which is probably caused by oxide facies iron formation in the metasediments. Tight, isoclinal drag folding or parasitical folding is indicated between this area and the vicinities of anomalies "Fc" and "Gc". Although the magnetic 'high' at CEM anomaly "Hc" lies approximately 200m westerly from the 'high' at CEM anomalies "Fc" and "Gc", it may well be the same zone, which has been displaced to the west by folding and/or related faulting. More detailed

mapping and sampling is warranted near anomaly "Hc" also.

iv) Anomaly "Ic"; L53N-L58N (Map Sheets 1 and 2

This weak but consistent anomalous trend appears to be related to a zone of strong shearing marked by the development of sericite schist in metasediments. Some silicification and chloritization were also noted in outcrop. Although the anomaly is asociated with a magnetic 'low' along its 500m length, it is flanked immediately to the west by a strong magnetic 'high', which forms the east side of a prominent magnetic dipole. The 'high' occurs at about the same stratigraphic level as the 'high' associated with CEM anomaly "Hc", and probably represents the along strike continuation of a series of lenses of oxide facies iron formation, which constitute a regional marker horizon. At the southerly end of anomaly "Ic", the conductor diverges westwards from the mapped trend of the shear zone and intersects the shoreline in an area of no outcrop. About 50m to the north, on the shoreline, a zone of quartz veining and a weak gossan are associated with the sericite schist. Further along the projected strike trend of this zone, another 300m to the south, several quartz porphyry dykes or sills subconcordantly intrude the metasediments. These were seen during the regional mapping program (see 1:31,680 geological map) but were not observed during the 1984-85 winter mapping program. However, a narrow quartz porphyry dyke or sill (not shown on the 1:31,680 map) is exposed on the shoreline at L48+50N-397+75W. The axis of a strong magnetic dipole anomaly, continuous with the dipole anomaly described above, occurs immediately to the east of the outcropping quartz porphyry. The geological environment along this entire zone, from L48+50N northwards to L58N, is similar to that of the main zone of interest at the Giant prospect. More detailed mapping and sampling is waranted, particularly in the vicinity of the CEM conductor, where the possibility of a concentration of sulphides is present.

MAP SHEET 2 - MANITOU STRAITS AREA

1. MAGNETOMETER SURVEY

a) Anomalies Associated with Metasediments

i) Anomalies "Em" and "Fm"; L55N-L69N

A confused pattern of small amplitude positive and negative peaks characterizes the area along the easterly side of Manitou Straits between L55N and Goose Egg Lake. Along L61N and L62N, 396+75W to 397+25W, a sharp positive peak is present (anomaly "Em"), of a magnitude of approximately 1,000 gammas above background. Between L61N and L62N this latter trend is interrupted, indicating a possible offset by folding and/or related faulting. Between L60N-398+50W and L65N-398+25W, a sharply defined dipole trend of similar magnitude is present (anomaly "Fm"), and is parallelled by a quartz porphyry dyke or sill. Between L65N and L68N this trend appears to swing more easterly and then trends towards the north end of Goose Egg Lake as far as L69N. A sharply defined, small amplitude positive peak at L64N-397+62.5W appears to splay off this trend and 'twin' peaks characterize the anomaly from L65N on. Anomaly "Gm" is a complex positive peak which extends from L64N-396W to L69N-395+50W.
Goose Egg Lake demarcates the northern limit of the above complex pattern of generally small amplitude, narrow, positive and negative peaks. These features do not re-emerge on the northeast side of the lake, suggesting that a major fault offset (intrusive control?) or depositional control occurs at this point.

The causes of the above anomalies are not known, but some spatial relationship to quartz porphyry dykes or sills is suggested. An alternate interpretation is that the area is present at the northern 'thinned out' end of the oxide facies iron formation magnetically indicated to the south on adjoining Map Sheet 1, and The complex magnetic pattern could then reflect a series of bands or lenses of magnetite interbedded with the metasediments at a complex facies boundary. A number of weakly to moderately conductive CEM anomalies accompany several of the magnetic trends, suggesting that lenses of sulphide mineralization accompany the intrusive bodies or lenses of oxide facies iron formation.

b) Anomalies Associated With Matic Intrusions

ii) Anomaly "Hm"

Anomaly "Hm" is a 75m to 100m wide zone occurring between L68N-400W-401W and L77N-400+25W-400+75W. Along L71N, L72N, and L73N, several exposures of porphyritic gabbro occur within the anomaly, which ranges from 400 gammas to 800 gammas above background. Detailed geological mapping between L74N and L77N indicates that this area is underlain by felsic tuffs and a felsic volcaniclastic unit, suggesting that the gabbro intrudes the felsic volcanics at a shallow depth.

c) Anomalies Associated With Felsic Volcanics

A number of small amplitude (100 to 200 gammas above background), narrow, positive peaks characterize the magnetic response over areas underlain by felsic volcanics in the northern part of Map Sheet 2 (L70N to L87N). In some cases these peaks coincide with areas of outcrop, suggesting that a local bedrock 'high' (i.e. zero separation between the magnetometer and the magnetic body) might account for the sharp peaks, but this is not a consistent relationship. Further mapping may elucidate some other control, such as alteration or accessory magnetic minerals in certain strata, etc.

2. VLF-EM SURVEY

i) Anomaly "Ev"; L62N-L65N

The separate lobes of this conductor may or may not be connected, but the presence of a fold structure is suggested, and is consistent with the presence of a structural discontinuity indicated by the magnetic data. The east lobe of VLF anomaly "Ev" is coincident with CEM anomaly "Kc". CEM anomaly "Jc" bisects the two lobes of the VLF conductor.

ii) Anomalies "Fv" and "Gv"

Anomaly "Fv" (L65N-398+50W to L72N-397W) is a 700m+ long anomalous trend which may be continuous (with a 100m offset at L73N) with VLF anomaly "Gv", which extends an additional 800m to the north.
Both conductors occur at about the same relative stratigraphic position, within 50m of the contact between a thin, carbonatized, strongly sheared, mafic volcanic unit (chloritic schist), and the thick overlying metasedimentary package. Sulphides (3% - 5% pyrite) were noted in the metasediments at a number of locations along the trend of anomaly "Gv" (L74N-397W to L81N-394+50W). A weakly to moderately conductive CEM anomaly (see description of anomaly "Oc") is roughly coincident with VLF anomaly "Gv" along its length, but no CEM trend accompanies VLF anomaly "Fv".

iii) Anomaly "Hv"; L77N-401+25W to L79N-401+32.5W

This 200m long conductive trend coincides with a trend of small amplitude magnetic peaks, 100 to 200 gammas above background, and lies along or close to a faulted(?) contact between mafic and intermediate volcanics.

iv) Anomaly "Iv"; L82N-400W to L87N-398+32.5W

This 500m+ long conductive trend is coincident with a CEM conductor along the central 200m of its length (see CEM conductor "Qc"). The area is underlain by strongly fractured, carbonatized felsic volcanics (fracture controlled stockworks of ankeritic veinlets). The coincident anomalies may indicate a sulphide concentration in an environment considered to have excellent potential for hosting gold mineralization.

v) Anomaly "Jv"; L85N-395-25W to L86N-394+75W

This short VLF conductor is coincident with CEM anomaly "Rc" in an area underlain by strongly sheared felsic metavolcanics, altered to quartz-sericite schist and sericite schist. The presence of sulphides is indicated and the area warrants follow up investigation.

vi) Anomaly "Kv"; L84N-394+32.5W to L86N-394+12.5W

This anomaly is a 200m long weakly conductive trend occurring in an area underlain by carbonatized mafic volcanics and interbanded sericite schist. The strong structure, carbonate alteration, and presence of sulphides along strike (gossan on shoreline at L90+50N-395+20W) warrant further mapping and more detailed lithogeochemical sampling.

vii) Anomaly "Lv"; L78N-393+25W to L79N-393+25W

This 100m+ long conductor is roughly coincident with a weak CEM conductor and a zone of sharply defined magnetic peaks, 400 to 500 gammas above background, which interrupt the otherwise 'quiet' pattern characterizing the underlying metasediments. A felsic sill or dyke may be present, with associated sulphides.

3. CEM SURVEY

i) Anomaly "Ic"; L52N-L58N

A weak conductive trend extending onto Map Sheet 1 has already been described elsewhere in this report (see section dealing with Map Sheet 1).

ii) Anomalies "Jc" and "Kc"; L62N-L66N

These two weak, subparallel trends occur in an area of extensive swamp, almost devoid of outcrop, but indicated as being underlain by metasediments. The cause of the anomalous reponse is not known, but may be due to weak sulphide concentrations in the underlying rocks, or to locally strongly conductive overburden.

iii) Anomaly "Lc"; L63N-L67N

This 400m long weakly to moderately conductive zone occur along the easterly shoreline of Manitou Straits, in an area underlain by metasediments, and close to a subparallel narrow quartz porphyry dyke or sill. Some shearing an development of sericite schist was observed in two outcrops along the anomalous trend. The favorable geological setting and the good conductor quality at L66N warrants some follow-up prospecting and a little more detailed mapping and sampling.

iv) Anomaly "Mc"; L72N-L74N-399+25W

This weak 200m long conductive trend is accompanied by a weak magnetic anomaly, 100 to 200 gammas above background, and of about the same strike length. There is little outcrop in the vicinity of the CEM/mag trend, but nearby exposures indicate that the area is underlain by felsic volcanics. Some fill-in mapping should be carried out.

v) Anomaly "Nc"; L77N-397W to L81N-395+50W

This weakly conductive 400m long trend is underlain by a thin belt of sheared, carbonatized mafic volcanics, and is parallelled, 25m to 50m to the west, by the contact between the carbonatized mafic volcanic and a broad belt of sheared felsic volcanics (rhyolitic). Mapping and sampling carried out during this program did not locate any sulphides in the available exposures of the carbonatized volcanics (away from the conductive trend). However, the CEM conductor suggests the presence of sulphides within the unit in a

section that has not been sampled. More detailed mapping and sampling should be carried out along this zone, particularly in light of the association of strong shearing and carbonate alteration.

vi) Anomaly "Oc"; L74N-394+50W to L80N-394+75W

This weakly to moderately conductive 600m+ long anomalous trend follows a topographic depression between the south lobe of Mosher Bay and a narrow bay off Manitou Straits. The conductor closely parallels the contact between metasedimentary rocks and a 50m to 100m thick carbonatized mafic volcanic unit which separates the metasediments from a thick unit of felsic volcanics. The indicated position of the conductor is within the metasediments approximately 25m from the contact with the mafic unit.

A good quality VLF conductor (see anomaly "Gv") coincides with CEM anomaly "Oc".

In some of the metasedimentary rocks outcropping near the anomalous trend, 3%-5% disseminated, fine to medium-grained euhedral pyrite is developed along the planes of schistosity, which here strike 070/80 SE. A 'Winkie' drill hole with collar at L76N-396+15W was drilled in January, 1984 to intersect the VLF conductor. Subsequent CEM surveying (Dec.,1984 - Jan., 1985) indicates that the axis of the anomaly passes just west (behind) the drill hole collar. No definite cause of the VLF conductor was noted in the drill core, and there is a strong possibility that the conductor may have been missed by the drill hole, perhaps partly due to the difficulty in precisely determining the subcrop location of a conductor when interpreting VLF data.

The presence of sulphidic metasediments, strong structure, and strongly sheared and carbonatized mafic volcanics at the interface of the thick felsic volcanic and metasedimentary units justifies further attention to this zone. Additional mapping and sampling should be carried out. Pending the results of this work, another drill hole shold be collared so as to investigate the axis of the CEM conductor.

vii) Anomalies "Pc" and "Qc"; L81N-L87N

Anomaly "Pc" is a weak CEM conductor extending from L81N-400+25W to L87N-399+25W. Along all but the most northerly 200m of its length, it is underlain by a felsic pyroclastic unit, which, 400m along strike to the south, carries weakly anomalous Au-in-rock values and is weakly pyritized. Between L85N and L87N, the conductive trend swings across the interpreted trend of a thin mafic volcanic unit overlying the felsic pyroclastic strata, and then follows the indicated contact between the mafic volcanics and a fault-

bounded block of sheared and carbonatized felsic volcanics.

This part of the property is very complex, structurally. The presence of a "CEM-indicated" zone of sulphides in this environment warrants thorough, fill-in mapping and an increased density of lithogeochemical sampling.

Anomaly "Qc" is a weak 300m long trend extending from L82N-399+25W to L85N-399+25W. Along its length it is associated with a stockwork zone of reddish-brown weathering ankeritic carbonate stringers developed in a strongly fractured rhyolitic flow unit. The conductor may indicate the presence of disseminated and stringer zones of sulphides. Thorough and detailed follow-up mapping and sampling is warranted to further evaluate this extremely favorable environment.

viii) Anomaly "Rc"; L85N-395+50W to L87N-394+75W

This is a weakly conductive 200m long trend underlain by intensely sheared felsic volcanics altered to quartz-sericite schist. At its southern extremity, the anomaly is associated with a narrow magnetic peak, 500 gammas above background. A similar peak occurs adjacent to, but not coincident with the northern end of the CEM conductor. About 25m to the east the sericitic schist is flanked by a 25m wide zone of strongly sheared and carbonatized mafic volcanics. There is little outcrop in the immediate vicinity of the conductor. The favorable structural environment and intense associated alteration warrants some follow-up in this area. More detailed mapping and sampling is recommended.

ix) "Point" Conductors

At a number of locations underlain by felsic volcanics, weakly to moderately conductive CEM anomalies occur on one line only at a "point" (several successive readings), without any definite indication of strike continuity on adjacent lines. The most significant of these occurs at L76N-400+50W and may extend to L78N-400+50W. Disseminated sulphides, zones of silicification, and quartz stringers were all noted in proximity to the trend of this conductor. A weakly anomalous Au-in-rock value was returned from a sample collected along the east flank of the conductive trend at L76N.
Two similar "point" conductors occur on L77N at 397+75W and 399W. Disseminated sulphides in rhyolitic flows were observed in nearby outcrops at both locations. Another "point" conductor occurs at L82N-397+75W, also in an area underlain by rhyolitic flows.

MAP SHEET 3 - MANITOU STRAITS AREA

1. MAGNETOMETER SURVEY

i) Anomaly "Im"; L90N-L95N

The peninsula along the east side of the south lobe of Mosher Bay is underlain by metasedimentary rocks intruded by quartz porphyries, and is characterized by a complex pattern of small amplitude, narrow positive and negative magnetic peaks, 100 to 200 gammas above background. The pattern is similar to that occurring in the area south of Goose Egg Lake in a similar geological setting. Along the east side of Mosher Bay a sizeable sill or dyke of quartz-feldspar porphyry has two to three such peaks associated with it. This intrusive body exhibits complex contacts, and there is a strong probability that other that other similar small amplitude anomalies may indicate the presence of related intrusive bodies.

ii) Anomaly "Jm"; L98N-390+25W to L108N-397W

At L98N, this narrow sharply defined trend is 'twin peaked and only 200 gammas above background. At L101N the anomaly is characterized by a single peak 1,000 gammas above background, and coincides with an area of intensely carbonatized mafic volcanics. The mafic volcanics occur as a 25m to 100m thick unit sandwiched between a thick section of felsic volcanics to the west and a thick section of metasedimentary rocks to the east. A similar, subparallel shorter single-peaked trend extends from L100N-396+87.5W to L103N-396+87.5W.

iii) Anomalies "Km" and "Lm"

Anomaly "Km" (L107N-398+12.5W to L114N-399+50W) is a narrow, sharply defined positive peak, 300 to 600 gammas above background, which follows the trend of a mafic volcanic unit that grades, along strike, into a coarse-grained gabbro between L109N and L113N. A couple of sharp positive peaks splay off from the main trend, one between L110N and L111N, and another between L112N and L113N. From L110N to L114N, anomaly "Km" is characterized by twin peaks, which range from 100m apart (L110N) to 50m apart (L114N).

Anomaly "Lm" is a similar narrow-peaked zone extending from L116N to L118N (northern limit of grid) in close association also with an outcropping sill-like body of coarse-grained gabbro. A 100m long weakly conductive CEM anomaly extends southwards from the magnetic trend.

iv) Other Magnetic Features

Along the extreme west side of the grid area (water covered) the magnetic field forms a broad, large positive anomaly between L88N and L96N, indicating the presence of mafic volcanics (or gabbro) beneath the lake. At L93N, the anomaly is almost 3,000 gammas above background. Along its length, the geometry of the anomaly indicates that the grid here extends over the eastern flank only of the broad lithologic unit causing the anomaly.

2. VLF-EM SURVEY

i) Anomalies "Mv" and "Nv"

Anomaly "Mv" (L97N-394+50W to L105N-396+60W) is an 800m long conductive trend which closely follows magnetic anomaly "Jm" from L98N northwards, and is flanked on either side by CEM conductors from L99N to L102N (west side) and L99N to L100N (east side). From L100N to L102N, the VLF anomaly coincides with an outcropping zone of strongly carbonatized mafic volcanics. Concentrations of sulphides may be present (CEM conductors). Along strike to the south the presence of chloritic and sericitic schists over a broad area indicates that the carbonate alteration occurs within a very strong fault zone.

Anomaly "Nv" (L106N-396+25W to L108N-397W) may be an extension of anomaly "Mv", assuming a 25m to 50m faulted or folded offset between L105N and L106N. CEM conductors here exhibit a similar offset.

The extreme northern end of anomaly "Nv" was drilled in January, 1984 (see report on 1984 winter exploration program). The drill hole intersected approximately 40' of massive, semi-massive and disseminated sulphides, consisting of bands, streaks, and nodular aggregates of pyrite in a cherty siltstone unit.

ii) Anomaly "Ov"; L101N-393+37.5W to L104N-394+25W

This conductive trend occurs close to the shoreline on the peninsula at the west end of Mosher Bay. No unusual magnetic or geological features are asociated with the anomaly.

iii) Anomaly "Pv"; L115N-397+50W to L118N-398+25W

This trend is associated with a magnetic 'low' and a CEM conductor. All three anomalies lie along the northern end of an abruptly truncated belt of mafic volcanics and suggest the presence of a northerly striking fault zone.

3. CEM SURVEY

i) Anomaly "Sc"; L93N-394W to L95N-394+75W

This 'twin' CEM conductor transects the regional strike direction at an angle of about 40 degrees. No unusual magnetic or geological features are associated with the trend, which may be due to conductive overburden.

ii) Anomaly "Tc"; L90N-387W to L95N-388+75W

This weakly defined CEM trend coincides with the eastern contact of a sill-like, 50m to 75m wide quartz porphyry intrusion, which exhibits irregular, complex contacts. The CEM trend may indicate the presence of a fairly continuous zone of disseminated sulphides along this side of the quartz porphyry. Follow-up work consisting of more detailed mapping and lithogeochemical sampling is warranted in view of the parallel setting here with the Giant prospect.

iii) Anomaly "Uc"; L98N-397+50W to L103N-397+50W

This weakly defined, weakly conductive trend is underlain by intensely sheared schistose felsic volcanics. Bands of quartz veins were noted in outcrops near the south end of this conductive trend. The anomaly indicates the possible presence of weak sulphide mineralization within a favorable lithology and an excellent structural environment Further evaluation of the area is warranted and should consist of fill-in mapping and an increased density of lithogeochemical sampling.

iv) Anomalies "Vc" and Wc"

Anomaly "Vc" (L98N-396+75W to L106N-396+75W) is a weakly to moderately conductive trend that follows a zone of chloritic schist which grades, along strike to the north, into a narrow belt of metasediments.

Anomaly "Wc" (L106N-396+25W to L108N-396+75W) may be an extension of anomaly "Vc", assuming a 25m to 50m fault or fold offset between L105N and L106N (see also VLF conductors "Mv" and "Nv"). CEM anomaly "Wc" is coincident with VLF anomaly "Nv", whereas anomalies "Vc" and "Mv" are quite widely separated along their subparallel lengths.

v) Anomaly "Xc"; L99N-396W to L102N-396W

This fairly well defined CEM conductor s coincident with VLF conductor "Mv", and magnetic anomaly "Jm", and occurs in close proximity to a zone of strongly carbonatized mafic volcanics. Chloritic and sericitic schists occur along strike to the south. The coincident EM conductors suggest that a fairly continuous zone of disseminated sulphides may be present and associated with the zone of carbonatization. Follow-uo work consisting of additional mapping and lithogeochemical sampling is warranted.

vi) Anomaly "Yc"; L99N-395W to L100N-395+50W

This conductive trend is quite strong at L99N, where it coincides with a "point" VLF conductor. A short trend of magnetic peaks 100 to 200 gammas above background coincides with the CEM conductor. Follow-up work is warranted and should be carried out in conjunction with the work recommended for CEM anomaly "Xc".

vii) Anomaly "Zc"

Along its length, the northerly trending section of CEM anomaly "Zc" is coincident with VLF anomaly "Pv", and is accompanied by a magnetic low. The locus of these three geophysical anomalies approximately coincides with the northerly (truncated?) end of a belt of mafic volcanics and gabbro. The presence of a northerly striking fault is indicated.

MAP SHEET 4 - GREEN ISLAND AREA

1. MAGNETOMETER SURVEY

i) Anomalies "Mm" and Nm"

Anomalies "Mm" and "Nm" are similar and possibly related trends characterized by multiple positive peaks across a 100m to 200m wide zone. Regional mapping indicates that the trend is spatially related to a swarm of felsite (Na and K alteration zones ?), quartz-feldspar porphyries, and sheared, schistose felsic rocks which intrude the mafic volcanics at Green Island and in both directions along strike. A third (unlabelled) weaker trend is evident along the east side of the small unnamed island at Four Mile Narrows, and parallels the island 25m to 50m offshore.

The structural controls of the Green Island dyke swarm are not known. However, jointing patterns (see regional geological mapping) on the point of land immediately to the southeast of Green Island suggest a fold may be present, with an axis parallel to the direction of the dyke swarm. The dykes may therefore have been emplaced along zones of weakness related to the axial plane of the fold.

A number of CEM conductors coincide with the magnetic trends, possibly indicating the presence of weak sulphide zones accompanying the dykes.

The geological environment exhibits general similarities to the setting at Leuiller Island, where 'high-grade' gold values were intersected during the January, 1984 drilling program. Additional work in the Green Island area is warranted. Detailed mapping should be carried out over the grid established during the 1984-85 winter exploration program and lithogeochemical sampling of the grid area should also be done, with particular attention to the geophysical targets.

2. CEM SURVEY

i) Anomalies "AAc", "BBc", "CCc", "DDc", "EEc", "FFc", "GGc", and "HHc"

These anomalies all exhibit close or direct spatial relationships to the magnetic anomalies described above. They may indicate weak sulphide zones within or along the contacts of the dykes. Further work in all cases is warranted and should consist of detailed mapping and lithogeochemical sampling of the grid as a whole, with particular attention to the geophysical targets.

3. VLF-EM SURVEY

i) Anomaly "Qv"; L108N-411+50W to L111N-411+50W

This is the only VLF conductor of appreciable strike length which coincides with a CEM conductor. A sulphide zone may be present.

A number of "point" VLF conductors show an approximate coincidence with CEM conductors. The genmeral lack of good VLF response may be in part attributed to the extensive "overshadowing" field associated with the conductive lake bottom sediments.

ii) Anomaly "Rv"; L124N-417+12.5W to L127N-418+75W

Like anomaly "Qv", VLF conductor "Rv" is coincident with a magnetic anomaly which indicates the presence of a felsic dyke. Regional mapping indicates the presence of a felsite body at or close to the intersection of the VLF trend with the shoreline. The presence of a felsic dyke with possibly associated sulphides warrants further work in the area, which should consist of detailed mapping and lithogeochemical sampling.

MAP SHEET 5 - LEUILLER ISLAND AREA

1. MAGNETOMETER SURVEY

i) Anomaly "Om"

The most prominent magnetic feature in the Leuiller Island area is a 200m wide complex magnetic high along the east side of Leuiller Island. Anomaly "Om" ranges up to 5,000 gammas above background and the survey profiles exhibit a pattern and amplitude typically associated with gabbroic intrusions in the Manitou Lakes area. Regional mapping indicates three belts of coarse-grained basalt/gabbro crossing the island. Ground magnetic survey data suggests that all three belts are actually a part of a single belt that is anticlinally and synclinally folded, with the axes of both folds crossing Leuiller Island. Isoclinal folding has been recognized along the trend of this "Manitou Anticline" to the southwest at Swede Boys Island and on the mainland just south of Swede Boys Island (see regional geological mapping). The ground magnetic survey data indicates that the gabbro unit underlying the east side of Leuiller Island swings westwards across the island in the vicinity of L112N and L113N and joins the central gabbro unit (see regional map). The central unit then swings northwestwards and merges with the westernmost gabbro unit. The axial trace of the Manitou Anticline is shown (regional map) as crossing Leuiller Island in exactly the same area where the magnetic data indicates the antiformal fold (between L112N and L113N).

At the southern tip of Leuiller Island the gabbro hosts a zone of strong quartz veining and intense wallrock alteration (silicification and K-feldspathization) which returned an assay of 0.7 oz/ton Au from one drill intersection through the zone (see report on January, 1984 drill program). The gabbro forms a very competent unit which deformed brittlely during folding. The presence of a series of similar, "en echelon" quartz veins and alteration zones is a distinct possibility, given the close proximity to a major fold axis. Further to the northeast along the same structure, in the Gold Rock Camp, all the past producers are clustered around the axis of the anticline.

