GM 48139

REPORT ON A PROGRAM OF GROUND GEOPHYSICAL SURVEYING AND REVERSE CIRCULATION DRILLING, LANOUILLIER TOWNSHIP PROPERTY

REPORT ON

A PROGRAM OF

GROUND GEOPHYSICAL SURVEYING

AND

REVERSE CIRCULATION DRILLING

LANOUILLIER TOWNSHIP PROPERTY, QUEBEC

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for

GREAT EXPLORATIONS INC.

ÉNERGIE ET RESSOURCES - SECTEUR MINES
REÇU
- 5 JAN 1989
BUREAU RÉGIONAL
ROUYN-NORANDA

Ministère de l'Énergie et des Ressources
Service de la Géoinformation
Date: 12 AVR 1989
No G.M.: 48139

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Toronto, Ontario
April, 1988

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SUMMARY

An integrated program of ground magnetic, electromagnetic and induced polarization surveying followed by reverse circulation drilling was conducted on the Lanouillier township property of Great Explorations Inc. in the Selbaie area of northwestern Quebec in early 1988.

The work was carried out to (a) further delineate airborne geophysical features and to test these and their immediate environments for the presence of gold and/or metal deposits, and (b) to test other portions of the property indicated to be of interest on geological grounds where there was no airborne conductivitiy.

The electromagnetic surveying successfully delineated the airborne conductors on the ground and the IP surveying located a number of weakly polarizable zones removed from the known EM conductors. These surveys provided a focus for the reverse circulation drilling.

The reverse circulation drill program, consisting of nineteen holes, was undertaken to sample the basal till and bedrock material immediately down-ice from, and directly into, the EM and IP anomalies delineated by the MPH geophysical surveys. An inferred granitic contact area in the west portion of the property was also tested.

Overburden thickness averaged 111 feet (33.0 metres) with the EM conductor area characterized by very thick overburden cover (to 202 feet). Granitic terrain to the west is characterized by much thinner overburden, In the areas of deep overburden, tills are well developed and generally comprise both Upper and Lower members. Upper Tills are only sparsely present to absent in the shallower holes.

A total of 40 gold grains was observed in tabling and panning operations of the 141 overburden samples, of which 30 were abraded, 2 irregular and one delicate. These are felt to reflect the background gold endowment in this portion of the Abitibi and are of no immediate exploration significance.

No significantly anomalous trace element assays (Cu, Zn, As, Au) were encountered from either overburden or bedrock samples.

No further work is recommended on the Lanouillier township property considering the results of the present program.

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PSEUDOSECTIONS

1.0 INTRODUCTION

This report presents and discusses the results of a combined ground geophysical and reverse circulation drilling program carried out by MPH Consulting Limited of Toronto on behalf of Great Explorations Inc., over the latter's Lanouillier township claim group in northwestern Quebec during February, 1988.

The property was deemed to have potential for gold ± base metal deposit-bearing environments on the basis of previous airborne EM surveys, regional structural grounds and the known geology of, as well as the occurrence of anomalous precious and base metal mineralization in the surrounding region.

The ground geophysical work, consisting of total field magnetometer, MaxMin II horizontal loop EM and induced polarization surveys, were undertaken to detect and define zones of conductive and/or polarizable sulphides that could reflect or be related to economic gold and/or polymetallic sulphide mineralization.

The 19 hole reverse circulation drilling program was carried out to test the geophysically-defined targets by seeking geochemical and mineralogical indicators of gold and/or polymetallic sulphides in the glacial overburden down-ice from the zones. Geophysical anomalies were penetrated directly with a number of the holes providing a sample of the causative material for analysis. A number of holes were also sited on a granite contact area, such environments being known hosts to gold mineralization in northwestern Quebec.

The report includes a description of the various exploration techniques, a discussion of the individual results and an integrated evaluation of the gold and polymetallic sulphide potential of the property.

2.0 LOCATION, ACCESS AND INFRASTRUCTURE

The claim group is located in the northwestern corner of Lanouillier township approximately 48 miles (77 km) northeast of Joutel, Quebec (Figure 1).

The town of Joutel, with a population of 500, services the adjacent Agnico-Eagle gold-silver mine. As the centre of an active exploration area, food, lodging, health and transportation facilities (helicopter, bus depot) are available. An all-weather secondary highway connects Joutel with La Sarre and Noranda to the southwest and the Selbaie Mine to the northwest.

The Selbaie mine (copper-zinc-silver-gold) is situated 12 miles (22 km) south-southeast of the claim group.

The town of LaSarre, situated 170 km to the southwest, is the main centre of service and supply for both the Casa Berardi and Selbaie Mine areas.

The Lanouillier township claim group is most conveniently accessed by helicopter from the Selbaie Mine or Bradley drilling camps at km 86 and 120 along the LaSarre-Selbaie-Joutel road. Alternatively, access to the property may be gained, in winter only, by a bush road that extends north from the Selbaie Mine.

The terrain is typical of northwestern Quebec, with low relief and extensive areas of deep overburden completely masking the bedrock topography. A few eskers and minor hills rise to a maximum of 150 feet above local drainage. The region is characterized by large areas of low-lying alders and muskeg swamp.

3.0 PROPERTY

The property consists of 125 contiguous unpatented mining claims, totalling approximately 1,360 hectares (3,360 acres), located in Lanouillier township as shown in Figure 2 and more properly described as follows:

Licence	Claims	Licence	Claims
456139	1-5	456152	1-5
456140	1-5	456153	1-5
456141	1-5	456154	1-5
456142	1-5	456155	1-5
456143	1-5	456156	1-5
456144	1-5	456157	1-5
456145	1-5	456158	1-5
456146	1-5	456159	1-5
456147	1-5	456160	1-5
456148	1-5	456161	1-5
456149	1-5	456162	1-5
456150	1-5	456163	1-5
456151	1-5		

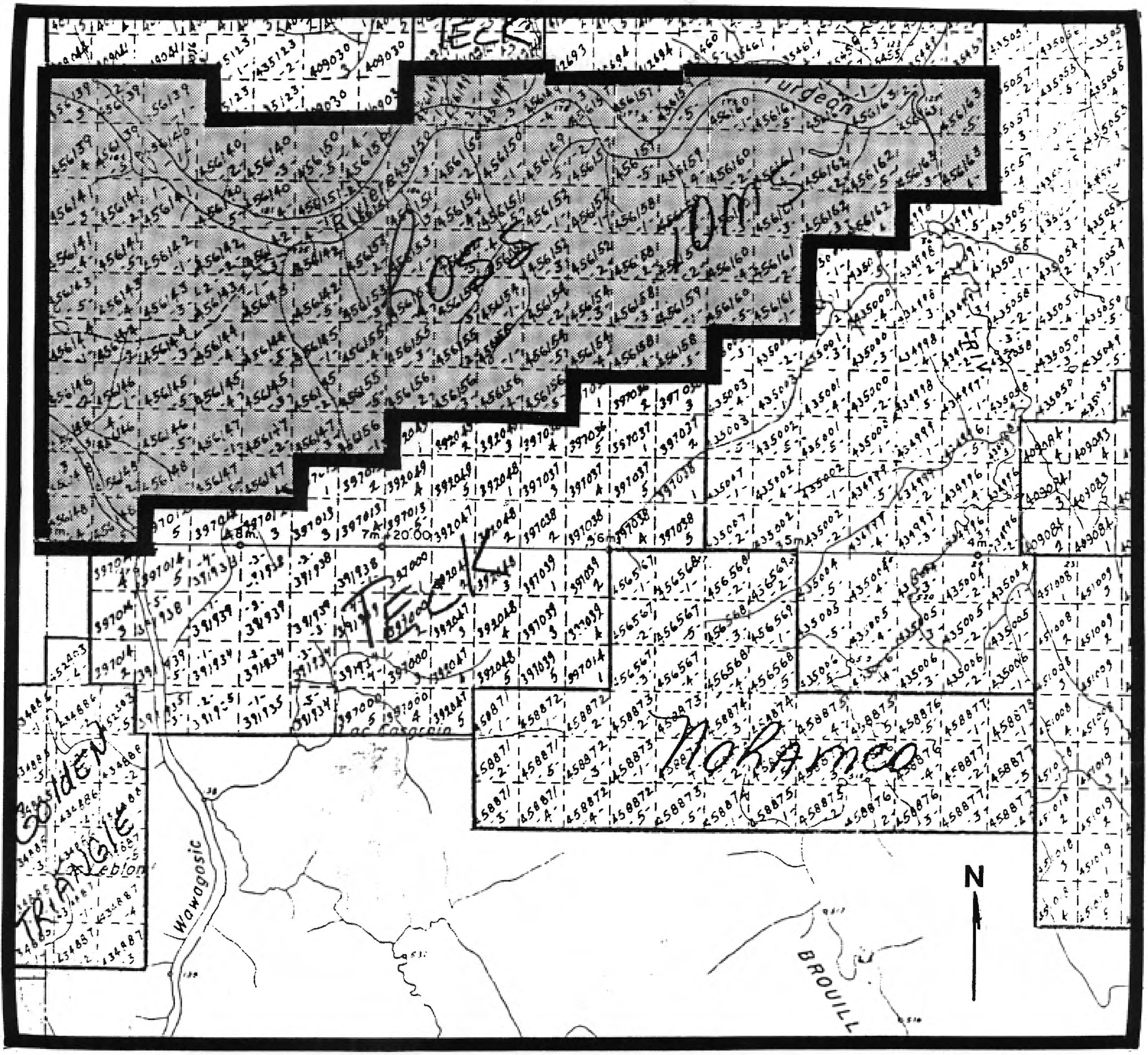
To maintain the claims in good standing, assessment work is required by the Quebec government on an annual expenditure basis for each claim as follows:

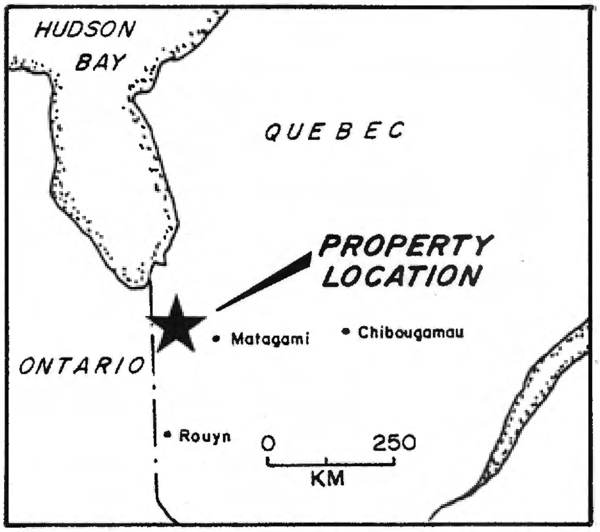
First year	$5/hectare (i.e. $80/claim)
Second to tenth years	$10/hectare (.i.e. $160/claim)

Work performed on one claim may be applied to other claims of the same group provided the claims are contiguous and the claim grouping does not exceed 480 hectares (1200 acres).

There is also an annual tax of $0.75/hectare which must be paid to the government within 10 days of the expiration date of the claim.

The holder of a claim(s) who wishes to retain his rights must apply for a development licence no later than 10 days prior to the expiration of a claim. The licence is valid for one year and must be renewed each year.





GREAT EXPLORATIONS INC.

LANOUILLIER TOWNSHIP CLAIM MAP

Project No: C-1078	By: G.P. Sinclair
Scale: 1: 50,000	Drawn: A & N
Drawing No:	Date: MAY 1988

MPH Consulting Limited

4.0 PREVIOUS EXPLORATION

The first concentrated mining exploration efforts in the region took place in the late 1950's following the discovery of the Matagami base metal camp to the east. Most of the work was carried out in Ste. Helene and La Gauchetiere townships to the east of the present property. Parts of Fenelon and Gaudet townships were covered by airborne and ground magnetic and electromagnetic surveys in 1959 and 1960.

Base metal exploration was carried out intermittently in the area during the 1960's and early 1970's. The discovery of the Phelps Dodge Cu-Zn-Ag deposit in La Gauchetiere township in 1973 and the Selbaie Zn-Cu-Au-Ag deposits in Brouillan township in 1974 intensified exploration in the area. Ground geophysical follow-up of airborne electromagnetic and magnetic anomalies and diamond drilling was carried out between 1974 and 1978 by Kennco, Noranda, Canadian Nickel (Inco), Hudson Bay, Amoco Exploration and Development and Selco.

There is no record of any diamond drilling on the present property.

Airborne geophysical surveys (EM, mag, VLF), flown by Aerodat for Quill Resources Ltd. prior to the present efforts greatly assisted in the design of the program (Aerodat, 1987).

Noramco Mining Corp. was carrying out an active diamond drilling project immediately to the south of the Great Explorations' property during the course of the present program.

5.0 GEOLOGY AND MINERAL DEPOSITS: DETOUR-MATAGAMI SECTOR, ABITIBI GREENSTONE BELT

5.1 Regional Geology

The Lanouillier township claim group lies within the overall Abitibi Greenstone Belt, as indicated in Figure 3. The Abitibi is the largest and most productive of several east-west trending metavolcanic-metasedimentary belts within the Superior Structural Province of the Canadian Shield. These supracrustal rocks are dominantly of Archean age, generally greater than 2 billion years B.P.

The general area of interest is a rectangular zone 200 km long by 125 km wide bounded approximately by the Detour mine in the northwest, the Burntbush area in the southwest, the Joutel area in the southeast and the Matagami area in the northeast.

This is generally a flat, monotonous area with endless black spruce swamp and muskeg cover. Outcrop exposure is probably 1% or less so that the geology is very imperfectly known. A further corollary of this is that additional undiscovered major deposits likely exist beneath overburden in the region.

Mafic metavolcanics are interpreted to be the predominant lithology. Scattered throughout this mafic "sea" are several centres of felsic volcanism such as in the Matagami area and around the Selbaie Mine. However, extensive assessment research indicates that there are far more felsic rocks in this region than commonly recognized.

Intercalated with the volcanic rocks are regional sedimentary-tuffaceous units with abundant graphite, argillite, sulphides and oxide

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MICROFILMÉE SUR 35 MM ET
POSITIONNÉE À LA SUITE DES
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SUITE DES PRÉSENTES PAGES STANDARDS

iron formation. These units typically appear as zones of airborne EM ± magnetic anomalies which may extend for tens of kilometres, and as such, they provide valuable stratigraphic marker horizons. This sedimentary-tuffaceous setting can also be a fertile one for mineral deposits. The Casa Berardi Golden Pond deposits are in such a setting as is the Agnico-Eagle Mine.

Intruding all of these rocks are various intermediate to felsic plutons, some of which may be broadly coeval with volcanism, i.e. synvolcanic, and hence of interest from an exploration viewpoint.

5.2 Mineral Deposits

After the Republic of South Africa's Witwatersrand, which produced some 1,114 million ounces of gold between 1884 and 1978, the greatest gold mining area of the western world is Canada's Abitibi belt. Composed mainly of Archean volcanic and sedimentary rocks, the Abitibi has produed more than 133 million ounces of gold between 1906 and 1981.

Several major gold and base metal deposits are present in the general region. The characteristics of some of these deposits, pertinent to further exploration in the region, are described below:

(a) Selbaie Mine - Brouillan Township

The Selbaie zinc-copper (± gold, silver) mine is located 50 km west of the present property and was discovered in 1974 by a Selco Exploration - Pickands Mather joint venture. The deposit was discovered by diamond drilling of a very weak horizontal loop EM anomaly in follow-up to an airborne EM survey. Production began in mid-1981 at 1,500 metric tonnes per day (B-Zone). The mine is currently undergoing a major expansion, funded in part by the Quebec government.

The Selbaie deposit occurs within acid pyroclastic and volcaniclastic rocks which form part of the Matagami section of the Archean Abitibi orogenic belt.

Ore reserves in the B Zone at December, 1982 consisted of 2.83 million tonnes averaging 3.5% Cu, 0.7% Zn, 33 g Ag, 1.2 g Au per metric tonne. Reserve figures quoted for the A-2 Zone (1978) were 5 million tons grading 2.02% Cu, 1.33% Zn, 0.36 oz Ag and 0.036 oz Au per ton.

This base metal deposit is somewhat atypical in that it consists mainly of epigenetic quartz-carbonate-base metal vein systems resulting from hydrothermal activity related to late stages of acid volcanism rather than the standard massive sulphides emplaced in syngenetic fashion.

The host rocks consist of rhyolitic tuffs and breccias, bedded chert-pyrite and volcaniclastic debris. An overlying quartz porphyry unit, which is weakly mineralized, may have acted as an impermeable cap rock during the mineralization event.

Veining and minor replacement occur in steeply dipping fracture/fault systems. The vein systems (Zones A-1 and A-2) are concentrated within subhorizontal, permeable rhyolitic units.

Principal hypogene minerals are pyrite, sphalerite and chalcopyrite. Galena, tetrahedrite, polybasite, and native silver occur in minor amounts together with native gold. Supergene chalcocite, digenite, covellite, bornite and native copper occur as fracture fillings and replacement rims around hypogene sulphides.

Important characteristics of the Selbaie deposit include the relatively weak nature of the related EM target and the epigenetic nature of the mineralization as compared to the classical stratiform massive sulphide model.

(b) Agnico-Eagle Mine, Joutel Township

Located near Joutel, this gold mine produced 610,000 oz of gold from 3.3 million tons of ore between 1974 and 1984, with reserves at that time being 1,401,592 tons of 0.203 oz gold per ton. Exploration leading to its discovery began in February, 1962 with ground geophysical surveys outlining coincident, magnetic and electromagnetic anomalies. Subsequent diamond drill testing and continued exploration resulted in a feasibility study in 1967, and regular production began in 1974.

The deposit occurs in felsic pyroclastic rocks at the top of a mafic metavolcanic cycle on the south limb of a northwest trending syncline. The volcanic sequence is overlain by a carbonaceous, pyritic schist that is a regional marker horizon. A large granitic stock, 6 km in diameter, intrudes the stratigraphy, along with later tonalite-trondjemite complexes.

The gold is contained within a stratabound/stratiform carbonate-sulphide-silicate-oxide facies iron formation which immediately overlies a sequence of partially welded felsic tuff and lapilli tuff. The carbonaceous schist, which contains pyrite bands and nodules, immediately overlies the ore zone.

The ore-bearing sequence is distinctly zoned with an outward change from an iron silicate facies exhalite at the centre of the orebody to iron carbonate (siderite) facies exhalite, with pyritic laminae common in both facies. Gold mineralization is directly associated with fine euhedral pyrite and Fe-dolomite veins, neither of which has a primary sedimentary origin (Wyman et al, 1986). These Fe-dolomite veins are associated with shear and fracture systems that appear broadly conformable with primary lithologies but in detail are crosscutting. Fine pyrite selvages and wispy stratiform pyritic offshoots from the veins contain the majority of the gold, and these structures do not show deformational features common throughout the mine sequence, suggesting that they are later than the latest major deformation.

Syngenetic models have been invoked for the Agnico-Eagle deposit. The deposit, however, exhibits all of the classical epigenetic lode gold features such as crosscutting mineralization, gold-Fe dolomite association, sulphidization (i.e. the fine-grained pyrite selvages), structural control and marked depletion of base metals in relation to Au, Sb, Bi, Hg, As, W and B. Moreover, trace element and isotope data clearly differentiate between the primary sedimentary siderite and pyrite, and the Fe-dolomite and sulphidized pyrite which contain the gold (Wyman et al, 1986). Auriferous H_2O-CO_2-H_2S fluid flow appears to have been localized by the zone of deformed rocks, and gold was precipitated at the intersection of this zone and the ideal host-rock, an iron-rich chemical sediment.

Any pyrite and/or pyrrhotite zone in this region should therefore be thoroughly evaluated for its gold potential. It is our finding that many such zones have not been assayed for gold in the past.

(c) The Golden Pond Gold Deposits, Casa Berardi Township

Four separate gold deposits are now indicated on the Golden Pond property located to the southwest of the present property. Estimated reserves at the Golden Pond and Golden Pond East deposits currently total some 6.3 million tons of 0.255 oz gold per ton with approximately equivalent tonnages in both zones.

The initial discovery was made by INCO in 1981 by diamond drilling of a ground electromagnetic-magnetic anomaly. The initial discovery hole was drilled on what is now known to be a small satellitic zone to the south of the main Golden Pond deposit. Three holes drilled as follow-up to the discovery hole were blanks. It was only by continued drilling of targets in the immediate area that the Golden Pond deposit was eventually discovered.

Golden Knight Resources Inc. of Vancouver subsequently farmed into the entire 882 claim property to earn a 40% interest in the property by spending $3,000,000 on exploration with INCO remaining as operator.

The property lies on the south limb of a regional synclinorium and straddles the contact between a lower sequence of volcanics and an overlying thick sedimentary pile. The contact generally trends E-W and dips almost vertically.

The geology of the property has been differentiated into various units using regional iron formations and graphitic horizons as marker horizons. The main rock units from stratigraphic top to bottom are given below:

Unit	Description
3	Clastic sediments, mostly sandstone, siltstone.
2e	Upper banded iron formation, ferruginous sediments.
2d	Golden Pond pyroclastic unit, agglomerate, lapilli tuff, tuffaceous sediments (ore-bearing).
2a	Volcaniclastic conglomerates.
1	Lower iron formation, magnetite, ferruginous sediments, clastic sediments.

In detail, the geology of the Golden Pond area can conveniently be considered in terms of a sequence of four mini-cycles. The cycles (from south to north) are briefly described as follows:

The base of cycle I consists of a thick polymictic volcaniclastic conglomerate. Clasts of pyritic grey chert and white bedded chert are characteristic. The basal unit is overlain by graphitic mudstone-siltstone which is capped by a discontinuous lens of bedded sulphide facies (chert-pyrite) iron formation. Cycle I hosts three distinct types of gold occurrences described below:

1. A weak but continuous gold zone that straddles the contact between the polymictic conglomerate and graphitic sediments.

2. A high-grade quartz-tourmaline-arsenopyrite-pyrite zone in mudstone-siltstone containing visible gold.

3. Disseminated auriferous arsenopyrite in the pyrite-chert exhalite.

The base of Cycle II consist of a variety of dacitic volcanic and volcaniclastic rock with intraformational conglomerates. The bulk of the cycle consists of a very thick sequence of turbidite greywacke, sandstone, siltstone, mudstone, containing nodular pyrite-graphite and chert. Variable quantities of intermediate to felsic volcaniclastic material are associated with one or more apparently transgressive, carbonate-sericite alteration zones which cut diagonally across the units. The alteration is intense and pervasive and may represent fossil hydrothermal conduits.

Ore grade mineralization in Cycle II is associated with the alteration and is also associated with graphite-pyrite-chert-arsenopyrite zones at the top of the cycle.

Cycle III is dominantly pyroclastic. The cycle begins with a thin, somewhat discontinuous, lapilli-tuff horizon overlain by a thick, felsic agglomerate unit. The agglomerate is overlain by a mixed sequence of lapilli-to-ash tuffs, green chloritic mudstone, cherts and a thin dacitic flow(?). The cycle ends with a magnetite quartz-chlorite-carbonate-pyrite iron formation.

Gold mineralization in Cycle III has been located on both the south and north contacts of the agglomerate unit and in one thin bed of pyritic iron formation.

Cycle IV is imperfectly defined and consists of well-bedded calcareous sandstone-mudstone.

Both geological and geophysical data clearly show that the Golden Pond gold-bearing zone lies within a major east-west trending conductive zone and an overlying complex pyroclastic unit. The conductive unit is traced without ambiguity west to the Turgeon River for a strike length of 20 km. At this point, the conductive unit bifurcates and correlation is less certain.

It should be noted that there is a major zone of east-west faulting, shearing and alteration, designated the "Casa Berardi Break", which extends through the deposit area and which has probably played a role in ore localization.

Key points at Golden Pond in our opinion include the crosscutting, quartz-sulphide vein nature of the mineralization, its occurrence near a regional INPUT-magnetic zone reflective of sulphide-graphite-oxide iron formation. The abundance of arsenopyrite in the deposit indicates that arsenic may be a very useful pathfinder element in this region.

(d) The Estrades Deposit, Estrades Township

The Estrades deposit was discovered by the Golden Hope-Teck Corporation joint venture in late 1985. The deposit occurs in a local wedge of Archean clastic sedimentary and felsic volcaniclastic sequence (locally graphitic and pyritic) with interbedded mafic to intermediate volcanic flows and associated pyroclastics within a broader sequence of mafic volcanics. The discovery would appear to be in the same broad regional stratigraphic package which contains the Golden Pond deposits and possibly the Agnico-Eagle mine.

Information from drilling to-date suggests a steeply dipping, tabular volcanogenic massive sulphide deposit striking east-west. The discovery hole cut a 35.1 ft section grading 0.2 oz gold per ton and 9.15 oz silver with high copper and zinc values (Northern Miner, December 2, 1985).

Drilling is being concentrated on two weakly conductive zones which probably represent a common horizon. The western part of the conductor has a strike component of more than 600 meters, while the eastern part extends for approximately 1,100 meters. Both are separated by a narrow gap occupied by a magnetic high which appears to represent a cross-cutting diabase dyke emplaced along a fault.

Thin section studies of the first core are indicated to reveal a quartz-sericite schist in the hangingwall and a volcaniclastic sediment comprising the footwall. These horizons form a thin but persistent unit in an environment generally characterized by mafic to intermediate volcanics.

Of importance to other exploration in this area is the fact that Teck drilled an extremely weak, albeit discrete, airborne conductor. A similarity to the Selbaie discovery is suggested in this regard.

Recently released figures based on extensive drilling indicate 2.4 million tons at 0.14 oz Au/T, 3.5 oz Ag/T, 0.84% Cu and 7.7% Zn (Northern Miner, June 6/86). The gold values are particularly noteworthy.

5.3 Exploration Models

The foregoing descriptions illustrate the probable types of gold deposits which can be expected in the area and may serve as models to guide exploration:

(a) stratiform/stratabound deposits ± sulphides, quartz vein zones, graphite, oxide iron formation in both mafic volcanic environments and felsic volcaniclastic-tuffaceous-sedimentary environments near volcanic contacts.

(b) massive and stringer sulphide gold deposits without base metals or with base metals in a generally felsic volcanic-sedimentary environment.

The following models are also considered prospective in the area:

(c) Structurally-controlled, intrusive-associated, quartz stockwork types of deposit localized along the margins of or within intermediate to felsic plutons. Such deposits are well represented in the Val d'Or area to the southwest.

(d) Disseminated gold deposits associated with carbonated, pyritic mafic volcanics. Such deposits are important sources of gold ore elsewhere in the Abitibi, noteably, in the Timmins area (Owl Creek mine, Dome mine).

5.4 Local Geology

The Great Explorations' property is situated between two major regional EM conductive trends. One of these occurs along the north property boundary while the southeast corner of the claim group covers a small portion of an identical trend to the south. These zones represent regional graphitic/sulphidic interflow units, the southern feature of which is believed to reflect the Grasset Break.

The bulk of the property is indicated by Quebec Government compilations to be underlain mainly by metasediments - greywacke, argillite, etc. The reverse circulation drilling and airborne magnetic results suggest that this interpretation is probably essentially correct but that there are some volcanic units within the sediments. Holes GE-88-01, 03 and 07, for example, all intersected volcanic rocks in what was presumed to be a sedimentary environment.

The northwest corner of the property is underlain by part of a large stock of granitic to dioritic composition as mapped from outcrop. Reverse circulation holes GE-88-14 to 17 all intersected granitoid rocks. Hole GE-88-13 penetrated the contact area of the above with magnetite-bearing mafic intrusive rocks intersected in holes GE-88-11 and 12 to the south.

The airborne surveys indicate two systems of faulting on the property. North-northwest trending faults are inferred from the truncation and offset of magnetic trends in the central portion of the property and from an interpreted diabase dyke in the east portion of the claim group. An apparent left-hand displacement of the dyke in the order of 150 m and the general magnetic response pattern suggest the presence of a regional west-southwest fault/shear zone in the central part of the property. This fault direction is consistent with the trend of the regional conductive horizons in the Casa Berardi/Selbaie area, many of which are known to have structural events associated with them.

Both the south and north regional EM conductors may be the locus of extensive strike-parallel shearing considering experience in other parts of this area (e.g. Casa Beradi graphitic fault). The presence of shearing in these rocks is supported by the intersection in reverse circulation hole GE-88-01 of highly altered sericite schist containing 1-3% pyrite and 5-10% quartz-carbonate veining.

5.5 Selected Target Areas

The exploration program designed for this initial evaluation of an essentially "grassroots" property was intended to indicate the possible existence of anomalous/economic gold mineralization associated with:

(i) mineralized splays from the Grasset Fault horizon;
(ii) mineralized horizons of disseminated sulphides which may or may not be related to faults/shear zones in the sediments north of the Grasset Fault/Break;
(iii) mineralized stockworks within the gabbros/diorites in the northwest corner of the property (e.g. as on the Duration ground in Orvillier Township to the south); and
(iv) the northern conductive horizon.

This latter feature could only by tested down-ice as any direct evaluation would have involved crossing the Turgeon River, a prohibitively expense and difficult task as the river does not freeze in winter and any work carried out within 100 ft of the river is subject to strict environmental constraints by government agencies.

6.0 GLACIAL GEOLOGY

Late Wisconsinan to Holocene age glacial drift covers the surface over much of the North Abitibi region, ranging in thickness from 0-100 m (Table 1). Two (and possibly three) distinct ice-flow directions have been recognized, an older 230-270° advance, an intermediate 180-220° advance and a latest 130-170° advance (Figure 4, after Veillette, 1986). Deposits from only the 180-220° advance ("Lower Till") and the 130-170° advance ("Upper" or Matheson Till) are recognized in the present property area.

The Harricana Moraine (also referred to as the Matagami or Abitibi esker) located east of the property area, coalesces with the Lake McConnell Moraine in the Temiskaming Region, and is thought to extend to the Lake Simcoe area, making it the longest body of glaciofluvial material in Canada (Figure 5, after Veillette, 1986). This complex is thought to be a marginal deglaciation feature related to a splitting of the ice sheet, and not an interlobate moraine between the Keewatin ice-flow to the northwest and the older Laurentide ice sheet to the northeast.

As ice receded from the area, the proglacial terrain tilted northward as a result of isostatic adjustment. North-flowing Arctic drainage was impeded by the receding ice mass which, combined with southward flushing of melt waters; produced substantial proglacial ponding. This ponding produced Lake Barlow and subsequently Lake Ojibway which inundated the region to depths in excess of 300 ft some 8100 years B.P. Sedimentation in the proglacial lakes is represented by deep water varved silts and clays and shallower fine sand facies. Several large eskers developed as a response of the deglaciation, and these commonly show the same general trend as the Harricana-Lake McConnell Moraine, suggesting that a major correction in meltwater direction occurred during deglaciation. Depending upon proximity to these glaciofluvial features, Quaternary stratigraphy encountered during overburden drilling can become quite complex.

CENOZOIC	QUATERNARY	HOLOCENE			
		PLEISTOCENE	WISCONSIN	LATE	25,000 - 10,000 years B.P.
				MIDDLE	55,000 - 25,000
				EARLY	55,000
			SANGAMON		interglacial; widespread soil development
			ILLINOIAN		till
			YARMOUTH		interglacial
			KANSAN		till
			AFTONIAN		interglacial
			NEBRASKAN		till
			BLANCAN ?		preglacial
	TERTIARY	PLIOCENE			1 M years B.P.

TABLE 1

Late Cenozoic Time Scale With Respect To Glacial-Stratigraphic Nomenclature

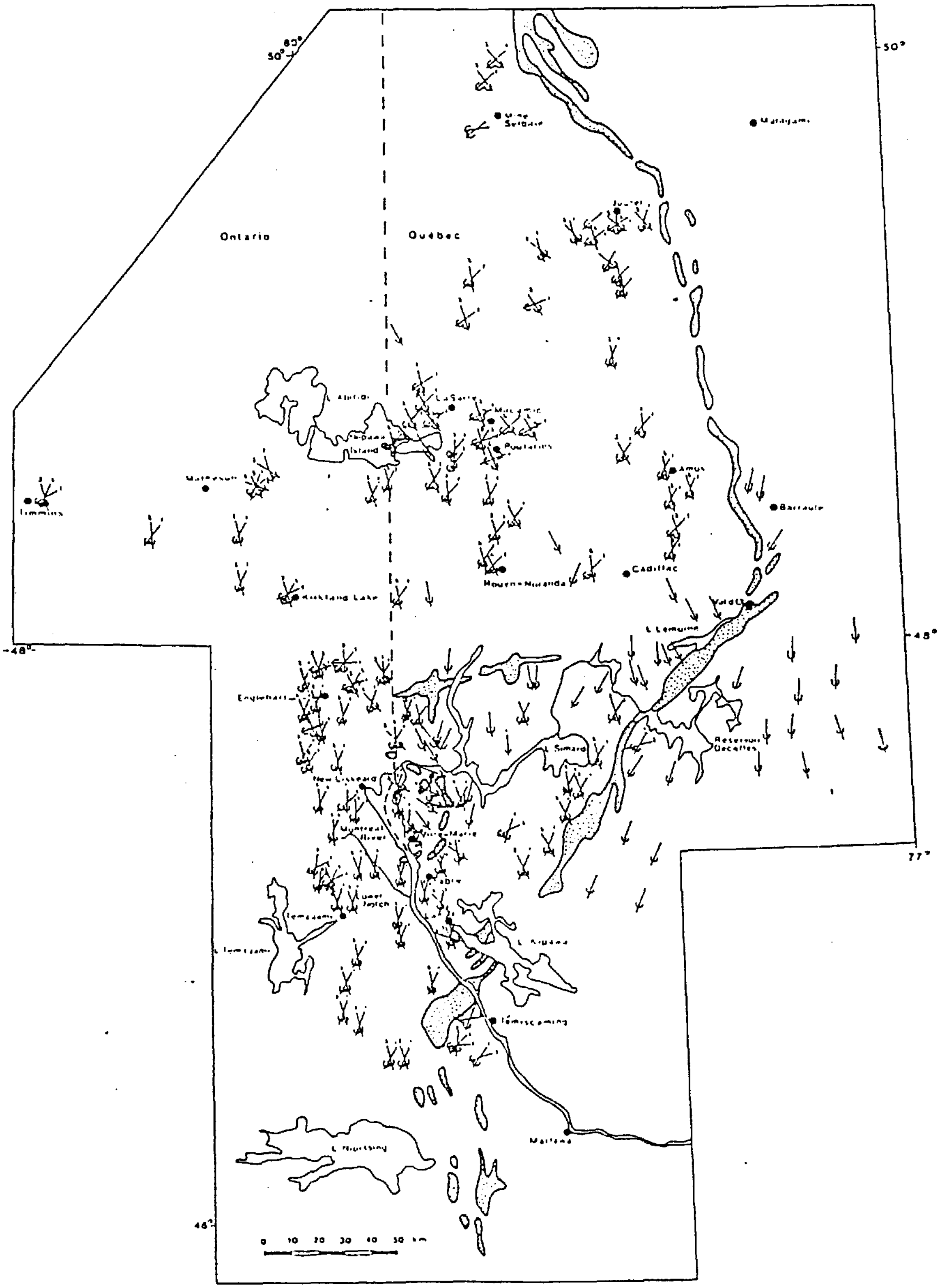

Fig 4: Cross-striated sites within the Abitibi-Temiskaming Region (after Veillette, 1986).

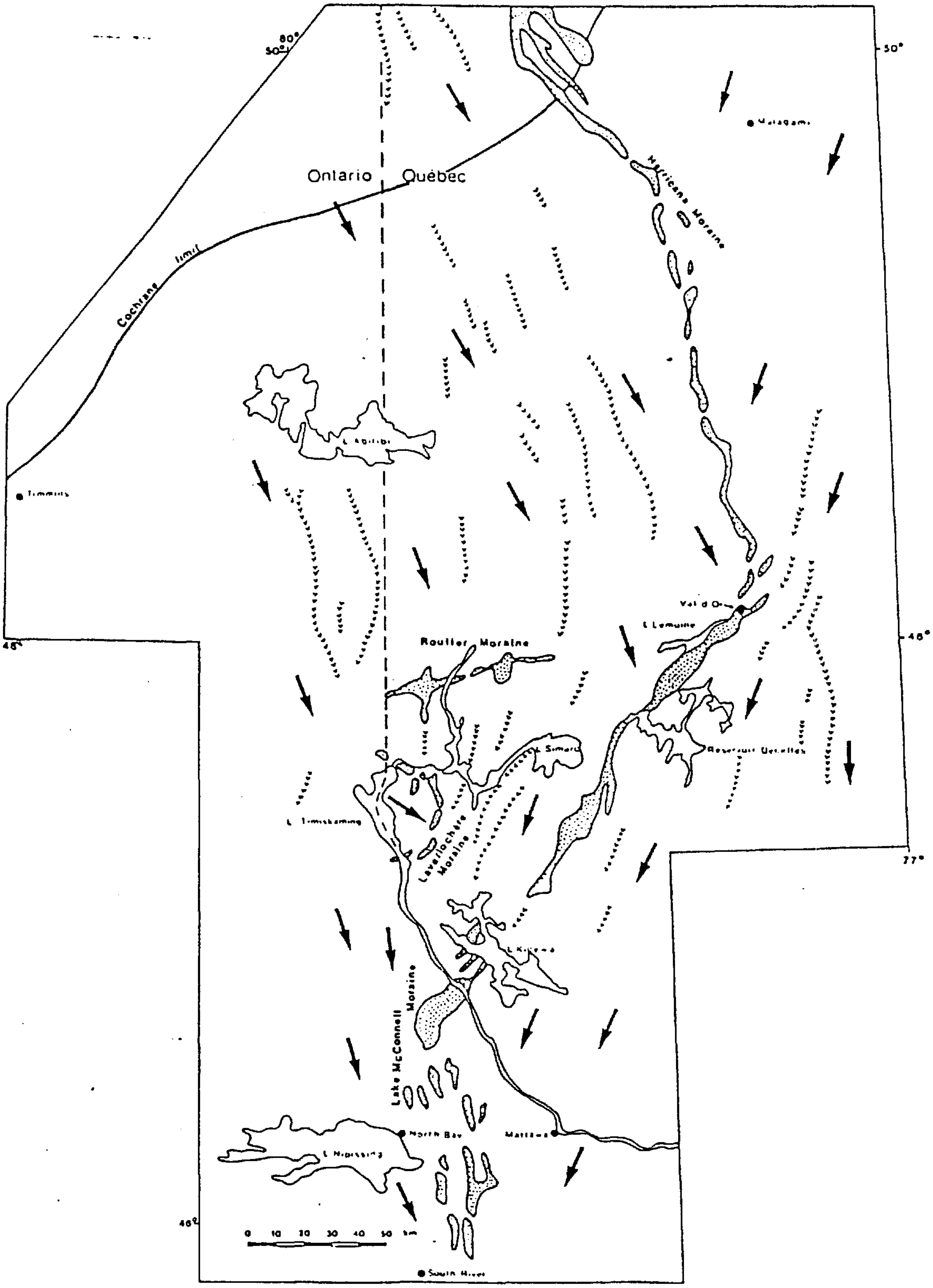

Figure 5: The Harricana-Lake McConnell glaciofluvial complex (moraines and eskers) and generalized directions of flow (arrows) during glaciation. (after Veillette, 1986.)

Till deposits of the older advance (Lower Till) from the north-northeast are present only in protected bedrock depressions beneath younger deposits (Upper Till) from the north-northwest. This is an important exploration consideration in that bedrock depressions (i.e. weathering lows) are often the locus of shearing, alteration and mineralization. It is clear that in many areas the older tills have been extensively modified or destroyed by the subsequent re-advance; however two complete glacial stratigraphic sections are often present, consisting of Upper Sediments (including clays and silts) overlying Upper Till, these units are in turn underlain by Lower Sediments and Lower Till.

7.0 EXPLORATION PROCEDURES

7.1 Magnetometer Survey

Magnetometer surveys represent a long-established geophysical technique providing useful information pertinent to the detection and delineation of magnetic lithologic units and mineralization.

A variety of instrumentation has been developed over the years to match the varied objectives and environments in which magnetic surveys are undertaken; these include airborne, ground and drillhole applications.

For mineral exploration, ground surveys are typically carried out with proton precession magnetometers measuring variations in the total intensity of the earth's magnetic field. Such variations can be interpreted to determine the probable configuration of the causative magnetic source and its magnetic susceptibility.

Magnetic surveys in Precambrian metavolcanic terrains for gold and base metal deposits generally provide information as to magnetic sources that may be directly associated with conductive EM targets and help characterize distinctive lithological units and structural disruptions.

The use of digitially recording field and base station magnetometers serves to ensure high quality, drift-free compiled data, which is usually displayed in contoured form.

7.2 Horizontal Loop EM Method

The horizontal loop electromagnetic method is a generally practiced and widely accepted geophysical technique for detecting and delineating conductive targets.

The type of array used in the survey is determined by the type of ground and overburden, and the geometry, depth and size of the target. Similar considerations determine the dipole spacing (the "a" spacing) and the "n" separations read.

The results from the survey are usually displayed in "pseudosection" form. A pseudosection is produced for both the resistivity (measured in ohm-metres and calculated from the primary voltage and the array type) and the total chargeability (in units of milliseconds and a measure of how the secondary voltage decays). The results may then be interpreted in a qualitative manner to obtain information with respect to the causative source. The location, size and polarization is determined, although the latter is not directly indicative of the quantity of polarizable minerals present.

7.4 The Reverse Circulation Drilling Method

Overburden or reverse circulation drilling consists of drilling through the unconsolidated (Quaternary) materials overlying bedrock with dual-tube rods and a tricone bit using a water-air mixture as drill fluid. The resultant slurry is visually monitored, collected, sampled and then processed to obtain a concentrate of heavy minerals. This concentrate is then analysed optically and geochemically to detect ore or indicator particles and/or indicator elements.

The method is based on the principle that there are dispersion trains created in tills during glacial over-riding which can be detected and subsequently traced, up-ice, to the source area (Figure 6). The use of heavy mineral concentrates greatly enhances anomalous metals concentrations making the method extremely sensitive to distant deposits.

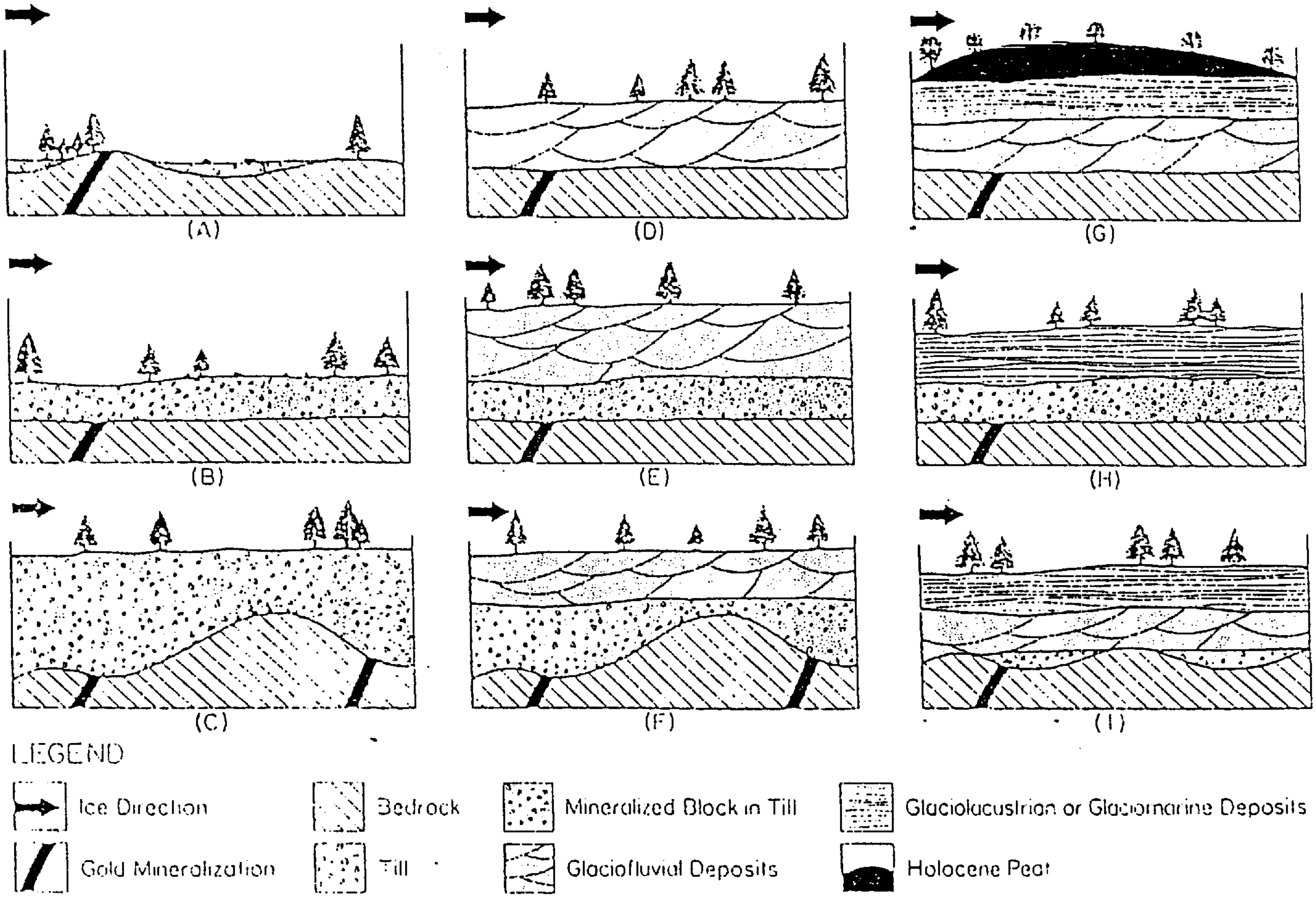

Figure 6: Conceptual model of the generation of mineralized trains in overburden material (after Fortesque, 1983)

One of the most important applications of the method is in the detailed follow-up to airborne and/or ground geophysical surveys.

Appendix I presents a more detailed discussion of the method.

8.0 SURVEY PARAMETERS, DATA PRESENTATION AND PERSONNEL

8.1 Linecutting (Map 1)

Due to the grassroots nature of the property and the limited funds available to explore the potential of such a large area, a geophysical program was designed to assess the potential of the property by delineating specific targets both on a mini-grid and by reconnaissance surveying on widely spaced lines (see section 5.5). Approximately 19.34 km of linecutting was carried out by Burt Dallaire of Normetal, Quebec under subcontract to MPH Consulting Limited.

An east-west baseline was established close to the southern property boundary and the regional conductive horizon associated with the Grasset Break. The baseline is picketed at 25 intervals, extending from 9+75E to 43+00W, and at 2+00E is 25 m south of post number one for claim 456154-5.

A mini-grid, with maximum limits of 5+00N and 5+00S, was established with crosslines at nominal 200 m separations between 6+00W and 8+00E. Line 0+00 was actually established at 0+50E.

North-south reconnaissance lines were established at 8+00E, 0+50E, 16+00W and 37+00W extending from the southern property boundary to the south bank of the Turgeon River.

All crosslines were picketed at 25 m station intervals.

The exact configuration of the grid, claim posts and topographic features (where noted) are recorded on Map 1.