Further exploration consisting of detailed mapping and lithogeochemicak sampling of the island and environs is warranted. Hand trenching and bulk sampling should be carried out over the zone at the south end of the island.

ii) Anomalies "Pm" and "Qm"

A number of narrow relatively small amplitude positive peaks (50 to 500 gammas above background) apparently indicate the presence of quartz-feldspar porphyry and felsite dykes and sheared felsic intrusive rocks, similar to the Green Island area (see section in this report on Map Sheet 4). These occur at Rochon Island and Gold Island (anomaly "Pm") and at the peninsula immediately to the east of Rochon Island (anomaly "Qm"--L113N and L114N). A number of them probably also occur at Leuiller Island, but their presence is masked by the high relief, high intensity magnetic expression of the gabbroic intrusions.

2. VLF-EM SURVEY

i) Anomaly "Sv"; L111N-435+75W to L116N-434+50W

At its southern extremity this anomaly coincides with the outcrop location of a quartz-feldspar porphyry dyke, which was emplaced along the western contact of the "central" gabbro body at Leuiller Island (see regional geology). A CEM conductor closely follows the entire length of the VLF conductor, but extends an additional 200m to the south, beyond the VLF conductor. The coincidence of strong folding (possibly faulted along the VLF conductor axis) with the VLF and CEM conductors warrants detailed mapping and lithogeochemical sampling in the area of interest.

ii) Anomaly "Tv"; L109N-434W to L111N-435W

This anomalous trend closely follows a weak magnetic 'high' and is located near the axial trace of the magnetically-indicated synformal fold, where the gabbroic intrusion(?) or sill(?) swings northwards again (from the central belt to the western belt).

iii) Anomalies "Uv" and "Vv"

These two related, long conductive trends strike obliquely to the regional strike and may be due to conductive overburden. The southern 200m length of anomaly "Vv", however, has a northeasterly strike and coincides with the western contact of the gabbroic body that occurs along the east side of Leuiller Island (see regional map).

iv) Anomaly "Wv"

Anomaly "Wv" and a short, subparallel, unlabelled anomalous trend 75m to the north are situated near the axial trace of the Manitou Anticline and may reflect zones of shearing or mineralization related to this structure.

v) Anomaly "Xv"; L110N-430+37.5W to L112N-430+50W

This anomaly parallels the approximate position of an infolded body of intermediate tuff breccia, enclosed on both sides by the gabbroic unit. The contacts of gabbroic units elsewhere in the Manitou Lake s region are frequently strongly sheared and faulted. Additional work in this area should combine detailed mapping and lithogeochemical sampling.

vi) Anomaly "Yv"

This short conductive trend coincides with the westernmost contact of a coarse-grained "gabbroic" basalt unit which might be the folded extension of the gabbroic unit underlying the east side of Leuiller Island.

vii) Anomaly "Zv"; L105N-425+37.5W to L112N-425+75W

This anomalous trend follows the outcrop trend of a felsic dyke along the southwest peninsula of Rochon Island. Similar rocks were noted in a shoreline outcrop where the conductive trend intersects the southwesterly shoreline of Gold Island (see regional geology).

viii) Anomalies "AAv"and "BBv"

These two anomalies occur along the northeasterly side of Rochon Island where felsic dyking is present. The two conductive trends appear to be similar to VLF conductor "Zv" described above. Detailed mapping and lithogeochemical sampling is required to further evaluate these zones.

ix) Anomaly "CCv"; L113N-420+25W to L118N-421+62.5W

This 500m long conductive trend is open along strike in both directions. Regional mapping indicates a belt of rhyolitic flows, felsic lapilli tuff, and sericitic schist underlies the peninsula. Detailed mapping and sampling is required to further evaluate this area.

3. CEM SURVEY

i) Anomalies "IIc", "JJc", and "KKc"

Anomalies "IIc" and "JJc" coincide with the contacts of the central gabbro body at Leuiller Island. These contacts are indicated both by the profiled magnetic data and regional geological mapping.

Anomaly "IIc" is coincident with VLF conductor "Sv".

Anomaly "KKc" lies along the interpreted synformal fold axis where the central gabbroic unit swings to the northwest corner of Leuiller Island. This anomaly and VLF conductor "Tv" may be related to axial planar fold structures.

ii) Anomalies "LL1c" to "LL6c", and "LL7c"

Anomalies "LL1c", "LL2c", "LL3c", "LL4c", "LL5c", and "LL6c" appear to be a related group of north-northeasterly trending conductors which crosscut the regional strike and are all (except "LL6c") truncated against CEM conductor "Jc" (see above). The significance of this group of conductors is not known. Perhaps they represent en echelon dilatant zones related to tensional stresses set up in the gabbro unit during folding.

Anomaly "LL7c" has a northeasterly strike parallelling regional strike and may simply represent the eastern contact of the gabbro unit.

iii) Anomalies "MMc", "NNc", and "OOc"

These three conductive trends situated at Rochon Island and Gold Island are associated with VLF conductors ""Yv", "Zv", and "AAv".

CEM conductor "MMc" corresponds to VLF anomaly "Yv" and parallels or coincides with the western contact of a coarse grained 'gabbroic' basalt unit, which might be the folded extension of the gabbroic unit underlying the east side of Leuiller Island.

CEM conductor "NNc" corresponds to VLF conductor "Zv", which follows the outcrop and geophysically indicated trend of a felsic dyke.

CEM conductor "OOc" corresponds to VLF conductor "AAv" and both conductors appear to be related to a zone of felsic dyking similar to that along VLF conductor "Zv".

iv) Anomaly "PPc"

CEM anomaly "PPc" corresponds to VLF anomaly "CCv", which occurs in an area underlain by rhyolitic flows, felsic pyroclastics and sericite schist. Sulphides may be present.

MAP SHEET 6 - TRAFALGAR BAY AREA

1. MAGNETOMETER SURVEY

i) Anomaly "Rm"

Anomaly "Rm" is a dipole type 'twin-peaked' zone extending from L128N-426+50W to L134N-427+50W. Regional mapping indicates that the trend is underlain by a belt of mafic volcanics approximately 250m wide. VLF conductor "DDv" coincides with the magnetic trend. This association elsewhere in the survey area (see Leuiller Island and Green Island sections - Map Sheets 4 and 5) usually indicates the presence of a felsite or quartz porphyry dyke along a sheared or altered zone.

ii) Anomalies "Sm" and "Tm"

This twin-peaked, subparallel, probably related trend extends the full length of the surveyed area, from L128N-421W to L142N-425+75W. The trend is closely followed along its entire length by VLF conductors "FFv" and "GGv". Regional mapping south of L128N indicates that the strike extension of this magnetic trend coincides with a belt of mafic volcanics. North of L128N, only one outcrop of mafic volcanics (chloritic schist), occurring at about L131N-422+50W, is correlatable with the belt of mafic volcanics south of L128N. The anomalous trend, for more than half of its length, follows a topographic depression almost devoid of outcrop. At about L131N, anomaly "Tm" branches from "Sm" to form a twin-peaked, subparallel trend for the remaining length of the grid area. At about L133N, VLF conductor "FFv", which coincides with magnetic anomaly "Tm", also splits, and a second VLF conductor, anomaly "GGv", then closely follows magnetic anomaly "Sm" for the remaining length of the grid area. At the northern end of the surveyed area, on the point projecting out into Trafalgar Bay, a northeasterly striking felsite dyke or zone of intense alteration (see regional map) closely follows magnetic anomaly "Sm" and VLF conductor "GGv".

2. VLF-EM SURVEY

i) Anomaly "DDv"; L128N-427+12.5W to L132N-427+32.5W

This 400m long conductor closely follows magnetic anomaly "Rm". The possible presence of a sheared contact and/or a felsic dyke is indicated.

ii) Anomalies "EE1v", "EE2v", "EE3v", "EE4v", "EE5v", "EE6v", and "EE7v"

This group of weak to strong conductors exhibits a northerly strike trend and crosscuts belts of both mafic and intermediate volcanics (see regional map). A couple of weak associated magnetic trends are discernible, but there is insufficient geological data available to evaluate the probable cause of the conductive trends.

iii) Anomalies "FFv" and "GGv"

Anomaly "FFv" extends the full length of the grid area and is closely associated with magnetic anomaly "Tm". At about L133N, anomaly "FFv" splits, and a subparallel, sometimes subtly defined conductive trend, anomaly "GGv", closely follows magnetic anomaly "Sm" for the remaining length of the grid.

VLF conductors "FFv" and "GGv" generally flank magnetic anomalies "Tm" and "Sm", but also exhibit a tendency to "switch sides", transecting the magnetic trends as they do so. Less well defined CEM conductors also parallel the VLF anomalies, but further surveying is required to more fully develop the CEM profiles.

The coincidence of magnetic, VLF, and CEM anomalous trends most probably indicates the presence of a belt of strongly sheared mafic volcanics (chloritic schist) with associated quartz-feldspar porphyry or felsite intrusions emplaced within and along the contacts of the sheared mafic volcanics. The CEM conductors suggest the presence of related sulphide zones.

3. CEM SURVEY

i) Anomaly "QQc"

Anomaly "QQc" coincides with VLF conductor "DDv" and magnetic anomaly "Rm", described above. The possible presence of a felsic dyke or sheared felsic zone with accompanying sulphides is indicated.

ii) Anomalies "RR1c", "RR2c", "RR3c", "RR4c", "RR5c"

These five weak to very subtle CEM trends coincide (only approximately in the case of "RR4c" and "RR5c") with VLF conductors "EE1v" to "EE5v". There is insufficient geological data available to evaluate the probable cause of these conductive trends. However, a similar pattern of CEM conductors was recognized at Leuiller Island within a competent 'gabbroic' basalt unit which has been isoclinally folded. The possible presence of a series of en echelon fractures with associated sulphides is indiacted.

iii) Anomalies "SSc" and "TTc"

CEM conductor "TTc" may extend the full length of the grid area, more or less coincident with VLF conductor "FFv" and magnetic trend "Tm". (A little more surveying is required to more fully develop the CEM profiles to the east.) At about L131N, the CEM trend branches, and a subparallel trend, conductor "SSc", extends along the remaining length of the grid area, closely coincident with magnetic trend "Sm". These conductors flank a belt of (magnetically indicated) mafic volcanics which appear to have been strongly sheared, altered to chloritic schist, and intruded by quartz-feldspar porphyry or felsite dykes (see regional geology).

MAP SHEET 7 - MERIDIAN BAY AREA

1. MAGNETOMETER SURVEY

i) Anomaly "M-1"

Anomaly "M-1" is a twin-peaked 25m to 50m wide zone, 300 to 800 gammas above background, which extends from L3N to L13N between stations 18W and 15+75W. The two peaks merge into a single peak between L7N and L10N.

At L4N-17+50W the easterly peak coincides with a zone of strongly sheared and carbonatized mafic volcanics. Between L7N-17W and L8N-17W, the peak coincides with a zone of sericite schist which is the alteration product of intensely sheared quartz sandstone. At a location corresponding approximately to L10N-16+62.5W, a Au-in-soil value of 175 ppb was obtained (see report on the Summer and Fall 1983 exploration program). Also, regional mapping indicates the presence of two quartz porphyry dykes along the anomalous trend. These dykes were not seen during the 1984-85 winter mapping program, although the location of one of them coincides with the zone of carbonate alteration mapped at L4N.

An "interpretable" medium frequency (1830 Hz) CEM conductive trend accompanies magnetic anomaly "M-1", but the CEM anomaly is very weak and falls within the 'noise' threshold.

ii) Anomaly "M-2"

TThis 50m to 100m wide magnetic trend ranges from 500 to 3500 gammas above background, and extends northeastwards from the mouth of the Weasel River at the south end of the grid, until it is lost under Holcroft Lake, near a regionally interpreted left lateral transcurrent fault. Along its length the anomaly is associated with the outcrop trend of a 50m to 100m wide gabbroic sill or coarse-grained basaltic flow. An area of structural complexity is present between L3N and L5N, and an apparent left lateral offset of the zone here coincides with a major northeasterly striking fault. A similar left lateral offset occurs between L10N and L15N, where a fault controlled 'thinning' of the unit results in a less intense magnetic response.

iii) Anomaly "M-3"

Anomaly "M-3" parallels anomaly "M-2" immediately to the east. Where it crosses the Weasel River, the trend is 100m easterly from anomaly "M-2", but at the south side of Holcroft Lake, the two zones are only about 25m apart. Anomaly "M-3" is a 75m to 150m wide trend ranging from 2,000 gammas below background to 4,000 gammas above background, and is characterized by two to three pronounced dipoles along its length. This magnetic trend coincides with the outcrop trend of a thick gabbroic sill or coarse-grained basaltic to gabbroic flow.

iv) Anomaly "M-4"

This anomaly is a narrow dipole trend 25m to 50m wide, ranging from 3,000 gammas below background to 4,000 gammas above background, and increases sharply in amplitude at L28N. Between L19N and L25N, the magnetic anomaly coincides with a trend of strong shearing and retrograde dynamic metamorphism, and may be due to the development of magnetite within the chlorite-quartz schist derived from the sheared mafic volcanics. From L25N to L29N, the magnetic trend is twin-peaked, and exhibits a northwards increase in amplitude. Along this part of the zone it appears to be more directly associated with a gabbroic sill or coarse-grained basaltic flow.

v) Anomaly "M-5"

This trend commences at about L20N and extends to the limits of the survey area (of Map Sheet 7) at L28N. Along part of its length it is a dipole trend ranging from 800 gammas below background to 1,500 gammas above background. It appears to be associated with a porphyritic gabbroic dyke intruding the enclosing basaltic/gabbroic flows. The porphyritic dyke is distinguished by its blue quartz "eyes" observed in outcrop at L23N-5W.

2. VLF-EM SURVEY

i) Anomalies "V-1" and "V-2"

These two anomalies flank CEM conductor "C-1" and follow a trend of strong shearing accompanied by the development chloritic and sericitic schist and carbonate alteration. Regional mapping indicates that two quartz porphyry dykes coincide with the two VLF anomalies. This very favorable geological environment warrants further detailed mapping and sampling.

ii) Anomaly "V-3"

This is a poor quality conductor (low in-phase : quadrature ratio) which crosses known geological trends. It is probably due to conductive overburden.

iii) Anomaly "V-4"

The profile of a weak CEM conductor spatially associated with VLF anomaly "V-4" indicates a wide flat-lying conductor between L16N and L19N. This would be consistent with the effects of conductive overburden.

iv) Anomaly "V-5"

This 1,300m long conductive trend is roughly coincident with CEM anomaly "C-6" from L9Nto L18N. It is a poor quality conductor along most of its length and crosses known geologic trends. It is probably caused by conductive overburden.

v) Anomalies "V-6" and "V-7"

Anomalies "V-6" and "V-7" are subparallel to anomaly "V-5" and are probably part of a single zone of conductive overburden.

vi) Anomalies "V-8" and "V-9"

These two conductors are probably continuous across the south arm of Holcroft Lake and closely follow the westerly 'contact' of magnetic anomaly "M-5". The trend is weak, but in places the conductor quality is good. Sulphides and/or a sheared contact may be present.

vii) Anomaly "V-10"

This conductor follows a swampy area and crosses known geological trends. Its probable cause is conductive overburden

viii) Anomaly "V-11"

This conductor closely follows the western 'contact' of magnetic anomaly "M-4". The presence of a sheared contact and/or sulphides is indicated.

ix) Anomaly "V-12"

This trend follows a large low-lying swampy area and crosses known geological trends. Conductive overburden is indicated.

3. CEM SURVEY

i) Anomaly "C-1"

This weak conductive trend is flanked by VLF conductors "V-1" and "V-2" and follows a zone of strong shearing, which is accompanied by carbonate alteration and the development of chloritic and sericitic schist. Regional mapping indicates the presence of two quartz porphyry dykes in the vicinity of the CEM conductor. This is a promising environment which warrants more detailed mapping and sampling.

ii) Anomalies "C-2" and "C-3"

These two curvilinear conductive trends parallel the folded(?) and faulted hinge of a regional strike change. They are parts of a probably related conductive trend and coincide with the stratigraphic position of a sulphidic chert horizon (see regional map). The conductors are not strong, but may indicate the presence of stratabound sulphide zones within the metasediments. More detailed mapping and sampling is warranted.

iii) Anomaly "C-4"

This is a relatively weak trend occurring in an area underlain by metasediments along strike from anomalies "C-2" and "C-3". Although conductor "C-4" occurs at a different stratigraphic level, another chert horizon is present in the vicinity (see regional map). Additional mapping and sampling is warranted.

iv) Anomaly "C-5"

This weak 1,000m long conductive trend crosses magnetic anomalies "M-2" and "M-3" at an oblique angle and is probably caused by conductive overburden.

v) Anomalies "C-6" and "C-7"

Anomaly "C-6" is a 1,000m long conductive trend which closely follows VLF conductor "V-5". It crosses known geological trends, is generally quite weak, and may be due to conductive overburden.
Anomaly "C-7" is a 200m long conductive trend occurring between conductors "C-5" and "C-6". It also crosses known geological trends, and is probably due to conductive overburden.

vi) Anomaly "C-8"

This is a weak 400m long conductive trend that flanks the easterly 'contact' of magnetic anomaly "M-3" between L17N and L21N. Shearing and sulphide mineralization related to this contact may be the cause of the anomaly. Shearing and carbonate alteration were noted in one outcrop on the shoreline on the north side of a small 'beaver pond' off Holcroft Lake at L20+15N-7+75W. This location lies within the centre of magnetic anomaly "M-3".

vii) Anomaly "C-9"

This is an 800m long conductive trend which closely follows the eastern 'contact' of magnetic anomaly "M-4". Contact effects, including shearing and/or sulphide mineralization are the probable cause of the anomaly.

viii) Anomaly "C-10"

This 400m long conductive trend follows the eastern shoreline of Holcroft Lake. It transects known geologic trends but does not appear to be related to conductive overburden. Its probable cause is not known.

MAP SHEET 8 - GLASS BAY AREA

1. MAGNETOMETER SURVEY

i) Anomalies "M-6" and "M-7"

These two parallel magnetic trends appear to be the fault offset continuation of anomalies "M-2" and "M-3" described above. The offset takes place along a left lateral transcurrent, northerly striking fault beneath the lake at L24N to L28N. The two anomalies extend from L30N to L40N where they merge into a region of complex magnetic profiles, and the individual peaks characterizing the two trends cannot be distinguished. The old Glass Reef Mine workings are situated within anomaly "M-7" at L42N to L43N.

ii) Anomaly "M-8"

This 75m to 150m wide magnetic trend extends the full length of the grid area along its eastern boundary, from L32N to L50N. At L49N, the zone abruptly widens to 250m and is characterized there by multiple peaks. This anomaly is probably the same trend as anomaly "M-5" (see Map Sheet 7), but the grid coverage is not continuous along the zone. Along its length on Map Sheet 8, it is associated with a coarse-grained porphyritic gabbroic sill or flow.

iii) Area "M-9"

Anomaly "M-9" is not a specific anomalous trend but rather an area of high relief, high amplitude magnetic response occurring north of L46N and west of about station 8W. The area is underlain by coarse-grained (gabbroic) to fine-grained mafic volcanics, intercalated with belts of metasediments and intruded by quartz porphyry sills. The area is lithologically and structurally complex and hosts a number of highly anomalous Au-in-rock values. Further mapping and sampling is warranted to elucidate the mineralized trends, the geology, and the controls of mineralization in the area.

2. VLF-EM SURVEY

i) Anomalies "V-13" and "V-14"

The southerly 200m of VLF anomaly "V-13" crosses known geologic trends and generally follows a low area of little outcrop. This portion is probably due to conductive overburden. The most northerly 200m roughly parallels the contact of a gabbroic sill or flow.

Anomaly "V-14" follows a swampy area extending from the 1km long unnamed lake occupying the centre of the grid area and is undoubtedly due to conductive overburden.

ii) Anomaly "V-15"

VLF anomaly "V-15" crosses known geologic trends and appears to be caused by conductive overburden.

iii) Anomaly "V-16"

This anomaly extends for 600m along the southeast side of the grid and exhibits a consistent spatial relationship with the northwesterly 'contact' of magnetic anomaly "M-8", which is caused by a relatively thick northeasterly striking gabbroic sill or flow. "Spotty" CEM conductive effects are associated with this trend. A sheared contact with the possible presence of sulphides is indicated.

iv) Anomalies "V-17" and "V-18"

These two anomalies are underlain by metasediments near the north end of the grid. An oxidized, sulphidic sandstone outcrops near the east end of anomaly "V-18", where it is coincident with the west end of a good quality CEM conductor, anomaly "C-20". The metasediments also include a sulphidic chert unit. Stratabound zones of sulphide mineralization in metasediments are the most probable cause of both anomalies.

v) Anomalies "V-19" and "V-20"

Both of these conductive trends parallel the eastern sides of unlabelled magnetic highs of short strike length, which occur in an area underlain by mafic volcanics. Sheared, possibly sulphide bearing contacts are indicated by the geophysical response.

3. CEM SURVEY

i) Anomaly "C-11"

This weakly to moderately conductive zone occurs directly along strike to the southwest from the most southwesterly of the three shafts at the Glass Reef prospect (see geological map; also regional geology). Its probable cause is the shear zone that hosts a strong quartz vein at the nearest shaft.

ii) Anomaly "C-12"

This is a 900m long weakly to moderately conductive trend which closely parallels the southeasterly contact of magnetic anomaly "M-7". The possible presence of a sheared sulphide bearing contact is indicated.

iii) Anomaly "C-13"

This is a weak 300m long conductor occurring in an area underlain by metasediments. A possible stratabound concentration of sulphides is indicated.

iv) Anomaly "C-14"

The central portion of this conductor (L34N and L35N) may be due to conductive overburden, but the extremities of the conductive zone are possibly related to stratabound concentrations of sulphides in metasediments.

v) Anomaly "V-15"

This conductor follows the indicated outcrop trend of a 50m wide gabbroic sill or flow and may indicate a sheared sulphide bearing contact.

vi) Anomaly "C-16"

"C-16" may be a composite anomaly with its southern 150m possibly caused by a stratabound concentration of
s sulphides in metasediments. Its northern section follows the interpreted extension of a fault which cuts short a zone of metasediments and quartz porphyry sill or dyke at L41N to L43N.

vii) Anomaly "C-17"

This anomaly closely folows a sulphidic quartz porphyry dyke which occurs just east of the Glass Reef prospect.

viii) Anomaly "C-18

The southerly end of this trend coincides with a zone of heavily pyritized metasandstones. The remainder of the anomaly also is most likely related to stratabound concentrations of sulphides in meta sediments.

ix) Anomaly "C-19"

This conductive trend occurs in close proximity to a sulphide bearing quartz porphyry dyke. Its probable causes are the conductive effects of the shear zone that hosts the dyke and related sulphide mineralization.

x) Anomaly "C-20"

An outcrop trend of strongly pyritized metasandstones occurs in association with this conductor.

xi) Anomalies "C-21" and "C-22"

These are two, weak, 200m long parallel conductive trends which occur at the northeast corner of the grid (L48N to L50N). Outcrops in the area are not plentiful, but th the zones are most likely related to zones of shearing and sulphide mineralization in mafic volcanics.

MAP SHEET 9 - BEAVERHEAD ISLAND

1. CEM SURVEY

i) Anomaly "C-23"

This weak to strong 1,300m long conductor (open along strike) is associated with a zone of very strongly sheared, carbonatized, and pyritized metasediments. A similar parallel zone, 300m to the southeast (CEM anomaly "C-26"), hosts highly anomalous Au-in-rock values.

ii) Anomaly "C-24"

This weakly to moderately conductive trend is associated with an oxide (magnetite) facies banded iron formation, which carries bands of sulphides along the southeasterly side of the zone.

iii) Anomalies "C-25" and "C-26"

These weakly to strongly conductive trends are associated with the flanks of a very strongly sheared, carbonatized, strongly pyritized zone of quartz-sericite schist (metasediments). Anomalous to highly anomalous Au-in-rock values were returned from all of the samples collected from outcrops along a 400m strike length of the zone.

iv) Anomaly "C-27"

This weakly conductive, 100m long trend is associated with carbonatized and pyritized polymictic and "volcanic" (monolithologic) conglomerates, which are not noticeably sheared in comparison to the strongly sheared sandstones and siltstones (quartz-sericite schist) associated with anomalies "C-25" and "C-26".

CONCLUSIONS AND RECOMMENDATIONS

The December, 1984 to March, 1985 program of winter CEM, VLF-EM, and ground magnetic geophysical surveying, combined with the winter mapping and lithogeochemical sampling program has successfully laid the groundwork for a systematic, detailed evaluation of specific areas of interest at the two main claim groups.

On Map Sheets 1 and 2 (Manitou Straits area) a number of geophysical and geological targets associated with a zone of oxide/sulphide facies iron formation and quartz porphyry sills duplicate the environment drilled at the Giant prospect.

Several Au-in-rock geochemical anomalies associated with strong shearing (quartz-sericite schist), carbonate alteration (stockworks), and sulphide mineralization in rhyolitic flows and related pyroclastic rocks constitute an extremely favorable environment (resembling the geological setting of the recent Nuinsco discoveries in the Rowan Lake - Cameron Lake areas) for the development of gold mineralization, in the area of Map Sheet 2.

A similar zone of carbonate alteration and shearing in rhyolitic flows and pyroclastics is present in the area of Map Sheet 3. at about the same stratigraphic level, and directly along strike from several deposits hosted by the same strata/structure in the Gold Rock camp.

On Map Sheets 4, 5, and 6 (Green Island area, Leuiller Island area, and Trafalgar Bay area) no property (1:2500 scale) geological mapping has been carried out to date, and the "land" areas of Map Sheets 4 and 6 still require basic line cutting and CEM, VLF-EM, and ground magnetic surveying. Despite the incomplete "picture" in these areas, a number of interesting geophysical features have been identified and an attempt to interpret these with the aid of regional (1:31,680 scale) geolgical mapping has been made. Of particular interest is the axial plane zone of the Manitou Anticline at Leuiller Island (Map Sheet 5) and a possible similar situation in the Green Island area (Map Sheet 4) Map Sheets 4, 5, and 6 (Trafalgar Bay area) all host the same favorable geology as the Gold Rock camp, where commercial grade and tonnage bodies of gold mineralization were discovered in close proximity to the axial plane of the Manitou Anticline. (High-grade gold mineralization was discovered in a zone of intense alteration and quartz veining near the axial plane of this fold at the south end of Leuiller Island in January, 1984 -- see earlier report on 1984 winter drilling program).

On Map Sheet 7 (Meridian Bay area), areas of considerable structural complexity (strong shearing, quartz porphyry sills or dykes and carbonate and sulphide mineralization) occur near the folded(?) and faulted hinge of a regional strike change. Sulphidic

chert strata occur in nearby metesedimentary strata, further enhancing the gold potential of the area.

On Map Sheet 8, a number of anomalous Au-in-rock values have been obtained over a broad area around (and not necessarily related to) the old Glass Reef Mine workings. On both Map Sheets 7 and 8, pyritic sandstones extend the full length of the grid-areas and have associated anomalous Au-in-rock values. A geological environment analagous to the Hemlo area may be present.

At Beaverhead Island (Map Sheet 9) highly anomalous and anomalous Au-in-rock values have been obtained from one of the very strongly sheared (quartz-sericite and sericite schists) zones of carbonatized pyritic metasediments. A potential "Hemlo" environment may be present here also.

The above paragraphs only highlight the zones of greatest interest identified during the exploration program.. In addition, there are numerous other locations where anomalous geophysical and geological conditions warrant a second examination. These are described in detail in the body of this report and recommendations for further work accompany these descriptions. In most cases the recommendations call for a little more detailed mapping and lithogeochemical sampling to further evaluate the zone of interest.

Recommendations for further work on the 'major' zones of interest are as follows:

Map Sheets 1, 2, and 3

Further work in the areas of interest described both above and in the body of this report should consist of detailed (1:2500 scale and 1:1000 scale) geological mapping combined with an increased density of lithogeochemical sampling. Some additional geophysical detailing may be required (50m line spacings) in selected areas. This should result in the selection of two or three areas for hand trenching and blasting, which should be done in conjunction with the trenching and blasting program recommended for the "Giant" prospect below.

Map Sheets 4, 5, and 6

These areas all still require "first pass" geological mapping and lithogeochemical sampling, as only reconnaissance work of this nature has been carried out to date. Line cutting, CEM, VLF-EM, and ground magnetic surveying all have yet to be done over the "land" areas of Map Sheets 4 and 6.

Map Sheets 7, 8, and 9

Further work in the areas of interest described both above and in the body of this report should consist of detailed (1:2500 scale and 1:1000 scale) geological mapping combined with an increased density of lithogeochemical sampling. Some additional geophysical detailing (50m line spacings) may be required in selected areas. Geological mapping at a scale of 1:1000 should be carried out in a 1km square area at : i) the Meridian Bay area strong structures and alteration, felsic dyking, sulphidic cherts and anomalous Au-in-rock values are generally associated with the folded(?) and faulted hinge of a regional change in strike; ii) the area around the old Glass Reef Mine workings where similar geological conditions prevail and a number of highly anomalous to anomalous Au-in-rock values have been obtained from a broad area surrounding the workings; iii) at the Beaverhead Island area where highly anomalous to anomalous Au-in-rock values have been obtained from a zone of intense shearing (quartz-sericite and sericite schist), carbonate alteration, and heavy sulphide mineralization in metasediments. Detailed lithogeochemical profiles of the above zones should also be obtained to provide a basis for selecting sites for further evaluation by hand trenching and blasting. At Map Sheets 7 and 8, the possible presence of stratabound gold mineralization in pyritic sandstones should be further investigated by more detailed mapping and lithogeochemical sampling.

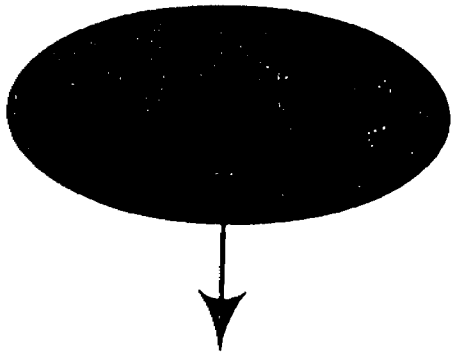
Giant Prospect (East Mosher Bay Area)

Towards the west end of the group of claims covering the Giant Prospect, a broad schist zone (marking a major fault) hosts quartz sericite schist which grades along strike into a chert breccia (variably pyritized) where the schist zone transects a pair of competent quartz porphyry sills. Geochemically anomalous Au-in-rock values of up to 30 or 40 times background were discovered in this zone during the course of the early 1984 drilling program. The quartz porphyry sills or dykes outcrop 'behind' the old Giant workings and should be 'opened up' by trenching and blasting in order to carry out more representative sampling of the chert breccia and to investigate the possible widening of the zone along strike to the west.

Sufficient lead time for the above recommended work at Map Sheets 5, 7, 8, and 9 should be allowed to develop trenching targets which could be 'opened up' in conjunction with (following the completion of) the trenching program at the Giant prospect.

APPENDIX I

INSTRUMENT SPECIFICATIONS

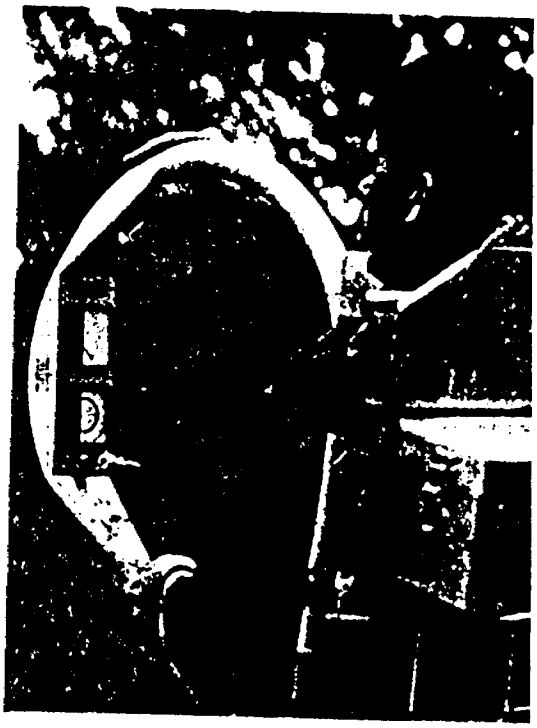


CRONE GEOPHYSICS L

3607 WOLFEDALE ROAD,
MISSISSAUGA, ONTARIO,
CANADA.

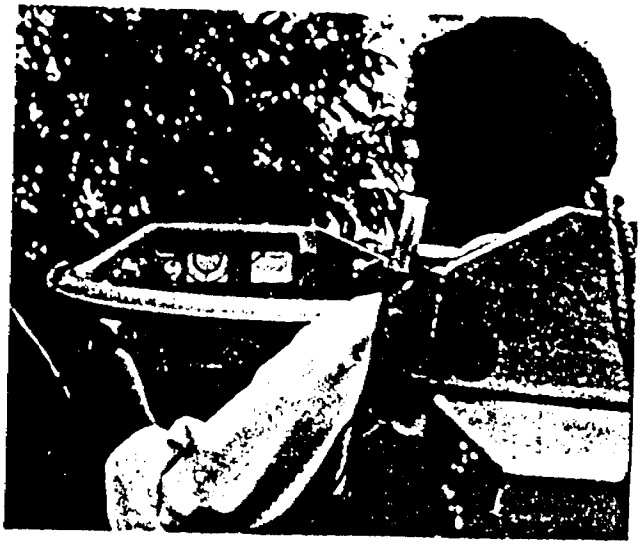
Phone: 270-0096

The equipment consists of two identical transmitter-receiver coils capable of measuring the DIP ANGLE and FIELD STRENGTH of the EM field. Coil separations up to 600'. See the report "Deep Electromagnetic Exploration with the Horizontal Shootback Method" by D. Crone for analysis of this new method.



HORIZONTAL SHOOTBACK EM

TRANSMITTING ↓ RECEIVING →



- Deep penetration.
- Accurate surveys in mountainous terrain.
- Line cutting not required.
- Precise interpretation as to dip, conducti and depth.
- Simple to operate.
- Rugged equipment.

SPECIFICATION OF THE CEM INSTRUMENT

This unit is composed of two identical coils both capable of receiving and transmitting at 3 fixed frequencies. All circuiting is housed within the coils. The batteries are mounted in an insulated box on a magnesium packboard.

- coil diameter 22", weight per coil 8.3 lbs.
- standard frequencies 390, 1830, 5010 Hz (others available).
- inclinometer range 200°, accuracy ± ½°.
- receiver gain control — 10 turns, linear calibrated pot.
- dip angle determined by visual minimum on Field Strength meter.
- Field Strength read directly on a meter and controlled by gain control pot.
- packboard and battery box weight each 7.0 lbs.
- battery — 6 volt lantern type — Eveready 731, Burgess TW-1.
- weight per battery 3.0 lbs.
- 1 to 3 batteries may be used connected in series.
- range for 100% Field Strength and ± 1° null all frequencies, 6 volts — 400', 12 volts — 500', 18 volts — 600'.
- shipped in two wooden boxes weight 50 lbs. each.

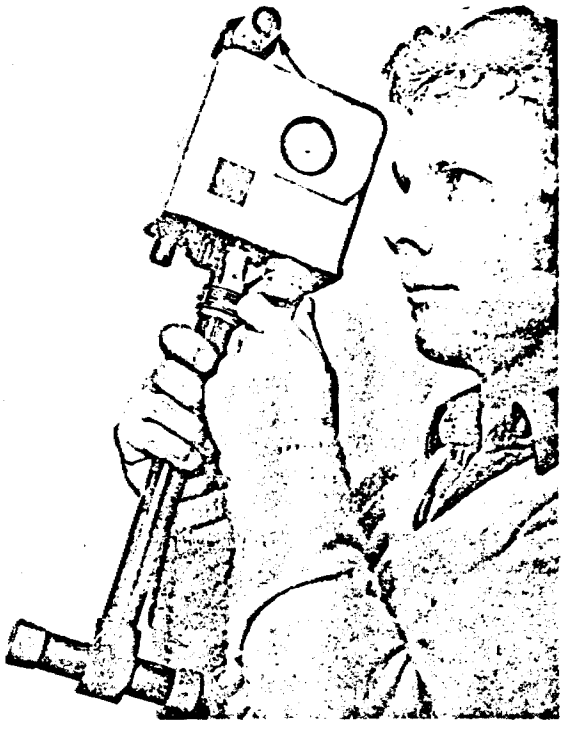
EM16

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 wealth of 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 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; out-of-phase from a calibrated dial. Nulling by audio tone.
Scale range:	In-phase ± 150%; Out-of-phase ± 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 and meter, station selector switch, volume control, quadrature dial ± 40%, inclinometer dial ± 150%.
Power Supply:	6 size AA (penlight) alkaline cells. Life about 200 hours.
Dimensions:	16 x 5.5 x 3.5 in (42 x 14 x 9 cm).
Weight:	2.5 lbs (1.1 kg).
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:	10 lbs (4.5 kg).

By selecting a suitable transmitter station as a source, the EM16 user can survey with the most suitable primary field azimuth.

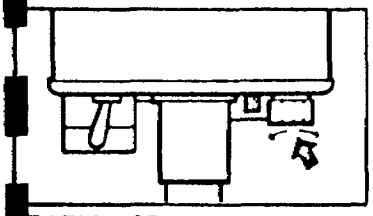
The EM16 has two receiving coils, one for the pick-up of the horizontal (primary) field and the other for detecting any anomalous vertical secondary field. The coils are thus orthogonal, and are mounted inside the instrument "handle".

The actual measurement is done by first tilting the coil assembly to minimize the signal in the vertical (signal) coil and then further sharpening the null by using the reference signal to buck out the remaining signal. This is done by a calibrated "quadrature" dial.

The tangent of the tilt angle is the measure of the vertical in-phase component and the quadrature reading is the signal at right angles to the total field. All readings are obtained in percentages and do not depend on the absolute amplitude of the primary signals present.

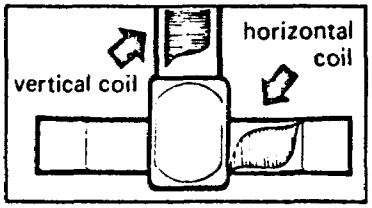
The "null" condition of the measurement is detected by the drop in the audio signal emitted from the patented resonance loudspeaker. A jack is provided for those preferring the use of an earphone instead.

The power for the instrument is from 6 penlight cells. A meter is provided for testing the battery condition.



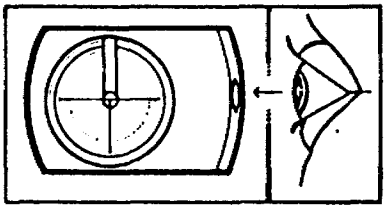
TATION SELECTOR

after selection of 2 VLF stations and insertion of proper plug-in units, knob rotation allows switching.



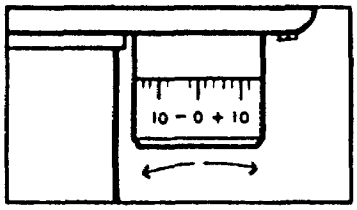
RECEIVING COILS

vertical receiving coil circuit in instrument picks up any vertical signal present. Horizontal receiving coil circuit, after automatic 90° signal phase shift, feeds signal into out-of-phase dial in series with the receiving coil.



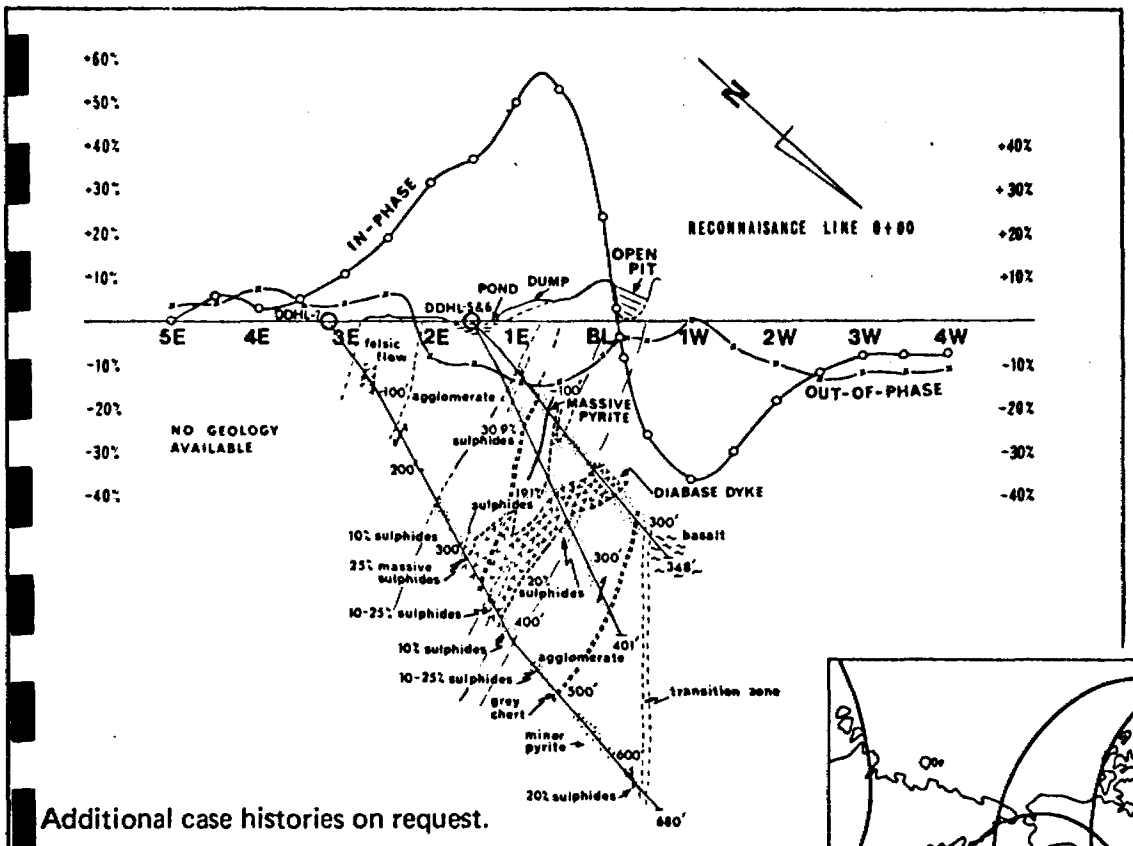
IN-PHASE DIAL

shows the tilt-angle of the instrument for minimum signal. This angle is the measure of the vertical in-phase signal expressed in percentage when compared to the horizontal field.



OUT-OF-PHASE DIAL

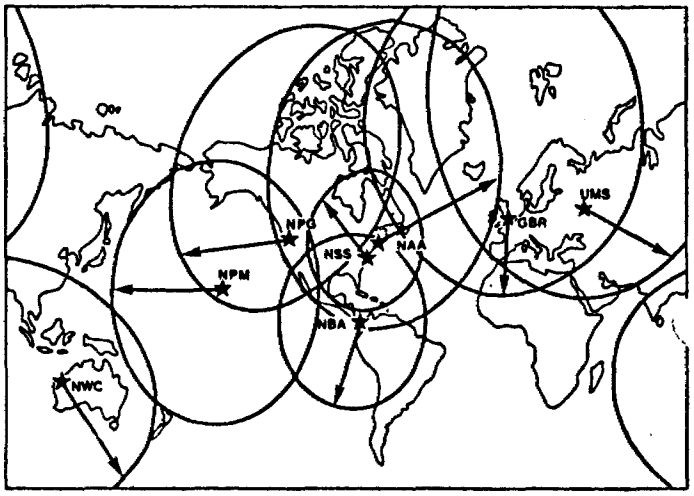
is calibrated in percentage markings and nulls the vertical quadrature signal in the vertical coil circuit.



EM16 PROFILE

over Lockport Mine property, Newfoundland

Additional case histories on request.

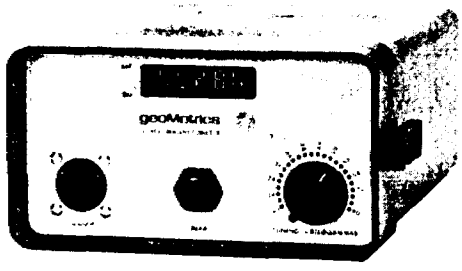


AREAS OF VLF SIGNALS

Coverage shown only for well-known stations. Other reliable, fully operational stations exist. For full information regarding VLF signals in your area consult Geonics Limited. Extensive field experience has proved that the circles of coverage shown are very conservative and are actually much larger in extent.

"Hands-free" Back Pack Sensor

Based upon the principle of nuclear precession (proton) the G-816 offers absolute drift-free measurements of the total field directly in gammas. (The proton precession method is the officially recognized standard for measurement of the earth's magnetic field.) Operation is worldwide with one gamma sensitivity and repeatability maintained throughout the range. There is no temperature drift, no set-up or leveling required, and no adjustment for orientation, field polarity, or arbitrary reference levels. Operation is very simple with no prior training required. Only 6 seconds are required to obtain a measurement which is always correct to one gamma, regardless of operator experience. Only the Proton Magnetometer offers such repeatability—an important consideration even for 10 gamma survey resolution.



Complete Field Portable System

The Model G-816 comes complete, ready for portable field operation and consists of:

1. Electronics console with internally mounted and easily replaced "D" cell battery pack.
2. Proton sensor and signal cable for attachment to carrying harness or staff.
3. Adjustable carrying harness.
4. 8 foot collapsible aluminum staff.
5. Instruction manual, complete set of spare batteries, applications manual, and rugged field suitcase.

Price and lease rates on the G-816 magnetometer are available upon request.

SPECIFICATIONS

Sensitivity: ±1 gamma throughout range

Range: 20,000 to 100,000 gammas (worldwide)

Tuning: Multi-position switch with signal amplitude indicator light on display

Gradient Tolerance: Exceeds 800 gammas/ft

Sampling Rate: Manual push-button, one reading each 6 seconds

Output: 5 digit numeric display with readout directly in gammas

Power Requirements: Twelve self-contained 1.5 volt "D" cell, universally available flashlight-type batteries. Charge state or replacement signified by flashing indicator light on display.

Battery Type	Number of Readings	
Alkaline	over	10,000
Premium Carbon Zinc	over	4,000
Standard Flashlight	over	1,500

NOTE: Battery life decreases with low temperature operation.

Temperature Range: Console and sensor: −40° to +85°C

Battery Pack: 0° to +50°C (limited use to −15°C; lower temperature battery belt operation—optional)

Accuracy (Total Field): ±1 gamma through 0° to +50°C temperature range

Sensor: High signal, noise cancelling, interchangeably mounted on separate staff or attached to carrying harness

Size:
Console: 3.5 x 7 x 10.5 inches (9 x 18 x 27 cm)
Sensor: 3.5 x 5 inches (9 x 13 cm)
Staff: 1 inch diameter x 8 ft length (3 cm x 2.44 m)

Weight:

	Lbs.	Kgs.
Console (w/batteries):	5.5	2.5
Sensor & signal cable:	4	1.8
Aluminum staff:	2	0.9
Total:	11.5	5.2

All magnetometers and parts are covered by a one year warranty beginning with the date of receipt but not to exceed fifteen months from the shipping date.

geoMetrics, INC. A SUBSIDIARY OF EG&G
395 JAVA DRIVE
SUNNYVALE, CA. 94086 U.S.A.
TEL: (408) 734-4616
CABLE: "GEOMETRICS"
TELEX NO: 357-435

geoMetrics SERVICES (CANADA) LTD.
436 LIMESTONE CRESCENT
DOWNSVIEW (TORONTO),
ONTARIO, CANADA
TEL: (416) 661-1966
TELEX NO: 06-22694

geoMetrics INTERNATIONAL CORP.
80 ALFRED ST.,
MILSON'S POINT
SYDNEY NSW 2061
AUSTRALIA
TEL: 929-9942
TELEX NO: 790-22624

WORLD-WIDE AGENTS: EUROPE • SCANDINAVIA • UNITED KINGDOM • JAPAN • SO. AFRICA • SO. AMERICA

COMPLETE PORTABLE/BASE STATION SYSTEM

The Model G-826A system includes complete instrumentation and related accessories for remote base station monitoring and portable field applications:

Converter/Timer Console: Complete signal processing and timing circuitry housed within an aluminum watertight cabinet. Includes "pocket" for the G-826 Portable Magnetometer and recessed mounting of the Rustrak recorder.

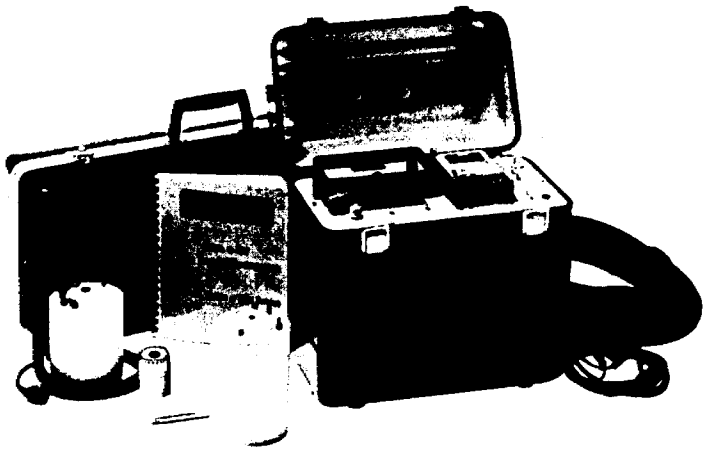
Portable Magnetometer Console: Compact instrument slides into "pocket" in Converter/Timer. Includes field accessories: shoulder harness, portable sensor, staff, 2 sets of batteries, signal cables for pouch and staff, and storage container.

Analog Recorder: Rustrak, Model 2146, installed in recessed panel mount in Converter/Timer console. Includes 1 roll chart paper. Recessed panel mount not provided when a different recorder is selected.

Base Station Sensor: Noise cancelling, high-signal sensor for use with long signal cables. Includes mounting stud.

Base Station Cables: Shielded 46 m (150 ft.) sensor cable with connectors attached (92 m, or 300 ft., cable optionally available), AC and DC input power cables, and external recorder connector.

Manuals: Operation manual, and 64-page "Applications Manual for Portable Magnetometers".



SPECIFICATIONS

RESOLUTION
±1 gamma throughout tuning range.

TUNING RANGE
20,000 to 100,000 gammas (world-wide).

TUNING MECHANISM
Multi-position rotary switch with twenty-five overlapping positions. Peak signal amplitude indicator light on readout display.

GRADIENT TOLERANCE
Exceeds 800 gammas/foot (portable applications).

SAMPLING RATE
Base Station Mode:
Six-position rotary switch for automatic sampling every 4, 10, 30 seconds or 1, 2, or 5 min. (time base oscillator stable within 10 seconds/week from 0° to 50° C.).
Portable Mode:
Manual pushbutton; new reading every 5 seconds.