8.2 Magnetometer Survey (Maps 2 and 3, Pseudosections P-1 to P-4)

Approximately 19.34 km of total field magnetic surveying was completed on the property. Readings were taken every 12.5 m along all north-south grid lines and the baseline.

An EDA PPM 350 magnetometer was used to measure the total field and an EDA PPM 400 base station magnetometer to record the total field and correct for diurnal variations. Specifications for these instruments are included in Appendix 5.

The magnetic data is presented in three different formats:

(i) Map 2 is a 1:5,000 contour presentation of the data to the south of 5+00N between lines 6+00W and 8+00E and coincident with the area surveyed by MaxMin II HLEM;

(ii) Map 3 is a profile of the baseline data at a scale of 1:2500; and

(iii) the data from survey lines 8+00E, 0+50E, 16+00W and 37+00W is presented in profile form on pseudosections P-1 to P-4, respectively, for direct comparison with the induced polarization/ resistivity results.

8.3 Horizontal Loop EM Survey (Map 4)

Approximately 5.24 km of HLEM surveying was completed on lines 6+00W to 8+00E over the southern airborne EM horizon (Grasset Break). An Apex Parametrics MaxMin II system was used with a coil separation of 150 m and transmitting frequencies of 444, 1777 and 3555 Hz. Readings were taken at 25 m station intervals.

Specifications for this instrument are included in Appendix 5.

The data for all three frequencies are presented in profile form at a scale of 1:5000 in Map 4. The interpreted conductor axes and physical parameters, where computed, are superimposed on the profiles (Map 4). The conductor axes are also presented in the compilation map (Map 1), the total field magnetic contours (Map 2) and on the IP pseudosection for lines 8+00E (P-1) and 0+50E (P-2).

8.4 Induced Polarization Survey (Pseudosections P-1 to P-4)

A total of 10.39 km of induced polarization surveying was completed on the four reconaissance lines traversing the property south of the Turgeon River to the southern property boundary.

A dipole-dipole array was employed on line 0+50E from 15+00N to 7+00S. This array configuration did not provide adequate penetration to bedrock on the northern third of line 0+00 with a consequent degradation in the ability to resolve and delineate anomalous conductive and polarizable features. In order to overcome these problems lines 37+00W, 16+00W and 8+00E and the northern third of line 0+50E were therefore surveyed using a pole-dipole array with the infinite current electrode located at 12+50S on line 0+00. In all cases the survey parameters were a dipole spacing ("a" spacing) of 75 m and dipole separations of n=1 to 4.

A Huntec 7.5 kw transmitter/alternator system with Huntec Mk IV receivers were used in the survey. The instrument settings used for the survey were:

Transmitter timing: 2 seconds on, 2 seconds off
Receiver : Delay time - 100 milliseconds
: Interval time - 100 milliseconds
: Low pass filter - IN
: Notch filter - IN @ 60 Hz

Specifications for these instruments are presented in Appendix 5.

The apparent resistivity and total chargeability data are presented in pseudosection format for lines 8+00E, 0+50E, 16+00W and 37+00W in pseudosections P-1 to P-4, respectively. On each pseudosection, where relevant, the reverse circulation drill hole locations and depth to bedrock plus the interpreted HLEM conductors with calculated parameters are identified. Profiles of the total field magnetic data are located immediately above the apparent resistivity data.

The interpreted resistivity and polarizable features are superimposed on the pseudosections (P-1 to P-4) and the compilation map (Map 1).

8.5 Personnel

The following MPH personnel were involved in the geophysical program:

S. Bate, M.Sc. - Senior Geophysicist
K. Blackshaw - Senior Geophysical Operator
P. Arsenault - Operator
R. Durant - Operator
S. LaBrecque - Operator
F. Seglincas - Operator
B. Briere - Operator

8.6 Reverse Circulation Drilling Operations

The Great Explorations' reverse circulation drilling program consisted of nineteen holes totalling 2109 ft (643.3 m) completed in the period February 7 to 27, 1988, including mobilization/demobilization. The logs for these holes may be found in Appendix 2.

In terms of exploration tactics, reverse circulation holes were located both directly on and immediately (10-100 m) down-ice from geophysical targets. Experience at the Golden Pond deposits and elsewhere in the region has shown this method most effective in evaluating the gold potential of such targets. The holes directly into the EM conductors usually identify the cause of the conductivity, and provide bedrock material for assay. The down-ice holes provide a reading, via the overburden, on the overall conductor or sedimentary/tuffaceous stratigraphy of which the specific EM conductor may be a relatively minor portion. This, in turn, recognizes that the gold deposit may be near the conductor but not necessarily a constituent of the conductor, as in the case of the Golden Pond deposit area.

Bradley Brothers Limited of Timmins was the drill contractor. They supplied an Acker dual-tube reverse circulation drill mounted on an FN 160 Nodwell tracked carrier, together with a smaller FN 60 Nodwell tracked carrier for water haulage. A D-7 bulldozer was contracted locally to prepare access roads.

The drill crew supplied by Bradley consisted of a drill operator or "runner", a runner's helper and a water hauler, as well as the tractor operator when needed. The following MPH personnel were involved with the reverse circulation drilling:

W.E. Brereton, P.Eng.	Consultant
G.P. Sinclair, B.Sc.	Project Geologist
L. Chabot	Sampler

A camp established by Bradley Brothers Ltd. at kilometer 86 on the Selbaie road was used by the drill crew and MPH personnel during the project. A Bell 206 B helicopter based at the Bradley camp at kilometer 120 was used to access the property by MPH and Bradley personnel.

The overburden samples collected during drilling were sent to the laboratory of Overburden Drilling Management Ltd. for heavy mineral processing in Ottawa. Standard visual monitoring was carried out during the tabling pre-concentration process with any samples in which gold was observed subjected to a careful panning operation in order to isolate and characterize each individual grain. Three-quarter splits were then sent to Bondar-Clegg & Co. Ltd. for Au, As, Cu and Zn analyses, with the remaining one-quarter split retained for microscopic examination and as a permanent record. Sample processing results can be found in Appendix 3.

At Bondar-Clegg, samples containing significant visible gold grains were analysed by the pulp and metallics method whereby the coarser fraction of the sample (+150 mesh) were analyzed separately from the fine fraction (-150 mesh) and the results combined to give a final weighted average value.

Au was analyzed by fire assay preconcentration followed by aqua regia dissolution and atomic absorption analysis. Cu, Zn and Ag were analyzed by atomic absorption after a hydrochloric acid-nitric acid digestion and As was determined by a colour metric determination following nitic acid-perchloric acid digestion. Certificates of analyses are presented in Appendix 4.

Bedrock chip samples (+12 mesh) were sent to Bondar Clegg in Ottawa for analysis of Au, As, Cu and Zn contents. A vial of +12 mesh chips were also sent to MPH in Toronto for subsequent binocular microscopic examination and classification.

9.0 GEOPHYSICAL INTERPRETATION

9.1 Airborne Geophysics

Airborne surveys, including total field magnetics, VLF-EM and electromagnetics, were completed over the property in December 1987 and an interpretation report produced by Aerodat Ltd. These surveys provided more details information than could be derived from the regional airborne survey undertaken by Questor Surveys Ltd. in 1978 for the Quebec government.

The magnetic response pattern is generally bland and featureless suggesting that sediments and/or felsic volcanics underlie the majority of the property. A narrow linear feature in the northeast corner of the property is inferred to reflect a diabase dyke associated with north-northwest faulting (see Map 1). Gabbros/diorites, mapped from outcrop, are inferred from the magnetics to be confined to the northwest corner of the property.

The electromagnetic data from the 1978 Questor survey define two regional conductive trends the main body of which lie outside but bound the northern and southern property boundaries. They are believed to reflect graphitic/sulphidic interflow units.

The Aerodat survey delineated a discrete conductive horizon within the property which are located on the margin of both regional conductive trends:

(i) the north conductor is interpreted as a strong to moderately conductive bedrock feature located immediately north of the Turgeon River and within the present property lies within claims 456149-1 to 456149-4 only;

(ii) the south conductor is a moderate to weakly conductive bedrock feature semi-coincident with the southern property boundary in claim 456154-4. The conductive responses are interpreted by Aerodat as possibly reflecting conductive overburden towards the western extent of the southern discrete conductive horizon which is located on the property.

Elsewhere, conductive responses are generally interpreted to reflect either surficial effects or as single line possible bedrock conductors.

Overburden thicknesses, ranging from outcrop to in excess of 74 m, were calculated from the results and presented by Aerodat in a contour and colour format (Aerodat, 1987). The limited geophysical and reverse circulation drilling results are in general agreement with the calculated depths.

Both north to north-northwest and east-northeast faults/lineaments are interpreted from the combined airborne datasets and they are identified on the compilation map (Map 1).

9.2 Magnetic Survey (Maps 2 and 3, Pseudosections P-1 to P-4)

The corrected total field data present a generally quiescent magnetic background with few anomalous features. The majority of the total field amplitudes are in the range of 57975 to 58150 nT with the magnetic background being approximately 58050 nT.

The contoured data from the minigrid, with limits of 5+00N to 5+00S on lines 8+00E to 6+00W (Map 2), depicts the typical response pattern of sediments and/or felsic volcanics. The amplitude range is only 120 nT and a contouring interval of 10 nT was required to display the magnetic texture of the area. Therefore, any features which might be considered anomalous or as depicting a different lithologic unit could equally well be reflecting a thinning of the overburden cover at that location; i.e. reflecting bedrock topography.

Five reverse circulation drill holes were collared on this miningrid and their location and the bedrock lithologies encountered are identified on Map 2. The lithologies include black metasediments (mudstones), siliceous sediments and intermediate metavolcanics. Graphitic and sericitic schist were also intersected along the conductive horizon 1 (see Section 9.3). Depths to bedrock in these holes range from 39.8 to 64.3 m. It is therefore apparent that the various lithologies cannot in general be differentiated in terms of magnetic signatures.

However, lithologic contacts and discrete features can be inferred from the magnetic results in several places as follows:

(i) in the vicinity of 18+00N and northwards on line 0+50E total field magnetic amplitudes increase sharply from 58050 to 58250 nT interpreted to indicate a higher intermediate-to-mafic volcanic content in the underlying lithologies;

(ii) a change in background is also noted between 14+00W and 18+00W on the baseline. East of this point, where mudstones and metavolcanics have been identified, the background is 58050 nT whereas to the west it is 58000 nT suggesting that siliceous sediments (GE-88-18) are more prevalent;

(iii) the highest total field amplitudes (up to 58450 nT) recorded during the current surveys are between 5+00N and 6+00N on line 37+00W. This area is known to be underlain by diorites with granodiorite intrusives occurring immediately to the north and west and sediments and/or felsic volcanics to the south and east (see Map 1). Holes GS-88-11 and GS-88-12 intersected medium to fine grained mafic volcanics which are non-magnetic, in direct contradiction of the magnetic results. However, the profile indicates at least two narrow, near surface magnetic features at 4+90N and 5+70N with a near vertical to steep southerly dip. These may reflect more magnetic phases within the mafic intrusives and they would not have been intersected by the drilling program;

(iv) Continuing northwards to 9+00N on line 37+00W the magnetic amplitudes average 58160 nT, or 110 nT above background. This sector is believed to reflect complex interfingering of the diorites and granodiorites as indicated by hole GS-88-13 which encountered both units at 7+25N. Hole GE-88-14 intersected massive medium grained granodiorite at 9+00N.

The magnetic signature of the granodiorites is bland and featureless as expected but the background (58050 nT) is identical to that for the mudstones and metavolcanics further east. It is therefore apparent that the various lithologic units underlying the property cannot be differentiated magnetically.

9.3 Horizontal Loop Electromagnetic Survey

Three conductors, labelled conductors 1 through 3, have been identified on the property within the mini-grid which extends from lines 6+00W to 8+00E.

The physical parameters have been calculated at the lowest transmitting frequency where a response is recorded; generally at 444 Hz. The conductors are essentially narrow, near vertical and are at depths of 15 to 75 m below surface. Conductances are estimated from the 444 Hz dataset to range from less than 1 to 20 mhos/m.

Conductor 1 trends east-northeast from 5+25S on line 6+00W to 0+70S on line 2+00E. A flexure is noted at this point in the conductive horizon which continues with a due easterly trend to line 8+00E.

Conductor 1 is coincident with the horizon on the northern margin of the Grasset deformation zone (see Section 9.1) and exhibits a similar variation in conductance along strike. The strongest portions of the conductor are on lines 2+00W and 2+00E to 4+00E where the estimated conductances are between 10 and 25 mhos/m. On other lines within the property estimated conductances range from <1 to 5 mhos/m.

A possible steep northerly dip on line 2+00W is inferred at the higher transmitting frequencies. However, the responses could also be distorted in some part by lateral variations in the conductivity of the overburden. Indeed, inspection of the profiles for all three transmitting frequencies reveals that the quadrature response associated with conductor 1 inverts into a positive response at 3555 Hz. This pattern is strongly indicative of an overburden filled valley which would lead to errors in the estimated physical parameters. The actual depth to the conductor would be greater and its conductance lower than those estimated.

Conductor 1 is coincident with polarizable anomaly A and has been tested at three points:

(i) Hole GE-88-01 intersected 1-2% pyrite in sericite schist on line 8+00E;
(ii) Hole GE-88-08 intersected 10% fine-grained pyrite in quartz veining and graphitic schist at 2+00E; and
(iii) Hole GE-88-09 intersected up to 5% fine-grained pyrite with minor quartz veining in a mudstone on line 2+00W.

Depths to bedrock were between 49.6 and 64.3 m and were all shallower than the depths to the conductive features classically interpreted from the horizontal loop profiles.

No anomalous gold assays of interest were recovered from the bedrock samples.

Conductor 2 is a narrow, weakly conductive horizon (3-4 mho/m) horizon interpreted at approximately 4+00N and extending from line 0+50E to 4+00E. The responses are best defined at the higher transmitting frequencies where conductances are estimated to be less than 1 mho. Depth estimates range widely from less than 15 to 55 m. At 3555 Hz the causal source is estimated to be approximately 50 m wide on line 0+00.

There are no low resistivity or polarizable features associated with conductor 2 which is interpreted to reflect an overburden filled valley. This interpretation is confirmed by hole GE-88-05 which encountered bedrock at a depth of 61.3 m.

Depths to bedrock elsewhere on line 0+50E is 49.8 m at 1+35N (GE-88-07) and 28.7 m at 5+75N (GE-88-06).

Conductor 3 is a single line response located at 2+65S on line 0+50E. The conductance is estimated to be less than 1 mho/m. The interpretation of conductor 3 is identical to that for conductor 2.

9.4 Resistivity Survey

Apparent resistivity amplitudes range from 100 to 4300 ohm-m. The pseudosection for the northern two-thirds of line 37+00W indicates that fairly resistive lithologic units (mafic intrusives, granodiorite) underlie that sector of the property. Elsewhere, conductive overburden of up to 70 m depth is known to predominate. The conductivity and depth of the overburden effectively masks, and to some extent distorts, the bedrock repsonses measured. Where possible, estimates of the intrinsic resistivities have been made and it is stressed that these are estimates, not absolute values, and present only a qualitative comparison between anomalous responses.

Low resistivity features, which are of interest when coincident with or related to polarizable horizons, cannot be confidently interpreted on all the apparent resistivity sections for the following reasons:

(i) the dipole spacing of 75 m (required to enable penetration in the deep overburden areas) is in all probability large with respect to the width of bedrock features anticipated to give rise to a discrete low resistivity response;

(ii) it is quite possible that narrow bedrock features of interest in an exploration context have too close an intrinsic resistivity with respect to that of the host rock (especially within the sediments) for any contrast to be recorded, given point (1) and the conductivity and depth of overburden occurring on the property;

(iii) overburden depths are known to vary rapidly in a lateral sense in the region: recorded depths from the overburden drilling program are 4.5 to 64.3 m. These variations can give rise to what appear to be bona fide apparent resistivity responses by themselves;

(iv) the low range in apparent resistivity amplitudes recorded on the majority of the sections result in very broad, indefinite responses from which no positive interpretation can be made when points (i), (ii) and (iii) are taken into account.

Seven resistivity features, labelled **zones a, c, e, g, h, i and j**, have been interpreted. **Zones a, c, e** and **g** are coincident with polarizable anomalies. These anomalies similarly labelled are discussed along with the polarizability response in Section 9.5.

Zones h, i and **j** are all moderately low resistivity features located on line 37+00W. They are either within, or are at the margin of, the intrusive rocks in the northwest corner of the property and have no correlating polarizable responses. These anomalies are discussed below:

Zone h, centred at 3+25N on line 37+00W, is a narrow, moderately low resistivity feature interpreted to be at a depth of 30 m below surface. The zone is located in the vicinity of the assumed contact between the mafic intrusives identified at 5+00N (GE-88-11) and siliceous sediments to the south (GE-88-18). No attempt was made to investigate **zone h** by drilling and none is recommended at this time.

Zone i is tentatively interpreted as a near surface moderately resistive feature centred at 6+25N. The apparent resistivity response pattern is complex between 4+00N and 8+00N. The higher apparent resistivities forming a classic pant-leg response centred at 5+50N may be reflecting either:

(i) a bedrock ridge, as indicated by the shallow depths in holes GE-88-11 and GE-88-12;
(ii) a more resistive lithologic unit (the mafic volcanics); or
(iii) a combination of the two.

The response associated with **zone i** is poorly defined. If **zone i** is a bona fide bedrock feature it is interpreted to reflect a non-mineralized shear/contact within or between the mafic intrusives and the granodiorite. This feature was not tested by the overburden drilling program and none is recommended at this time.

Zone j, centred at 14+35N, is a narrow moderately low resistivity feature at a depth below surface which cannot be estimated with confidence. Located wholly within the granodiorite, it is interpreted to reflect a fault/shear zone which is unmineralized. Hole GE-88-15 was collared on the southern flank of **zone j** and may not have intersected the causal source of the response.

9.5 Induced Polarization Survey

Six induced polarization anomalies have been identified and labelled as Anomalies A to G. Estimates of the average intrinsic chargeabilities have been made and should be considered in the context of the background chargeability amplitudes which range from 1.5 to 5 msecs.

It should be noted that, in interpreting the location of an anomalous source, it is only possible to locate it within an accuracy of one half a dipole separation. All anomalous locations should therefore be taken as being the central point of the indicated zone, plus or minus half a dipole separation, in this case 37.5 m.

Anomaly A is centred at 1+10S on line 0+50E and 0+50S on line 8+00E. The response is only partially defined on line 8+00E due to the proximity of the property boundary. Consequently, the width of, and depth to the causal source cannot be confidently estimated.

Anomaly A is coincident with HLEM conductor 1 and discrete low resistivity responses, **zone a.** Total chargeability amplitudes of up to 10 msec in a background of 2 to 4 msecs are recorded. Qualitative interpretation of the discrete responses indicate that the polarizable material continues to depth.

On line 0+50E the depth to the polarizable features is estimated to be half a dipole separation (40 m) which is in agreement with inferred depths to conductor 1 and the apparent resistivity response **zone a.**

Anomaly A was intersected at bedrock by hole GE-88-08 on line 0+50E (10% fine pyrite in graphitic schist) and hole GE-88-01 on line 8+00E (1-2% pyrite in sericite schist). Gold values recorded in the hole were up to 570 ppb in the till and <5 ppb from the bedrock samples which in this sector of the Abitibi are considered to be background values.

The chargeability amplitudes recorded on both lines indicate a similar polarizable material content. It is therefore possible that the results of hole GE-88-01 which shows a very much lower sulphide content are not a true representation of the causal source of Anomaly A.

Anomaly B is partially defined at 5+50S on line 0+50E. Total chargeability amplitudes of up to 3 times background are recorded. Anomaly B is interpreted to reflect a polarizable horizon within the Grasset deformation zone but, as it is located south of the property boundary, is of no further interest.

Anomaly C is a moderate chargeability feature located at 5+85N on line 0+50E and 6+75N on line 8+00E. The causal source is narrow and estimated to be at a depth of 40 m below surface. Low resistivity **zone c** is coincident with Anomaly C and, while no depth determination can be made on line 8+00E, the depth estimate of 40 m on line 0+50E is in agreement with the chargeability results.

The HLEM survey did not continue far enough north to determine whether there is an associated electromagnetic response.

Although nearly 800 m separates the two survey lines from which individual interpreted features constituting Anomaly C are inferred it is belived that they reflect a continuous horizon given that they are subparallel to Anomaly A, **zone a** and HLEM conductor 1, presumed to be conformable.

Drilling of Anomaly C has located metasediments with minor pyrite on line 0+50E (hole GS-88-06) and metasediments on line 8+00E (hole GS-88-02). No anomalous gold assays were recorded.

The percentages of disseminated sulphide mineralization encountered (<1% to nil) are much less than those indicated by the induced polarization survey. Diamond drilling of this feature would be required to adequately test the causal source.

Anomaly D is a questionable weak chargeability feature located at approximately 1+75N on line 0+50E and 3+50N on line 8+00E. The anomalous features are sub-parallel to anomalies A and C and thus are inferred to reflect a continuous horizon within the sediments and/or felsic volcanics. No associated low resistivity response or HLEM features are interpreted. Depths to the causal sources are estimated to be approximately 40 m.

Drilling (hole GS-88-07) intersected up to 2% pyrite and 15 to 20% quartz-carbonate veining in metavolcanics under almost 40 metres of overburden on line 0+50E. No anomalous gold assays were returned.

Anomaly E, located approximately at 5+25S on line 16+00W, is a weak chargeability response with total chargeability amplitudes of up to 2.5 msecs in a background of 1.5 msecs. The causal source is interpreted to be at a depth of about 75 metres. The depth to an associated low resistivity response, **zone e**, cannot be determined with confidence. Inspection of the airborne electromagnetic results (Questor, 1978 and Aerodat, 1987) in conjunction with the ground geophysical results suggests that Anomaly E may reflect a westward continuation of Anomaly C. This interpretation is only tentative and would require fill-in surveying to verify or reject the hypothesis.

Anomaly E is interpreted to reflect weak graphitic and/or non-magnetic sulphide mineralization associated with shearing within sediments and/or felsic volcanics. The reverse circulation drilling program did not test this feature.

Anomaly F, located at approximately 8+50S on line 16+00W, is only partially defined due to the proximity of the property boundary. Total chargeability amplitudes of 1.5 to 2. times background are recorded and the causal source is estimated to be at a depth of 40 m. No coincident low resistivity or magnetic features are recorded. The interpretation of Anomaly F is therefore identical to that for Anomaly E.

Anomaly F may be related to Anomalies A, C or D. Due to its close proximity to the property boundary and its weak intrinsic chargeability, Anomaly F was not tested during the reverse circulation drilling program.

Anomaly G is located at approximately 2+25S on line 37+00W. The causal source is interpreted to be narrow, at a depth of 40 m below surface and has total chargeability amplitudes of twice background. A coincident discrete, moderately low resistivity feature indicates a similar interpreted depth. There is no magnetic feature associated with Anomaly G. The interpretation of Anomaly G is identical to that for Anomaly E.

Drillhole GE-88-18 intersected siliceous sediments and/or mafic volcanics (?) at 2+20S. No sulphides were recovered which is not altogether unexpected as the depth to bedrock (14.85 m) is less than the apparent depth to the polarizable source.

10.0 REVERSE CIRCULATION DRILLING

10.1 General

The average overall thickness of overburden was 33.8 m with a maximum depth to bedrock of 61.6 m (Hole GE-88-5) and a minimum depth of 4.5 m (Hole GE-88-12). Overburden thicknesses in holes GE-88-11 to 18 in the area of granitic terrain on line 37+00W were much shallower than those in the holes to the east which generally varied between 40 to 60 m (140 to 200 ft).

A total of 141 processable overburden samples were collected in the course of the reverse circulation drilling.

10.2 Local Glacial Geology

Two distinct glacial domains are present in the area where reverse circulation drilling was carried out:

(i) a domain characterized by deep overburden and the presence of both Upper and Lower Tills in the area of holes GE-88-1 to 10 and 19 and

(ii) a domain to the west, represented by holes GE-88-11 through 18, of shallower overburden containing Upper Till or no till at all. This latter domain is underlain by a granitic stock which is more resistive to erosion than the surrounding volcanics and sediments.

As is often the case in the northern portion of the Abitibi, these two domains have distinctive surface vegetation topographic expressions. The area of deep overburden is characterized by open, sparsely forested, extremely swampy terrain with open string bog. The areas of thinner overburden are marked by heavy spruce forest.

The Upper Tills in the former area are often very sandy with a generally low clast content. In hole 19, for example, the section from 27-47 m which was logged as sand and gravel is probably a very fine sandy phase of Upper Till. Clasts in this unit are generally of quite heterogeneous composition with the majority being of foreign deviation.

This Upper Till material is of largely ablationary origin and has been variably re-worked during deposition. The re-worked material often has a gravelly to cobbly aspect, e.g. the section from 23 to 27 m in hole 1.

The division between Upper and Lower Tills, i.e. the Lower Sediments, is marked by a clay unit in some holes, e.g. GE-88-1, 3, 8, 9, 19 and in other holes by a sand unit, e.g. GE-88-2, 5. These variations are interpreted, in part, to represent lateral facies variations within the regional lacustrine sequence. The absence of clay material may also be due to removal/incorporation of clay by and into overriding ice which deposited Upper Till material. An anomaly within this area, hole 6, would appear to contain only Upper Tills and Upper Sediments. Hole 10 contains a thick section of Lower Sediment, comprising an 8 m clay unit, which rests directly on bedrock with possibly a very thin section of Lower Till at the interface.

The Lower Tills comprise both sandy and clayey facies. They become quite coarse towards bedrock in some holes, e.g. GE-88-3. Of particular significance to exploration, a greater percentage of the contained clasts are of more local derivation. For example, 80% of the clasts in sample 07 are indicated to be of local derivation. These Lower Tills are interpreted to be of both lodgement and ablationary origin. Again, there is some re-worked till material present as in the sand unit near the bottom of hole GE-88-9.

Holes GE-88-11 to 18 are characterized by a thin to moderate thickness (4.5 - 23 m) of Upper Sediments, comprising mainly glaciolacustrine clays with some silty and sandy to gravelly interbeds.

Upper Till is absent or forms only a thin smear on bedrock in the shallowest holes, e.g. holes GE-88-11, 14, 15. These holes are of little use from a till exploration standpoint. Better developed, gravelly Upper Tills are present in holes GE-88-16 and 17.

10.3 Visual Gold Grain Counts

A total of 40 gold grains were encountered in the tabling and panning operations on the overburden samples in the laboratory.

All but 3 of these are of the abraded, i.e. far-travelled, variety. A single delicate grain was reported in sample 13, hole GE-88-9.

None of these grain counts is concluded to be of exploration significance. These scattered abraded and occassional irregular and delicate gold grains are known to represent a regional background endowment in the Abibiti.

10.4 Analytical Results

10.4.1 Overburden

HMC gold values in the overburden are generally very low, averaging 109 ppb. The highest value of 1965 ppb was from a sample of bedrock fines which was inadvertently processed by Overburden Drilling Management as till and is of no interest. A value of 1090 ppb in sample 07, hole GE-88-05 is an isolated anomaly occurring well up the hole and is of no significance. Samples 06 and 07 in hole GE-88-01 are weakly anomalous at 570 ppb and 450 ppb. Again, these samples occur well up the hole and are of little interest.

The most distinctly anomalous section of anomalous HMC arsenic values occurs in samples 11 through 20 in hole

GE-88-01 with values in the 200-700 ppm range. The basal portions of holes GE-88-04, 05, 07, 08, 09, 10 and 19 are also consistently anomalous in arsenic with values to the 1,000 ppm range. The bulk of values occur within Lower Till. These anomalous indications are interpreted to be reflective of increased contents of this element associated with the EM conductive zone(s) and disseminated sulphide IP anomalous zones. While not of any immediate economic significance given the lack of gold correlation, the results do illustrate the sensitivity of the HMC method and confirm that, at least in the area of the above holes, the method is obtaining the desired reading on the up-ice bedrock.

Copper and, to a lesser extent, zinc values often display a sympathetic relationship with arsenic values reflecting chemically enhanced levels of these elements associated with the target geophysical zones. Weakly anomalous copper values are evaluated in holes GE-88-11 to 18, a direct reflection of the underlying granitic rocks which are intrinsically more cupiferous relative to the surrounding volcanics and sediments. There are no base metal values that would be considered to be of exploration significance.

10.4.2 Bedrock

There are no significantly anomalous indications in any of the bedrock samples from the 19 holes. Gold values are less than 5 ppb in all cases with the exception of the graphitic schist bedrock with pyrite and quartz veining in hole GE-88-8 (20 ppb). The highest arsenic value of 104 ppm was also recorded in this hole.

11.0 CONCLUSIONS AND RECOMMENDATIONS

The integrated program of ground geophysical surveying and reverse circulation drilling on the Lanouillier township property of Great Explorations Inc. successfully located and tested the accessible exploration targets. These target areas were identified from interpreting the airborne geophysical results in the context of the known and inferred geological information. The targets and their geophysical expression are:

(i) Mineralized splays from the Grasset Fault (?) which is believed to be contained within the graphitic/sulphidic interflow horizon immediately south of the property:

> HLEM Conductor 1, chargeability anomalies A and B and low resistivity **zone a.**

(ii) Mineralized horizons of disseminated sulphides related/non-related to faults/shear zones in the sediments and/or felsic volcanics north of the Grasset deformation zone:

> Chargeability anomalies C, D, E, F and G and low resistivity **zones c, e** and **g.**

(iii) Mineralized stockworks within the gabbros/diorites and granodiorite in the northwest corner of the property:

> Low resistivity **zones k, i(?)** and **j** and magnetic features(?).

The stronger and more continuous features defined by the geophysical surveys, as well as the possible existence of a down-ice dispersion fan from the conductive horizon north of the property, were tested directly, or indirectly, by the subsequent reverse circulation drilling program.

There are no gold values of significance in the till or bedrock samples from the nineteen reverse circulation holes completed during the course of the program. There were no significantly anomalous indications in the target granitic contact area to the west where tills are less well developed to absent.

While no further work is recommended on the strength of the present results, it must be emphasized that the program tested less than half of the entire property. Any further exploration of the claims would be most effectively carried out by a combination of magnetic, horizontal loop electromagnetic and induced polarization surveys the results of which would be used to efficiently direct a reverse circulation and/or diamond drilling program.

Respectfully submitted,

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APPENDIX I

The Reverse Circulation Drilling Method

THE REVERSE CIRCULATION DRILLING METHOD

Glacial Sediments and Dispersion Trains

Approximately 97% of Canada's land surface was glaciated during the Quaternary. Figures I-1 and I-2 summarize the model for the formations of mineralized trains in overburden and the types of glacial sediments and their associated land forms.

Lodgement till is the most favourable drift exploration medium because in general, the source of clasts in the till will be directly up-ice. In till, the concentration of ore clasts shows a sharp peak at or near the source followed up a rapid then gradual, i.e. approximately exponential, decline in the down-ice direction. The size shape and continuity (and therefore detectability) of a dispersion train will depend on many factors. These include size and composition of source, bedrock topography, vigour of glacial quarrying and abrasion, etc. Boulders closest to source will be larger and more angular. Down-ice comminution leads to a decrease in average clast size and increase in sphericity.

There is a recognizable indicator train almost 10 miles long down-ice from the George Lake Zn deposit in northern Saskatchewan. In the Noranda area, anomalous Cu-Zn values have been recorded in till up to 1.5 km down-ice from the Horne deposit while geochemical anomalies in till are restricted to within 1,000 ft. of the nearby West Macdonald low grade Zn deposit. A dispersion train appears to extend for over 6 miles down-ice from the Kidd Creek Mine near Timmins based on a 1970-71 Geological Survey of Canada overburden drilling program. The above program also showed that the separation between anomalous lenses in till and bedrock increases downice from the Kam-Kotia deposit near Timmins. This is interpreted as representing relict shear planes in the glacier.

In gold exploration, dispersion trains seem to be most easily detectable at distances of 1 km or less from source. In some cases, down-ice dispersion may be very limited. At the Golden Pond deposit, for example, the recognizable gold train seems to be no more than 200 m long. Trains

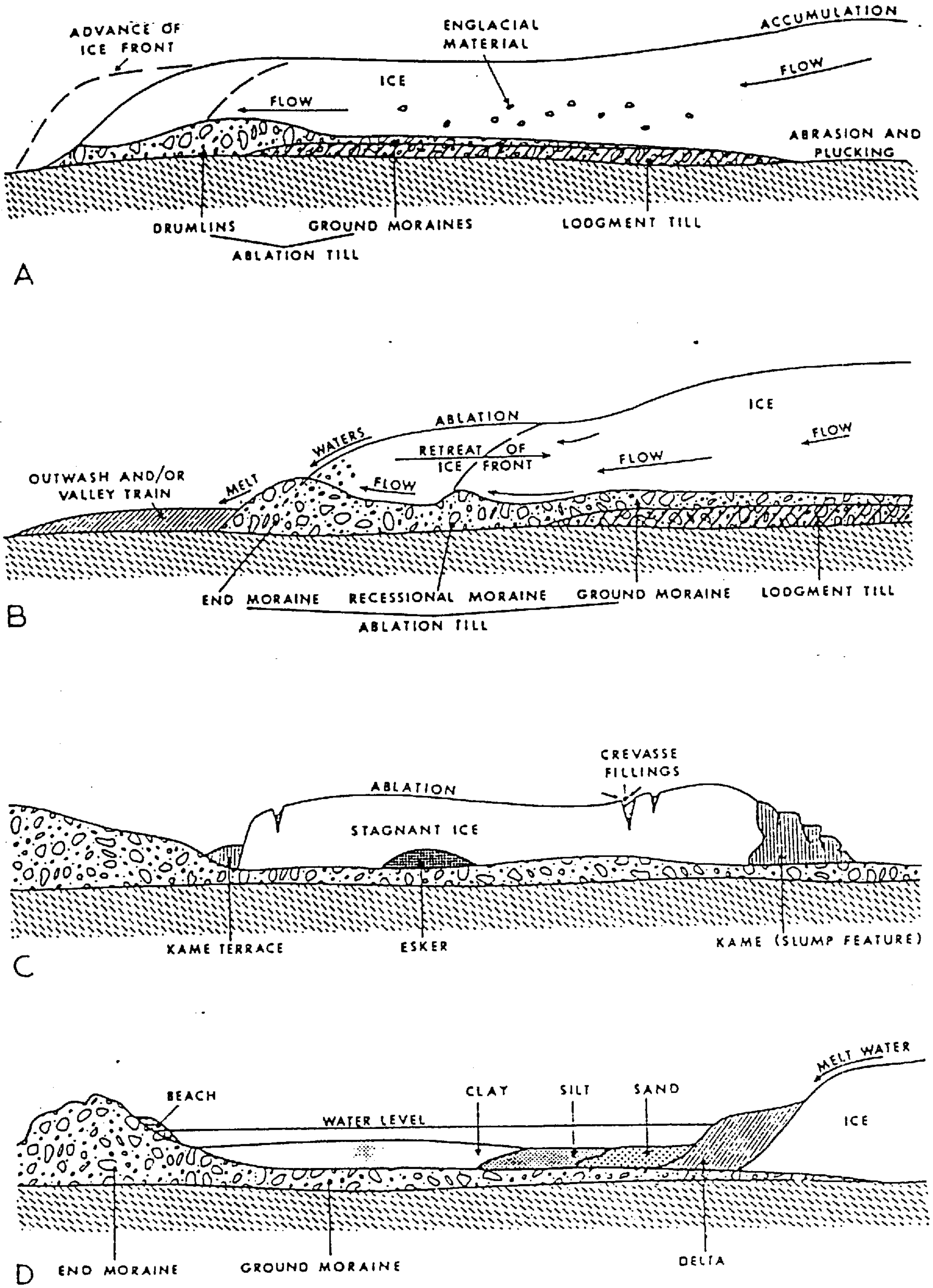


Fig I-1 Glacial sediment and landform deposition relative to ice front.

may also be very narrow, 200 m or less in some cases, and have a distinct pencil-like form, e.g. Dome Mine near Timmins. An example of the effect of bedrock topography on down-ice dispersion is to be seen at the Golden Hope Estrades deposit. Here, a bedrock ridge immediately down-ice from the deposit has completely blocked the formation of any significant dispersion fans.

When in close proximity to the source, anomalous values are concentrated in the basal part of the till sheet so that this area of the overburden column is of prime importance during sampling. Spectacular sulphide concentrations may occur down-ice from a sulphide deposit. In such cases, it is not necessary to await geochemical analyses. Additional overburden drilling can progress based directly on the visual results.

The stratified varieties of drift, i.e. bedded gravels, sands, silts and clays, are a less favourable sampling medium because the fluvial re-working inherent in their formation may make it difficult or impossible to identify the bedrock source area. Placer-like concentrations, in which normal background values are upgraded, may develop during the meltwater re-working of glacial debris. This can produce spurious anomalies in an overburden drilling program. This effect, however, has been used to advantage in esker sampling.

Varved clays representing rock flour washed out of glacial drift and deposited in proglacial lakes are (to date) virtually useless in minerals exploration and are not usually sampled during the drilling process. Analyses on varved clays over the Kidd Creek and South Bay polymetallic massive sulphide orebodies, for example, show no signs of the underlying mineralization.

During drilling, the clays serve the useful purpose of sealing the hole which results in good sample return. In addition, sulphide minerals survive well in the reducing environment that exists beneath the clay

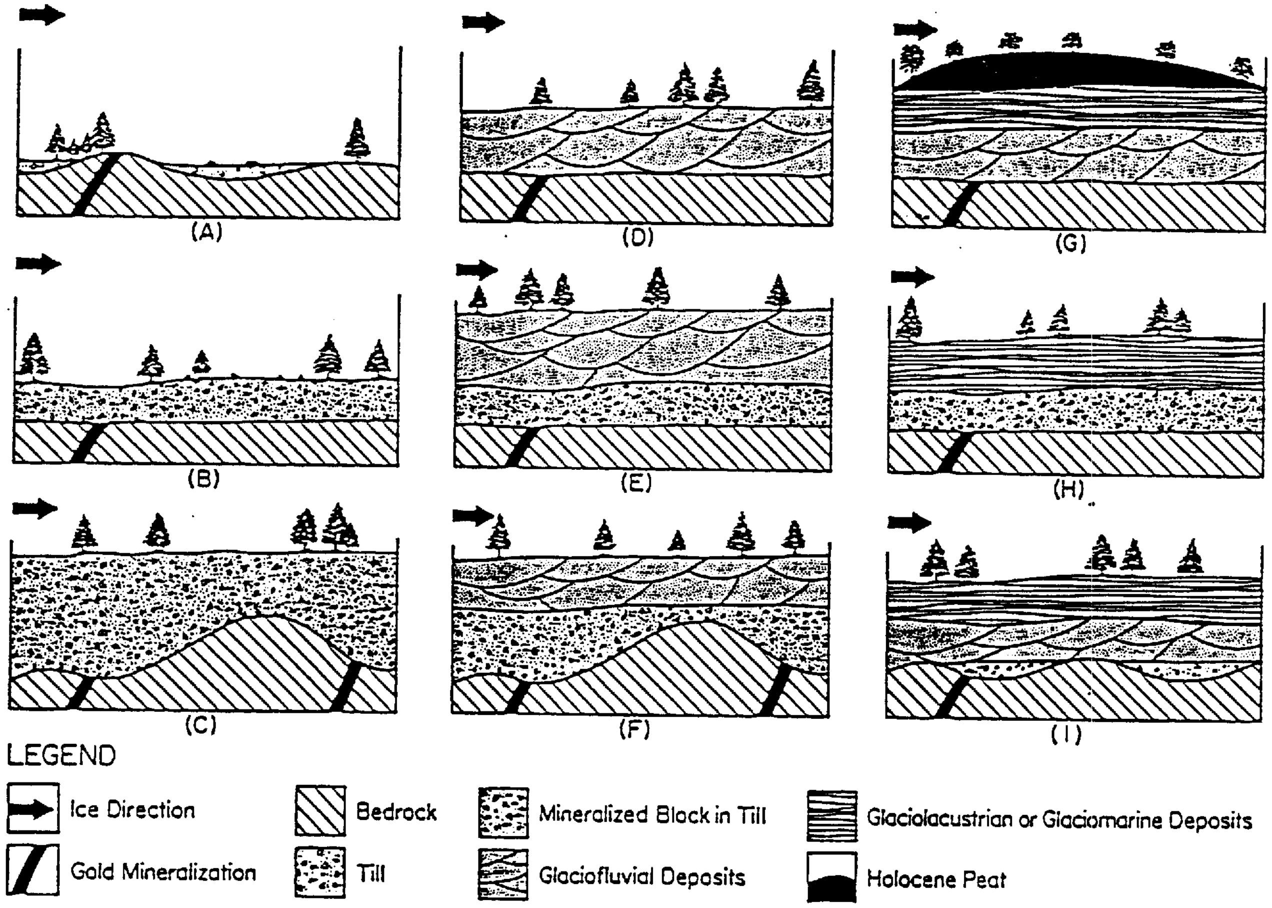


Figure I-2 : Conceptual model of the generation of mineralized trains in overburden material (after Fortesque, 1983) cap; oxidation and leaching of sulphides can be a problem in some exposed tills.

Drilling and Sampling

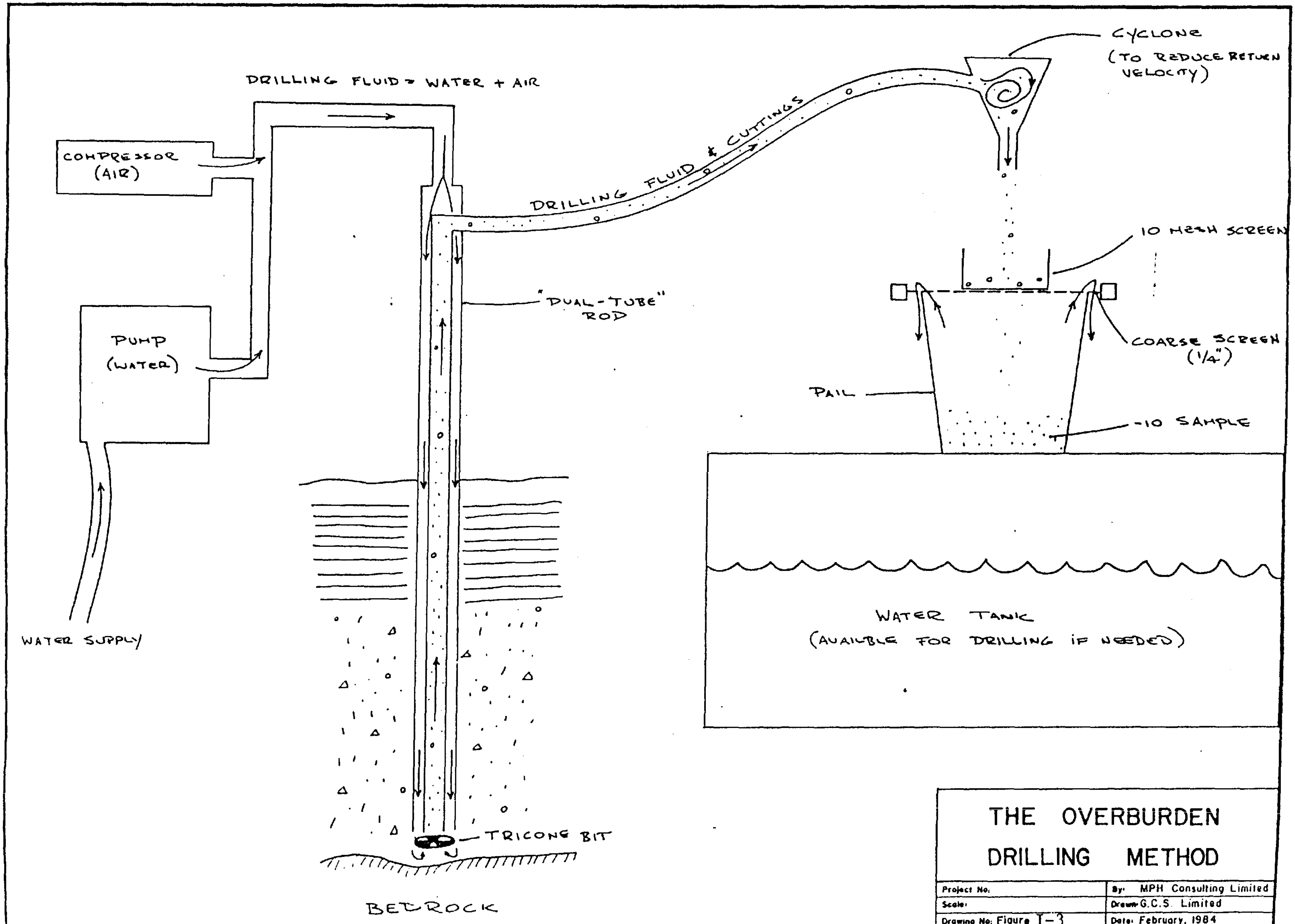
The reverse ciculation method uses an approximately 3 inch O.D. dual-tube drill pipe. The drill fluid consisting of water and air is pumped down between the inner and outer tubes, past the drill bit and back up the inner tube with the cuttings which are then collected and sampled. The return water overflows the sampling tub and is collected in the underlying tank. This water may then be re-used as drilling fluid or conversely water may be pumped or hauled entirely from some external source.

The drill and accessory equipment such as pumps and compressors weighs about 20 tons and is mounted either on the back of a large tracked carrier such as a Nodwell or on skids so that it can be towed from drill site to drill site by a medium-sized tractor. A permanent or removable drillshack erected around the drill protects drillers and geologists from the elements and allows for year-round operation (24 hours per day if desired).

Figure I-3 illustrates the drilling-sampling procedure.

Three drillers are normally required to carry out the drilling, to haul water if necessary, to make roads, to effect repairs, etc. A geologist and an assistant are also present. The geologist logs the overburden section by "feeling" the return and monitoring the material collecting in a relatively coarse sieve (usually about 10 mesh). The helper bags samples and generally assists the geologist. Logging is generally done in imperial units.

Although it will emerge in the geochemical results in any event, the visual monitoring is very important since the recognition of an ore clast during the drilling allows the geologist to modify/extend the program



THE OVERBURDEN DRILLING METHOD

Project No:	By: MPH Consulting Limited
Scale:	Drawn G.C.S. Limited
Drawing No: Figure I-3	Date: February, 1984

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Figure I-3 Overburden Drilling- Schematic.

while the drill is in the immediate area or to act immediately on significant results.

The return is normally sampled at 5 ft intervals or at major sedimentary boundaries. The +10 mesh material is discarded after inspection during the drilling as is the return from most boulders. A five foot run normally yields about 15 lbs (6.8 kg) of -10 mesh material. An overburden hole is usually continued 2-5 ft into bedrock to ensure that the bit is not in a boulder. Obviously, if a very large boulder is encountered in a hole, the rsulting interpretations will prove to be incorrect. The progress of a tricone bit into bedrock (or boulders) is generally at a slow rate (average 5 feet per hour) and therefore it is not usually cost effective to proceed further into suspected bedrock unless previous knowledge or unusual geological circumstances dictate.