DATA OUTPUTS
Visual (Base Station and Portable):
5-digit illuminated incandescent display directly in gammas—visible even in bright sunlight.
Analog (Base Station):
Potentiometric: Calibrated for 100 mv full-scale, maximum load is 20KΩ.
Galvanometric: Calibrated for 1 ma full-scale into 1500Ω.
Digital (Base Station):
5-BCD characters, 1-2-4-8 code (4 line output).
"0" state = 0 to +0.5V. "1" state = +2.5 to +5V.

EVENT MARKER
Automatic, every 30 minutes (Analog Recorder only).

POWER REQUIREMENTS
Base Station Mode:
External 24V DC or 115/220V, 50/60 Hz AC power (maximum current drain per measurement is 2.18 amps with Rustrak recorder and display on).
Portable Mode:
Internal "D" cell (12 each) universally available flashlight batteries. Charge state or replacement signified by flashing indicator light.

Battery Type	No. of Readings
Alkaline	over 10,000
Premium carbon zinc	over 4,000
Standard carbon zinc	over 1,500

NOTE: Battery life decreases with low temperature operation.

TEMPERATURE RANGE
Consoles and Sensors —40° C. to +85° C.
Analog Recorder (Rustrak) 0° C. to +50° C.
NOTE: For portable operation at temperatures below 0° C., an optional battery belt is recommended.

ACCURACY (TOTAL FIELD)
±1 gamma throughout 0° to +50° C. (±3 gamma from —40° C. to +85° C.).

SENSORS:
Base Station:
High signal, AC noise cancelling for use with long signal cables. Includes threaded aluminum mounting stud.
Portable:
High signal, omnidirectional for use with collapsible staff or in "back pouch" attached to shoulder harness.

GALVANOMETRIC ANALOG RECORDER
Rustrak, Model 2146. Includes 5.1 cm (2 inch) chart width with fixed chart speed of 10.2 cm (4 inch) or 15.2 cm (6 inch) per hour (select), event marker, and inkless writing. Style "N" chart paper (50 divisions f/s), 6.4 cm x 19.2 m (2.5 inch wide x 63 feet long).

SIZE AND WEIGHT

	Size	Kgs.	Lbs.
Converter/Timer Console: (w/o magnetometer or recorder)	23.5 x 41.3 x 40 cm (9¼" x 16¼" x 15¾")	9.5	21.0
Portable Magnetometer: (with batteries)	9.5 x 18 x 27 cm (3¾" x 7" x 10½")	2.5	5.5
Portable Accessories*	2.5 cm dia. x 2.4 m (1" x 8 ft.)	2.8	6.0
Sensors:			
Base Station:	11.4 cm dia. x 17.8 cm (4½" x 7")	2.8	6.0
Portable:	8.9 cm dia. x 12.7 cm (3½" x 5")	1.2	2.5
Sensor Cable:	46 m length (150 ft.)	4.6	10.0
Rustrak Recorder:	13.9 x 8.9 x 11.4 cm (5½" x 3½" x 4½")	1.6	3.5

*Portable Accessories: Includes shoulder harness, batteries, sensor cables, and staff. Only the staff dimensions are shown. Weight shown is for all accessories.

OPTIONS

INCREASED RESOLUTION
Provisions for either 1.0 gamma or 0.25 gamma resolution. Includes internal switch in magnetometer console.

EXTENDED SENSOR CABLE
Special 92 m (300 ft.) shielded sensor signal cable for use with Base Station Sensor.

POTENTIOMETRIC ANALOG RECORDER
Hewlett-Packard, Model 7155B. Includes 12.7 cm (5 inch) chart width, event marker, multiple chart speeds, operation on 24V DC or 115/220V 50/60 Hz AC power.
Calibration: Metric (English optional)
Size: 30.5 x 19.7 x 42 cm (12" x 7¾" x 16½")
Weight: 13.6 kg (30 lbs.)
Temp. Range: —28° to +65° C.

MULTIPLE EVENT MARKS AND ANALOG RESOLUTIONS
Recorder event marks every 0.5 hour, 1 hour and 24 hours (separately coded). Analog outputs (switch selectable) to provide 10, 100 and 1,000 gammas full scale.

BATTERY BELT
Specially designed canvas belt with pockets for 12 "D" cell batteries and appropriate power cables for use with the portable magnetometer in very cold weather (0° to —15° C.).

RACK MOUNTING
Special 48.3 x 26.7 cm (19" x 10½") flush-mount aluminum panel, complete with captive hardware.

RECORDING SUPPLIES
Available upon request for the recorder selected.

geoMetrics, INC. A SUBSIDIARY OF EG&G
395 JAVA DRIVE
SUNNYVALE, CA. 94086 U.S.A.
TEL: (408) 734-4616
CABLE: GEOMETRICS
TELEX NO: 357-435

geoMetrics SERVICES (CANADA) LTD.
436 LIMESTONE CRESCENT
DOWNSVIEW (TORONTO),
ONTARIO, CANADA
TEL: (416) 661-1966
TELEX NO: 06-22694

geoMetrics INTERNATIONAL CORP.
80 ALFRED ST.
MILSON'S POINT
SYDNEY NSW 2061
AUSTRALIA
TEL: 929-9942
TELEX NO: 790-22624

WORLD-WIDE AGENTS: EUROPE SCANDINAVIA UNITED KINGDOM JAPAN SO. AFRICA SO. AMERICA

52F07NE8318 2.8195 BOYER LAKE

900

Mining Lands Section

File No 2.8195

Control Sheet

TYPE OF SURVEY ✓ GEOPHYSICAL

____ GEOLOGICAL

____ GEOCHEMICAL

____ EXPENDITURE

MINING LANDS COMMENTS:

LD

Lgd

_____

Signature of Assessor

_____

Date

March 26, 1986

Your File: 13/86
Our File: 2.8195

Mining Recorder
Ministry of Northern Development and Mines
808 Robertson Street
Box 5080
Kenora, Ontario
P9N 3X9

Dear Sir:

RE: Notice of Intent dated March 4, 1986
Geophysical (Electromagnetic, Magnetometer & VLF)
and Geological Surveys on Mining Claims K 810558,
et al, in the Lower Manitou Lake Area

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,

J.C. Smith, Supervisor
Mining Lands Section

Whitney Block, 6th Floor
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

DK/mc

cc: Michael Fox
Box 1015, Station G
Calgary, Alberta
T3A 0E0

Mr. G.H. Ferguson
Mining & Lands Comm.

Resident Geologist
Kenora, Ontario

Encl.

Ministry of Northern Development and Mines
Ontario

Technical Assessment Work Credits

File: 2.8195

Date: 1986 03 04

Mining Recorder's Report of Work No.: 13-86

Recorded Holder: MICHAEL FOX

Township or Area: LOWER MANITOU LAKE

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 12 days	K 810558 to 61 inclusive
Geochemical ____ days	
Man days [ ] Airborne [ ]	
Special provision [X] Ground [X]	
[X] 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

[X] not sufficiently covered by the survey [ ] insufficient technical data filed

K 824528
824537

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

Technical Assessment Work Credits

File: 2.8195

Date: 1986 03 04

Mining Recorder's Report of Work No.: 13-86

Recorded Holder: MICHAEL FOX

Township or Area: LOWER MANITOU LAKE AREA

Type of survey and number of Assessment days credit per claim			Mining Claims Assessed
Geophysical			K 810558 to 61 inclusive 824528 824537
Electromagnetic	CEM	40 days	
Magnetometer		20 days	
Radiometric		days	
Induced polarization		days	
Other	VLF EM	20 days	
Section 77 (19) See "Mining Claims Assessed" column			
Geological		days	
Geochemical		days	
Man days [ ]		Airborne [ ]	
Special provision [X]		Ground [X]	

[ ] 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

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)

Ontario

Ministry of
Northern Development
and Mines

March 19/86

March 4, 1986

Your File: 13-86
Our File: 2.8195

Mining Recorder
Ministry of Northern Development and Mines
808 Robertson Street
Box 5080
Kenora, Ontario
P9N 3X9

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. R.J. Pichette at (416) 965-4888.

Yours sincerely,

S.E. Yundt, Director
Land Management Branch

Mining Lands Section
Whitney Block, 6th Floor
Queen's Park
Toronto, Ontario
M7A 1W3

DK/mc
Encls.

cc: Michael Fox
Box 1015, Station G
Calgary, Alberta
T3A 0E0

Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Ontario

Ministry of
Northern Development
and Mines

Notice of Intent

for Technical Reports

March 4, 1986

2.8195/13-86

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on the record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted directly to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

Ministry of Natural Resources
Ontario

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

R.P.

#13-86

2.8195

Mining Act

RECEIVED

Instructions: - Please type or print.
If number of mining claims traversed exceeds space on this form, attach 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): GEOLOGICAL, GEOPHYSICAL

Township or Area: G 2683 LOWER MANITOU

Claim Holder(s): MICHAEL FOX

Prospector's Licence No.: H 11640

Address: BOX 1015, STATION G, CALGARY, ALTA. T3A-0E6

Survey Company: CORDILLERAN RESOURCE MANAGEMENT LTD.

Date of Survey (from & to): Day 1 Mo. 2 Yr. 85 — Day 28 Mo. 2 Yr. 85

Total Miles of line Cut: 13 km

Name and Address of Author (of Geo-Technical report): MICHAEL FOX, BOX 1015, STATION G, CALGARY, ALTA.

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 VLF	20
	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	

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
	810558	
	810559	
	810560	
	810561	
	824528	
	824537	

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.

RECEIVED
JAN 31 1986
MINING LANDS SECTION

POSTMARKED
JAN 23 1986

See revised work statement.

JAN. 21/86

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.

810558

Total number of mining claims covered by this report of work: 6

Date: JAN. 20, 1986

Recorded Holder or Agent (Signature)

For Office Use Only

Total Days Cr. Recorded: 600

Date Recorded: JAN. 23/86

Date Approved as Recorded

Mining Recorder

Branch Director

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

MICHAEL FOX
BOX 1015, STATION G
CALGARY, ALBERTA T3A-0E6

Date Certified: JAN. 20, 1986

Certified by

February 21, 1986

Your Files: 51-85 & 200-85
Our File: 2.8195

Mining Recorder
Ministry of Northern Development and Mines
808 Robertson Street
Box 5080
Kenora, Ontario
P9N 3X9

Dear Sir:

RE: Notice of Intent dated January 17, 1986
Geophysical (Electromagnetic & Magnetometer, VLF) Geological and Geochemical Surveys
on Mining Claims K 687340, et al, in Boyer Lake, Harper Lake and Lower Manitou Lake Areas

---

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,

S.E. Yundt, Director
Land Management Branch

Mining Lands Section
Whitney Block, 6th Floor
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

DK/mc

cc: Cochrane Oil and Gas Ltd
Suite 2100
350 7th Avenue SW
Calgary, Alberta
T2P 3N9

Michael Fox
Box 1015, Station G
Calgary, Alberta
T3A 0E0

Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Resident Geologist
Kenora, Ontario

Encl.

Ministry of Northern Affairs and Mines
Ontario

Technical Assessment Work Credits

File: 2.8195

Date: 1986 01 17

Mining Recorder's Report of Work No.: 51-85

Recorded Holder: COCHRANE OIL & GAS

Township or Area: BOYER LAKE, HARPER LAKE AND LOWER MANITOU LAKE

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	K 687479
Electromagnetic _____ days	696003
Magnetometer _____ days	687452 to 54 inclusive
Radiometric _____ days	687459-60
Induced polarization _____ days	696015 to 17 inclusive
Other _____ days	696019 to 27 inclusive
Section 77 (19) See "Mining Claims Assessed" column	696030
Geological 15 days	687417 to 19 inclusive
Geochemical _____ days	687570 to 79 inclusive
Man days ☐ Airborne ☐	687561 to 65 inclusive
Special provision ☒ Ground ☒	687554
☒ Credits have been reduced because of partial coverage of claims.	687483 to 86 inclusive
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	687497-98
	687500-01

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

K 696014
696018
687555

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 (85/9)

Ministry of Northern Affairs and Mines
Ontario

Technical Assessment Work Credits

File: 2.8195

Date: 1986 01 17

Mining Recorder's Report of Work No.: 51-85

Recorded Holder: COCHRANE OIL & GAS LTD

Township or Area: BOYER LAKE, HARPER LAKE AND LOWER MANITOU LAKE

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	K 687479
Electromagnetic CEM 40 days	696003
Magnetometer 20 days	687452 to 54 inclusive
Radiometric ____ days	687459-60
Induced polarization ____ days	696014 to 27 inclusive
Other VLF 20 days	696030
Section 77 (19) See "Mining Claims Assessed" column	687417 to 19 inclusive
Geological ____ days	687570 to 79 inclusive
Geochemical ____ days	687561 to 65 inclusive
Man days ☐ Airborne ☐	687554-55
Special provision ☒ Ground ☒	687483 to 86 inclusive
☐ Credits have been reduced because of partial coverage of claims.	687497-98
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	687500-01

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

NO CREDIT FOR THE GEOCHEMICAL SURVEY AS REPORTS AND MAPS NOT SUBMITTED

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 (85/9)

Ministry of Northern Affairs and Mines
Ontario

Technical Assessment Work Credits

File: 2.8195

Date: 1986 01 17

Mining Recorder's Report of Work No.: 200-85

Recorded Holder: COCHRANE OIL & GAS LTD

Township or Area: BOYER LAKE, HARPER LAKE AND LOWER MANITOU LAKE

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	K 687340-41
Electromagnetic ____ days	687345 to 47 inclusive
Magnetometer 20 days	687349-50
Radiometric ____ days	687352-53
Induced polarization ____ days	687359
Other ____ days	687361-62
Section 77 (19) See "Mining Claims Assessed" column	687369 to 73 inclusive
Geological ____ days	687381 to 84 inclusive
Geochemical ____ days	687388 to 91 inclusive
Man days ☐ Airborne ☐	687434
Special provision ☒ Ground ☒	687437-38
☐ Credits have been reduced because of partial coverage of claims.	687442 to 44 inclusive
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	687446 to 51 inclusive
	687455-56
	687458
	687461
	687476 to 78 inclusive
	696001-02
	696004-05
	696031 to 33 inclusive
	745120 to 23 inclusive

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

10 DAYS MAGNETOMETER	5 DAYS MAGNETOMETER
K 687358	K 687363
687433	687374
	687380
	687385
	687387 687441

No credits have been allowed for the following mining claims

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

K 687356-57
687364
687367-68
687375-76
687379
687386
687397-98
687402 to 07 inclusive
687410 to 14 inclusive
K 687439

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.

Ministry of Northern Affairs and Mines
Ontario

Technical Assessment Work Credits

File 2.8195

Date 1986 01 17

Mining Recorder's Report of Work No. 200-85

Recorded Holder: COCHRANE OIL & GAS LTD

Township or Area: BOYER LAKE HARPER LAKE AND LOWER MANITOU LAKE

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	K 687340-41
Electromagnetic CEM 40 days	687345 to 47 inclusive
Magnetometer ____ days	687349-50
Radiometric ____ days	687352-53
Induced polarization ____ days	687356
Other ____ days	687359
Section 77 (19) See "Mining Claims Assessed" column	687361-62
Geological ____ days	687369 to 73 inclusive
Geochemical ____ days	687376
Man days ☐ Airborne ☐	687381 to 84 inclusive
Special provision ☒ Ground ☒	687388 to 91 inclusive
☐ Credits have been reduced because of partial coverage of claims.	687398
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	687402 to 07 inclusive
	687410 to 14 inclusive
	687434
	687437-38
	687442 to 44 inclusive
	687446 to 51 inclusive
	687455-56
	687458
	687461
	687476 to 78 inclusive
	696001-02
	696004-05
	696031 to 33 inclusive
	745120 to 23 inclusive

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

20 DAYS ELECTROMAGNETIC (CEM)	10 DAYS ELECTROMAGNETIC (CEM)
K 687358	K 687363
687375	687374
687379	687380
687387	687385-86
687433	

No credits have been allowed for the following mining claims

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

K 687357
687364
687367-68
687397
687439
687441

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 (85/9)

Ministry of Northern Affairs and Mines
Ontario

Technical Assessment Work Credits

File: 2.8195

Date: 1986 01 17

Mining Recorder's Report of Work No.: 200-85

Recorded Holder: COCHRANE OIL & GAS LTD

Township or Area: BOYER LAKE, HARPER LAKE AND LOWER MANITOU LAKE

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	K 687340-41
Electromagnetic VLF 20 days	687345 to 47 inclusive
Magnetometer ____ days	687349-50
Radiometric ____ days	687352-53
Induced polarization ____ days	687359
Other ____ days	687361-62
Section 77 (19) See "Mining Claims Assessed" column	687369 to 74 inclusive
Geological ____ days	687381 to 84 inclusive
Geochemical ____ days	687388 to 91 inclusive
Man days ☐ Airborne ☐	687405-06
Special provision ☒ Ground ☒	687410 to 12 inclusive
☐ Credits have been reduced because of partial coverage of claims.	687414
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	687434
	687437-38
	687442 to 44 inclusive
	687446 to 51 inclusive
	687455-56
	687458
	687461
	687476 to 78 inclusive
	696001-02
	696004-05
	696031 to 33 inclusive
	745120 to 23 inclusive

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

10 DAYS ELECTROMAGNETIC (VLF)	5 DAYS ELECTROMAGNETIC (VLF)
K 687358	K 687363
687433	687380
	687385
	687387
	687404
	687407
	687413

No credits have been allowed for the following mining claims

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

K 687356-57
687364
687367-68
687375-76
687379
687386
687397-98
687402-03
687439
K 687441

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 (85/9)

Ministry of Northern Development and Mines
Ontario

Technical Assessment Work Credits

AMENDED

File 2.8195

Date 1986 02 03

Mining Recorder's Report of Work No. 200-85

Recorded Holder: COCHRANE OIL & GAS LTD

Township or Area: BOYER LAKE, HARPER LAKE AND LOWER MANITOU LAKE AREAS

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	K 687340-41 687345 to 47 inclusive 687349-50 687352-53 687358 to 59 687361 to 63 inclusive 687369 to 76 inclusive 687398 687402 to 07 inclusive 687410 to 14 inclusive 687433-34 687437 to 38 687442 to 44 inclusive 687446 to 50 inclusive 687456 687461 687476 to 78 inclusive 696001-02 696004-05 696031 to 33 inclusive 745120 to 23 inclusive 687379 to 91 inclusive
Electromagnetic _____ days	
Magnetometer _____ days	
Radiometric _____ days	
Induced polarization _____ days	
Other _____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological 16 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

32 DAYS GEOLOGICAL
K 687357
687364
687367-68
687397
687439
687441

No credits have been allowed for the following mining claims

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

K 687356
687451
687455
687458

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)

Ontario

Feb 18/86.

Ministry of
Northern Development
and Mines

AMENDED

1986 02 03

Your File: 200-85 & 51-85
Our File: 2.8195

Mining Recorder
Ministry of Northern Development and Mines
808 Robertson Street
Box 5080
Kenora, Ontario
P9N 3X9

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. R.J. Pichette at (416) 965-4888.

Yours sincerely,

S.E. Yundt, Director
Land Management Branch

Mining Lands Section
Whitney Block, 6th Floor
Queen's Park
Toronto, Ontario
M7A 1W3

S.E.Y.DK/mc

Encls.

cc: Cochrane Oil and Gas Ltd
Suite 2100
350 7th Avenue SW
Calgary, Alberta
T2P 3N9

Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Michael Fox
Box 1015, Station G
Calgary, Alberta
T3A OEO

Ontario

Ministry of
Northern Development
and Mines

AMENDED

Notice of Intent
for Technical Reports

1986 02 03

2.8195/200-85 & 51-85

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on the record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted directly to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

Ministry of Natural Resources
Ontario

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

RP 28195

Mining Act

#200-85-19. Nov.

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): GEOLOGICAL, GEOPHYSICAL

Township or Area: G 2683, G 2572, G 2584

Claim Holder(s): COCHRANE OIL AND GAS LTD.

Prospector's Licence No.: T 1554

Address: SUITE 2100
350 - 7th AVE. S.W., CALGARY, ALBERTA, T2P 3N9

Survey Company: CORDILLERAN RESOURCE MANAGEMENT LTD.

Date of Survey (from & to): 5 12 84 (Day | Mo. | Yr.) — 5 9 85 (Day | Mo. | Yr.)

Total Miles of line Cut: 196 km

Name and Address of Author (of Geo Technical report): MICHAEL FOX, BOX 1015, STATION G, CALGARY, ALBERTA T3A-0E0

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
	- Radiometric	
For each additional survey: using the same grid: Enter 20 days (for each)	- Other VLF	20
	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
NOV - 6 1985
MINING LANDS SECTION

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
K.	SPACE INSUFFICIENT	
	PLEASE SEE ATTACHED LIST	

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.

KENORA MINING DIV.
RECEIVED
SEP 30 1985
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

1st rec'd Sept 9/85

See revised work statement

Total number of mining claims covered by this report of work: 86

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.

Date: SEPT. 5, 1985

Recorded Holder or Agent (Signature): Michael Fox

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
7775.	Sept 30/85	
	Date Approved as Recorded	Branch Director

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:
MICHAEL FOX
BOX 1015 STATION G
CALGARY, ALBERTA

Date Certified: SEPT. 5, 1985

Certified by (Signature): Michael Fox

0652 (81/9)

687340 *	"	687412 *	G 2683
687341	"	687413	"
687345	"	687414 *	G 2683
687346 *	"	[illegible]	G 2572
687347 *	"	687433 *	"
687349 *	"	687434 *	"
687350 *	"	[illegible]	"
687352 *	"	[illegible]	"
687353 *	"	687457	"
[illegible]	"	687458	"
687356 *	"	687459 *	"
687357 *	"	[illegible]	"
687358 *	"	687441 *	"
687359 *	"	687442 *	"
687361	"	687443 *	"
687362 *	"	687444 *	"
687363 *	"	[illegible]	"
687364 *	"	687446	"
687367 *	"	687447	"
687368 *	"	687448	"
687369 *	"	687449	"
687370	"	687450	"
687371	"	687451 *	"
687372	"	687455	"
687373 *	"	687456	"
687374 *	"	[illegible]	"
687375 *	"	687461	"
687376 *	"	687476 *	G 2584
687379 *	"	687477 *	"
687380 *	"	687478 *	"
687381 *	"	696001 *	"
687382	"	696002 *	"
687383	"	696004 *	"
687384	"	696005 *	"
687385 *	"	696031 *	"
687386 *	"	696032 *	"
687387 *	"	696033 *	"
687388 *	"	745120	"
687389	"	745121	"
687390	"	745122	G 2572
687391 *	"	745123	G 2572
687397	"	[illegible] x	G 2683
687398 *	"	[illegible] x	"
687402 *	"	[illegible] x	"
687403 *	"	[illegible] x	"
687404 *	"	[illegible] x	"
687405 *	"	[illegible] x	"
687406 *	"		
687407 *	"		
687410 *	"		
687411 *	"		
51		17	

— Cancelled.

* reduced to maximum

— X STILL IN THE NAME OF MICHAEL FOX

TOTAL: ~~98~~ 86 CLAIMS

Michael Fox
SEPT 5/85

Name and Postal Address of Person Certifying

MICHAEL FOX

BOX 1015, STATION A
CALGARY, ALBERTA T3A-0E0

Date Certified: SEPT. 5, 1985

Certified by (Signature): Michael Fox

362 (81/9)

Ministry of Natural Resources
Ontario

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

FWM 2.8195

Mining Act

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.

Apr. 25th #51-85

Type of Survey(s): GEOPHYSICAL, GEOLOGICAL, GEOCHEMICAL

Township or Area: MOIER HARPER G-2693 G-2572 G-2584 LOWER MANITOU

Claim Holder(s): COCHRANE OIL AND GAS LTD.

Prospector's License No.: T1554

Address: # 2100 - 350 7TH AVE. S.W. CALGARY, ALTA. T2P-3N9

Survey Company: CORDILLERAN RESOURCE MANAGEMENT LTD.

Date of Survey (from & to): Day 5 Mo. 12 Yr. 84 — Day 3 Mo. 05 Yr. 85

Total Miles of line Cut: 168 km.

Name and Address of Author (of Geo Technical report): MICHAEL FOX 120 HAWKWOOD HILL N.W., CALGARY, ALTA. T3G-2G5

Credits Requested per Each Claim in Columns at right

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

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	

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
K	687479	
	696003	
	FOR OTHER 48 CLAIMS SEE ATTACHED LIST	

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.

RECEIVED
MAR 20 1985
MINING LANDS SECTION

KENORA MINING DIV.
RECEIVED
MAR 5 1985
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

See revised work statement.

687417

Total number of mining claims covered by this report of work: 50

Expenditures (excludes power stripping)

Type of Work Performed: ~~GEOPHYSICAL~~ ~~ASSAYS~~

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.

Date: MAR 5/85

Recorded Holder or Agent (Signature):

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
5750	Mar 5/85	M. McLennan acting
	Date Approved as Recorded	Branch Director

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:
MICHAEL FOX
BOX 1015 POSTAL STATION G
CALGARY, ALTA. T3A-0E0

Date Certified: MARCH 5, 1985

Certified by (Signature):

1362 (81/9)

#51-85

AREA AND CLAIM NUMBERS	TOTALS	
1) Leuiller Island Area		
Claim No's 687479, 696003	2	2
2) Manitou Straits Area		
Claim No's 687452-687454 incl.	3	
687459, 687460	2	
696014-696027 incl.	14	
696030	1	
687417-687419 incl.	3	
687570-687579	10	
687561-687565 incl.	5	
687554, 687555	2	
687483-687486 incl.	4	
687497, 687498	2	
687500, 687501	2	
		48

Ministry of Northern Affairs and Mines
Ontario

Technical Assessment Work Credits

File: 2.8195

Date: 1986 01 17

Mining Recorder's Report of Work No.: 200-85

Recorded Holder: COCHRANE OIL & GAS LTD

Township or Area: BOYER LAKE, HARPER LAKE AND LOWER MANITOU LAKE

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	K 687340-41
Electromagnetic _____ days	687345 to 47 inclusive
Magnetometer _____ days	687349-50
Radiometric _____ days	687352-53
Induced polarization _____ days	687357 to 59 inclusive
Other _____ days	687361 to 64 inclusive
Section 77 (19) See "Mining Claims Assessed" column	687367 to 76 inclusive
Geological 16 days	687379 to 91 inclusive
Geochemical _____ days	687397-98
Man days ☐ Airborne ☐	687402 to 07 inclusive
Special provision ☒ Ground ☒	687410 to 14 inclusive
☒ Credits have been reduced because of partial coverage of claims.	687433-34
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	687437 to 39 inclusive
	687441 to 44 inclusive
	687446 to 50 inclusive
	687456
	687461
	687476 to 78 inclusive
	696001-02
	696004-05
	696031 to 33 inclusive
	745120 to 23 inclusive

AMENDED

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

K 687356
687451
687455
687458

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 (85/9)

Ministry of
Natural
Resources

Feb. 3/86

1986 01 17

Your File: 51-85, 200-85
Our File: 2.8195

Mining Recorder
Ministry of Northern Development and Mines
808 Robertson Street
Box 5080
Kenora, Ontario
P9N 3X9

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. R.J. Pichette at 416/965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3

RDK DK/mc

Encls.

cc: Cochrane Oil and Gas Ltd
Suite 2100
350 7th Avenue SW
Calgary, Alberta
T2P 3N9

Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Michael Fox
Box 1015, Station G
Calgary, Alberta
T3A 0E0

Ministry of Natural Resources

Ontario

Notice of Intent

for Technical Reports

1986 01 17

2.8195/51-85 & 200-85

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

Claim #	Geophysical Credits already approved	Maximum allowed this report
687479	7	73
696003	16	64
687453	8	72
687459	8	72
687460	8	72
696015	8	72
696016	8	72
696017	8	72
696019	8	72
696021	8	72
696022	8	72
696023	8	72
687419	21	59
687570	21	59
687573	21	59
687574	21	59
687576	21	59
687579	21	59
687501	21	59
	250	1270

#51-85

J.8195

check with M.R. - Date

REGISTERED

November 20, 1985

Report Of Work #200

Cochrane Oil and Gas Ltd
Suite 2100
350 7th Avenue SW
Calgary, Alberta
T2P 3N9

Dear Sir:

RE: Mining Claims K 687340, et al,
in the Area of Lower Manitou
Boyer and Harper Lakes

I have not received the reports and maps (in duplicate) for Geophysical (Electromagnetic & Magnetometer) and Geological Surveys on the above-mentioned claims.

As the assessment "Report of Work" was recorded by the Mining Recorder on September 30, 1985 the 60 day period allowed by Section 77 of the Mining Act for the submission of the technical reports and maps to this office will expire on November 29, 1985.

If the material is not submitted to this office by November 29, 1985 I will have no alternative but to instruct the Mining Recorder to delete the work credits from the claim record sheets.

For further information, please contact Mr. Arthur Barr at (416)965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-4888

AB/mc

cc: Mining Recorder
Kenora, Ontario
Encl.

Data sent Priority Post Dec 24.

1985 12 24 File: 2.8195

REGISTERED

Cochrane Oil & Gas Limited
Suite 2100
350 - 7th Avenue S.W.,
Calgary, Alberta
T2P 3N9

Dear Sirs:

RE: Geophysical (V.L.F., C.E.M. & Magnetometer), Geological & Geochemical Surveys submitted on Mining Claims K 687417, et al, in the Areas of Boyer Lake, Harper Lake & Lower Manitou Lake.

Enclosed is a copy of our letter dated July 9, 1985 requesting additional information for the above-mentioned survey.

Unless you can provide the required data by January 3, 1986, I will have no other alternative but to instruct the mining recorder to cancel the work credits recorded on March 5, 1985.

For further information, please contact Mr. Ray Pichette at (416)965-4888.

Yours sincerely

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park, Toronto
M7A 1W3
Telephone: 416/965-4888

DK:sc

Encls:

cc: Mr. Michael Fox
Box 1015
Postal Station G
Calgary, Alberta
T3A 0E0

cc: Mining Recorder
Kenora, Ontario

July 9, 1985 File: 2.8195

Cochrane Oil & Gas Ltd
Suite 2100
250 7th Ave S W
Calgary, Alberta
T2P 3N9

Dear Sirs:

RE: Geophysical (V.L.F. C.E.M. & Magnetometer), Geological and Geochemical Surveys submitted on Mining Claims K 687417, et al, in the Areas of Boyer Lake, Harper Lake and Lower Manitou Lake

---

This will acknowledge receipt of the above-mentioned geophysical survey on June 10, 1985.

Enclosed are the plans (in duplicate) for this survey. Please show the actual readings at each station point and have the author of the report sign each plan, and return them to this office.

In addition, we have not yet received Map number 9 of the magnetometer survey (in duplicate), nor the reports and plans (in duplicate) for the geological and geochemical survey recorded on March 5, 1985.

When returning this material, please quote file 2.8195.

For further information, please contact Dennis Kinvig at (416)965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-4888

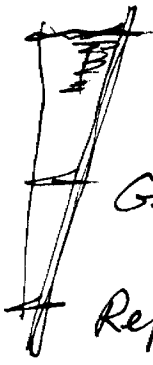
D. Kinvig:mc
Encl.

cc: Michael Fox
Calgary, Alberta

cc: Mining Recorder
Kenora, Ontario
File: 51-85

Dec 2/6

Michael Fox.



Geophy being sent tonight.

Geol. by Fri.. Dec. 6

Report ~ Dec 12

Ontario

Action Memo

Time: 5:00

Date: 85 11

To: Art .v

From (Name and): Consultant for Micheal Fox, Cochrane Oil + Gas

TCN No.	Area Code	Telephone No.	Ext.	Message Taken By
	403	239-3669	Calgary	TJ.

- [ ] Phoned / On Hold
- [x] Please Call / Returned Your Call
- [ ] Will Call Back / Wishes Appointment
- [ ] Waiting in Person / Was Here
- [ ] Will Return

- [ ] File
- [ ] Draft Reply For My Signature
- [ ] Provide More Details
- [ ] For Your Information
- [ ] Type Draft
- [ ] For Your Approval and Signature
- [ ] Keep Me Informed
- [ ] Per Discussion
- [ ] Type Final
- [ ] Circulate for Action and Return
- [ ] Take Appropriate Action
- [ ] Per Your Request
- [ ] Make Copies
- [ ] Return With Comments
- [ ] Note and See Me
- [ ] Returned With Thanks
- [ ] Please Answer
- [ ] Investigate and Report
- [ ] Note and Return
- [ ]

Called M. Dec 6 Hilda

Comments:

Re: File 2.8195

They have received your 50-day notice. They will not be able to place the maps in the mail until Dec 6 (Friday). Problem?

7540-1037 (Rev. 11/82)

- [ ] Over

Ontario

Action Memo

Time: 5 00

Date: 85 | 11 | 29

To: Art V

From (Name and C.): Michael Fox, Consultant for Cochrane Oil & Gas

I.C.N. No	Area Code	Telephone No.	Ext.	Message Taken By
	403	239-3669	Calgary	TJ.

☐ Phoned ☐ On Hold | ☒ Please Call ☐ Returned Your Call | ☐ Will Call Back ☐ Wishes Appointment | ☐ Waiting in Person ☐ Was Here | ☐ Will Return

☐ File
☐ Draft Reply For My Signature
☐ Provide More Details
☐ For Your Information
☐ Type Draft
☐ For Your Approval and Signature
☐ Keep Me Informed
☐ Per Discussion
☐ Type Final
☐ Circulate, Initial and Return
☐ Take Appropriate Action
☐ Per Your Request
☐ Make Copies
☐ Return With Comments
☐ Note and See Me
☐ Returned With Thanks
☐ Please Answer
☐ Investigate and Report
☐ Note and Return
☐

Comments

Re: File 2.8195

They have received your 30-day notice. They will not be able to place the maps in the mail until Dec 6 (Friday). Problem?

7540-1037 (Rev. 11/82)

☐ Over

Ministry of Natural Resources
Ontario

REGISTERED

August 28, 1985 File: 2.8195

MINISTRY OF NATURAL RESOURCES
RECEIVED
DISTRICT OFFICE, KENORA

Cochrane Oil & Gas Limited
Suite 2100
350 - 7th Avenue S.W.,
Calgary, Alberta
T2P 3N9

Dear Sirs:

RE: Geophysical (V.L.F., C.E.M. & Magnetometer), Geological & Geochemical Surveys submitted on Mining Claims K 687417 et al in the Areas of Boyer Lake Harper Lake & Lower Manitou Lake.

Enclosed is a copy of our letter dated July 9, 1985 requesting additional information for the above-mentioned survey.

Unless you can provide the required data by September 10, 1985 I will have no other alternative but to instruct the mining recorder to cancel the work credits recorded on March 5, 1985.

For further information, please contact Mr. Ray Pichette at (416)965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416)965-4888

AUG 30 1985
PM
1985
MINING LANDS SECTION

D. Kinvig:sc

cc: Mining Recorder
Kenora, Ont.
File: 51-85

cc: Michael Fox
Box 1015
Postal Station G
Calgary, Alberta
T3A OEO

Has this work been approved/deleted ? Thanks.
M E Lemay

Allow #11

Dec 2 / 85

85-11-22

REGISTERED

August 28, 1985 File: 2.8195

Cochrane Oil & Gas Limited
Suite 2100
350 - 7th Avenue S.W.,
Calgary, Alberta
T2P 3N9

Dear Sirs:

RE: Geophysical (V.L.F., C.E.M. & Magnetometer), Geological & Geochemical Surveys submitted on Mining Claims K 687417 et al in the Areas of Boyer Lake Harper Lake & Lower Manitou Lake.

Enclosed is a copy of our letter dated July 9, 1985 requesting additional information for the above-mentioned survey.

Unless you can provide the required data by September 10, 1985 I will have no other alternative but to instruct the mining recorder to cancel the work credits recorded on March 5, 1985.

For further information, please contact Mr. Ray Pichette at (416)965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416)965-4888

D. Kinvig:sc

cc: Mining Recorder
Kenora, Ont.
File: 51-85

cc: Michael Fox
Box 1015
Postal Station G
Calgary, Alberta
T3A 0E0

Nov. 27 → Mike Fox called. - 12

allow till October 11, 1985 for return of work

Ray 85-09-04

allow till Nov. 12th, 1985 for return of work

called again Oct 8th/85

Ministry of Natural Resources
Ontario

Order of the Minister

Room 6643, Whitney Block
Queen's Park
Toronto, Ontario
M7A 1W3
416/965-4888

June 7th

The Mining Act

In the matter of mining claims:

K 687479
696003
687452 to 54 inclusive
687459-60
696014 to 27 inclusive
696030
687417 to 19 inclusive
687570 to 79 inclusive
687561 to 65 inclusive
687554-55
687483 to 86 inclusive
687497-98
687500-01

in the Areas of Boyer, Harper and Lower Manitou Lakes as listed on Report of Work #51-85.

On consideration of an application from the recorded holder, Cochrane Oil and Gas Ltd under Section 77 Subsection 22 of The Mining Act, I hereby order that the time for filing reports and plans in support of Geophysical, Geological & Geochemical assessment work recorded on March 5, 19 85, be extended until and including June 7, 19 85.

1985.05.23
Date

Signature of Director, Land Management Branch

Copies: Mining Recorder
Kenora, Ontario
File: 51-85

Cochrane Oil and Gas Ltd
Suite 2100
350 7th Avenue S.W.
Calgary, Alberta
T2P 3N9

cc: Michael Fox
Box 1015
Postal Station "G"
Calgary, Alberta
T3A 0E0

1333 (85/02)

R.
D.K.

REGISTERED

April 25, 1985 Work Report #51-85

Cochrane Oil and Gas Ltd
Suite 2100
350 7th Avenue S.W.
Calgary, Alberta
T2P 3N9

Dear Sirs:

RE: Mining Claims K 687479, et al,
in the Areas of Boyer Lake,
Harper Lake, Lower Manitou Lake

I have not received the reports and maps (in duplicate) for the Electromagnetic, Magnetometer, Geological and Geochemical Survey on the above-mentioned claims.

As the assessment "Report of Work" was recorded by the Mining Recorder on March 5, 1985, the 60 day period allowed by Section 77 of the Mining Act for the submission of the technical reports and maps to this office will expire on May 6, 9185.

If the material is not submitted to this office by May 6, 1985, I will have no alternative but to instruct the Mining Recorder to delete the work credits from the claim record sheets.

For further information, please contact Mr. Arthur Barr at (416)965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-4888

A. Barr:mc

cc: Mining Recorder, Kenora, Ontario
cc: Michael Fox
Box 1015, Postal Station G
Calgary, Alberta T3A 0E0

Ministry of Natural Resources
Ontario

Order of the Minister

May 21

Room E-45, Whitney Block
Queen's Park
Toronto, Ontario
M7A 1W3
416/965-4888

The Mining Act

In the matter of mining claims:

K 687479
696003
687452 to 54 inclusive
687459-60
696014 to 27 inclusive
696030
687417 to 19 inclusive
687570 to 79 inclusive
687561 to 65 inclusive
687554-55
687483 to 86 inclusive
687497-98
687500-01

in the Areas of Boyer, Harper and

Lower Manitou Lakes as listed on

Report of Work #51-85

On consideration of an application from the recorded holder, Cochrane Oil and Gas Ltd
under Section 77 Subsection 22 of The Mining Act, I hereby order that the time for filing reports and plans in support of
Geophysical,Geological & Geochemical assessment work recorded on March 5, 1985
be extended until and including May 24, 19.85.

May 16/85
Date

Signature of Director, Land Management Branch

Copies:

Mining Recorder
Kenora, Ontario
File: 51-85

Cochrane Oil and Gas Ltd
Suite 2100
350 7th Avenue S.W.
Calgary, Alberta
T2P 3N9

cc: Michael Fox
Box 1015
Postal Station G
Calgary, Alberta
T3A 0E0

1333 (85/02)

FILE

Ministry of Natural Resources
Ontario

Order of the Minister

May 17

Room 6643, Whitney Block
Queen's Park
Toronto, Ontario
M7A 1W3
416/965-4888

The Mining Act

In the matter of mining claims:

K 687479
696003
687452 to 54 inclusive
687459-60
696014 to 27 inclusive
696030
687417 to 19 inclusive
687570 to 79 inclusive
687561 to 65 inclusive
687554-55
687483 to 86 inclusive
687497-98
687500-01

in the Areas of Boyer, Harper and Lower Manitou Lakes as listed on Report of Work 51-85

On consideration of an application from the recorded holder, Cochrane Oil and Gas Ltd under Section 77 Subsection 22 of The Mining Act, I hereby order that the time for filing reports and plans in support of ~~Geophysical,Geological&Geochemical~~ assessment work recorded on ~~May 5,~~ 19~~85.~~ be extended until and including ~~May 17,~~ 19~~85.~~.

1985.05.03
Date

Signature of Director, Land Management Branch

Copies:

Mining Recorder
Kenora, Ontario

Cochrane Oil and Gas Ltd
Suite 2100
350 7th Avenue S.W.
Calgary, Alberta
T2P 3N9

cc: Michael Fox
Box 1015
Postal Station G
Calgary, Alberta
T3A 0E0

1333 (85/02)

2.8195

#200-85

	E.M.	Mag.	V.L.F.	Geol.		E.M.	Mag.	VLF	Geol.		E.M.	Mag.	V.L.F.	Geol.
687340	✓	✓	✓	✓										
687341	✓	✓	✓	1/4	687383	✓	✓	✓	✓	687443	1/4	>1/4	1/4	1/2
687345	✓	✓	✓											
687346	✓	✓	✓	>1/4	84	✓	✓	✓	1/2	44	1/4	1/4	1/4	✓
47	✓	✓	✓	1/4	85	3/4	3/4	3/4	✓	687446	✓	✓	✓	3/4
687349	✓	✓	✓	✓	86	3/4	0	0	1/4	47	✓	✓	✓	3/4
50	✓	✓	✓	1/4	87	1/2	3/4	3/4	1/4	48	✓	✓	✓	1/2
687352	✓	✓	✓	✓	88	✓	✓	✓	✓	49	✓	✓	✓	1/2
53	✓	✓	✓	>1/4	89	✓	✓	✓	✓	50	✓	✓	✓	1/2
687356	✓			0	90	1/4	>1/4	1/4	1/4	687451	✓	✓	✓	0
57	0			✓	687391	✓	✓	✓	3/4	687455	✓	✓	✓	0
58		1/2		✓	687377	0	0	0	1/4	56	✓	✓	✓	1/2
687359		✓		1/4	98	✓		0	3/4	687458	✓	✓	✓	0
687361	✓	✓	✓	1/2	687402	✓		0	3/4	687461	✓	✓	✓	3/4
62	✓	✓	✓	1/4	03	✓		0	1/2	687476	✓	✓	✓	1/2
63	3/4	3/4		✓	04	1/4	0	3/4	3/4	77	✓	✓	✓	3/4
687364				✓	05	✓		✓	1/4	78	✓	✓	✓	1/4
687367				✓	06	✓		1/4	1/2	696001	✓	✓	✓	✓
68	0	0	0	✓	687407	✓		3/4	✓	02	✓	✓	✓	✓
69	✓	✓	✓	1/2	687410			✓	>1/2	696004	✓	✓	✓	>1/2
70	✓	✓	✓	3/4	11	✓		✓	3/4	05	✓	✓	✓	1/2
71	✓	✓	✓	1/4	12	1/4		1/4	>1/4	696031	✓	✓	✓	1/2
72		✓	✓	1/4	13	✓	0	3/4	✓	32	✓	✓	✓	1/2
73		✓	✓	✓	687414	1/4		✓	3/4	33	✓	✓	✓	1/2
74	1/4	3/4	✓	✓	687433	1/2	1/2	1/2	✓	745120	✓	✓	✓	3/4
75	1/2			✓	34	✓	✓	✓	1/2	21	✓	✓	✓	3/4
687376	✓			1/2	687437	✓	✓	✓	1/4	22	✓	✓	✓	1/2
687379	1/4	0		✓	38	✓	✓	✓	✓	745123	✓	✓	✓	3/4
80		3/4		✓	687439				✓					4/4
81	✓	✓	✓	>1/4	687441		3/4		✓					
687382	✓	✓	✓	✓	687442	✓	1/4	✓	>1/2					
				4/4					4/4					

APPARATE GEOL → (20×80) ÷ (80 + 4/4) = 15.14 (16)

2.8195
#51-85

	C.E.M.	V.L.F.	Mag.		C.E.M.	V.L.F.	Mag.		C.E.M.	V.L.F.	Mag.
K-687479	✓	✓	✓	696024	✓	✓	✓	687579	✓	✓	✓
696003	✓	✓	✓	25	✓	✓	✓	687561	✓	✓	✓
687452	✓	✓	✓	26	✓	✓	✓	62	✓	✓	✓
53	✓	✓	✓	696027	✓	✓	✓	63	✓	✓	✓
687454	✓	✓	✓	696030	✓	✓	✓	64	✓	✓	✓
687459	✓	✓	✓	687417	✓	✓	✓	687565	✓	✓	✓
687460	✓	✓	✓	18	✓	✓	✓	687554	✓	✓	✓
696014	✓	✓	✓	687419	✓	✓	✓	687555	✓	✓	✓
15	✓	✓	✓	687570	✓	✓	✓	687483	✓	✓	✓
16	✓	✓	✓	71	✓	✓	✓	84	✓	✓	✓
17	✓	✓	✓	72	✓	✓	✓	85	✓	✓	✓
18	✓	✓	✓	73	✓	✓	✓	687486	✓	✓	✓
19	✓	✓	✓	74	✓	✓	✓	687497	✓	✓	✓
20	✓	✓	✓	75	✓	✓	✓	687498	✓	✓	✓
21	✓	✓	✓	76	✓	✓	✓	687500	✓	✓	✓
22	✓	✓	✓	77	✓	✓	✓	687501	✓	✓	✓
696023	✓	✓	✓	687578	✓	✓	✓				

2.8195

	Geol.	Geochem.			Geol.	Geochem.			Geol.	Geochem.	
K-687479	1/2			696024	>1/2			687579	✓		
696003	>1/2			25	1/4 ✓			687561	3/4		
687452	<1/4			26	3/4			62	~✓		
53	✓			696027	1/2			63	>1/4		
687454	3/4			696030	3/4			64	~✓		
687459	<1/2			687417	3/4			687565	1/2		
687460	1/2			18	✓			687554	1/2		
696014	O			687419	>1/4			687553	O		
15	✓			687570	3/4			687483	1/4		
16	✓			71	1/4			84	✓		
17	~1/4			72	1/2			85	✓		
18	O			73	1/4			687486	1/2		
19	3/4			74	✓			687497	1/4 ✓		
20	✓			75	✓			687498	3/4		
21	>1/4			76	✓			687500	1/2		
22	~1/2			77	~1/4 ✓			687501	1/2		
696023	1/2			687578	1/2						
	21/4				23/4				18/4		

(20×47)÷(47+6/4) = 15.1

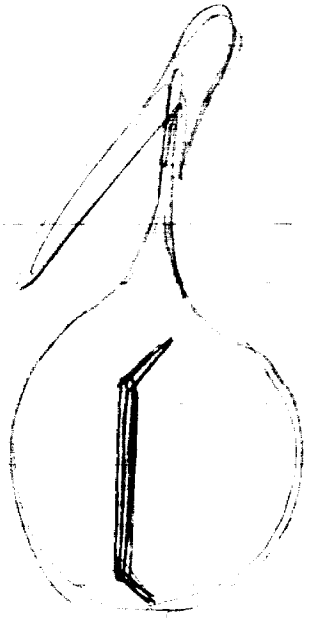
15

	l.c. shortcake included
687357	Yes
363	No
364	Yes
367	Yes
368	Yes
386	No
687433	No
439	Yes
441	Yes

1/4 coverage. (Geod. shown as 1/4)

— 3/4 coverage.

— almost total coverage.



look at 687397

— 10 days [illegible] for 439 + 386 due to l.c..

— 20 " " " 433 " " "

Geol. - 16 days
- No geop'

Map G 2685

687357
363, 64, 67, 68
386

Map G 2572 - 687433, 39, 441

Due
Mar. 17

Michael Fox.