Sample Processing and the Heavy Minerals Concentrate

The following describes the typical processing methods applied to gold exploration as used by Overburden Drilling Management Ltd. in this program.

At the processing laboratory in Ottawa, the field samples are first wet screened at 10 (Tyler) mesh (No. 12 Canada or U.S. Standard). The -10 mesh material is then passed across a Deister shaking table to produce a heavy minerals preconcentrate. Any grains of native gold present in the samples will be seen on the table and be recorded by the laboratory technician during this operation. Samples containing gold grains are subjected to a careful panning operation in which the gold grains are isolated for microscopic inspection, measurement and micro-photography if desired.

Overburden Drilling Management Ltd. generally classify gold grains as being "abraded", "irregular" or "delicate". These shapes are felt to be generally indicative of transport distance with delicate grains being closest to source, perhaps a few tens of meters, with heavily abraded grains having travelled much longer distances on the order of a kilometer or more (Figure I-4). This however does not address the possibilities and problems of secondary or recrystallized gold (Mann, 1984, Webster and Mann, 1984).

The table preconcentrates are passed through a heavy media (methylene iodide; S.G. = 3.3) to effect the true heavy minerals separation. This will contain mainly the common sulphides, free gold, magnetite, garnet and epidote (a more complete list of minerals is presented in Table I-1). The magnetic fraction is then removed. A 3/4 split is sent for geochemical analysis with a ¼ split retained for reference purposes.

Individual grains can be further subjected to Scanning Electron Microscope or microprobe work to determine the presence of trace elements (which may "fingerprint" a source area), and to examine morphological features such as the folding of grains, re-crystallization, etc. The value of the microscope was amply demonstrated in one instance around Timmins where some highly anomalous Cu values were shown by microscopic examination to be caused by copper filings derived from O-rings on a water pump and not by copper-bearing minerals. This sort of contamination has now been virtually eliminated in overburden drilling work. Heavy mineral concentrates can also be viewed under ultraviolet light or be examined by a scintillometer in the case of uranium exploration.

Applications

There are applications for overburden drilling on both the regional and detailed scales. Regional work involves wider hole spacings, up to 1 km or more apart. Such large stepouts are allowed by the high sensitivity of the method. The usual purpose of regional work is to intersect an indicator train which can then be traced back up-ice where the probable source area can be explored by detailed overburden drilling, geophysics and diamond drilling.

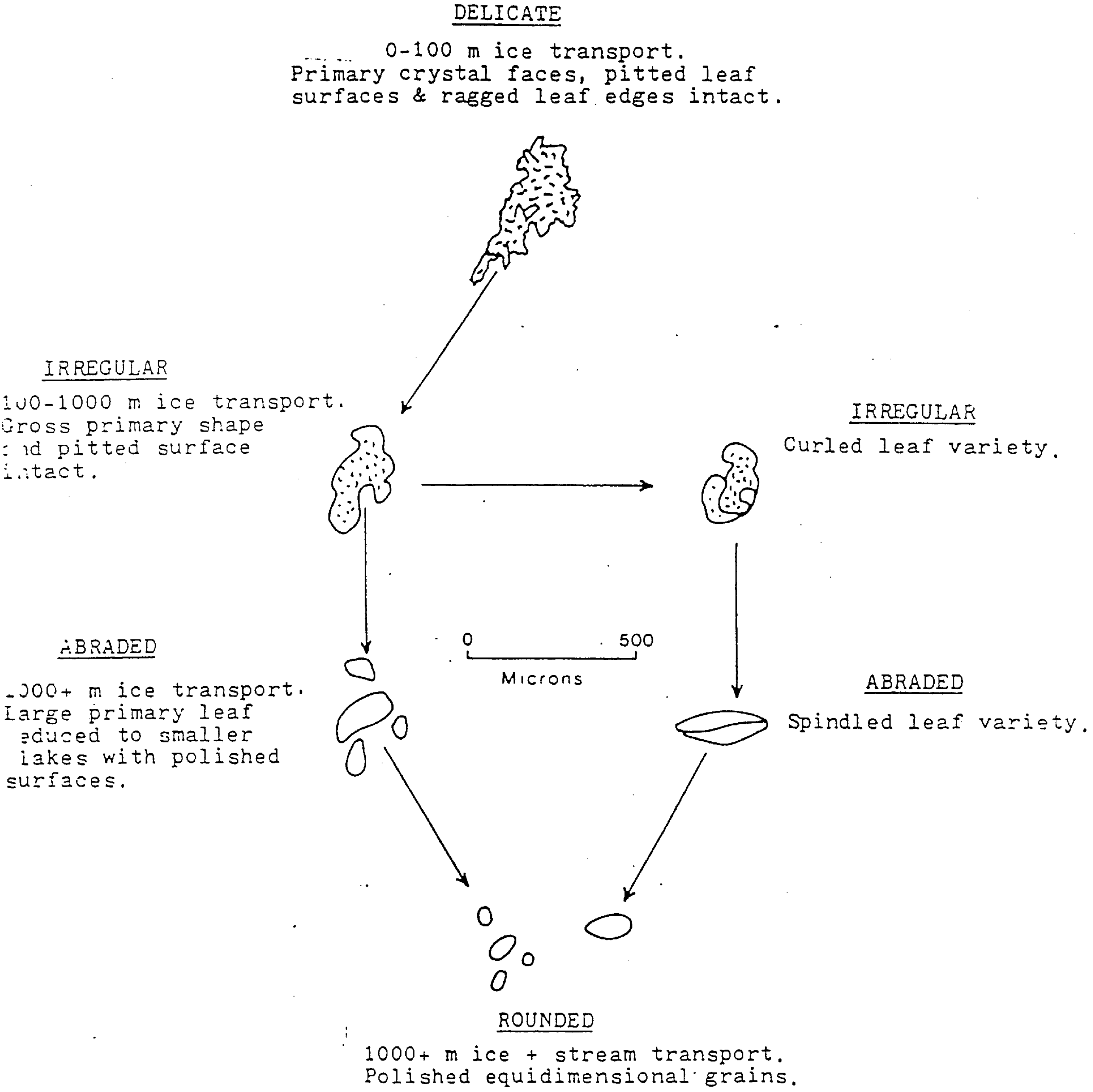

Figure I-4 Grain Shape Parameters.

TABLE I-1
LIST OF MINERALS WITH SPECIFIC GRAVITIES 3.3

Native Elements

Arsenic
Copper
*Diamond
*Gold
Iron
Mercury
*Platinum
Silver
Tellurium

Sulphides, Arsenides, Tellurides, Sulphosalts

All minerals have S.G. 3.3. Common examples include: -

*Arsenopyrite
Bornite
Calaverite
*Chalcopyrite
*Galena
*Molybdenite
Pyrargyrite
*Pyrite
*Pyrrhotite
*Sphalerite
Stibnite
Tetrahedrite

Oxides

Anatase
Bixbyite
Brookite
*Cassiterite
Chrysoberyl
*Columbite
*Corundum
Cuprite
(Diaspore)
Goethite
*Hematite
*Ilmenite
Lepidocrocite
(Limonite)
Manganite
Massicot
Microlite
Periclase
Perovskite
Psilomelane
Pyrolusite
*Rutile
*Spinels
*Tantalite
Tungstite
*Uraninite
Zincite

Silicates

Allanite
*(Amphiboles)
Astrophyllite
(Axinite)
(Bustamite)
(Celsian)
Chloritoid
Clinohumite
*(Clinopyroxenes)
(Clinozoisite)
Enigmatite
*(Epidotes)
*Garnets
(Helvites)
*Kyanite
Lavenite
*(Olivines)
*(Orthopyroxenes)
Pyroxmangite
Rhodonite
Sapphirine
*Sphene
*Staurolite
*Topaz
Vesuvianite
Willemite
*Zircon

Others

Anglesite
Azurite
*Barite
Caledonite
Carnotite
Celestite
Cerrusite
Crocoite
Hydrozincite
Malachite
*Monazite
Phosgenite
Powellite
Pyromorphite
Rhodocrosite
*Scheelite
Scorzalite
*Siderite
Smithsonite
Strontianite
Vanadinite
Witherite
*Wolframite
Wulfenite

Species in parentheses may have specific gravities less than 3.3 depending on variable elemental substitutions.

Most commonly expected species indicated with asterisks.

A very important use of the method is in follow-up to airborne and/or ground geophysical surveys to assist diamond drilling in anomaly evaluation. In this way all or most of the anomalies located during a survey can be evaluated, not only those with the highest geophysical rating. The overburden drilling approach is also very useful in evaluating long, formational anomalies.

A standard approach in the case of EM conductors is to drill a string of holes immediately down-ice from the conductive zone with a hole spacing of 100 to 300 m. This results in a reading on the entire conductive zone. This is particularly desirable since the actual economic deposit may not be part of the main conductor or may be a less conductive part off or beside same. In addition, it is common practice to drill an overburden hole(s) directly into the conductor. There have been instances of direct ore intersections being made during overburden drilling (e.g., the Asarco gold deposit, Timmins, Ontario).

Another detailed application is to further explore a property where a favourable contact or small deposit is known from previous work and the bedrock information gained from overburden drilling is also very important for lithologic correlation and rock geochemistry.

Interpretational Considerations

The drilling technology is now fairly advanced and more sophisticated improvements, e.g. computer monitoring during the drilling process, are already on the drawing boards. Likewise the sample processing and analytical techniques are now fairly rapid, effective and accurate.

One of the great problems of overburden drilling is in the interpretation of the analytical/processing results. This is particularly so in the case of gold exploration where the "nugget effect" of a single large grain of gold in a small heavy minerals sample may give rise to a very high yet possibly meaningless gold value. It may also be difficult in some cases to distinguish between high background levels of gold and a truly significant anomaly. In geophysics, this would be a question of trying to separate the "signal" from the "noise" when the two can be of the same order of magnitude.

These problems are further complicated in areas of extremely complex glacial geology as in portions of the Clay Belt of northern Ontario-Quebec.

One technique that we at MPH Consulting have used to advantage in interpretation is to calculate, generally by computer, an "equivalent metal" value. This takes into account the analytical value and weight of the heavy minerals concentrate (HMC) and the original sample weight utilizing a formula of the form:

$$\frac{\text{Analysis ug/g* x Proportion Heavy Mineral ug/g}}{1{,}000} = \text{Equivalent concentrate of metal (ng/g)*}$$

*An original value would be in ng/g would result in an equivalent concentration in pg/g.

This, in effect, is a reflection of the metal content per gram of original till sample less any losses inherent in the drilling and processing procedures. Such equivalent values often project a much more meaningful picture of metal distribution in overburden than the actual values in the heavy mineral sample.

We recognize however that such calculations are, in part, a reflection of glacial lithology. A fluvial sand, for example, would have a much larger heavy minerals endowment, reflecting the fluvial concentration process inherent in its formation, than a clay-rich till. The former would give a higher equivalent number, other things being equal.

A further problem in interpretation that can occur is the failure to recognize that the overburden material may not be giving the desired "reading" on the up-ice bedrock stratigraphy. This will be the case if the desired tills are absent or only poorly developed or if the over-riding glaciers were not in contact with bedrock. This latter effect may be much more common than previously thought. Such overburden samples, no matter how carefully processed and analyzed, will not be indicative of the up-ice bedrock. For example, if drilling immediately.down-ice from a strong EM conductive zone, some indication of that conductor, e.g. graphite or sulphide chips, imparts confidence that the method is indeed working.

Another problem in the case of gold applications is the potential loss of fine gold during the drilling and processing and the potential loss of gold in compound grains (e.g. gold in quartz) during the heavy media separation.

In reverse circulation drilling it is customary to drill approximately one metre into bedrock. This sampling of a previously unknown (or approximately interpreted) lithologies constitutes a further important contribution by RC drilling. Careful visual analysis of the resulting rock chips, coupled with multi-element geochemical analyses, can provide both direct and indirect evidence as to a proximate ore deposit or a favourable environment.

In summary there is little doubt that if glacial conditions are correctly interpreted and if the method is properly applied, the reverse circulation technique can be extremely effective in mineral exploration in glaciated terrain.

APPENDIX 2

Reverse Circulation Drill Logs

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-1

Property/Area Great Explorations
Township Lanoullier
Claim No.
Location L8E 56S

Logged by GPSinclair
Sampler LChabot

Date(s) 10/2/88

Drilling Co. Bradley Bros. Ltd
Bit No.
Depth to bedrock 55.0 m
Total depth 56.3 m
Sample screening

Remarks

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL			
						Cu	Zn	As	Au
						ppm			ppb
					0-3.5m no return				
	10				3.5 Lacustrine Sediments - grey gritty clay balls				
5	20				8.7 - felsic volc. cobble with 5% py.				
	30				8.8 Till - grey sand matrix - heterogeneous clasts				
10			1	0		244	55	114	40
			2	0	11.7 - more clay in matrix	178	55	77	40
	40		3	0	- diverse clasts	195	60	133	75
15	50		4	0	16 m - larger granules	142	56	79	200
			5	0		154	45	46	10
	60		6	1	17m sandy, heterogeneous clast comp.	169	108	141	570
20	70		7	1		163	49	77	450
			8	1		492	60	53	10
25	80		9	0	cobbley beyond 23m	272	48	108	20
			10		25.9→26.3 syenite cobble	124	41	57	20
	90		11	0	28.5 more mafic clasts	154	51	198	60
30	100		12	0	28.6 clayey	136	60	308	70

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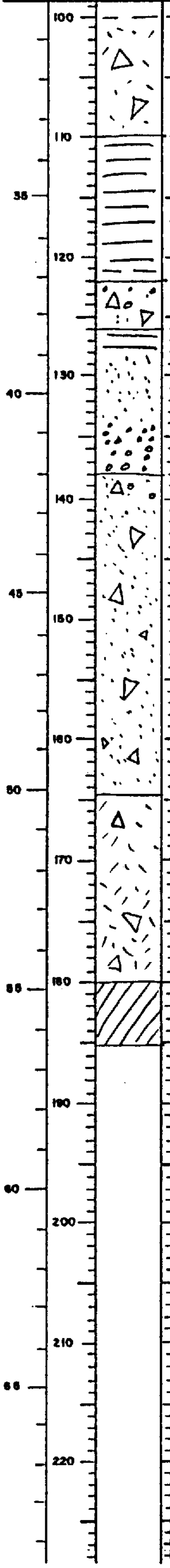
OVERBURDEN DRILL LOG

Hole GE-88-1



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL				
12	0	Clayey sand till	136	60	308	70	
NS		33-3 Lacustrine: Clay - grey, grit-free, small balls - med hard drilling 36-5 silt					
13	0	37m Till - varied clast comp. 38-3 Clay then fine sand then gravel, well sorted	167	67	198	25	
NS							
NS							
14	0	42 Till - sand hosted, with predominantly local (75%) clasts	151	60	280	165	
15	0	43m some reworking here	430	93	728	75	
16	0	44m granite cobble	578	65	688	100	
17	2	44.2m 10% free qtz. 48m - more metaseds	101	86	568	100	
18	0	50m Clayey Till, dark grey, gritty, clay matrix	144	92	504	35	
19	0	local clasts here - 85% matrix - 1.5m pure clay here	262	130	632	25	
20	0	55m Bedrock - Mixture of pistachio green, soft, friable,	294	165	338	15	
21		f.g., highly altered mafic volcanic and buff-coloured sericite schist mineralized with quartz-carbonate and 1-2% py. Eoh 56.3m	41	51	5	<5	

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-2

Property/Area Great Explorations

Township Lanoullier

Claim No.

Location L 8E, 675N

Logged by GP Sinclair

Sampler L Chabot

Date(s) 13/2/88

Drilling Co. Bradley Bros Ltd.

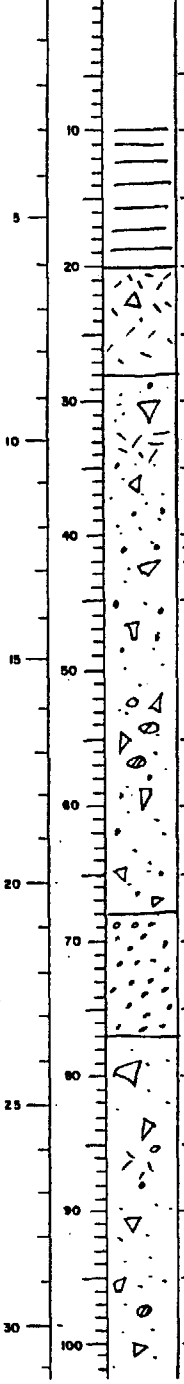
Bit No. J000 760

Depth to bedrock 43.2m

Total depth 44.3

Sample screening 12 mesh

Remarks



M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	Cu	Zn	As	Au
					0-3m no return		ppm		ppb
					3m Lacustrine Seds. - grey blue clay 6m - gritty				
					8.3 Till - sandy matrix - hetero clast mix				
			1	0	-9m - clay w matrix -10m 99% gritty grey brown clay	148	43	42	<10
			2	0	10.5 - sandy till beyond	149	47	123	35
			3	0		93	36	59	5
			4	0	- hetero clast comp.	156	33	42	245
			5	1	little material here	107	43	66	<10
			5		20.6 Gravel - heterogeneous				
			NS						
					23.3 Till - sandy matrix				
			6	5	heterogeneous clasts - some reworked bits	130	47	55	500
			7	0	25.7 clayey - slow drilling	53	26	14	<10
			8	0	- 70% locals @ 28m	32	18	22	<10

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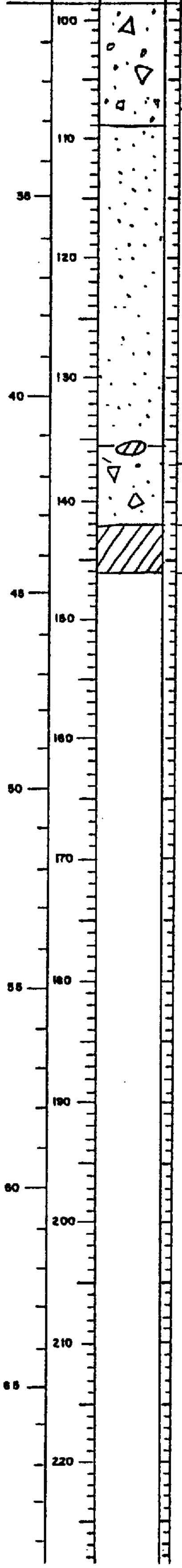
OVERBURDEN DRILL LOG

Hole GE-88-2



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL				
8	0	sandy till as previously					
9	0	- 70% local clasts	26	19	20	150	
		<u>33m Lacustrine Sand</u>					
NS							
		41 m granite boulden					
10	1	<u>41-3 Sandy Till</u>	33	18	4	450	
11		<u>43.2 Bedrock</u> Greyish, fine grained, foliated meta sediment	48	61	16	<5	
		Eoh 44.3					

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OVERBURDEN DRILL LOG

Hole GE-88-3

Property/Area Great Explorations

Township Lanoullien

Claim No.

Location ± 4E, 600N

Logged by GP Sinclair

Sampler L Chabot

Date(s) 14/2/88

Drilling Co. Bradley Bros Ltd.

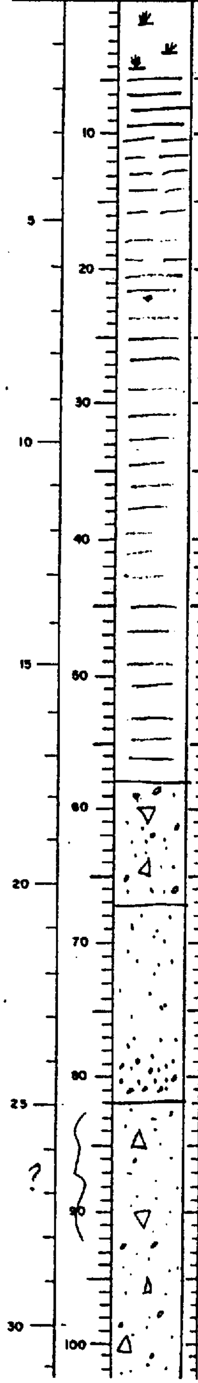
Bit No. J000 #159

Depth to bedrock 48.5m

Total depth 49.6

Sample screening 12 mesh

Remarks



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	Cu	Zn	As	Au
		Sfc Recent Organics		ppm		ppb
		1.5 Lacustrine Sediments - grey clay - silt afterwards				
		6m - grey gritty clay				
		- little grit below 10m				
		13m - gritty occasional pebbles				
1	0	17.4 Till - sandy matrix - varied clasts	99	60	52	10
NS		20.5 Lacustrine/Fluvial sand				
NS						
2	0	25 Till? sandy w minor clay in matrix probably 80% matrix	48	30	8	40
3	0		32	31	10	70

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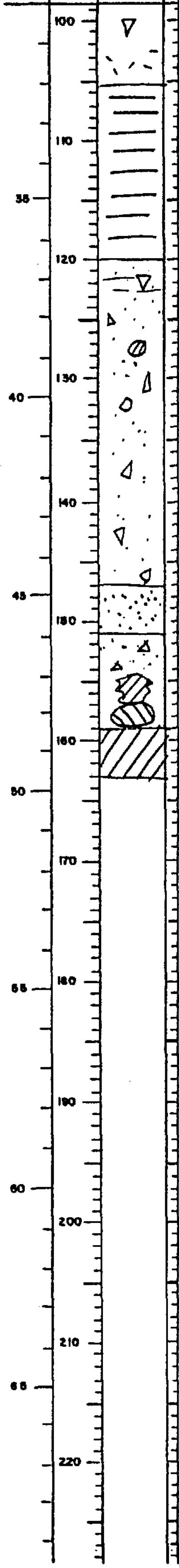
OVERBURDEN DRILL LOG

Hole GE-88-3



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL			
NS		sandy-clay till little return.				
		32.3 clean varved clay				
NS		36-3 - clay seams				
4	0	38.3 good till, 70% locals, incl. minor massive pyrite	58	27	15	135
5	0	- 38.6 m.v. cobble	562	34	43	<10
6	0	- m-seds & int. volcs. here	272	69	96	145
		44.6 Sand seam				
7	0	45.8 Till, as prev.	105	24	33	<10
NS		sand matrix, meta-seds to 50%				
8	0	47. blk. meta sed bld.	136	40	97	605
NS		47.5 volc bld. 48.4 some sand				
9		48.5 Bedrock	47	130	13	<5

- dark green mafic volcanic
- rare v.f. grained py <<1%
- Foliated
- little/no alteration

Eoh 49.6m

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-4

Property/Area Great Explorations

Township Lanoullier

Claim No.

Location L0, 1175N

Logged by GP Sinclair

Sampler L Chabot

Date(s) 15/2/88

Drilling Co. Bradley Bros Ltd.

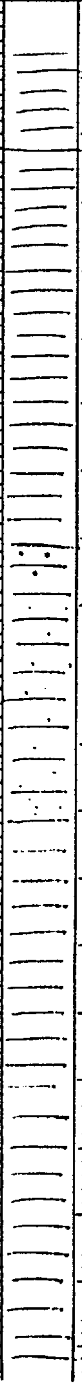
Bit No. as per #3, new sub

Depth to bedrock 51 m

Total depth 52.3m

Sample screening 12 mesh

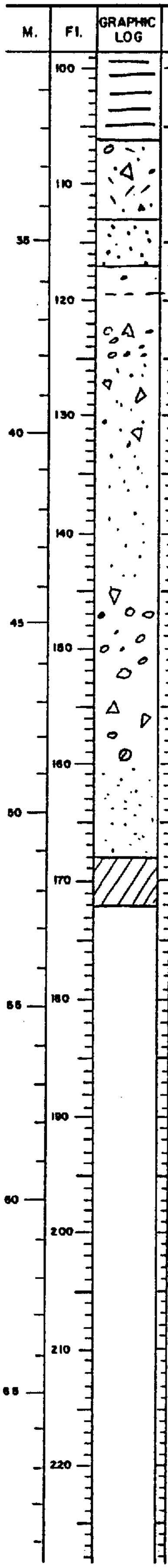
Remarks

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL			
						Cu	Zn	As	Au
					Sfc. Recent Organics		ppm		ppb
					1m Lacustrine Sediments				
	10				- grey blue varved clay				
5					- gritty grey afterwards				
	20				-6.4 silt, brown grey				
					- clay gritty				
10	30				-occassional gravelly seams				
					11m - less gritty, floculates				
	40				- gritty				
15	50		1	0		158	87	15	40
	60								
20					- less gritty				
	70				- floculates here				
25	80								
	90								
30	100								

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-4



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL			
NS		32.3 Sandy Till - varied clast composition				
2	1	34.3 Lacustrine/Fluvial seds - gravel - f. sand	122	30	74	190
NS		35.6 Till sand matrix mixed clasts				
3	0	37- reworked somewhat	798	49	270	120
4	0	39.5 sand rich 90% 44m 90% m.v. chips	104	44	149	190
5	0		109	63	374	175
6	0		155	75	236	15
7	1	- 80% local clasts here	116	58	144	55
8	1	51m Bedrock medium green, fine grained mafic volcanic, foliated	61	115	92	110
9		- very minor qtz veining <2%	38	47	13	<5

Eoh 52.3

MPH Consulting Limited

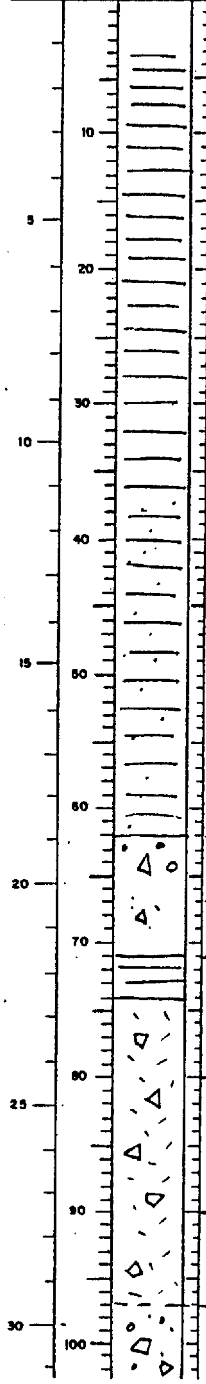
OVERBURDEN DRILL LOG

Hole GE-88-5

Property/Area Great Explorations
Township Lanoullier
Claim No.
Location L0, 400N
Logged by GP Sinclair
Sampler L Chabot

Date(s) 16/2/88
Drilling Co. Bradley Bros Ltd.
Bit No. J000755
Depth to bedrock 61.3m
Total depth 62.7m
Sample screening 12 mesh

Remarks



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	Cu	Zn	As	Au
				ppm		ppb
		2m Lacustrine Seds - grey gritty clay - floculates somewhat - gritty with occasional pebbley sections				
1	6	16.6 Till sand matrix - local pebbles initially - heterogeneous afterwards	150	46	252	305
2	0	- slow drilling, lg. volume of material	177	48	114	10
3	0	21.3 Lac clay - dark grey	59	36	8	<10
4	0	22.6 Till Clay-sand matrix predominantly locals 25m 95% clay here	38	25	8	140
5	0		85	37	96	30
6	0		125	39	26	<10

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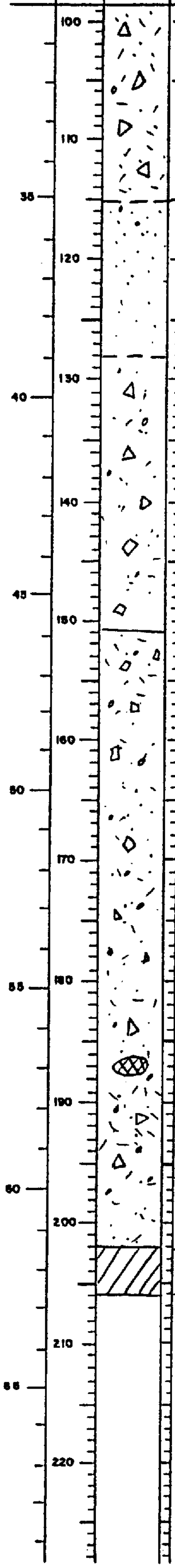
OVERBURDEN DRILL LOG

Hole GE-88-5



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL				
6	0	Clay-sand till beyond 31m	125	39	26	<10	
7	1	85% matrix	79	53	140	1090	
8	0	36 sand seam	101	99	106	15	
N5							
9	0	} 5-10% hetero clasts	53	29	88	70	
10	1	39m Till - varied clast provenance	92	39	99	<10	
11	0	- clay-coated clasts	115	42	148	<10	
12	0	44→44.5 - gravelly till Clay Till	148	44	100	<10	
13	0	- still varied clast comp.	134	25	71	70	
14	0	~52m meta-sed. w coarse py. ~60% matrix	157	39	103	<10	
15	0	- clay sand till as previously	108	58	318	35	
16	0		128	60	880	205	
17	0	56.6 granodiorite bld. 58.2 Clay Till - quite heavy	93	45	159	145	
18	0		185	99	944	30	
19		61m - more mafic/intermediate vdc's	135	42	250	50	
20			84	49	4	<5	

61.3 Bedrock - Greyish, v.f.g., well laminated, homogenous siliceous sediment
- 1-2% v.f.g. py << 1mm cubes
- minor carb. alteration.

Eoh 62.7

MPH Consulting Limited

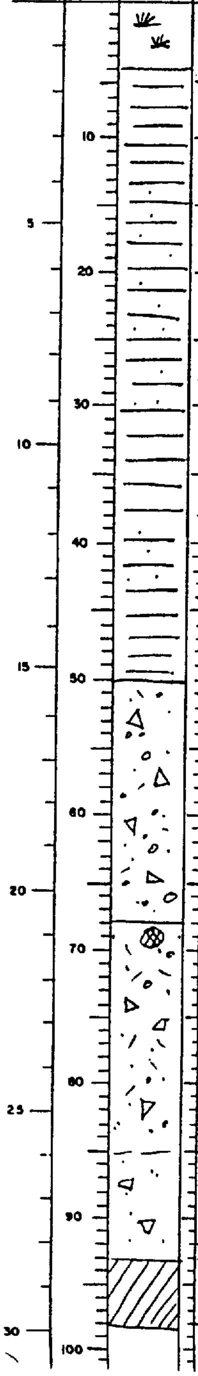
OVERBURDEN DRILL LOG

Hole GE-88-6

Property/Area Great Explorations
Township Lanoullier
Claim No.
Location ~30m E, 575N
Logged by GP Sinclair
Sampler L Chabot

Date(s) 17/2/88
Drilling Co. Bradley Bros Ltd
Bit No. J000 761
Depth to bedrock 28.2m
Total depth 29.8
Sample screening 12 mesh

Remarks



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL Cu	Zn	As	Au
			ppm			ppb
		Sfc Recent Organics				
NS		1.5 Lacustrine Sediments -grey brown gritty clay - occasional pebbley sections - flaulates ~ 9m 15.2 Till - grey sand matrix -heterogeneous clast comp. -includes some felsic volcs.				
1		17m - m.v. cobble w/py	322	36	75	45
2		20.7 more clay in matrix, darker grey 21- granite cobble	68	32	93	230
3		26m - much more clay 27.9- minor massive py in +12 fraction	54	30	82	80
4		28.2 Bedrock	54	35	39	35
5		- black fine grained, foliated meta sediment	119	84	276	30
6		≪1% py total on F. planes	116	134	488	40
7		Eoh 29.8m	44	63	14	<5

OVERBURDEN DRILL LOG

Hole GE-88-7

Property/Area Great Explorations

Township Lanoullier

Claim No.

Location L0, 135N

Logged by GP Sinclair

Sampler L Chabot

Date(s) 17/2/88

Drilling Co. Bradley Bros Ltd

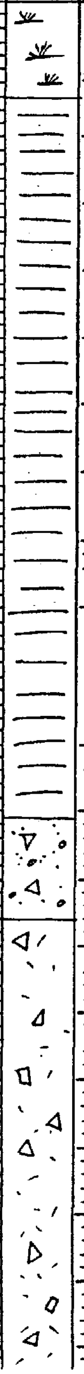
Bit No. JOCO761

Depth to bedrock 37.8

Total depth 41.3m

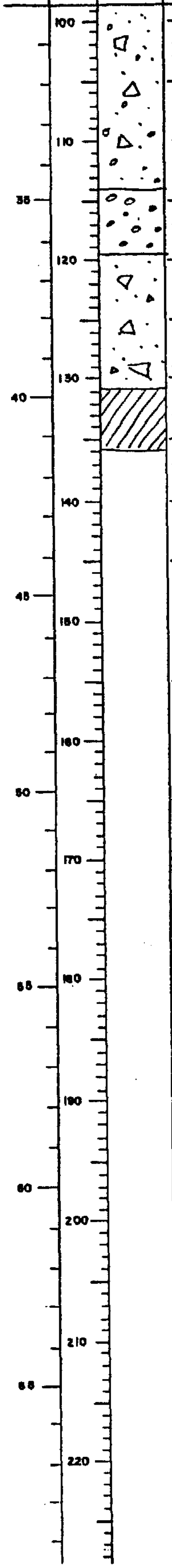
Sample screening 12 mesh

Remarks

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL				
						Cu	Zn	As	Au	
					0-2m Peat		ppm		ppb	
	10				2m Lacustrine Clay - grey gritty clay balls					
5	20									
	30									
10			NS							
	40									
					14m - mainly grit free					
15	50									
	60				18.3 Till - sandy matrix - heterogeneous clasts - grey brown sand matrix					
20			1		20.7 Clayey Till - more clay in matrix	118	40	17	40	
	70		2		- more local clasts ~65% - matrix darken	444	47	100	80	
			3	0	- exclusively locals at 24m	166	89	46	<10	
25	80		4	0		70	46	23	<10	
	90		5	0	} predominantly local's, lg. volume	50	26	16	95	
30	100		6	0		197	64	68	20	

OVERBURDEN DRILL LOG

Hole GE-88-7



SAMPLE No.	GRAINS Au	ANALYTICAL			
6	0				
7	0	206	164	600	55
8	0	102	40	172	90
NS					
9	0	234	79	244	90
10	0	145	66	456	25
11		57	51	10	<5

DESCRIPTIVE LOG

sandy-clay till as prev.
60-70% locals
- sandier matrix, more varied clasts by 31-32

35 - more reworked
35.5 medium sand, seam lg. volume

38.5 very heterogeneous clast makeup, 10% free quartz

39.8 Bedrock
- medium green (intermediate) meta-volcanic
- occasional quartz veins
- 2% py, evenly distributed
- 15-20% quartz-carb. veins beyond 40.6m

Eoh 41.3m

OVERBURDEN DRILL LOG

Hole GE-88-8

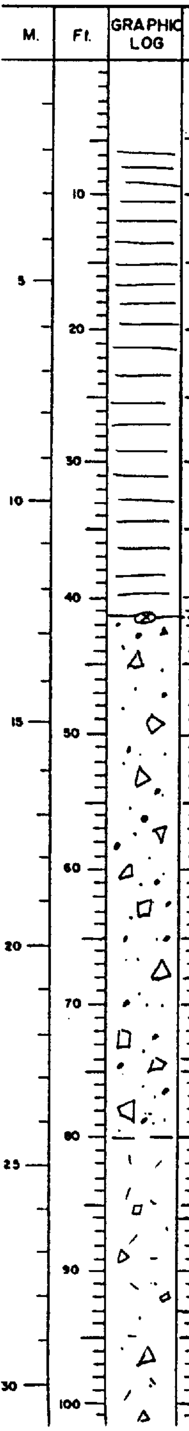
Property/Area Great Explorations
Township Lamoullien
Claim No.
Location L1+98E, 67.5S

Logged by GP Sinclair
Sampler L Chabot

Date(s) 18/2/88

Drilling Co. Bradley Bros Ltd.
Bit No. J000755
Depth to bedrock 49.6m
Total depth 51.5m
Sample screening 12 mesh

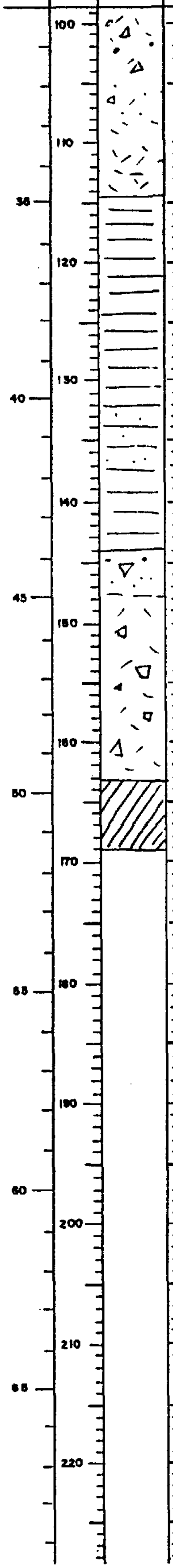
Remarks



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	Cu	Zn	As	Au
			ppm	ppm	ppm	ppb
		0-2m no return				
		2m Lacustrine Sediments - grey varved clay - gritty initially				
		- little grit here				
1		12.4 Till - Clay-sand matrix - quite heterogeneous clast composition				
2		- more sand matrix				
3		- perhaps more locals here				
4						
5		- 75% locals here, including int. & felsic volcanics - 23 wood	244	65	1384	205
6		24.3 Clay Till	110	55	480	45
7		26.2 80% clay, clasts include serquinite, predom locals	120	74	132	20
8		- exclusively locals — m-seds & volcs.	202	167	236	80

OVERBURDEN DRILL LOG

Hole GE-88-8



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL			
8	0	- good clay till				
9	0		371	144	360	70
10	0	~33m Lacustrine Sediments brown & grey clay, clean	153	119	90	30
NS		- quite slow drilling 41m - becomes gritty 43.7 Till sand matrix heterogeneous clasts				
11	0	45 Till, clayey matrix	193	85	424	45
12	0	more locals	132	103	320	20
13	0	47 - sandier, more varied clasts	152	112	350	45
14	0	48 - more locals	195	162	332	220
		49 - minor massive pyrite above bedrock	*178	124	456	1965
15		- varied clasts here	32	36	104	20

49.6 Bedrock - graphitic schist, to 10% quartz veins, 10% fine pyrite

Eoh ~51.5m

* bedrock fines processed as till sample

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-9

Property/Area Great Explorations

Township Laucullier

Claim No.

Location L2W, 2+25 South

Logged by GPSinclair

Sampler L Chabot

Date(s) 18/2/88

Drilling Co. Bradley Bros Ltd.

Bit No. J000745

Depth to bedrock 64.3 m

Total depth 66 m

Sample screening 12 mesh

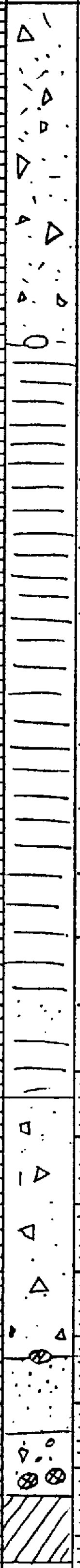
Remarks

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL Cu	Zn	As	Au
					- no return initially		ppm		ppb
	10				1.5 Lacustrine Sediments - grey clay, clean				
5	20		NS						
					8.3 Till - sandy matrix - 60% locals				
	30		1	0	9.2 - more clay in matrix	108	43	53	5
10			2	0		185	52	51	200
	40		3			85	39	72	35
15	50		4		- quite heterogeneous clast composition, including carbonates	101	40	59	10
	60		5			87	39	26	265
20			6	1	19m gravelly till	166	65	86	20
	70		7		sm. volume little return	89	45	65	30
25	80		8		- compresson here - very heterogeneous	188	64	163	280
	90		9		27.8 more sand/clay in matrix	129	48	135	40
30	100		10			70	34	42	50
			11						

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-9

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL				
	100		10		- sand clay till as prev.					
			11	1		81	36	24	15	
35	110		12	.	- poor return	75	46	84	165	
	120		13	3	38m 70% matrix	118	117	132	80	
			14		38.5 clay good clay till	140	51	94	15	
40 45 50 55	130 140 150 160 170 180		NS		39.5 Lacustrine Sediments - very dark grey - medium drilling rate - rare pebbley bits 55.3 Till - sand matrix					
			15		70% locals	126	137	240	310	
	190		16	1	58 - more hetero clasts	134	55	314	305	
60	200		17	1	- more sand matrix	101	31	111	190	
			NS		- mafic intrusive bld. 61.2-.4 - sand & hetero clasts beyond					
	210		18		Sandy Till 62.4 - quite hetero. 63.7 → 64.3 m.sed. & m.volc cobble	187	172	186	30	
65			19		64.3 Bedrock - black-green then black, fine grained mud-stone with up to 5% f.g. py (epigenetic) + 3-5% vein qtz	51	771	21	<5	
	220				Eoh 66m					

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-10

Property/Area Great Explorations
Township Lanoullien
Claim No.
Location Beaver Dam ≈ 18W ≈ 200N
Logged by GP Sinclair
Sampler same

Date(s) 19/2/88
Drilling Co. Bradley Bros Ltd.
Bit No.
Depth to bedrock 33.6 m
Total depth 35m
Sample screening 12 mesh

Remarks

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL			
						Cu	Zn	As	Au
						ppm			ppb
					Sfc. no return				
					1m Lacustrine Sediments brown grey clay				
	10								
					- Floculates here				
5	20								
	30								
10					- gritty & pebbley beyond 6m				
					12.4 Till - sandy matrix 60% locals				
	40								
			1		14.8 much more clay in matrix to 85%	169	77	116	75
			2			146	81	102	40
15	50								
			3	1		196	74	334	55
					17m - predom. silt - sandy till, 70% locals				
	60		4	4		165	100	672	950
20					19m Clay Till				
	70		5	1		156	184	242	40
			6		24.5 → .8 - gravelly	117	55	212	255
	80								
25					26 Lacustrine Sediments				
	90		NS						
30	100								

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-10

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL				
	100	—	NS		clay as previously					
	110	—			33.3→.6 very narrow till? above bedrock					
35		▨	7		33.6 Bedrock fine grained, greyish, well foliated meta sediment with up to 7% f.g. py. - to 5% carbonate veinlets	46	65	10	<5	
	120				End 35m					
	130									
40										
	140									
45										
	150									
	160									
50										
	170									
55	180									
	190									
60										
	200									
	210									
65										
	220									

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-11

Property/Area Great Explorations

Township Lanoullier

Claim No.

Location L37W, 500N

Logged by GP Sinclair

Sampler same

Date(s) 19/2/88

Drilling Co. Bradley Bros Ltd.

Bit No. J000758

Depth to bedrock 5.9m

Total depth 6.8m

Sample screening 12 mesh

Remarks

SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	Cu ppm	Zn ppm	As ppm	Au ppb
		no return initially				
1	1	1.6 Lacustrine Clay 3.5 Lac/Fluvial sand little return – clay afterwards	95	60	14	140
2 3		5.9 Bedrock - dark green-black, med-f-grained mafic volcanic - non-magnetic	52	40	4	<5
		Eoh 6.8m				

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-12

Property/Area Great Explorations

Township Lanoullier

Claim No.

Location L37W, 555N

Logged by GP Sinclair

Sampler L Chabot

Date(s) 21/2/88

Drilling Co. Bradley Bros Ltd

Bit No. J000758

Depth to bedrock 4.5m

Total depth 5.3m

Sample screening 12 mesh

Remarks

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL Cu	Zn	As	Au
					Sfc - Recent Organics	ppm			ppb
					1.6m Lacustrine Clay - grey, floculates				
	10		1		3.7 - Till ? - v. minor - little/no return	143	139	20	-
5			2			38	16	3	<5
					4.5 Bedrock - dark green-black mafic intrusive as per #GE-11				
	20								
	30				Eoh 5.3m				
10									
	40								
15	50								
	60								
20									
	70								
	80								
25									
	90								
30									
	100								

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-13

Property/Area Great Explorations

Township Lanoullier

Claim No.

Location L37W, 725N

Logged by GPSinclair

Sampler LChabot

Date(s) 21/2/88

Drilling Co. Bradley Bros

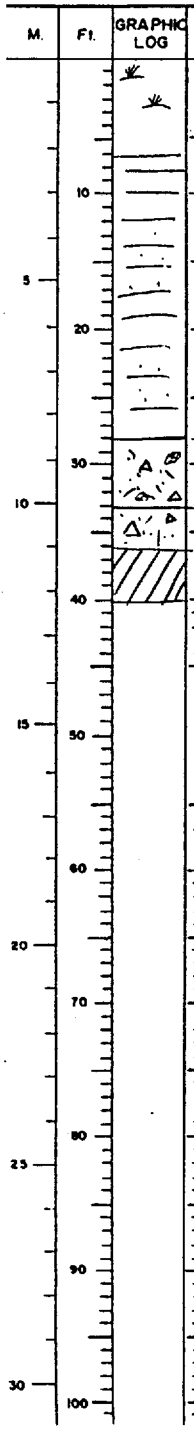
Bit No. J000758

Depth to bedrock 11.1m

Total depth 12.2m

Sample screening 12 mesh

Remarks



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL			
			Cu	Zn	As	Au
				ppm		ppb
		Sfc - Recent Organics				
		1.5 Lacustrine sediments - grey clay - gritty - grey/brown balls after 3m				
		8.4 Cobbley - quite gritty clay				
1		10m Till - sandy clay matrix - quite heterogeneous clasts	185	139	26	<20
2			120	65	25	50
3			10	42	2	<5
		11.1 Bedrock - contact (grad) from mafic intrusive to felsic int. granodiorite				
		Eoh 12.2m				

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-14

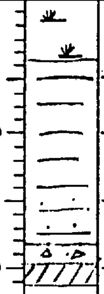
Property/Area Great Explorations
Township Lanoullier
Claim No.
Location L37W, 900N

Logged by GP Sinclair
Sampler L Chabot

Date(s) 21/2/88

Drilling Co. Bradley Bros Ltd
Bit No. J000758
Depth to bedrock 5.8m
Total depth ~6.2m
Sample screening 12 mesh

Remarks

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL Cu	Zn	As	Au
						ppm			ppb
					SFc. Recent Organics				
					1m Lacustrine – grey blue clay				
	10				Cochrane Till? – gritty grey brown clay balls – minor pebbley sections				
5			1		5.8 Bedrock – granodiorite,	153	89	31	175
	20		2		massive, medium grained	127	38	5	<5
	30								
10									
	40								
15	50								
	60								
20									
	70								
	80								
25									
	90								
30	100								

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-14A

Property/Area Great Explorations

Township Laucollier

Claim No.

Location L37W, ~920N

Logged by GP Sinclair

Sampler L Chabot

Date(s) 21/2/88

Drilling Co. Bradley Bros Ltd

Bit No.