403-239-3679

Ministry of Northern Affairs and Mines
Ontario

Technical Assessment Work Credits

MICHAEL FOX

File 2.8195

Date 1986 01 17

Mining Recorder's Report of Work No. 200-85

Recorded Holder: COCHRANE OIL & GAS LTD

Township or Area: BOYER LAKE HARPER LAKE AND LOWER MANITOU LAKE

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	K 687340-41
Electromagnetic CEM 40 days	687345 to 47 inclusive
Magnetometer ____ days	687349-50
Radiometric ____ days	687352-53
Induced polarization ____ days	687356
Other ____ days	687359
Section 77 (19) See "Mining Claims Assessed" column	687361-62
Geological ____ days	687369 to 73 inclusive
Geochemical ____ days	687376
Man days ☐ Airborne ☐	687381 to 84 inclusive
Special provision ☒ Ground ☒	687388 to 91 inclusive
☐ Credits have been reduced because of partial coverage of claims.	687398
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	687402 to 07 inclusive
	687410 to 14 inclusive
	687434
	687437-38
	687442 to 44 inclusive
	687446 to 51 inclusive
	687455-56
	687458
	687461
	687476 to 78 inclusive
	696001-02
	696004-05
	696031 to 33 inclusive
	745120 to 23 inclusive

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

20 DAYS ELECTROMAGNETIC (CEM)

K 687358
687375
687379
~~687387~~
687433

10 DAYS ELECTROMAGNETIC (CEM)

K 687363
687374
687380
687385-86

No credits have been allowed for the following mining claims

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

K ~~687357~~
687364
~~687367-68~~
687397
687439
687441

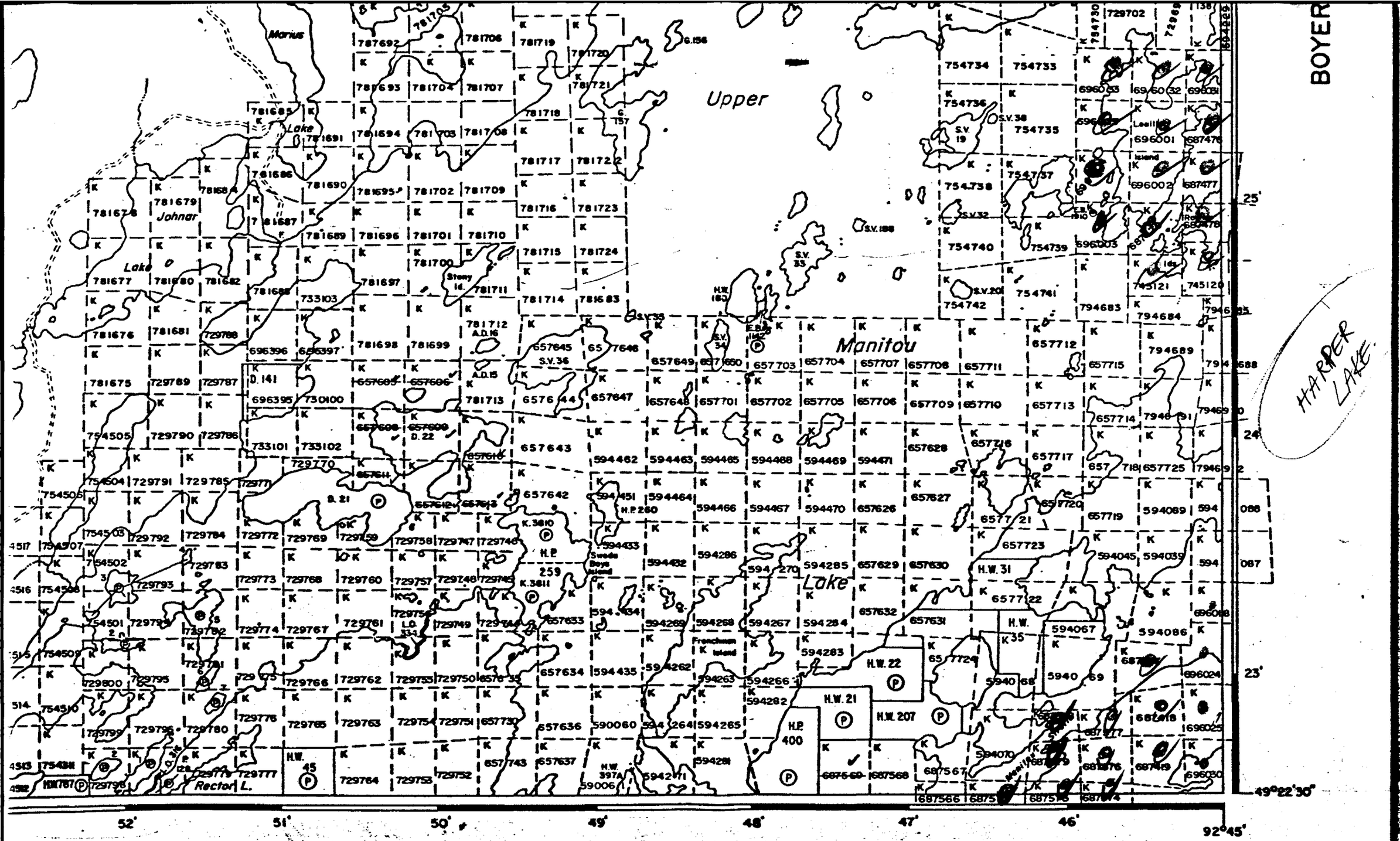
The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

828 (85/9)

2.8195

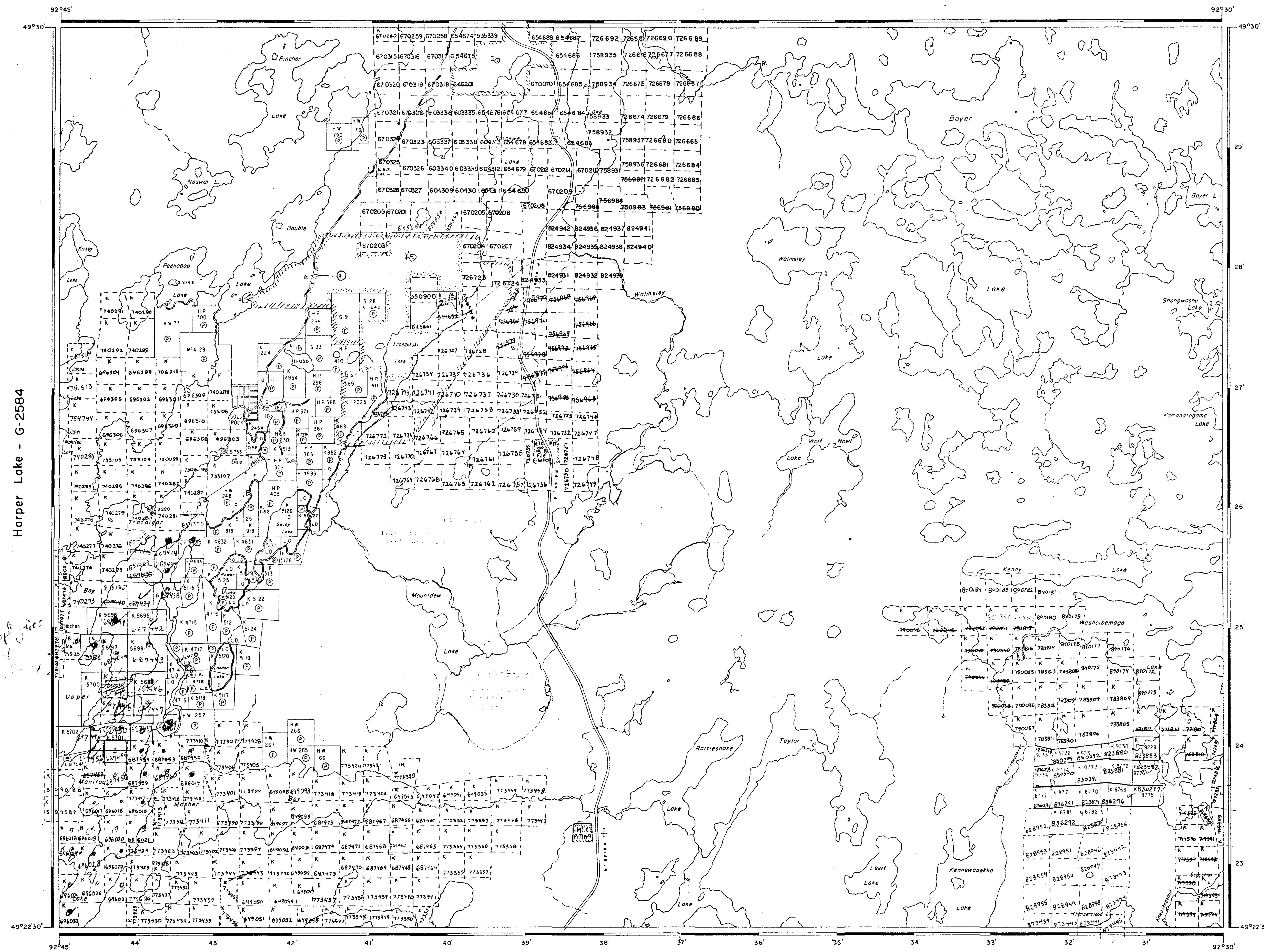
/ -	E.M.	Mag.	V.L.F.	Geol.	
K-810558	✓	✓	✓	3/4	- Shot 2 for Geol.
59	✓	✓	✓	3/4	- Shot 1
60	✓	✓	✓	3/4	"
810561	✓	✓	✓	3/4	"
824528	1/4 ✓	1/4	1/4 ✓	0	
824537	✓	✓	✓	0	
				12/4	PROFILE GEOL:
					(4×20)÷(4+12/4)
					= 11.42 ⇒ 12 dips.

O.K.



MANITOU LAKE, G-2693

Turtlepond Lake - G-2595



Harper Lake - G-2584

Kawashegamuk Lake - G-2585

Meggisi Lake - G-2688

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	Ⓟ or ●
" , 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

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 WITHDRAWN FROM STAKING NOV. 1981 3:00 PM W-19/85 NWR
R2 PENDING APPLICATION RE: MINING RIGHTS

KENORA MINING DIV.
RECEIVED
JAN 28 1986
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

SCALE: 1 INCH = 40 CHAINS

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

AREA

BOYER LAKE

M.N.R. ADMINISTRATIVE DISTRICT

DRYDEN

MINING DIVISION

KENORA

LAND TITLES / REGISTRY DIVISION

KENORA

Ontario Ministry of Natural Resources — Land Management Branch

Date JANUARY, 1984

Number G-2572

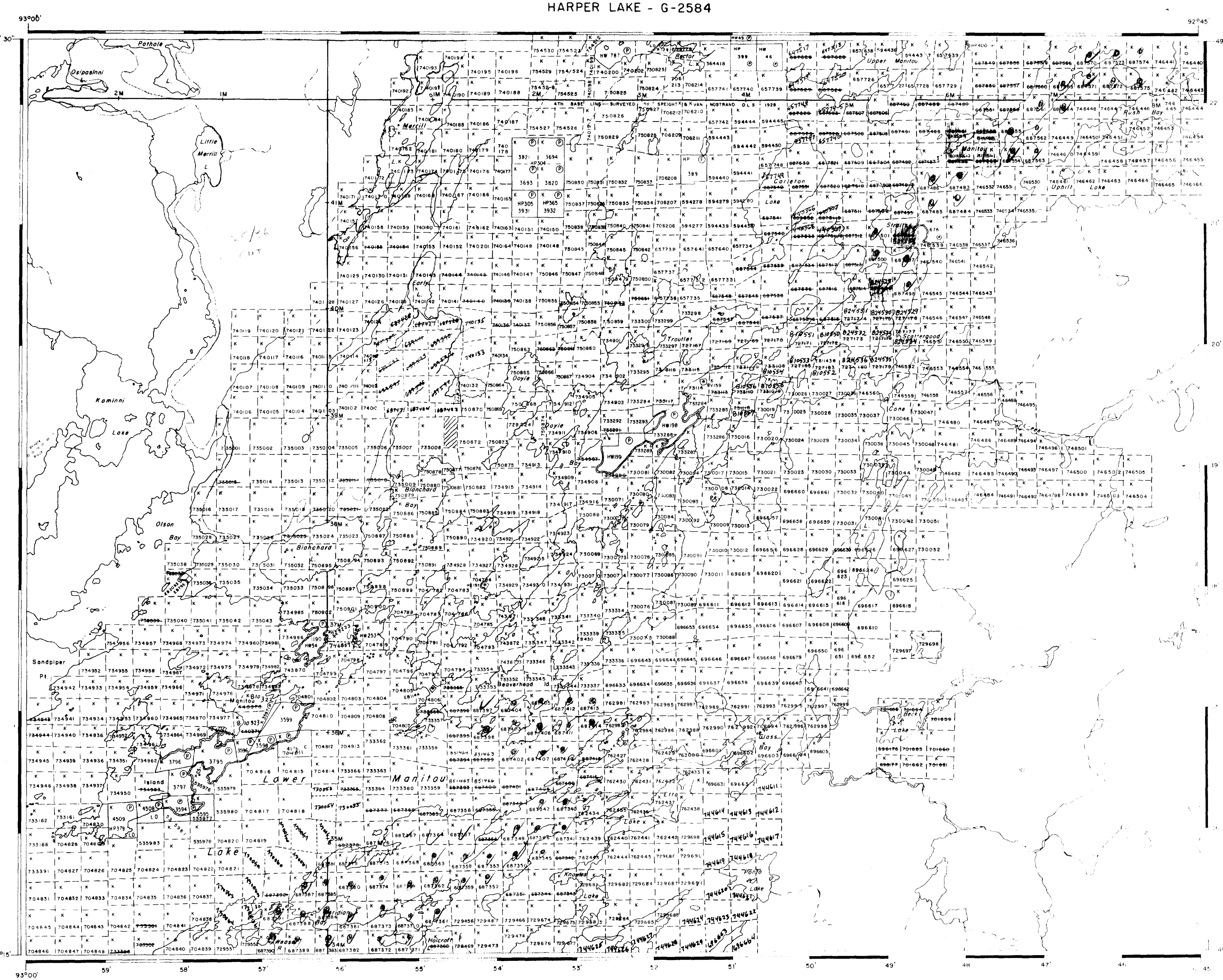
494923

52F07NE8318 2.8195 BOYER LAKE

200

HARPER LAKE - G-2584

BARKER BAY - G-2666



MEGGISI LAKE - G-2688

MANG LAKE - G-2685

LEGEND

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

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

KENORA MINING DIV. FEB 13 1986

SCALE 1 INCH = 40 CHAINS

AREA

LOWER MANITOU LAKE

M.N.R. ADMINISTRATIVE DISTRICT

FORT FRANCES

MINING DIVISION

KENORA

LAND TITLES / REGISTRY DIVISION

KENORA

Ministry of Natural Resources — Land Management Branch

Ontario

Date MARCH, 1984

M-2007

Number G-2683

52F07NE8316 2.8195 BOYER LAKE

210

LEGEND

5 FELSIC HYPABYSSAL ROCKS
- 5a QUARTZ AND QUARTZ-FELDSPAR PORPHYRY

4 METAMORPHOSED MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS
- 4a GABBRO

3 METASEDIMENTARY ROCKS
- 3b POLYMICTIC CONGLOMERATE
- 3c SANDSTONE
- 3d SILTSTONE, ARGILLITE (GRAPHITIC SCHIST)
- 3e CHERT
- 3g SERICITIC SCHIST DERIVED FROM METASEDIMENTS

2 INTERMEDIATE TO FELSIC METAVOLCANIC ROCKS
- 2a INTERMEDIATE LITHIC-CRYSTAL TUFF
- 2b INTERMEDIATE LAPILLI TUFF
- 2h SERICITIC SCHIST
- 2m CHLORITIC SCHIST
- 2n FELSIC (QUARTZ ± SERICITE ± CHLORITE) SCHIST

1 MAFIC METAVOLCANIC ROCKS
- 1a MEDIUM TO FINE-GRAINED FLOWS
- 1c PILLOWED FLOWS
- 1d PORPHYRITIC FLOWS
- 1k AMPHIBOLITE
- 1m CHLORITIC SCHIST
- 1p CARBONATIZED FLOWS
- 1q TUFF

- ALTERATION ZONES: QUARTZ + CARBONATE ± SULPHIDES

FOLIATION; INCLINED, VERTICAL
JOINTING; INCLINED, VERTICAL
LINEATION, WITH PLUNGE
FAULT, SHEAR, SCHIST ZONE BOUNDARY
x ROCK GEOCHEMICAL SAMPLE LOCATION

PROFESSIONAL GEOLOGIST ALBERTA MICHAEL St. C. ROK

2.8195

COCHRANE OIL AND GAS LTD.

MANITOU LAKES PROJECT GEOLOGY

MAP SHEET 1

MANITOU STRAITS AREA

KENORA MINING DIVISION ONTARIO

SCALE: 1:2000	N.T.S. 52-F-7
DATE: [illegible]	

220

LEGEND

5 FELSIC HYPABYSSAL ROCKS
- 5a QUARTZ AND QUARTZ FELDSPAR PORPHYRY
- 5b FELSITE

4 MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS (METAMORPHOSED)
- 4a GABBRO

3 METASEDIMENTARY ROCKS
- 3a VOLCANIC CLAST CONGLOMERATE
- 3b POLYMICTIC CONGLOMERATE
- 3c SANDSTONE
- 3d SILTSTONE, ARGILLITE (GRAPHITIC SCHIST)
- 3g SERICITIC SCHIST DERIVED FROM METASEDIMENTS

2 INTERMEDIATE TO FELSIC METAVOLCANIC ROCKS
- 2a INTERMEDIATE LITHIC-CRYSTAL TUFF
- 2b INTERMEDIATE LAPILLI TUFF
- 2d FELSIC CRYSTAL TUFF
- 2e FELSIC LAPILLI TUFF
- 2g DACITIC TO RHYOLITIC FLOWS
- 2h SERICITIC SCHIST DERIVED FROM INTERMEDIATE TO FELSIC METAVOLCANICS
- 2m CHLORITIC SCHIST DERIVED FROM INTERMEDIATE TO FELSIC VOLCANICS
- 2n FELSIC (QUARTZ ± SERICITE ± CHLORITE) SCHIST
- 2p CARBONATIZED INTERMEDIATE TO FELSIC METAVOLCANICS

1 MAFIC METAVOLCANIC ROCKS
- 1a MEDIUM TO FINE-GRAINED FLOWS
- 1b COARSE GRAINED FLOWS (GABBROIC)
- 1d PORPHYRITIC FLOWS
- 1k AMPHIBOLITE
- 1m CHLORITIC SCHIST DERIVED FROM MAFIC METAVOLCANICS
- 1p CARBONATIZED FLOWS

ALTERATION ZONES
- QUARTZ + CARBONATE ± SULPHIDES
- QUARTZ + CARBONATE + PYRITE STOCKWORKS

- FOLIATION; INCLINED, VERTICAL
- JOINTING, INCLINED, VERTICAL
- LINEATION, WITH PLUNGE
- FAULT, SHEAR ZONE, SCHIST ZONE BOUNDARY
- ROCK GEOCHEMICAL SAMPLE LOCATION
- DIAMOND DRILL HOLE

PROFESSIONAL GEOLOGIST ALBERTA — MICHAEL St. C. FOX

2.8195

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MANITOU LAKES PROJECT
GEOLOGY
MAP SHEET 2
MANITOU STRAITS AREA

KENORA MINING DIVISION — ONTARIO

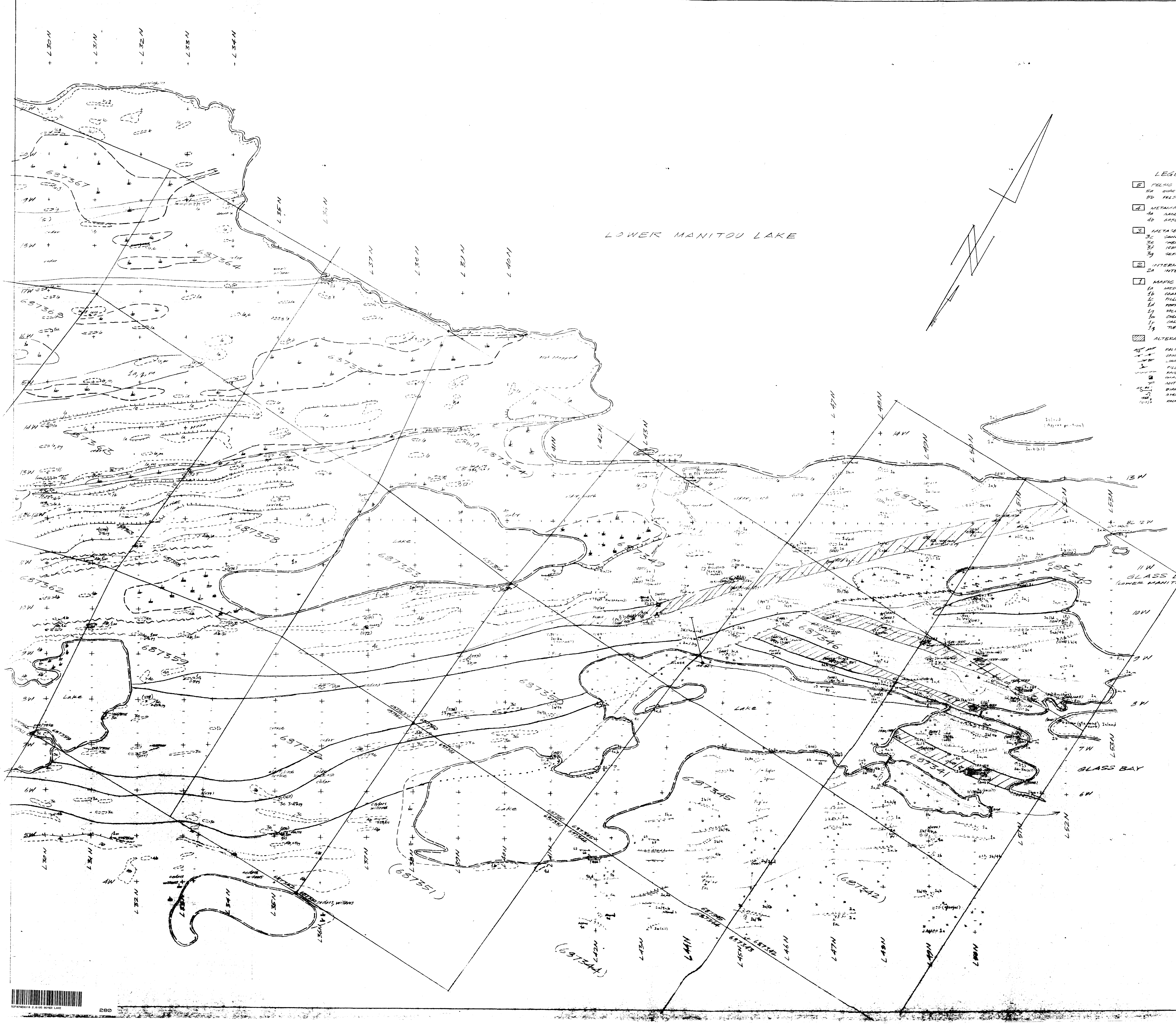
SCALE : 1:2500	N.T.S. 52-F-7
DATE : MAY, 1985	
REVISED: OCT., 1985	


MANITOU STRAITS
(UPPER MANITOU LAKE)
MANITOU STRAITS
MOSHER BAY
MOSHER BAY
SCHIST ZONE
LEGEND
5 FELSIC HYPABYSSAL ROCKS
5a QUARTZ AND QUARTZ-FELDSPAR PORPHYRY
4 METAMORPHOSED MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS
4a GABBRO
4e DIABASE
3 METASEDIMENTARY ROCKS
3b POLYMICTIC CONGLOMERATE
3c SANDSTONE
3d SILTSTONE, ARGILLITE
3g SERICITIC SCHIST DERIVED FROM METASEDIMENTS
2 INTERMEDIATE TO FELSIC METAVOLCANIC ROCKS
2a INTERMEDIATE LITHIC-CRYSTAL TUFF
2b INTERMEDIATE LAPILLI TUFF
2d FELSIC CRYSTAL TUFF
2e FELSIC LAPILLI TUFF
2g DACITIC TO RHYOLITIC FLOWS
2h SERICITIC SCHIST DERIVED FROM INTERMEDIATE TO FELSIC METAVOLCANICS
2m CHLORITIC SCHIST DERIVED FROM INTERMEDIATE TO FELSIC METAVOLCANICS
2n FELSIC (QUARTZ + SERICITE ± CHLORITE) SCHIST
1 MAFIC METAVOLCANIC ROCKS
1a MEDIUM TO FINE-GRAINED FLOWS
1b COARSE GRAINED FLOWS (GABBROIC)
1d PORPHYRITIC FLOWS
1j AMYGDALOIDAL FLOWS
1m CHLORITIC SCHIST DERIVED FROM MAFIC VOLCANICS
1p CARBONATIZED FLOWS
1t LAPILLI TUFF
ALTERATION ZONES
QUARTZ + CARBONATE ± PYRITE
QUARTZ + CARBONATE + PYRITE STOCKWORKS
FOLIATION; INCLINED, VERTICAL
JOINTING; INCLINED, VERTICAL
LINEATION, WITH PLUNGE
FAULT, SHEAR, SCHIST ZONE BOUNDARY
(4930)x ROCK GEOCHEMICAL SAMPLE LOCATION
MB-84-1 DIAMOND DRILL HOLE
PROFESSIONAL GEOLOGIST ALBERTA
MICHAEL St. C.
2,8195
MANITOU LAKES PROJECT
GEOLOGY
MAP SHEET 3
MANITOU STRAITS
KENORA MINING DIVISION

TRAFALGAR BAY
(UPPER MANITOU LAKE)
ROCHON ISLAND
(FOR GEOLOGY SEE MAP SHEETS)
GOLD ISLAND
UPPER MANITOU LAKE
GREEN ISLAND
NOT MAPPED
745121
745120
745123
745122
687432
687433
687434
687435
687436
687437
687442
687443
687444
687446
687447
687448
687449
687450
687456
LEGEND
5 FELSIC HYPABYSSAL ROCKS
5a QUARTZ AND QUARTZ - FELDSPAR PORPHYRY
2 INTERMEDIATE TO FELSIC METAVOLCANIC ROCKS
2a INTERMEDIATE LITHIC-CRYSTAL TUFF
2b INTERMEDIATE LAPILLI TUFF
2c INTERMEDIATE TUFF BRECCIA
2g DACITIC (2g(dac)) AND RHYOLITIC (2g(rhy)) FLOWS
2h SERICITIC SCHIST DERIVED FROM INTERMEDIATE TO FELSIC VOLCANICS
2m CHLORITIC SCHIST DERIVED FROM INTERMEDIATE TO FELSIC VOLCANICS
1 MAFIC METAVOLCANIC ROCKS
1a MEDIUM TO FINE-GRAINED FLOWS
1c PILLOWED FLOWS
1d PORPHYRITIC FLOWS
1e PILLOWED PORPHYRITIC FLOWS
1m CHLORITIC SCHIST DERIVED FROM MAFIC VOLCANICS
1p CARBONATIZED FLOWS
1q TUFF
1r LAPILLI TUFF
ALTERATION ZONES : QUARTZ+CARBONATE ± FUCHSITE ± SULPHIDES
FOLIATION, INCLINED, VERTICAL
JOINTING, INCLINED, VERTICAL
LINEATION, WITH PLUNGE
LAVA FLOW, TOP INDICATED FROM PILLOWS
ANTICLINE, SYNCLINE
SHAFT
ADIT
CLAIM POST
1276x ROCK GEOCHEMICAL SAMPLE LOCATION
FAULT; SHEAR ZONE
PROFESSIONAL GEOLOGIST ALBERTA
MICHAEL St. C. FOX
28195
COCHRANE OIL AND GAS LTD.
MANITOU LAKES PROJECT
GEOLOGY
FOUR MILE NARROWS
AND
TRAFALGAR BAY AREAS
KENORA MINING DIVISION
ONTARIO
SCALE: 1:2500
N.T.S.
DATE: OCT., 1985