Depth to bedrock 6.4m

Total depth 6.7m

Sample screening 12 mesh

Remarks redrilled ~ 20m N of #14 to confirm bedrock / secure an additional overburden sample after difficulties with #14

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL				
						Cu	Zn	As	Au	
						ppm	ppm	ppm	ppb	
5	10 20		1		2m Lacustrine Clay – gritty grey brown little return Till – quite thin overlying bedrock	153	77	20	<5	
10	30		2		6.4 Bedrock – granodiorite as previously Eoh 6.7m					
15	40 50									
20	60 70									
25	80									
30	90 100									

MPH Consulting Limited

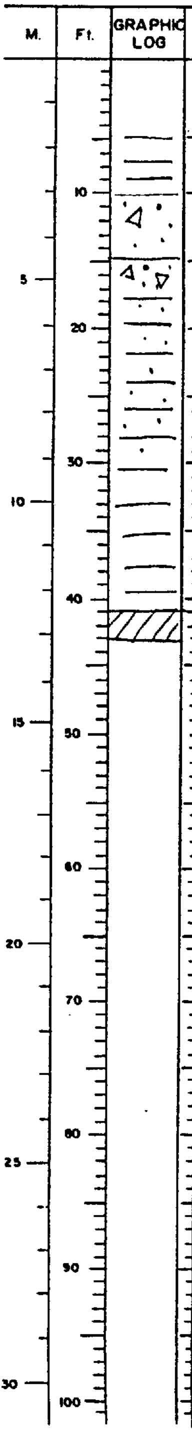
OVERBURDEN DRILL LOG

Hole GE-88-15

Property/Area Great Explorations
Township Laucullien
Claim No.
Location 137W, 1400N
Logged by GPSinclair
Sampler L Chabot

Date(s) 21/2/88
Drilling Co. Bradley Bros. Ltd
Bit No.
Depth to bedrock 12-4m
Total depth 13-1m
Sample screening 12 mesh

Remarks



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL Cu	 Zn	 As	 Au
			ppm			ppb
1		1.7 Lacustrine Sediments - grey blue clay - flecs. thence gritty grey-brown clay balls	126	108	20	<15
2		4.4 Till - sand matrix - heterogeneous clast composition 5m Clay - grey brown gritty occasional pebbly sections	140	83	30	<10
3		12-4 Bedrock - granodiorite as previously	16	27	4	<5

MPH Consulting Limited

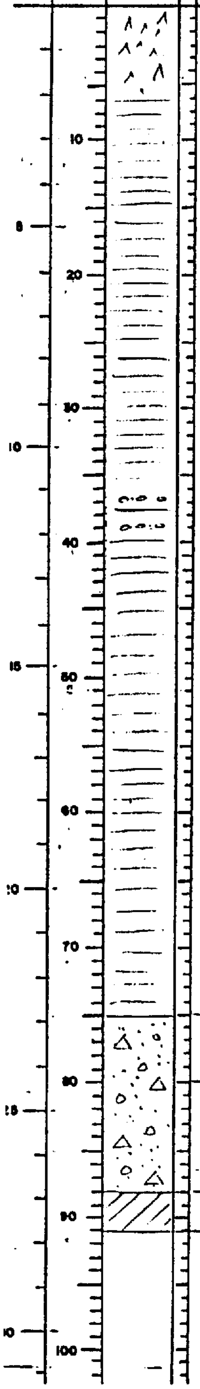
OVERBURDEN DRILL LOG

Hole GE-89-16

Property/Area Great Explorations
Township Lanouiller, Quebec
Claim No.
Location L37W, 1600N
Logged by GP Sinclair
Sampler L Chabot

Date(s) 23/2/89
Drilling Co. Bradley Bros Ltd
Bit No. I 0007
Depth to bedrock 26.7m
Total depth 27.3m
Sample screening 12 mesh

Remarks



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL Cu	Zn	As	Au
			ppm	ppm	ppm	ppb
		0-2m No return				
		2-22.8m <u>Lacustrine Sediments</u> generally greyish varved clays & silt some pebbly material 11-12m.				
		22.8-26.7m <u>Till</u> relatively sandy with some matrix clay; generally heterogenous clast composition; becomes more gravelly towards bedrock				
1			157	106	51	70
2		26.7-27.3m <u>Bedrock</u> granite - granodiorite; med-grained, rel massive	188	62	67	25
3			162	88	32	25
4			—	—	—	—

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE 88-17

Property/Area [illegible] Explorations	Date(s) 23/2/88
Township Lamouillier, P.Q.	
Claim No.	Drilling Co. Bradley Bros
Location 38W, 1650N	Bit No. J000756
	Depth to bedrock 25.8m
Logged by G.P. Sinclair	Total depth 26.5m
Sampler L. Chabot	Sample screening 12 mesh

Remarks

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL Cu	Zn ppm	As	Au ppb
					0-2m No return				
					2-16.8m <u>Lacustrine Sediments</u> generally varved grey clay & silt somewhat gritty around 10m. becoming alternating silt and gritty clay 15-16.8m.				
			1		16.8-18.6m <u>Gravel</u> thin fluvial (?) gravel unit in clays.	135	98	16	160
					18.6-23m <u>Clay</u> varved brown/grey				
			2		23-25.8m <u>Till</u> gravelly till with very heterogeneous clast comp, abun matrix sand	201	77	40	75
			3			226	71	48	150
			4		25.8-26.5 <u>Bedrock</u> granite/granodiorite; massive, med-gr. last hole.	—	—	—	—

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GL 83-13

Property/Area Great Explorations

Township Lanouillier

Claim No.

Location L37W, 220S

Logged by G. P. Sinclair

Sampler L. Chabot

Date(s) 24/2/83

Drilling Co. Bradley Bros

Bit No. J000 756

Depth to bedrock 14.9m

Total depth 16m

Sample screening 12 mesh

Remarks

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL			
						Cu	Zn ppm	As	Au ppb
					0-2m Swamp deposits little return				
					2-14.9m Lacustrine & Fluvial Sediment				
			1		Grey varved clay with gravel, interbeds at 4m, 6.5m and 11m	135	99	17	<5
			2		possibly thin skim of till on bedrock - poor return	150	93	37	<10
			3		14.9-16m Bedrock siliceous sediment or volcanic; dark, very f.gr, rel hard with subchochoidal fracture	35	63	7	<5

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-88-11

Property/Area [illegible]

Township Lanouillier

Claim No.

Location Per map

Logged by [illegible]

Sampler L Chabot

Date(s) 25/2/88

Drilling Co. Bradley Bros

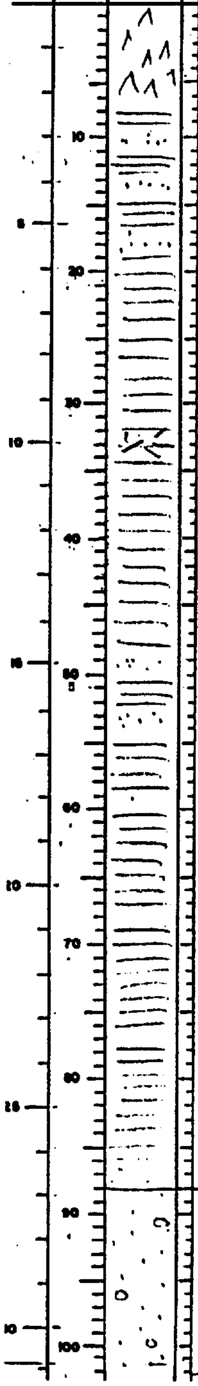
Bit No. As per

Depth to bedrock 52.7 m

Total depth 54.2 m

Sample screening 12 mesh

Remarks



SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL Cu	Zn	As	Au	
				ppm		ppb	
		0-2m No return					
		2-27m <u>Lacustrine Sediments</u> Varved grey clays with sandy / pebbly beds at: 3m, 4m, 5.5m and 15m-16m * wood chips at 10m. distinctly varved around 21 m					
1	1	27-47m <u>Sand and Gravel</u> Cobbly, in upper portion becoming finer, more sandy down section	155	56	56	225	

MPH Consulting Limited

OVERBURDEN DRILL LOG

Hole GE-38-14

M.	Ft.	GRAPHIC LOG	SAMPLE No.	GRAINS Au	DESCRIPTIVE LOG	ANALYTICAL				
	100		2			126	56	42	40	
	110		3	1.	return problems in sand 35 - 47m	115	40	47	235	
35 40	120 130 140		poor return, no sample		generally heterogeneous clasts throughout clay lens 43-44m sand and gravel 44-47m					
45	150		4		47-52m Clay	190	84	202	25	
50	160 170				Clean, grey-green Superclay - hard drilling. 52-52.7m Till clay-rich till with					
			5		75% local clasts	319	141	504	-	
			6			48	55	11	<5	
55 60 65	180 190 200 210 220				52.7-54.2 m Bedrock metasediment; fine-gr. Greyish colour, no sulphides.					

APPENDIX 3

Sample Processing Results

PHG1MAR.WR.
OTAL # OF SAMPLES IN THIS REPORT = 40

OVERBURDEN DRILLING MANAGEMENT LIMITED

LABORATORY SAMPLE LOG

AMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION									CLASS
						M. I. CONC					CLAST				MATRIX					
											SIZE	%					COLOR			
	TABLE SPLIT	+10 CHIPS	TABLE FEED	TABLE CONC	M.I. LIGHTS	CONC. TOTAL	NON MAG	MAG	NO. V.G.	CALC PPB		V/S GR	LS	OT	S/U SD	ST CY	SD	CY		
GE-88																				
1-1	7.3	0.2	7.1	153.8	135.1	18.7	15.1	15.1	0	NA										
1-2	6.0	0.1	5.9	117.7	88.8	28.9	16.8	12.1	0	NA										
1-3	8.1	0.1	8.0	167.6	123.3	44.3	24.2	20.1	0	NA										
1-4	7.4	0.1	7.3	147.1	109.4	37.7	18.7	19.0	0	NA										
1-5	7.5	0.1	7.4	122.7	82.9	39.8	19.8	20.0	0	NA										
1-6	6.7	0.0	6.7	107.4	62.4	45.0	22.2	22.8	1	96										
1-7	7.3	0.0	7.3	174.2	123.2	51.0	22.3	28.7	1	130										
1-8	6.9	0.0	6.9	141.8	103.1	38.7	18.3	20.4	1	55										
1-9	7.7	0.0	7.7	141.4	100.5	40.9	20.5	20.4	0	NA										
1-10	6.1	0.0	6.1	104.7	74.6	30.1	12.5	17.6	0	NA										
1-11	6.9	0.0	6.9	161.6	96.9	64.7	28.2	36.5	0	NA										
1-12	3.2	0.0	3.2	98.0	90.0	8.0	5.9	2.1	0	NA										
1-13	6.0	0.0	6.0	117.6	82.2	35.4	20.1	15.3	0	NA										
1-14	7.1	0.0	7.1	188.8	152.0	36.8	19.5	17.3	0	NA										
1-15	6.0	0.0	6.0	109.0	84.4	24.6	13.3	10.3	0	NA										
1-16	7.6	0.0	7.6	158.8	131.4	27.4	17.8	9.6	0	NA										
1-17	7.1	0.0	7.1	176.7	145.2	31.5	17.2	14.3	2	145										
1-18	6.8	0.0	6.8	162.1	132.9	29.2	15.5	13.7	0	NA										
1-19	6.5	0.0	6.5	107.2	84.4	22.8	13.3	9.5	0	NA										
1-20	5.9	0.2	5.7	90.9	74.0	16.9	10.7	6.2	0	NA										
2-1	4.2	0.0	4.2	94.5	70.7	23.8	15.3	8.5	0	NA										
2-2	6.0	0.0	6.0	171.9	146.9	25.0	14.9	10.1	0	NA										
2-3	6.4	0.0	6.4	133.8	101.4	32.4	18.2	14.2	0	NA										
2-4	6.3	0.0	6.3	209.8	179.8	30.0	17.3	12.7	0	NA										
2-5	6.0	0.0	6.0	140.3	114.9	25.4	14.0	11.4	1	107										
2-6	6.7	0.0	6.7	156.0	115.5	40.5	22.3	18.2	5	271										
2-7	7.0	0.0	7.0	178.1	150.9	27.2	14.3	12.9	0	NA										
2-8	7.2	0.0	7.2	119.4	88.1	31.3	15.3	16.0	0	NA										
2-9	7.7	0.0	7.7	83.9	52.2	31.7	13.1	18.6	0	NA										
2-10	5.4	0.0	5.4	132.2	90.8	41.4	20.5	20.9	1	157										
3-1	6.9	0.0	6.9	118.9	87.6	31.3	19.5	11.8	0	NA										
3-2	7.2	0.0	7.2	114.0	86.4	27.6	19.0	8.6	0	NA										
3-3	6.7	0.0	6.7	102.8	77.2	25.6	15.4	10.2	0	NA										
3-4	6.4	0.2	6.2	113.8	91.9	21.9	11.5	10.4	0	NA										
3-5	6.4	0.4	6.0	109.5	80.0	29.5	10.8	18.7	0	NA										
3-6	7.4	0.0	7.4	153.9	128.8	25.1	13.0	12.1	0	NA										
3-7	7.3	0.2	7.1	144.5	114.8	29.7	15.4	14.3	0	NA										
3-8	3.8	0.2	3.6	70.7	46.4	24.3	10.1	14.2	0	NA										
4-1	2.4	0.0	2.4	54.5	49.7	4.8	3.5	1.3	0	NA										
4-2	7.2	0.0	7.2	136.2	105.8	30.4	16.8	13.6	1	89										

ᴾHG2MAR.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 40

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET) TABLE SPLIT	+10 CHIPS	TABLE FEED	WEIGHT (GRAMS DRY) TABLE CONC	M.I. LIGHTS	M. I. CONC CONC. TOTAL	NON MAG	MAG	AU NO. V.G.	CALC PPB	DESCRIPTION CLAST SIZE	% V/S	GR	LS	OT	MATRIX S/U	SD	ST	CY	COLOR SD	CY	CLASS
GE-88																						
4-3	7.1	0.2	6.9	95.1	77.9	17.2	8.2	9.0	0	NA												
4-4	7.6	0.1	7.5	135.3	108.3	27.0	13.5	13.5	0	NA												
4-5	7.3	0.0	7.3	142.2	109.0	33.2	15.8	17.4	0	NA												
4-6	7.5	0.0	7.5	134.2	103.6	30.6	17.2	13.4	0	NA												
4-7	7.2	0.0	7.2	107.9	76.5	31.4	18.5	12.9	1	207												
4-8	7.5	0.0	7.5	127.7	88.0	39.7	24.8	14.9	1	15												
5-1	6.7	0.0	6.7	175.1	136.8	38.3	21.5	16.8	6	337												
5-2	6.9	0.2	6.7	116.2	89.2	27.0	13.8	13.2	0	NA												
5-3	6.4	0.0	6.4	166.6	143.5	23.1	13.0	10.1	0	NA												
5-4	7.4	0.0	7.4	93.0	66.8	26.2	14.6	11.6	0	NA												
5-5	6.3	0.0	6.3	101.1	77.3	23.8	15.2	8.6	0	NA												
5-6	6.8	0.0	6.8	169.4	143.1	26.3	15.8	10.5	0	NA												
5-7	7.3	0.0	7.3	203.2	176.3	26.9	15.9	11.0	1	182												
5-8	7.2	0.0	7.2	253.1	241.7	11.4	7.5	3.9	0	NA												
5-9	5.7	0.0	5.7	96.8	69.7	27.1	12.2	14.9	0	NA												
5-10	6.5	0.0	6.5	120.0	92.7	27.3	11.9	15.4	1	178												
5-11	7.2	0.0	7.2	168.0	130.2	37.8	15.8	22.0	0	NA												
5-12	7.0	0.0	7.0	93.0	61.8	31.2	12.3	18.9	0	NA												
5-13	7.3	0.0	7.3	128.9	101.9	27.0	12.3	14.7	0	NA												
5-14	6.7	0.0	6.7	190.4	159.0	31.4	15.1	16.3	0	NA												
5-15	7.9	0.0	7.9	138.4	102.4	36.0	18.9	17.1	0	NA												
5-16	6.2	0.0	6.2	110.5	81.7	28.8	17.2	11.6	0	NA												
5-17	6.9	0.0	6.9	168.3	138.7	29.6	19.1	10.5	0	NA												
5-18	5.7	0.0	5.7	111.1	80.9	30.2	15.6	14.6	0	NA												
7-3	7.2	0.0	7.2	111.7	87.4	24.3	16.1	8.2	0	NA												
7-4	7.1	0.0	7.1	116.7	94.5	22.2	14.7	7.5	0	NA												
7-5	7.6	0.0	7.6	84.0	62.5	21.5	14.1	7.4	0	NA												
7-6	7.3	0.2	7.1	183.8	142.0	41.8	21.7	20.1	0	NA												
7-7	7.4	0.2	7.2	128.7	96.3	32.4	17.7	14.7	0	NA												
7-8	7.7	0.0	7.7	152.7	112.3	40.4	21.2	19.2	0	NA												
7-9	7.2	0.0	7.2	155.3	130.2	25.1	14.2	10.9	0	NA												
7-10	7.7	0.1	7.6	164.8	103.3	61.5	26.4	35.1	0	NA												
8-5	7.0	0.0	7.0	349.6	274.6	75.0	36.8	38.2	0	NA												
8-6	6.9	0.0	6.9	123.4	94.2	29.2	18.5	10.7	0	NA												
8-7	3.9	0.1	3.8	75.5	60.4	15.1	9.7	5.4	0	NA												
8-8	4.2	0.0	4.2	84.8	68.8	16.0	11.3	4.7	0	NA												
8-9	6.9	0.1	6.8	68.3	40.6	27.7	19.4	8.3	0	NA												
8-10	2.2	0.0	2.2	131.4	124.7	6.7	4.1	2.6	0	NA												
9-1	7.0	0.0	7.0	163.6	120.3	43.3	21.1	22.2	0	NA												
9-2	6.8	0.0	6.8	203.2	175.6	27.6	16.2	11.4	0	NA												

PHG3MAR.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 40

LABORATORY SAMPLE LOG

SAMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
	TABLE SPLIT	+10 CHIPS	TABLE FEED	TABLE CONC	M.I. LIGHTS	CONC. TOTAL	NON MAG	MAG	NO. V.G.	CALC PPB	SIZE	%				S/U	SD	ST	CY	COLOR		
												V/S	GR	LS	OT					SD	CY	
GE-88																						
5-19	7.2	0.0	7.2	132.5	81.4	51.1	25.2	25.9	0	NA												
6-1	7.5	0.0	7.5	158.0	125.6	32.4	16.3	16.1	0	NA												
6-2	7.6	0.0	7.6	144.2	116.8	27.4	14.5	12.9	0	NA												
6-3	7.7	0.0	7.7	125.3	96.2	29.1	14.1	15.0	0	NA												
6-4	7.5	0.0	7.5	148.8	122.2	26.6	14.4	12.2	0	NA												
6-5	7.7	0.0	7.7	159.9	125.4	34.5	20.0	14.5	0	NA												
6-6	1.9	0.0	1.9	60.2	49.9	10.3	6.5	3.8	0	NA												
7-1	7.1	0.0	7.1	156.0	125.3	30.7	17.0	13.7	0	NA												
7-2	6.7	0.0	6.7	115.0	88.7	26.3	13.6	12.7	0	NA												
8-1	7.8	0.0	7.8	128.7	101.6	27.1	14.9	12.2	0	NA												
8-2	8.0	0.0	8.0	117.8	85.3	32.5	19.0	13.5	0	NA												
8-3	6.6	0.0	6.6	147.4	116.4	31.0	18.7	12.3	0	NA												
8-4	6.1	0.0	6.1	102.5	63.7	38.8	18.6	20.2	0	NA												
8-11	5.7	0.0	5.7	139.3	114.7	24.6	12.6	12.0	0	NA												
8-12	4.1	0.0	4.1	93.6	70.9	22.7	12.4	10.3	0	NA												
8-13	6.6	0.0	6.6	87.7	61.0	26.7	13.6	13.1	0	NA												
8-14	5.9	0.0	5.9	54.9	35.8	19.1	10.0	9.1	0	NA												
8-15	4.1	0.0	4.1	107.0	55.6	51.4	41.0	10.4	1	189												
9-3	7.2	0.0	7.2	151.8	119.8	32.0	18.5	13.5	0	NA												
9-4	7.3	0.1	7.2	138.5	107.8	30.7	17.5	13.2	0	NA												
9-5	7.0	0.0	7.0	166.1	139.4	26.7	15.0	11.7	0	NA												
9-6	6.4	0.0	6.4	173.0	147.0	26.0	15.4	10.6	1	12												
9-7	5.3	0.0	5.3	169.3	142.5	26.8	15.9	10.9	0	NA												
9-8	7.3	0.0	7.3	162.2	85.2	77.0	32.8	44.2	0	NA												
9-9	6.9	0.0	6.9	182.1	125.5	56.6	28.6	28.0	0	NA												
9-10	7.3	0.0	7.3	201.6	175.4	26.2	16.7	9.5	0	NA												
9-11	7.1	0.0	7.1	184.1	153.9	30.2	19.1	11.1	1	79												
9-12	6.8	0.0	6.8	152.6	125.7	26.9	17.8	9.1	0	NA												
9-13	6.5	0.0	6.5	142.6	116.0	26.6	18.3	8.3	3	296												
9-14	6.5	0.0	6.5	158.0	127.2	30.8	15.9	14.9	0	NA												
9-15	3.9	0.0	3.9	118.6	101.3	17.3	10.5	6.8	0	NA												
9-16	8.1	0.0	8.1	185.5	153.6	31.9	16.4	15.5	1	129												
9-17	2.9	0.0	2.9	100.3	85.5	14.8	8.7	6.1	1	43												
9-18	2.9	0.0	2.9	84.6	74.1	10.5	6.8	3.7	0	NA												
10-1	6.0	0.0	6.0	122.9	96.7	26.2	15.7	10.5	0	NA												
10-2	4.3	0.0	4.3	114.6	94.5	20.1	11.9	8.2	0	NA												
10-3	6.9	0.0	6.9	146.4	100.3	46.1	23.0	23.1	1	44												
10-4	6.8	0.2	6.6	183.5	99.0	84.5	33.5	51.0	4	434												
10-5	7.9	0.0	7.9	152.4	113.6	38.8	24.9	13.9	1	85												
10-6	8.2	0.0	8.2	170.1	137.5	32.6	19.4	13.2	0	NA												

PHG4MAR.WR1

OVERBURDEN DRILLING MANAGEMENT LIMITED

TOTAL # OF SAMPLES IN THIS REPORT = 21

LABORATORY SAMPLE LOG

AMPLE NO.	WEIGHT (KG.WET)			WEIGHT (GRAMS DRY)					AU		DESCRIPTION											CLASS
						M. I. CONC					CLAST					MATRIX						
	TABLE SPLIT	+10 CHIPS	TABLE FEED	TABLE CONC	M.I. LIGHTS	CONC. TOTAL	NON MAG	MAG	NO. V.G.	CALC PPB	SIZE	%				S/U	SD	ST	CY	COLOR		
												V/S	GR	LS	OT					SD	CY	
GE-88																						
11-1	5.5	0.0	5.5	87.5	65.2	22.3	13.1	9.2	1	28												
12-1	1.1	0.0	1.1	50.2	36.6	13.6	7.2	6.4	0	NA												
13-1	3.1	0.0	3.1	58.4	37.9	20.5	11.1	9.4	0	NA												
13-2	4.7	0.0	4.7	127.9	92.9	35.0	18.5	16.5	0	NA												
14-1	6.4	0.0	6.4	153.4	108.6	44.8	26.4	18.4	0	NA												
14A-1	7.2	0.0	7.2	156.4	109.9	46.5	28.4	18.1	0	NA												
15-1	2.2	0.0	2.2	156.6	133.1	23.5	13.0	10.5	0	NA												
15-2	6.1	0.0	6.1	115.7	87.0	28.7	16.4	12.3	0	NA												
16-1	7.5	0.0	7.5	213.7	173.6	40.1	22.5	17.6	0	NA												
16-2	7.7	0.0	7.7	150.7	109.9	40.8	22.9	17.9	0	NA												
16-3	6.5	0.0	6.5	164.9	122.1	42.8	25.8	17.0	0	NA												
17-1	6.0	0.0	6.0	234.1	182.1	52.0	32.5	19.5	0	NA												
17-2	7.0	0.0	7.0	205.9	163.8	42.1	24.4	17.7	0	NA												
17-3	6.8	0.0	6.8	179.7	142.5	37.2	19.9	17.3	0	NA												
18-1	7.3	0.0	7.3	189.3	148.8	40.5	25.5	15.0	0	NA												
18-2	3.2	0.0	3.2	107.5	82.7	24.8	14.6	10.2	0	NA												
19-1	7.5	0.0	7.5	171.9	125.4	46.5	27.7	18.8	1	341												
19-2	4.9	0.0	4.9	138.6	99.4	39.2	24.3	14.9	0	NA												
19-3	6.9	0.0	6.9	135.6	85.6	50.0	26.8	23.2	1	79												
19-4	5.7	0.0	5.7	131.1	94.1	37.0	20.0	17.0	0	NA												
19-5	2.6	0.0	2.6	82.3	64.8	17.5	9.3	8.2	0	NA												

```
OLD CLASSIFICATION
==================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MPHG1MAR.WR1                                   NUMBER OF GRAINS
TOTAL # OF PANNINGS        3             -----------------------------------
                                         ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
 AMPLE #  PANNED                         ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER   THICKNESS     T    P     T    P     T    P       GMS      PPB    REMARKS

   GE-88
     1-1    N   NO VISIBLE GOLD

     1-2    N   NO VISIBLE GOLD

     1-3    N   NO VISIBLE GOLD

     1-4    N   NO VISIBLE GOLD

     1-5    N   NO VISIBLE GOLD

     1-6    N     100 X  125      22 C    1                             1
                                                                      ------------------------
                                                                        1   25.8        82

     1-7    N     100 X  150      25 C    1                             1
                                                                      ------------------------
                                                                        1   26.4       110

     1-8    N      75 X  100      18 C    1                             1
                                                                      ------------------------
                                                                        1   23.6        43

     1-9    N   NO VISIBLE GOLD

    1-10    N   NO VISIBLE GOLD

    1-11    N   NO VISIBLE GOLD

    1-12    N   NO VISIBLE GOLD

    1-13    N   NO VISIBLE GOLD

    1-14    N   NO VISIBLE GOLD

    1-15    N   NO VISIBLE GOLD

    1-16    Y   NO VISIBLE GOLD                                                                EST. 60% PYRITE
                                                                                                    500 ARSENOPYRITE GRAINS
                                                                                                    POSSIBLE TUNSTEN CARBIDE.

    1-17    Y      50 X   75      13 C    1                             1                      EST. 3% PYRITE
                   75 X  150      22 C    1                             1                           100 GRAINS ARSENOPYRITE
                                                                      ------------------------
                                                                        2   17.2       145

    1-18    N   NO VISIBLE GOLD
```

```
GOLD CLASSIFICATION
==================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MPHG1MAR.WR1                                      NUMBER OF GRAINS
TOTAL # OF PANNINGS        3              ----------------------------------
                                          ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
SAMPLE #  PANNED                          ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER   THICKNESS     T    P     T    P     T    P        GMS      PPB    REMARKS

   GE-88
    1-19    N   NO VISIBLE GOLD

    1-20    N   NO VISIBLE GOLD

     2-1    N   NO VISIBLE GOLD

     2-2    N   NO VISIBLE GOLD

     2-3    N   NO VISIBLE GOLD

     2-4    N   NO VISIBLE GOLD

     2-5    N      75 X  125      20 C    1                               1
                                                                        -------------------
                                                                          1   14.0       107

     2-6    Y      25 X   25       5 C         1                          1                   EST. 2% PYRITE
                   50 X   75      13 C         1                          1                        50 GRAINS ARSENOPYRITE
                   75 X   75      15 C         1                          1
                   75 X  150      22 C    1                               1
                  125 X  125      25 C    1                               1
                                                                        -------------------
                                                                          5   22.3       271

     2-7    N   NO VISIBLE GOLD

     2-8    N   NO VISIBLE GOLD

     2-9    N   NO VISIBLE GOLD

    2-10    N     125 X  150      27 C    1                               1
                                                                        -------------------
                                                                          1   20.5       187

     3-1    N   NO VISIBLE GOLD

     3-2    N   NO VISIBLE GOLD

     3-3    N   NO VISIBLE GOLD

     3-4    N   NO VISIBLE GOLD

     3-5    N   NO VISIBLE GOLD

     3-6    N   NO VISIBLE GOLD

     3-7    N   NO VISIBLE GOLD
```

```
 LD CLASSIFICATION
===================
SIBLE GOLD FROM SHAKING TABLE AND PANNING

MPHG2MAR.WR1                                      NUMBER OF GRAINS
TOTAL # OF PANNINGS        2             -----------------------------------
                                         ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
 MPLE #  PANNED                          ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER   THICKNESS    T    P    T    P     T    P         GMS      PPB    REMARKS

  GE-88
    4-3    N   NO VISIBLE GOLD

    4-4    N   NO VISIBLE GOLD

    4-5    N   NO VISIBLE GOLD

    4-6    N   NO VISIBLE GOLD

    4-7    N     100 X  175      27 C    1                                1
                                                                       ------------------
                                                                          1   18.5      207

    4-8    N      50 X   75      13 C    1                                1
                                                                       ------------------
                                                                          1   24.8       15

    5-1    Y      25 X   50       8 C         1                           1                EST. 3% PYRITE
                  50 X   50      10 C         1                           1
                  50 X  100      15 C         1                           1
                  75 X  100      18 C    1                                1
                  75 X  125      20 C    1                                1
                 125 X  150      27 C    1                                1
                                                                       ------------------
                                                                          6   21.5      337

    5-2    N   NO VISIBLE GOLD

    5-3    N   NO VISIBLE GOLD

    5-4    N   NO VISIBLE GOLD

    5-5    N   NO VISIBLE GOLD

    5-6    N   NO VISIBLE GOLD

    5-7    N     100 X  150      25 C    1                                1
                                                                       ------------------
                                                                          1   15.9      182

    5-8    N   NO VISIBLE GOLD

    5-9    N   NO VISIBLE GOLD

   5-10    N      75 X  150      22 C              1                      1
                                                                       ------------------
                                                                          1   11.9      178
```

```
.AGE 2                                        MPH                                                  03/10/88

OLD CLASSIFICATION
==================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

PHG2MAR.WR1                                NUMBER OF GRAINS
TOTAL # OF PANNINGS       2            -----------------------------------
                                       ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
AMPLE #  PANNED                        ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER   THICKNESS    T    P    T    P    T    P        GMS      PPB    REMARKS

  GE-88
   5-11    N   NO VISIBLE GOLD

   5-12    N   NO VISIBLE GOLD

   5-13    N   NO VISIBLE GOLD

   5-14    N   NO VISIBLE GOLD

   5-15    N   NO VISIBLE GOLD

   5-16    N   NO VISIBLE GOLD

   5-17    N   NO VISIBLE GOLD

   5-18    N   NO VISIBLE GOLD

    7-3    N   NO VISIBLE GOLD

    7-4    N   NO VISIBLE GOLD

    7-5    N   NO VISIBLE GOLD

    7-6    N   NO VISIBLE GOLD

    7-7    N   NO VISIBLE GOLD

    7-8    N   NO VISIBLE GOLD

    7-9    N   NO VISIBLE GOLD

   7-10    N   NO VISIBLE GOLD

    8-5    N   NO VISIBLE GOLD

    8-6    N   NO VISIBLE GOLD

    8-7    N   NO VISIBLE GOLD

    8-8    N   NO VISIBLE GOLD

    8-9    Y   NO VISIBLE GOLD                                                         EST. 40% PYRITE

   8-10    N   NO VISIBLE GOLD

    9-1    N   NO VISIBLE GOLD

    9-2    N   NO VISIBLE GOLD
```

```
'OLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

.IPHG3MAR.WR1                                   NUMBER OF GRAINS
TOTAL # OF PANNINGS        3          -----------------------------------
                                      ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
'AMPLE #  PANNED                      ========  =========  ======== ===== MAG      ASSAY
          Y/N    DIAMETER  THICKNESS   T    P    T    P    T    P        GMS      PPB    REMARKS

   GE-88
    5-19   N   NO VISIBLE GOLD

     6-1   N   NO VISIBLE GOLD

     6-2   N   NO VISIBLE GOLD

     6-3   N   NO VISIBLE GOLD

     6-4   N   NO VISIBLE GOLD

     6-5   N   NO VISIBLE GOLD

     6-6   N   NO VISIBLE GOLD

     7-1   N   NO VISIBLE GOLD

     7-2   N   NO VISIBLE GOLD

     8-1   N   NO VISIBLE GOLD

     8-2   N   NO VISIBLE GOLD

     8-3   N   NO VISIBLE GOLD

     8-4   N   NO VISIBLE GOLD

    8-11   N   NO VISIBLE GOLD

    8-12   N   NO VISIBLE GOLD

    8-13   N   NO VISIBLE GOLD

    8-14   N   NO VISIBLE GOLD

    8-15   Y     175 X  175      34 C    1                             1                  EST. 50% PYRITE
                                                                     ____________________
                                                                       1   41.0       189

     9-3   N   NO VISIBLE GOLD

     9-4   N   NO VISIBLE GOLD

     9-5   N   NO VISIBLE GOLD

     9-6   N      50 X   50      10 C    1                             1
                                                                     ____________________
                                                                       1   15.4        12
```

GOLD CLASSIFICATION

VISIBLE GOLD FROM SHAKING TABLE AND PANNING

MPHG3MAR.WR1

TOTAL # OF PANNINGS 3

NUMBER OF GRAINS

SAMPLE #	PANNED Y/N	DIAMETER	THICKNESS	ABRADED		IRREGULAR		DELICATE		TOTAL	NON MAG GMS	CALC V.G. ASSAY PPB	REMARKS
				T	P	T	P	T	P				
GE-88													
9-7	N	NO VISIBLE GOLD											
9-8	N	NO VISIBLE GOLD											
9-9	N	NO VISIBLE GOLD											
9-10	N	NO VISIBLE GOLD											
9-11	N	75 X 125	20 C	1						1			
										1	19.1	79	
9-12	N	NO VISIBLE GOLD											
9-13	Y	25 X 50	8 C		1					1			EST. 40% PYRITE
		50 X 150	20 C						1	1			
		100 X 175	27 C				1			1			
										3	18.3	296	
9-14	N	NO VISIBLE GOLD											
9-15	N	NO VISIBLE GOLD											
9-16	N	100 X 125	22 C	1						1			
										1	16.4	129	
9-17	N	50 X 75	13 C	1						1			
										1	8.7	43	
9-18	N	NO VISIBLE GOLD											
10-1	N	NO VISIBLE GOLD											
10-2	N	NO VISIBLE GOLD											
10-3	N	75 X 100	18 C	1						1			
										1	23.0	44	
10-4	Y	75 X 75	15 C		1					1			EST. 15% PYRITE
		100 X 175	27 C	1						1			200 GRAINS ARSENOPYRITE
		125 X 150	27 C	1						1			
		150 X 175	31 C		1					1			

```
 OLD CLASSIFICATION
===================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

 IPHG3MAR.WR1                                  NUMBER OF GRAINS
TOTAL # OF PANNINGS        3           -----------------------------------
                                       ABRADED  IRREGULAR  DELICATE TOTAL NON    CALC V.G.
 AMPLE #  PANNED                       ======== =========  ======== ===== MAG      ASSAY
           Y/N    DIAMETER   THICKNESS    T    P    T   P    T    P       GMS      PPB    REMARKS

   GE-88

                                                                     ____________________
                                                                        4   33.5      434

    10-5    N     100 X  125      22 C    1                             1
                                                                     ____________________
                                                                        1   24.9       85

    10-6    N   NO VISIBLE GOLD
```

```
 OLD CLASSIFICATION
 ==================
VISIBLE GOLD FROM SHAKING TABLE AND PANNING

 PHG4MAR.WR1                                    NUMBER OF GRAINS
TOTAL # OF PANNINGS        0           -----------------------------------
                                       ABRADED   IRREGULAR  DELICATE TOTAL NON    CALC V.G.
 AMPLE #  PANNED                       ========  =========  ======== ===== MAG     ASSAY
           Y/N    DIAMETER   THICKNESS    T    P    T    P    T    P       GMS     PPB    REMARKS

   GE-88
    11-1    N      50 X   75      13 C    1                              1
                                                                      --------------------
                                                                         1   13.1      28

    12-1    N   NO VISIBLE GOLD

    13-1    N   NO VISIBLE GOLD

    13-2    N   NO VISIBLE GOLD

    14-1    N   NO VISIBLE GOLD

   14A-1    N   NO VISIBLE GOLD

    15-1    N   NO VISIBLE GOLD

    15-2    N   NO VISIBLE GOLD

    16-1    N   NO VISIBLE GOLD

    16-2    N   NO VISIBLE GOLD

    16-3    N   NO VISIBLE GOLD

    17-1    N   NO VISIBLE GOLD

    17-2    N   NO VISIBLE GOLD

    17-3    N   NO VISIBLE GOLD

    18-1    N   NO VISIBLE GOLD

    18-2    N   NO VISIBLE GOLD

    19-1    N     125 X  250      36 C    1                              1
                                                                      --------------------
                                                                         1   27.7     341

    19-2    N   NO VISIBLE GOLD

    19-3    N     100 X  125      22 C    1                              1
                                                                      --------------------
                                                                         1   26.8      79

    19-4    N   NO VISIBLE GOLD

    19-5    N   NO VISIBLE GOLD
```

APPENDIX 4

Certificates of Analyses

Bondar-Clegg & Company Ltd.
[illegible]0 Canotek Road
Ottawa, Ontario
K1J 8X5
(613) 749-2220 Telex 053-3233

BONDAR-CLEGG

Geochemical Lab Report

REPORT: 088-01338.0 (COMPLETE)

REFERENCE INFO:

CLIENT: MPH CONSULTING
PROJECT: NONE

SUBMITTED BY: ODM
DATE PRINTED: 22-MAR-88

ORDER		ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Cu	Copper	40	1 PPM	HCl-HNO3, (1:3)	Atomic Absorption
2	Zn	Zinc	40	1 PPM	HCl-HNO3, (1:3)	Atomic Absorption
3	As	Arsenic	40	2 PPM	HNO3-HClO4	Colourimetric
4	Au	Gold	40	5 PPB	AQUA REGIA	FA-AA @ 10 gm weight
5	Testwt	Fire Assay Test Wt.	18	0.01 gms		

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
HEAVY MINERAL CONC.	40	-200	40	Pulverize -200	40

REMARKS: < MEANS LESS THAN

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Geochemical Lab Report

REPORT: 088-01038.0

PROJECT: NONE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Au PPB	Testwt gms
GE88-1-01-3/4		244	55	114	40	
GE88-1-02-3/4		178	55	77	40	
GE88-1-03-3/4		195	60	133	75	
GE88-1-04-3/4		142	56	79	200	
GE88-1-05-3/4		154	45	46	10	
GE88-1-06-3/4		169	108	141	570	
GE88-1-07-3/4		163	49	77	450	
GE88-1-08-3/4		492	60	53	10	
GE88-1-09-3/4		272	48	108	20	
GE88-1-10-3/4		124	41	57	20	
GE88-1-11-3/4		154	51	198	60	
GE88-1-12-3/4		136	60	308	70	3.00
GE88-1-13-3/4		164	67	198	25	
GE88-1-14-3/4		151	60	280	165	
GE88-1-15-3/4		430	93	728	75	8.00
GE88-1-16-3/4		578	65	688	100	
GE88-1-17-3/4		101	86	568	100	
GE88-1-18-3/4		144	92	504	35	8.00
GE88-1-19-3/4		262	130	632	25	8.00
GE88-1-20-3/4		294	165	338	15	6.00
GE88-2-01-3/4		148	43	42	<10	9.00
GE88-2-02-3/4		149	47	123	35	9.00
GE88-2-03-3/4		93	36	59	5	
GE88-2-04-3/4		156	33	42	245	
GE88-2-05-3/4		107	43	66	<10	7.00
GE88-2-06-3/4		130	47	55	500	
GE88-2-07-3/4		53	26	14	<10	7.00
GE88-2-08-3/4		32	18	22	<10	8.00
GE88-2-09-3/4		26	19	20	150	7.00
GE88-2-10-3/4		33	18	4	450	
GE88-3-1-3/4		99	60	52	10	
GE88-3-2-3/4		48	30	8	40	
GE88-3-3-3/4		32	31	10	70	9.00
GE88-3-4-3/4		58	27	15	135	6.00
GE88-3-5-3/4		562	34	43	<10	5.00
GE88-3-6-3/4		272	69	96	145	7.00
GE88-3-7-3/4		105	24	33	<10	9.00
GE88-3-8-3/4		136	40	97	605	5.00
GE88-4-1-H		158	87	15	40	2.39
GE88-4-2-3/4		122	30	74	190	

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Geochemical Lab Report

REPORT: U88-01348.0

PROJECT: NONE

SAMPLE	ELEMENT	Cu	Zn	As	Au	Testwt
NUMBER	UNITS	PPM	PPM	PPM	PPB	gms
GE88-04-03-3/4H		798	49	270	120	4.00
GE88-04-04-3/4H		104	44	149	190	7.00
GE88-04-05-3/4H		109	63	374	175	
GE88-04-06-3/4H		155	75	236	15	9.00
GE88-04-07-3/4H		116	58	144	55	
GE88-04-08-3/4H		61	115	92	110	
GE88-05-01-3/4H		150	46	252	305	
GE88-05-02-3/4H		177	48	114	10.	7.00
GE88-05-03-3/4H		59	36	8	<10	6.00
GE88-05-04-3/4H		38	25	8	140	7.00
GE88-05-05-3/4H		85	37	96	30	8.00
GE88-05-06-3/4H		125	39	26	<10	8.00
GE88-05-07-3/4H		79	53	140	1090	8.00
GE88-05-08-3/4H		101	99	106	15	4.00
GE88-05-09-3/4H		53	29	88	70	6.00
GE88-05-10-3/4H		92	39	99	<10	6.00
GE88-05-11-3/4H		115	42	148	<10	9.00
GE88-05-12-3/4H		148	44	100	<10	6.00
GE88-05-13-3/4H		134	25	71	70	6.00
GE88-05-14-3/4H		157	39	103	<10	8.00
GE88-05-15-3/4H		108	58	318	35	
GE88-05-16-3/4H		128	60	880	205	9.00
GE88-05-17-3/4H		93	45	159	145	
GE88-05-18-3/4H		185	99	944	30	8.00
GE88-07-03-3/4H		166	89	46	<10	8.00
GE88-07-04-3/4H		70	46	23	<10	8.00
GE88-07-05-3/4H		50	26	16	95	8.00
GE88-07-06-3/4H		197	64	68	20	
GE88-07-07-3/4H		206	164	608	55	
GE88-07-08-3/4H		102	40	172	90	
GE88-07-09-3/4H		234	79	244	90	8.00
GE88-07-10-3/4H		145	66	456	25	5.00
GE88-08-05-3/4H		244	65	1384	285	
GE88-08-06-3/4H		110	55	400	45	
GE88-08-07-3/4H		120	74	132	20	4.00
GE88-08-08-3/4H		202	167	236	80	6.00
GE88-08-09-3/4H		371	144	360	70	
GE88-08-10-H		153	119	90	30	3.90
GE88-09-01-3/4H		108	43	53	5	
GE88-09-02-3/4H		185	52	51	200	9.00

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Geochemical Lab Report

REPORT: 088-01459.0

PROJECT: NONE PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Au PPB	Testwt gms
GE88-05-19-3/4		135	42	250	50	
GE88-06-01-3/4		322	36	75	45	
GE88-06-02-3/4		68	32	93	230	9.00
GE88-06-03-3/4		54	30	82	80	9.00
GE88-06-04-3/4		54	35	39	35	9.00
GE88-06-05-3/4		119	84	276	30	
GE88-06-06-3/4		166	134	408	40	3.65
GE88-07-01-3/4		118	40	17	40	
GE88-07-02-3/4		444	47	100	80	8.00
GE88-08-01-3/4		202	44	166	175	9.00
GE88-08-02-3/4		172	54	76	100	
GE88-08-03-3/4		137	44	54	40	
GE88-08-04-3/4		341	59	84	255	
GE88-08-11-3/4		193	85	424	45	8.00
GE88-08-12-3/4		132	103	320	20	7.00
GE88-08-13-3/4		152	112	350	45	8.00
GE88-08-14-3/4		195	162	332	220	6.00
GE88-08-15-3/4		178	124	456	1965	
GE88-09-03-3/4		85	39	72	35	
GE88-09-04-3/4		101	40	59	10	
GE88-09-05-3/4		87	39	26	265	9.00
GE88-09-06-3/4		166	65	86	20	9.00
GE88-09-07-3/4		89	45	65	30	9.00
GE88-09-08-3/4		188	64	163	280	
GE88-09-09-3/4		129	48	135	40	
GE88-09-10-3/4		70	34	42	50	
GE88-09-11-3/4		81	36	24	15	
GE88-09-12-3/4		75	46	84	165	
GE88-09-13-3/4		118	117	132	80	
GE88-09-14-3/4		140	51	94	15	9.00
GE88-09-15-3/4		126	137	240	310	5.00
GE88-09-16-3/4		134	55	314	305	
GE88-09-17-3/4		101	31	111	190	4.00
GE88-09-18-3/4		187	172	186	30	3.00
GE88-10-01-3/4		169	77	116	55	
GE88-10-02-3/4		146	81	102	40	6.00
GE88-10-03-3/4		196	74	334	55	
GE88-10-04-3/4		165	100	672	950	
GE88-10-05-3/4		156	184	242	40	
GE88-10-06-3/4		117	55	212	255	

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Geochemical Lab Report

REPORT: 088-01459.0

PROJECT: NONE

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Au PPB	Testwt gms
GE88-11-01-3/4		95	60	14	140	4.00
GE88-12-01-3/4		143	139	20	IS	
GE88-13-01-3/4		185	139	26	<20	3.00
GE88-13-02-3/4		120	65	25	50	8.00
GE88-14-01-3/4		153	89	31	175	
GE88-14A-01-3/4		153	77	20	<5	
GE88-15-01-3/4		126	108	20	<15	4.00
GE88-15-02-3/4		140	83	30	<10	6.00
GE88-16-01-3/4		157	106	51	70	
GE88-16-02-3/4		188	62	67	25	
GE88-16-03-3/4		162	88	32	25	
GE88-17-01-3/4		135	98	16	160	
GE88-17-02-3/4		201	77	40	75	
GE88-17-03-3/4		226	71	48	150	9.00
GE88-18-01-3/4		135	99	17	<5	
GE88-18-02-3/4		150	93	37	<10	5.00
GE88-19-01-3/4		155	56	56	225	
GE88-19-02-3/4		126	56	42	40	
GE88-19-03-3/4		115	40	47	235	
GE88-19-04-3/4		190	84	202	25	9.00
GE88-19-05-3/4		319	141	504	IS	

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Bedrocks

REPORT: 088-01398.0

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SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Zn PPM	As PPM	Au PPB
GE-88-1-21-B		41	51	5	<5
GE-88-2-11-B		48	61	16	<5
GE-88-3-09-B		47	130	13	<5
GE-88-4-09-B		38	47	13	<5
GE-88-5-20-B		84	49	4	<5
GE-88-6-07-B		44	63	14	<5
GE-88-7-11-B		57	51	10	<5
GE-88-8-16-B		32	36	104	20
GE-88-9-19-B		51	771	21	<5
GE-88-10-07-B		46	65	10	<5
GE-88-11-02-B		52	40	4	<5
GE-88-12-02-B		38	16	3	<5
GE-88-13-03-B		10	42	2	<5
GE-88-14-02-B		127	38	5	<5
GE-88-15-03-B		16	27	4	<5
GE-88-18-03-B		35	63	7	<5
GE-88-19-06-B		48	55	11	<5