52F07NE8318 2.8195 BOYER LAKE

LOWER MANITOU LAKE
MERIDIAN BAY
MERIDIAN BAY
HOLCROFT LAKE
WEASEL RIVER
JOHNSON LAKE
MAINLAND
LEGEND
5 FELSIC HYPABYSSAL ROCKS
5a QUARTZ AND QUARTZ - FELDSPAR PORPHYRY
4 METAMORPHOSED MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS
4a GABBRO, COARSE GRAINED
4b GABBRO, MEDIUM TO FINE-GRAINED
3 METASEDIMENTARY ROCKS
3c SANDSTONE, IN PART INTRAVOLCANIC (VOLCANIC ARENITE, WACKE)
3d SILTSTONE, ARGILLITE
3e CHERT
3f IRON FORMATION, SILICATE - SULPHIDE FACIES
3g SERICITIC SCHIST
2 INTERMEDIATE TO FELSIC METAVOLCANIC ROCKS
2a INTERMEDIATE LITHIC-CRYSTAL TUFF; SILICIFIED MAFIC VOLCANICS
2m CHLORITIC SCHIST
2n FELSIC (QUARTZ ± CHLORITE ± SERICITE) SCHIST; PARTLY DERIVED FROM METASEDIMENTS
1 MAFIC METAVOLCANIC ROCKS
1a MEDIUM TO FINE-GRAINED FLOWS
1b COARSE-GRAINED FLOWS (GABBROIC)
1c PILLOWED FLOWS
1d PORPHYRITIC FLOWS
1g BRECCIA
1k AMPHIBOLITE
1m CHLORITIC SCHIST
1p CARBONATIZED MAFIC VOLCANICS
1q TUFF
ALTERATION ZONES: QUARTZ + CARBONATE ± SERICITE ± SULPHIDES
FOLIATION; INCLINED, VERTICAL
JOINTING; INCLINED, VERTICAL
LINEATION, WITH PLUNGE
FAULT, SHEAR ZONE
SHAFT, PIT
(1288) 1636 ROCK GEOCHEMICAL SAMPLE; (1288): '84-'85 WINTER PROGRAM; 1636: FALL '85 PROGRAM
PROFESSIONAL GEOLOGIST ALBERTA
28195
COCHRANE OIL AND GAS LTD.
MANITOU LAKES PROJECT
GEOLOGY
MAP SHEET 7
MERIDIAN BAY AREA
SCALE:
DATE:



LEGEND

5 FELSIC HYPABYSSAL ROCKS
- 5a QUARTZ AND QUARTZ-FELDSPAR PORPHYRY
- 5b FELSITE

4 METAMORPHOSED MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS
- 4a GABBRO, COARSE-GRAINED
- 4b GABBRO, MEDIUM TO FINE-GRAINED

3 METASEDIMENTARY ROCKS
- 3c SANDSTONE, IN PART INTRAVOLCANIC (VOLCANIC ARENITE, WACKE)
- 3e CHERT
- 3f IRON FORMATION, SULPHIDE-SILICATE FACIES
- 3g SERICITIC SCHIST

2 INTERMEDIATE TO FELSIC METAVOLCANIC ROCKS
- 2a INTERMEDIATE LITHIC-CRYSTAL TUFF

1 MAFIC METAVOLCANIC ROCKS
- 1a MEDIUM TO FINE-GRAINED FLOWS
- 1b COARSE-GRAINED FLOWS (GABBROIC)
- 1c PILLOWED FLOWS
- 1d PORPHYRITIC FLOWS
- 1g VOLCANIC BRECCIA
- 1m CHLORITIC SCHIST
- 1p CARBONATIZED FLOWS
- 1q TUFF

ALTERATION ZONES: QUARTZ + CARBONATE ± SERICITE ± FUCHSITE ± SULPHIDES

- FOLIATION; INCLINED, VERTICAL
- JOINTING; INCLINED, VERTICAL
- LINEATION, WITH PLUNGE
- PILLOW LAVAS, INDICATED FLOW TOP
- FAULT, SHEAR ZONE
- SHAFT
- ADIT
- DIAMOND DRILL HOLE
- OPEN CUT, TRENCH
- ROCK GEOCHEMICAL SAMPLE; (1217): '84-'85 WINTER PROGRAM; 1568: FALL '85 PROGRAM

PROFESSIONAL GEOLOGIST ALBERTA — MICHAEL St. C. FOX

28195

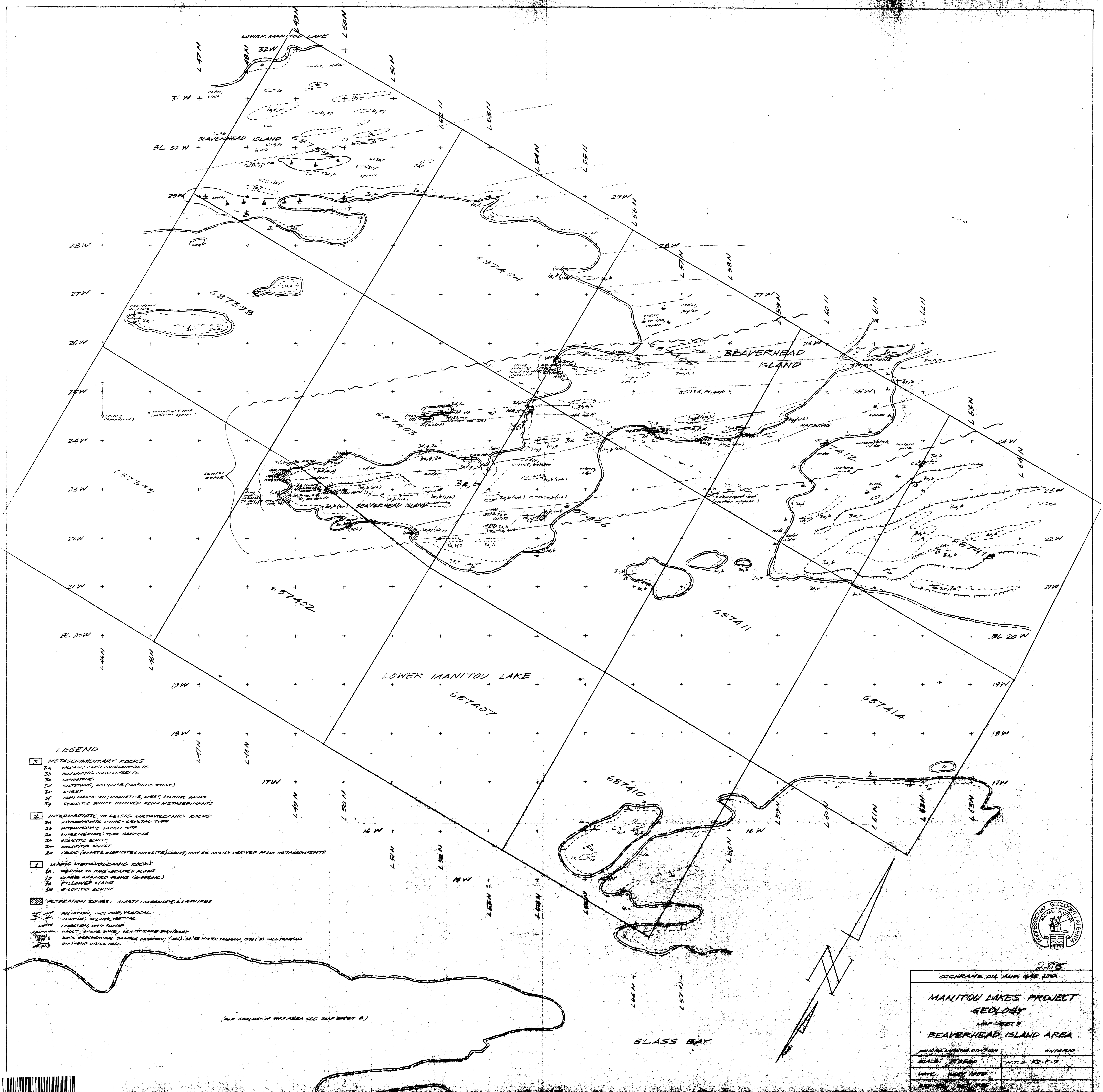
COCHRANE OIL AND GAS LTD.

MANITOU LAKES PROJECT
GEOLOGY
MAP SHEET 8
GLASS BAY AREA

KENORA MINING DIVISION — ONTARIO

SCALE: 1:2500	N.T.S. 52-F-7
DATE: MAY, 1985	
REVISED: OCT., 1985	

280



52F07NE8318 2.8195 BOYER LAKE
290

TOTAL FIELD MAGNETIC PROFILES
(STACKED PROFILE FORMAT)
SCALES: 1cm : 100 GAMMAS
1cm : 1000 GAMMAS

+60,000 γ
+59,900 γ
+59,800 γ
+62,000 γ
+61,000 γ
+60,000 γ

INSTRUMENT: GEOMETRICS G-816
BASE STATION: GEOMETRICS G-826A

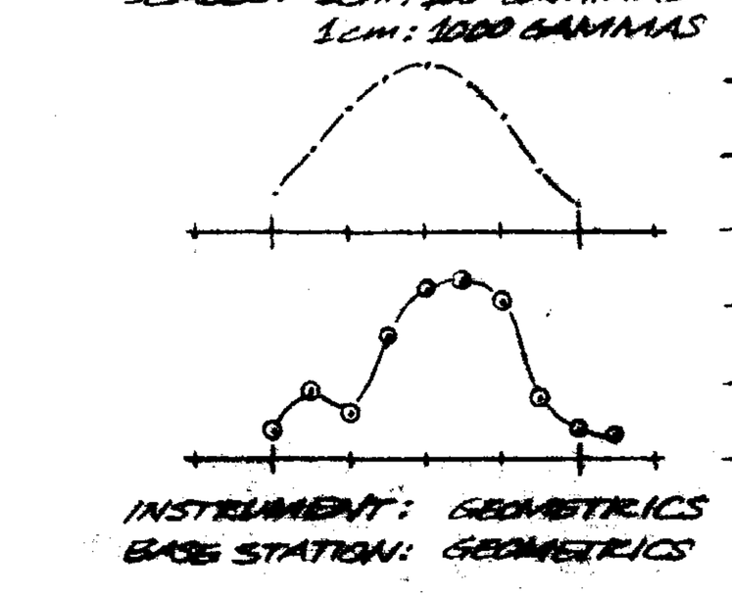
COCHRANE OIL AND GAS LTD.

MANITOU LAKES PROJECT
GROUND MAGNETIC SURVEY
TOTAL FIELD PROFILES
MAP SHEET
MANITOU STRAITS AREA

KENORA MINING DIVISION ONTARIO

SCALE: 1:2500	N.T.S. 52-F-7
DATE: MAY, 1985	
SURVEYED: JAN-FEB, 1985	

TOTAL FIELD MAGNETIC PROFILES
(STACKED PROFILE FORMAT)
SCALES: 1cm : 100 GAMMAS
1cm : 1000 GAMMAS



INSTRUMENT: GEOMETRICS G-816
BASE STATION: GEOMETRICS G-826A

28195

COCHRANE OIL AND GAS LTD.

MANITOU LAKES PROJECT
GROUND MAGNETIC SURVEY
TOTAL FIELD PROFILES
MAP SHEET 2
MANITOU STRAITS AREA
KENORA MINING DIVISION ONTARIO

SCALE: 1:2500	N.T.S. 52-F-7
DATE: MAY, 1986	
SURVEYED: [illegible]	

[illegible] LTD., CALGARY

310

UPPER MANITOU LAKE
MOSHER BAY
MOSHER BAY
28195
TOTAL FIELD MAGNETIC PROFILES
(STACKED PROFILE FORMAT)
1 cm : 1000 GAMMAS
+60,000 γ
+59,900 γ
+59,800 γ
+62,000 γ
+61,000 γ
+60,000 γ
INSTRUMENT: GEOMETRICS G-816
BASE STATION: GEOMETRICS G-826 A
COCHRANE OIL AND GAS LTD.
MANITOU LAKES PROJECT
GROUND MAGNETIC SURVEY
TOTAL FIELD PROFILES
MAP SHEET 3
MANITOU STRAITS AREA
KENORA MINING DIVISION
ONTARIO
SCALE: 1:2500
N.T.S. 52-F-7
SURVEYED: JAN-FEB, 1985
CRM LTD, CALGARY

330

MANITOU LAKES PROJECT
GROUND MAGNETIC SURVEY
GREEN ISLAND AREA

MAP SHEET 4

SCALE: 1 INCH = 200 FEET	NTS: 82-P-7
DATE: [illegible]	
SURVEYED BY: [illegible]	

LEADING EDGE GEOPHYSICAL LTD.
CALGARY, ALBERTA

TOTAL FIELD MAGNETIC PROFILES
(SHADED PROFILE REMOVED)
SCALE: 1cm = 200 GAMMAS

GEOLOGICAL SURVEY OF ALBERTA
PROFESSIONAL ENGINEERS

28195

DISTRIBUTED BY THE MAP OFFICE

UPPER MANITOU LAKE

LEUILLER ISLAND

ROCHON ISLAND

GOLD ISLAND

"MAINLAND"

UPPER MANITOU LAKE

TOTAL FIELD MAGNETIC PROFILES
(STACKED PROFILE FORMAT)
SCALES: 1 cm : 100 GAMMAS
1 cm : 1000 GAMMAS

INSTRUMENT: GEOMETRICS G-816
BASE STATION: GEOMETRICS G-826A

28195

COCHRANE OIL AND GAS LTD.

MANITOU LAKES PROJECT

GROUND MAGNETIC SURVEY

MAP SHEET 5

LEUILLER ISLAND AREA

KENORA MINING DIVISION ONTARIO

SCALE: 1:2500	N.T.S. 52-F-7
DATE: MAY, 1985	
SURVEYED: FEB, 1985	

CRM LTD, CALGARY

52F07NE8318 2.8195 BOYER LAKE

TRAFALGAR BAY
(UPPER MANITOU LAKE)

L128N L129N L130N L131N L132N L133N L134N L135N L136N L137N L138N L139N L140N L141N L142N

BL 428 W 427 W 426 W 425 W 424 W 423 W 422 W 421 W 420 W 419 W 418 W 417 W 416 W

687435 687434 687436 687433 687437 687439 687438 687442

UPPER MANITOU LAKE

TOTAL FIELD MAGNETIC PROFILES
(STACKED PROFILE FORMAT)
SCALES: 1cm : 200 GAMMAS
1 cm : 1000 GAMMAS

INSTRUMENT: GEOMETRICS G-816
BASE STATION: GEOMETRICS G-826A

PROFESSIONAL GEOLOGIST MICHAEL S. FOX ALBERTA

28195

CONCORDIA AIRMAG LTD.

MANITOU LAKES PROJECT
AIRBORNE MAGNETIC SURVEY
TOTAL FIELD PROFILES
AREA 2
TRAFALGAR BAY AREA

LOWER MANITOU LAKE
MERIDIAN BAY
WEASEL RIVER
HOLCROFT LAKE
BL 20W
BL 12W
TOTAL FIELD MAGNETIC PROFILES
(STACKED PROFILE FORMAT)
SCALES: 1 cm : 100 GAMMAS
1 cm : 1000 GAMMAS
INSTRUMENT:
BASE STATION:
PROFESSIONAL GEOLOGIST ALBERTA
MICHAEL St. C. FOX
28195
COCHRANE OIL AND GAS LTD.
MANITOU LAKES PROJECT
TOTAL FIELD PROFILES
MERIDIAN BAY AREA

LOWER MANITOU LAKE
GLASS BAY
LAKE
TOTAL FIELD MAGNETIC PROFILES
(STACKED PROFILE FORMAT)
INSTRUMENT: GEOMETRICS G-816
BASE STATION: GEOMETRICS G-826A
PROFESSIONAL GEOLOGIST ALBERTA
28195
COCHRANE OIL AND GAS LTD.
MANITOU LAKES PROJECT
GROUND MAGNETIC SURVEY
TOTAL FIELD PROFILES
GLASS BAY AREA

COCHRANE OIL AND GAS LTD.
MANITOU LAKES PROJECT
GROUND ELECTROMAGNETIC SURVEY
VLF-EM
MANITOU STRAITS AREA
ONTARIO
VLF-EM PROFILES
TRANSMITTER (NS): NSS
FREQUENCY : 21.4 kHz
PROFILE SCALE: 1cm : 20%
(ALL LINES TRAVERSED FACING WESTERLY)
STRAITS
MANITOU
2-8195

GEOPHYSICS AL AND GSD

MANITOU LAKES PROJECT

GROUND ELECTROMAGNETIC SURVEY

VLF-EM

MANITOU STRAITS AREA

MANITOBA

SCALE 1:2500 CONTOUR INTERVAL 10 FEET

DATE OF SURVEY: AUG. 1978

DATE PLOTTED: SEPT. 1978

PLOTTED BY: GEOTRONICS LTD.

GEOLOGIST ALBERTA PROFESSIONAL SEAL

98195

VLF-EM PROFILES
TRANSMITTER: NSS
FREQUENCY: 24.0 kHz
(N-S LINES: NAA, NORTH DAKOTA)

MOSHER BAY (UPPER MANITOU LAKE)

MANITOU STRAITS

GOOSE LAKE

EGG LAKE

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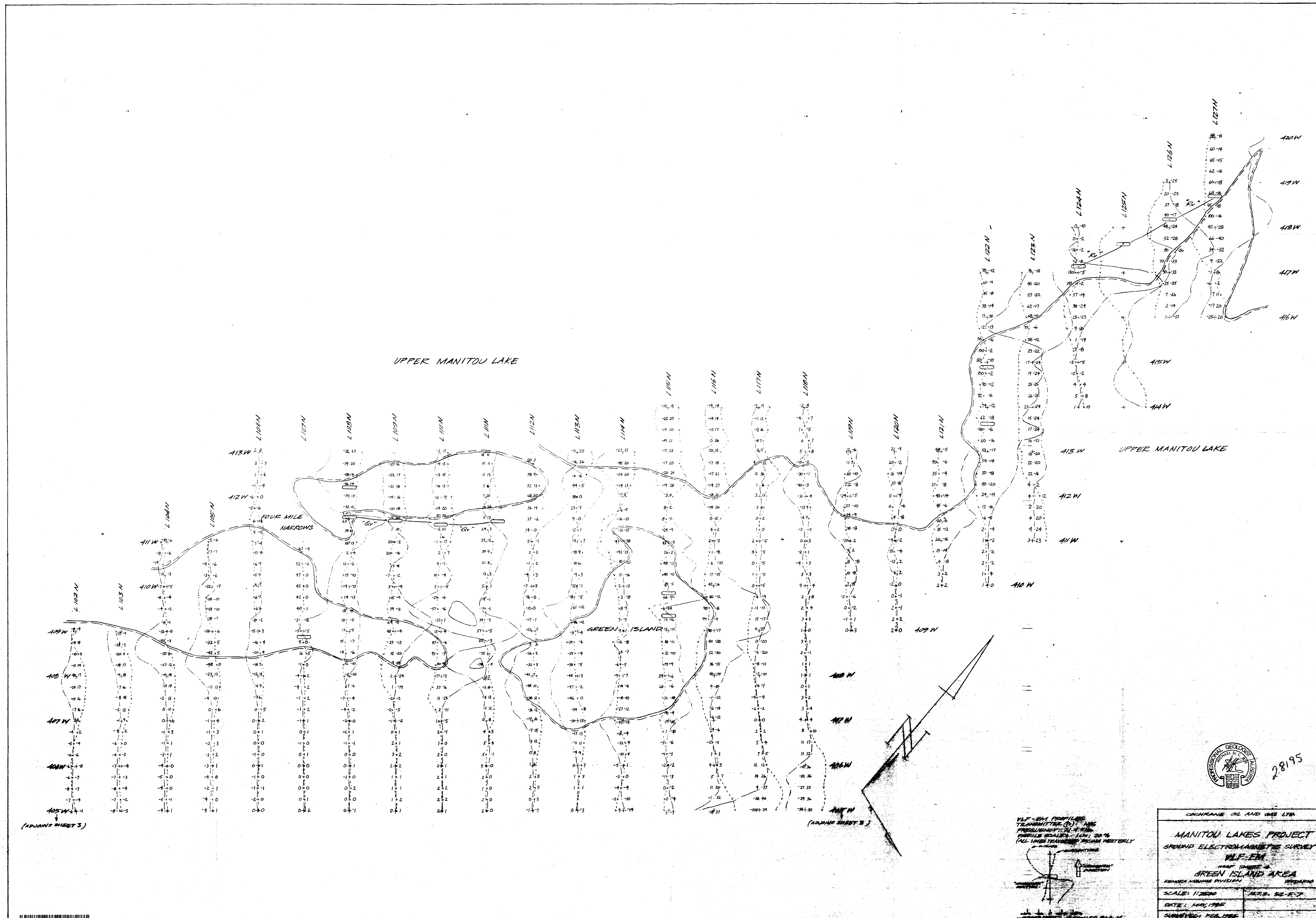
390


UPPER MANITOU LAKE
MOSHER BAY
MOSHER BAY
MANITOU LAKES PROJECT
VLF-EM
MANITOU STRAITS AREA
PROFESSIONAL GEOLOGIST
MICHAEL St. C.
ALBERTA
28195



COCHRANE OIL AND GAS LTD.

MANITOU LAKES PROJECT

GROUND ELECTROMAGNETIC SURVEY

VLF-EM

MAP SHEET 4

GREEN ISLAND AREA

KENORA MINING DIVISION ONTARIO

SCALE: 1:2500	N.T.S. 52-F-7
DATE: MAY, 1985	
SURVEYED: FEB., 1985	

UPPER MANITOU LAKE

LEUYLLER ISLAND

ROCHON ISLAND

GOLD ISLAND

"MAINLAND"

UPPER MANITOU LAKE

"Sv"

"Tv"

"Uv"

"Vv"

"Wv"

"Xv"

"Yv"

"Zv"

"AAv"

"BBv"

"CCv"

L 107 N
L 108 N
L 109 N
L 110 N
L 111 N
L 112 N
L 113 N
L 114 N
L 115 N
L 116 N
L 117 N
L 118 N
L 119 N
L 120 N
L 121 N
L 122 N
L 123 N

441 W
440 W
439 W
438 W
437 W
436 W
435 W
434 W
433 W
432 W
431 W
430 W
429 W
428 W
427 W
426 W
425 W
424 W
423 W
422 W
421 W
420 W
419 W
418 W
417 W
416 W

VLF-EM PROFILES
TRANSMITTER (Tx): NSS
FREQUENCY: 21.4 kHz
PROFILE SCALE: 1cm : 20%
ALL LINES TRAVERSED FACING WESTERLY

IN PHASE
QUADRATURE
"TRANSMITTER" DIRECTION
"RESPONSE" RATIO
INSTRUMENT: GEONICS EM-16

PROFESSIONAL GEOLOGIST ALBERTA MICHAEL St. CYR

2.8195

COCHRANE OIL AND GAS LTD.

MANITOU LAKES PROJECT

GROUND ELECTROMAGNETIC SURVEY

VLF-EM

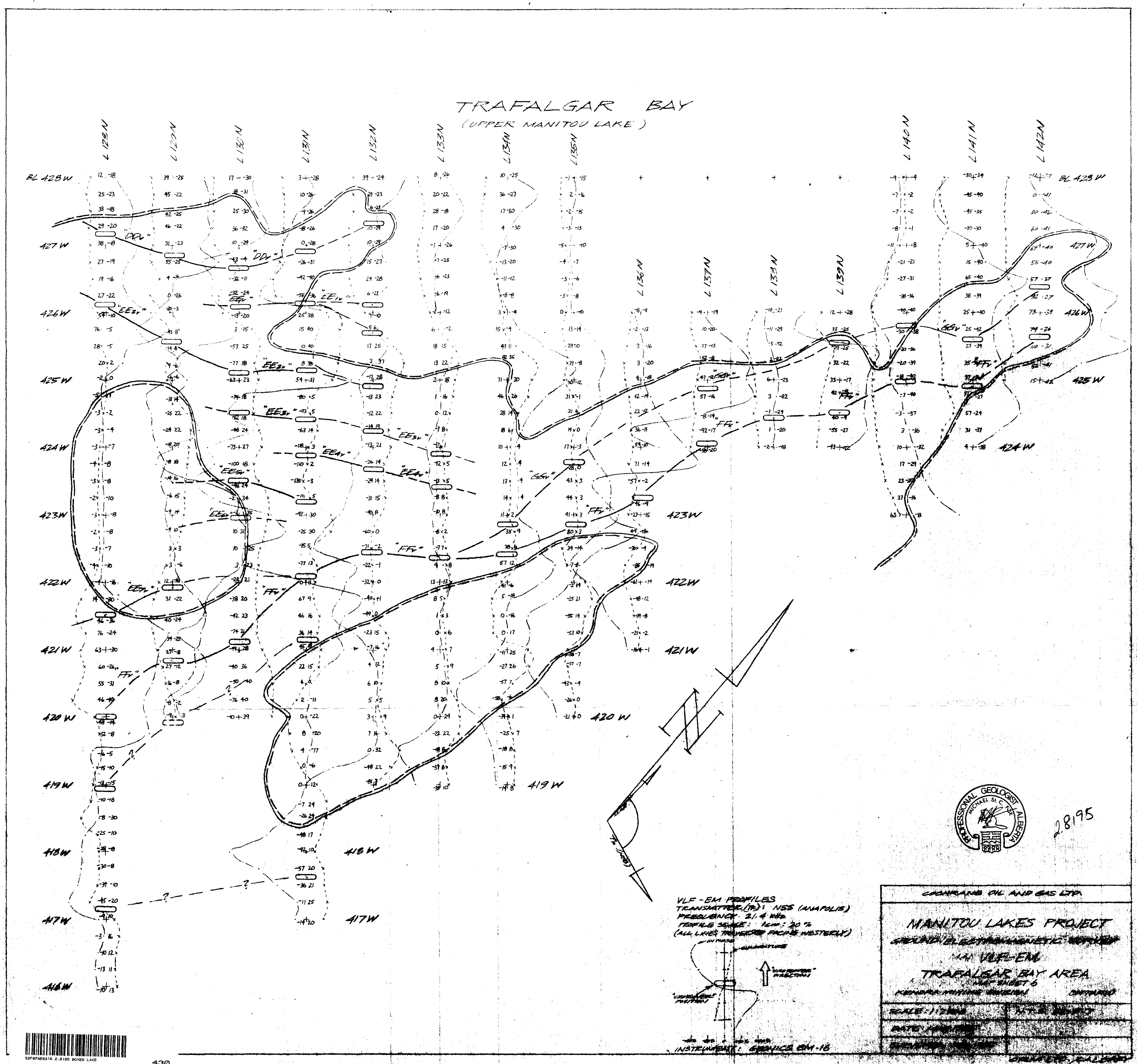
LEUYLLER ISLAND AREA

KENORA MINING DIVISION

SCALE: 1:2500	N.T.S. 52-F-7
DATE: MAY 1985	
SURVEYED: FEB, 1985	

CDM LTD., CALGARY

52F07NE0318 2.8195 BOYER LAKE
420



52F07NE8318 2.8195 BOYER LAKE

430


LOWER MANITOU LAKE
MERIDIAN BAY
MERIDIAN BAY
HOLCROFT LAKE
WEASEL RIVER
BL 20W
BL 12W
VLF-EM PROFILES
TRANSMITTER (Tx): NSS (ANAPOLIS)
FREQUENCY 21.4 kHz
PROFILE SCALE: 1cm : 20%
(ALL LINES TRAVERSED FACING WESTERLY)
INSTRUMENT: GEONICS EM-16
28195
COCHRANE OIL AND GAS LTD.
MANITOU LAKES PROJECT
GROUND ELECTROMAGNETIC SURVEY
VLF-EM
MAP SHEET 7
MERIDIAN BAY AREA
KENORA MINING DIVISION
ONTARIO
SCALE: 1:2500
N.T.S. 52-F-7
DATE: MAY, 1985

COCHRANE OIL AND GAS LTD.

MANITOU LAKES PROJECT

GROUND ELECTROMAGNETIC SURVEY

VLF-EM

GLASS BAY AREA

MAP SHEET 9

NICHOLAS MINING DIVISION — ONTARIO

SCALE: 1:2500	NTS: 52-F-7
DATE: MAY 1985	
SURVEYED: FEB.-MAR./85	

CRAN LTD., QUEBEC

VLF-EM PROFILES
TRANSMITTER(S): NSS (ANNAPOLIS)
FREQUENCY: 21.4 kHz
PROFILE SCALE: 1cm = 20%
(ALL LINES TRAVERSED FACING WESTERLY)

INSTRUMENT: GEONICS EM-16
J8195

ONTARIO GEOLOGICAL SURVEY

450

LOWER MANITOU LAKE

HOLCROFT LAKE

LAKE

GLASS BAY

LOWER MANITOU LAKE

BEAVERHEAD ISLAND

LOWER MANITOU LAKE

(ISLAND)

GLASS BAY

NARROWS

"V-21"

"V-22"

"V-21"

"V-22"

687391

687405

687406

687407

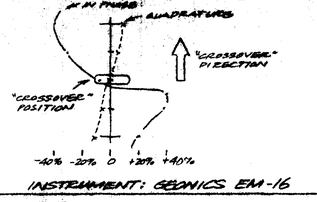
687410

687411

687414

687415

VLF - EM PROFILES
TRANSMITTER(Tx): NSS (ANNAPOLIS)
FREQUENCY: 24.4 kHz
PROFILE SCALE: 1cm : 20%
(ALL LINES TRAVERSED FACING WESTERLY)



INSTRUMENT: GEONICS EM-16

2.8195.

COCHRANE OIL AND GAS LTD.

MANITOU LAKES PROJECT

GROUND ELECTROMAGNETIC SURVEY

VLF-EM

BEAVERHEAD ISLAND AREA

MAP SHEET 3

KENORA MINING DIVISION ONTARIO

SCALE: 1:2000	N.T.S. 52 J-7
DATE: MAY, 1985	
SURVEYED: MARCH, 1985	

CGM LTD., CALGARY

52P07NE8318 2.8195 BOYER LAKE


COCHRANE OIL AND GAS LTD.
MANITOU LAKES PROJECT
GROUND ELECTROMAGNETIC SURVEY
C.E.M.
MANITOU STRAITS AREA
SCALE: 1:2500
CEM PROFILES
HORIZONTAL "SHOOTBACK" CONFIGURATION
FREQUENCIES: 1830 Hz, 5010 Hz
COIL SPACING: 100 m
PROFILE SCALE: 1cm: 10°
CONDUCTORS:
INSTRUMENT: CRONE C.E.M.
PROFESSIONAL GEOLOGIST ALBERTA
MICHAEL S. C. FOX
28195
BL 400W
L21N
L22N
L23N
L24N
L25N
L26N
L27N
L28N
L29N
L30N
L31N
L32N
L33N
L34N
L35N
L36N
L37N
L38N
L39N
L40N
L41N
L42N
L43N
L44N
L45N
L46N
L47N
L48N
L49N
L50N
L51N
L52N
L53N
L54N


MANITOU STRAITS
MANITOU STRAITS
MOSHER BAY
(UPPER MANITOU LAKE)
GOOSE LAKE
L55N
L56N
L57N
L58N
L59N
L60N
L61N
L62N
L63N
L64N
L65N
L66N
L67N
L68N
L69N
L70N
L71N
L72N
L73N
L74N
L75N
L76N
L77N
L78N
L79N
L80N
L81N
L82N
L83N
L84N
L85N
L86N
L87N
403W
402W
401W
BL400W
399W
398W
397W
396W
395W
394W
393W
392W
391W
390W
389W
28195
PROFESSIONAL GEOLOGIST
MICHAEL St. C. FOX
ALBERTA
CEM PROFILES
HORIZONTAL CONFIGURATION
PREQUENCIES: 5010 Hz
COIL SPACING:
PROFILE SCALE: 1cm : 10°
CONDUCTORS:
WEAK
MODERATE
STRONG
INSTRUMENT: CRONE CEM
COCHRANE OIL AND GAS LTD.
MANITOU LAKES PROJECT
GROUND ELECTROMAGNETIC SURVEY
C.E.M.
MAP SHEET 2
MANITOU STRAITS AREA
KENORA MINING DIVISION
ONTARIO
SCALE: 1:2500
N.T.S.
DATE: MAY, 1985

MANITOU LAKE

MOSHER BAY

MOSHER BAY (SOUTH ARM)

CEM PROFILES
HORIZONTAL "HOOTBACK" CONFIGURATION
FREQUENCIES: 400 Hz, 2010 Hz
COIL SPACING: 100' ea
PROFILE SCALES: 1cm = 10'

INSTRUMENT: GEONICS EM-16

COCHRANE OIL AND GAS LTD.

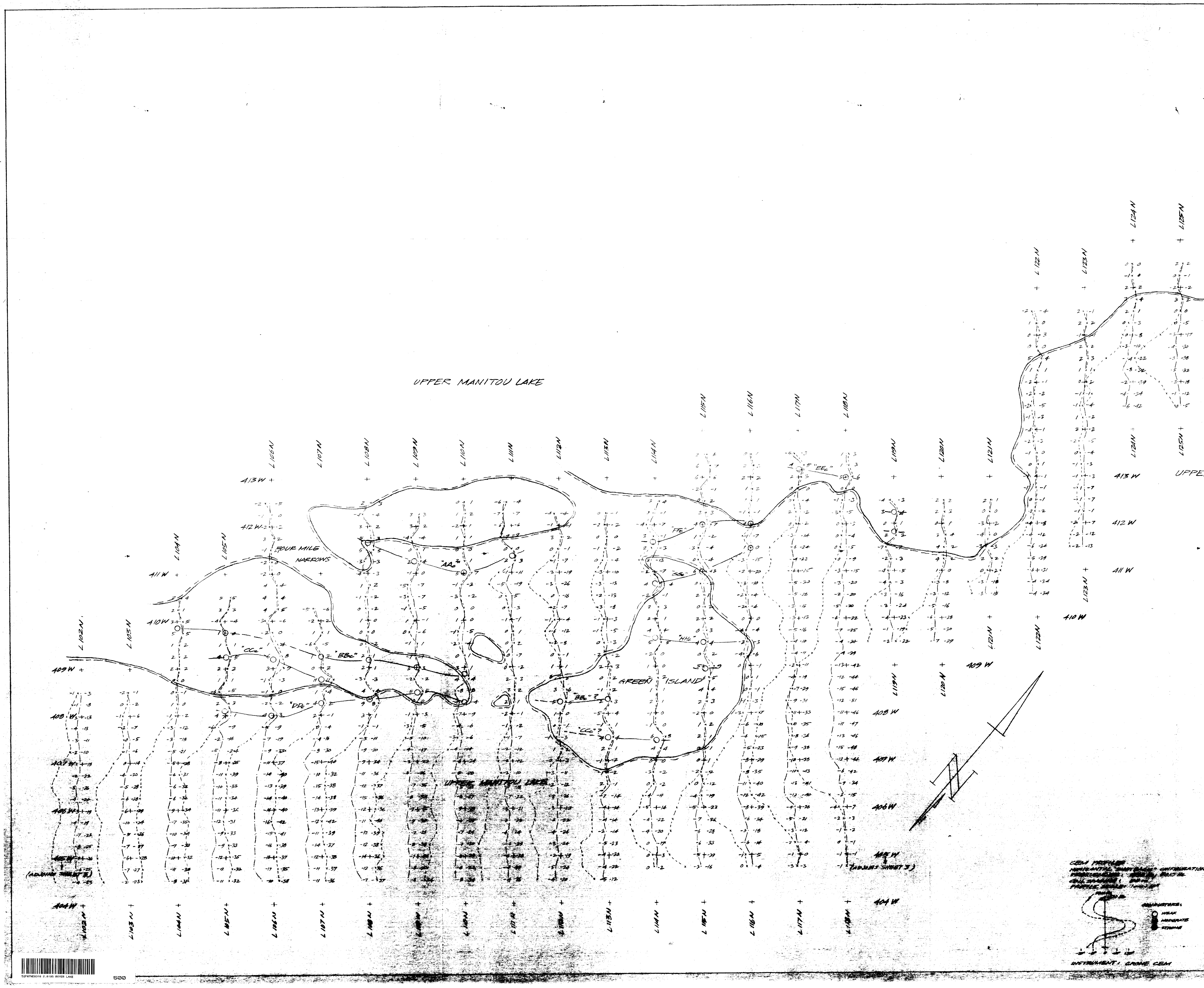
MANITOU LAKES PROJECT
GROUND ELECTROMAGNETIC SURVEY
C.E.M.
MAP SHEET #
MANITOU STRAITS AREA
MISSINAIBI MINING DIVISION ONTARIO

SCALE: 1:2500	NTS: 52-F-7
DATE: MAY, 1985	
SURVEYED: JAN-FEB, 1985	

CREA LTD, CALGARY

28195

490



COCHRANE OIL AND GAS LTD.

MANITOU LAKES PROJECT

GROUND ELECTROMAGNETIC SURVEY

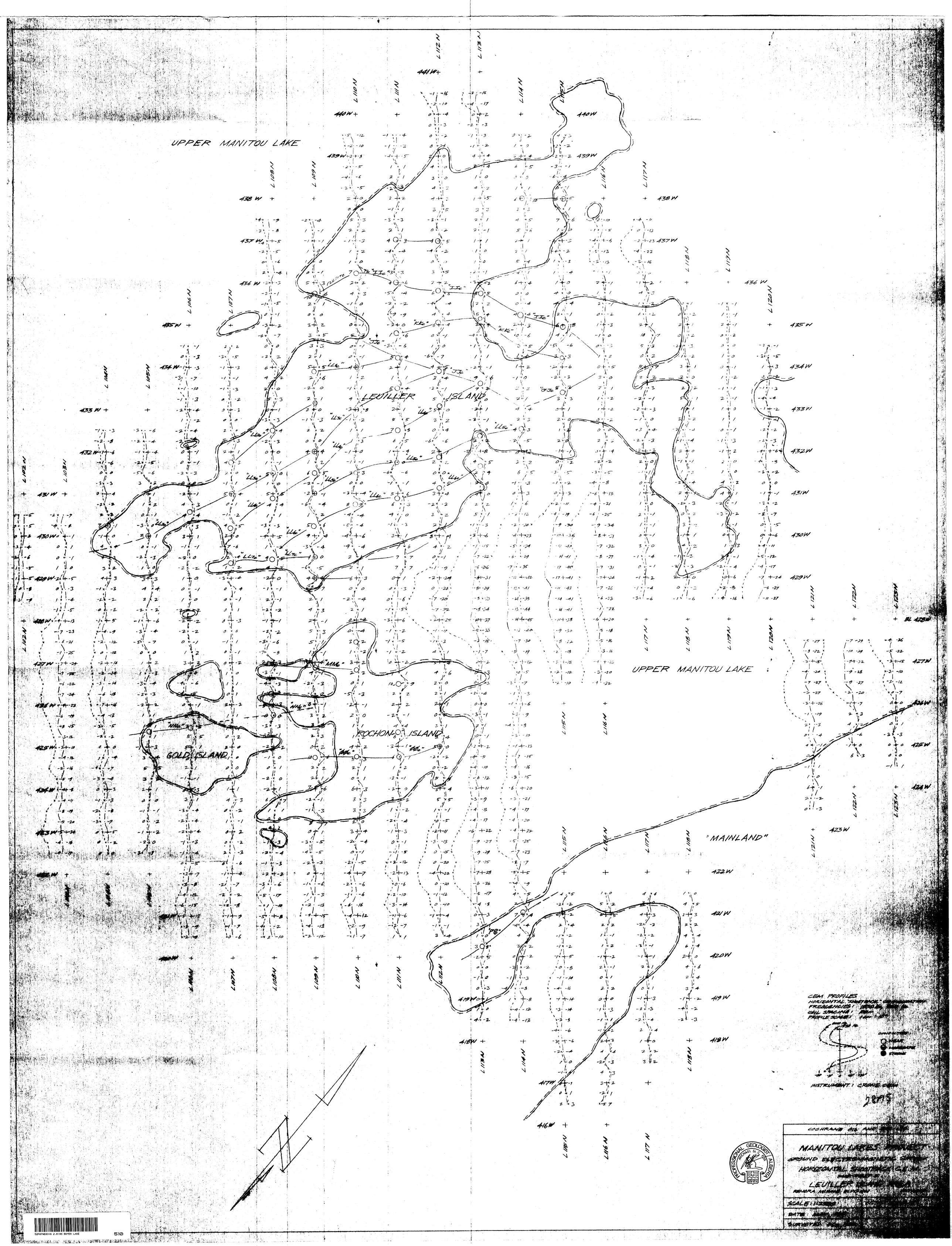
C.E.M.

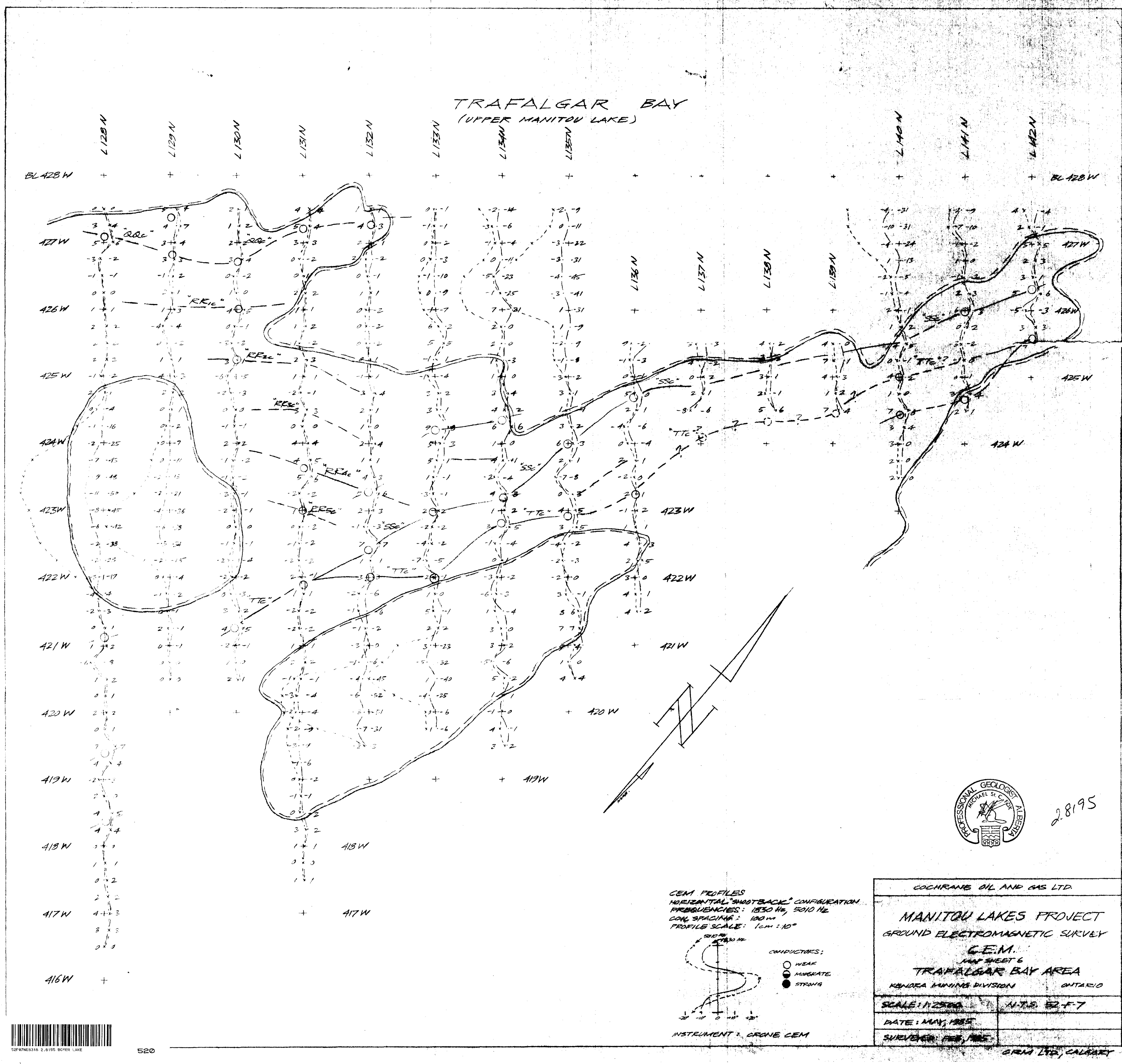
MAP SHEET 4

GREEN ISLAND AREA

KENORA MINING DIVISION — ONTARIO

SCALE: 1:2500	N.T.S. 52-F-7
DATE: MAY 1988	
SURVEYED: FEB. 1988	


UPPER MANITOU LAKE
LEUILLER ISLAND
ROCHON ISLAND
GOLD ISLAND
"MAINLAND"
UPPER MANITOU LAKE
CEM PROFILES
INSTRUMENT: GEONICS EM-16
COCHRANE AREA AND DISTRICT
MANITOU LAKES PROJECT
GROUND ELECTROMAGNETIC SURVEY
LEUILLER ISLAND AREA
SCALE:
DATE:
SURVEYED:
PROFESSIONAL GEOLOGIST
MICHAEL S. C. FOX
ALBERTA
510

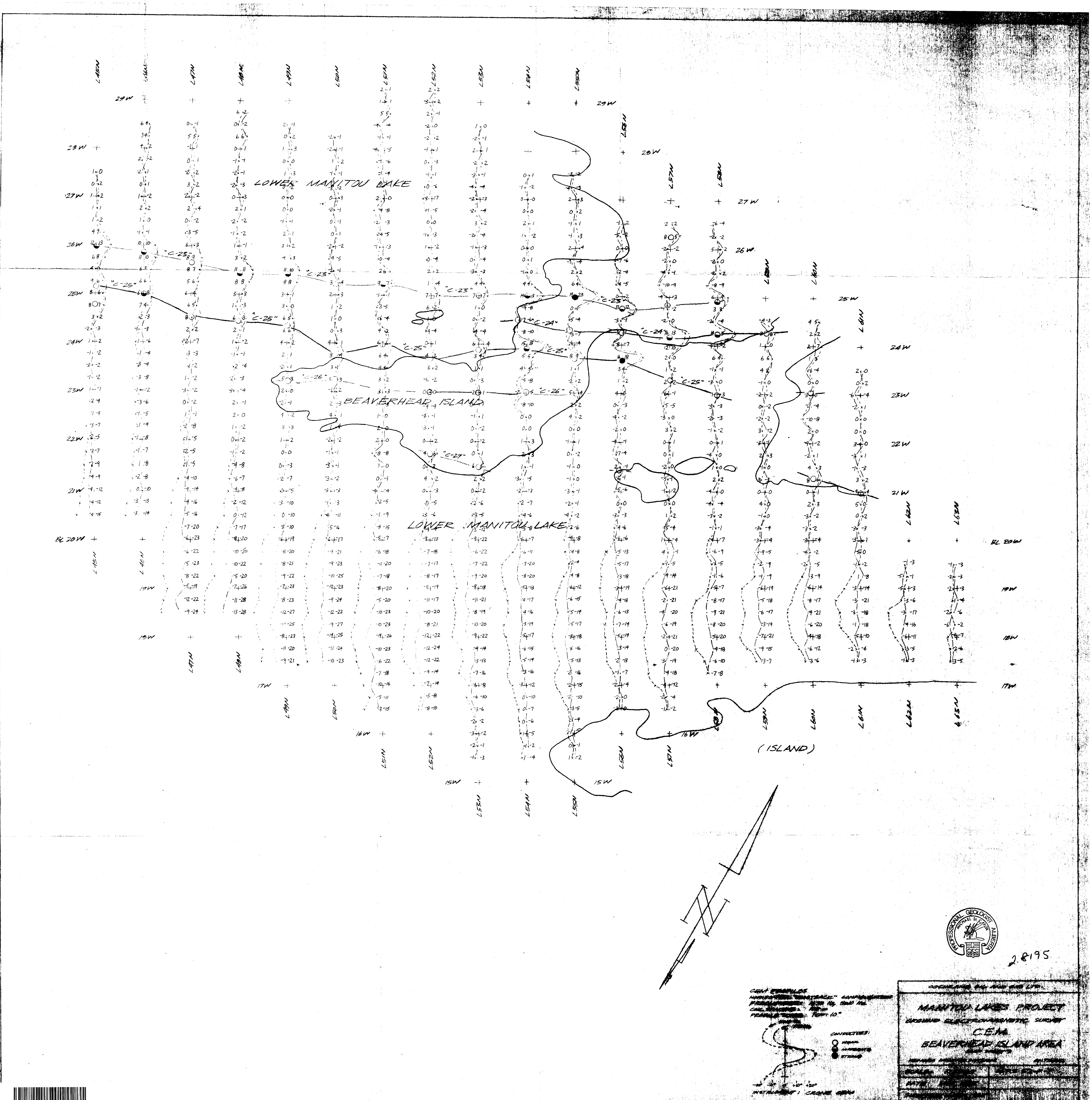


52F07NE8318 2.8195 BOYER LAKE

520


LOWER MANITOU LAKE
MERIDIAN BAY
MERIDIAN BAY
WEASEL RIVER
HOLCROFT LAKE
BL 20W
BL 12W
CEM PROFILES
HORIZONTAL "SHOOTBACK" CONFIGURATION
FREQUENCIES: 1830 Hz, 5010 Hz
PROFILE SCALE: 1cm : 10°
INSTRUMENT: CRONE CEM
28195
COCHRANE OIL AND GAS LTD.
MANITOU LAKES PROJECT
C.E.M.
MERIDIAN BAY AREA
KENORA MINING DIVISION
ONTARIO
SCALE: 1:2500
N.T.S. 52-F-7
DATE:
SURVEYED:


LOWER MANITOU LAKE
GLASS BAY
LAKE
HOLCROFT LAKE
BL 20W
BL 12W
CEM PROFILES
HORIZONTAL "SHOOTBACK" CONFIGURATION
FREQUENCIES: 1830 Hz, 5010 Hz
COIL SPACING: 100 m
PROFILE SCALE: 1cm : 10°
5010 Hz
1830 Hz
1830 Hz READINGS (LEFT HAND SIDE)
5010 Hz READINGS (RIGHT HAND SIDE)
CONDUCTORS:
WEAK
MODERATE
STRONG
INSTRUMENT: CRONE CEM
28195
PROFESSIONAL GEOLOGIST MICHAEL St. C. FOX ALBERTA
MANITOU LAKES PROJECT
GROUND ELECTROMAGNETIC SURVEY
C.E.M.
GLASS BAY AREA
ONTARIO



52F07NE8318 2.8195 BOYER LAKE

550