2.19344

REPORT ON THE
MAISONVILLE TWP. BASE METALS PROPERTY
MAISONVILLE TOWNSHIP
LARDER LAKE MINING DIVISION, ONTARIO
FOR
OPAWICA EXPLORATIONS INC.

July 1998

Toronto, Ontario

Michael P. Rosatelli, M.Sc.

Table of Contents

List of Figures

List of Tables

List of Appendices

List of Plates

1.0 Executive Summary

During January and February 1998, Opawica Explorations Inc. carried out a 1,167 metre diamond drilling program in five holes to test HLEM conductors on the Maisonville Township property optioned from Mr. Thomas Obradovich.

The Maisonville Township property is predominately underlain by felsic to mafic volcanics and coeval gabbroic intrusions. A narrow band of folded sediments consisting of graphitic argillite and subordinate greywacke forms an arc centered on Goose Egg Lake. These rocks are inferred to represent the Kinojevis South Group of the Central Abitibi Greenstone belt.

The most significant structural feature on the property is a north plunging syncline. This syncline is interpreted to be younger than a south-east-plunging syncline identified to the north of the property, which parallels the regional east-west trend of the Abitibi Greenstone Belt. The folded nature of the sediments is attributed to the development of the younger syncline as the result of deformation related to the emplacement of the Winnie Lake granitic stock to the south of the property.

Diamond drilling revealed a variably altered and mineralized footwall sequence of intermediate volcanic flow breccia and subordinate fine to coarse-grained felsic fragmentals, in contact to the north with graphitic sediments. North of the sediments or at the structural hangingwall contact, a second intermediate volcanic flow breccia sequence was intersected, albeit alteration and mineralization was only weakly developed.

Three separate styles of sub-economic zinc mineralization were identified in the drill core, of which two appear to be stratiform in nature. The more common of two types is defined by disseminated sphalerite with minor galena and traces of chalcopyrite occurring in graphitic flow-top pillow breccia horizons. The mineralized flow breccia horizons are hosted by intermediate volcanic flows. The second style of mineralization was hosted in a narrow cherty greywacke bed in contact with a possible fine-grained felsic volcanic tuff. At the upper contact of the chert,

semi-massive pyrite and up to 10-15% disseminated sphalerite was intersected, superimposed by a graphite-chlorite-quartz stockwork. The final style of zinc mineralization was defined as quartz-calcite tension gashes, stringers and veinlets, containing sphalerite, minor galena and trace chalcopyrite. The graphitic argillite hosted the majority of the fractures, however they were noted to cross-cut and remobilize sphalerite mineralization hosted by graphitic breccia horizons.

Diamond drilling confirmed the graphitic argillite to be the causative source of the HLEM conductors. The conductors therefore mark the approximate stratigraphic location of the prospective zinc mineralized zone proximal to, or at the southern contact of the graphitic argillite marker horizon.

A total of 571 samples of drill core were analyzed for zinc, lead, copper, silver and gold. The most significant zinc assays are summarized below:

Drill Hole	**Rocktype**	**Results**
MT98-2	Graphitic Argillite	4766 ppm Zn, 1.11 g/t Ag over 3.5 m, including 9040 ppm Zn, 1.2 g/t Ag over 1.5 m
MT98-3	Flow-top Breccia	7051 ppm Zn over 3.5 m, including 18, 600 ppm Zn over 0.7 m 13,600 ppm Zn over 1.3 m 4,500 ppm Zn, 3,790 ppm Pb and 1.26 g/t Ag over 2.8 m, including 11,900 ppm Zn, 10,800 ppm Pb and 2.3 g/t Ag over 0.8 m
MT98-2	Chert Felsic Fragmental	4.41% Zn, 3.4 g/t Ag over 0.6 m, including 31,127 ppm Zn, 2.3 g/t Ag over 0.9 m

The zinc-silver intercept in MT98-2 remains open down dip and along strike.

2.0 Introduction

2.1 Preamble

This report on the Maisonville Township property of Opawica Explorations Inc. was prepared by MPH Consulting Limited. It was commissioned and authorized by D.M.R. (Dan) Clark, President of Opawica Explorations Inc. pursuant to the option agreement and assessment filing requirements.

The following sections review the previous exploration work in the area and discuss its geology and mineral potential. A diamond drill program was carried out between January and February 1998. The results of this work are described. Finally a proposal and recommendation is made for continued exploration of the property.

2.2 Location, Access and Infrastructure

The Maisonville property is located approximately 15 kilometres northwest of Kirkland Lake (Figure 1). The property is accessible by Highway No. 11, the Bourkes Road and bush roads leading south from the Bourkes Community Centre to Goose Egg Lake. During the winter months, a network of groomed trails maintained by the local snowmobile club passes through the property.

The community of Kirkland Lake (population ± 10,000), the main population centre in the area, includes modern housing as well as educational, medical, recreational and shopping facilities.

Historically, mining has been the mainstay of the regional economy. Labour, industrial supplies and services applicable to mining and exploration activities are readily available in the region. The Ontario Northland Railway operates a rail/bus passenger and freight service out of Swastika and Kirkland Lake. Regular airline service to Kirkland Lake is still available, but at reduced volumes.

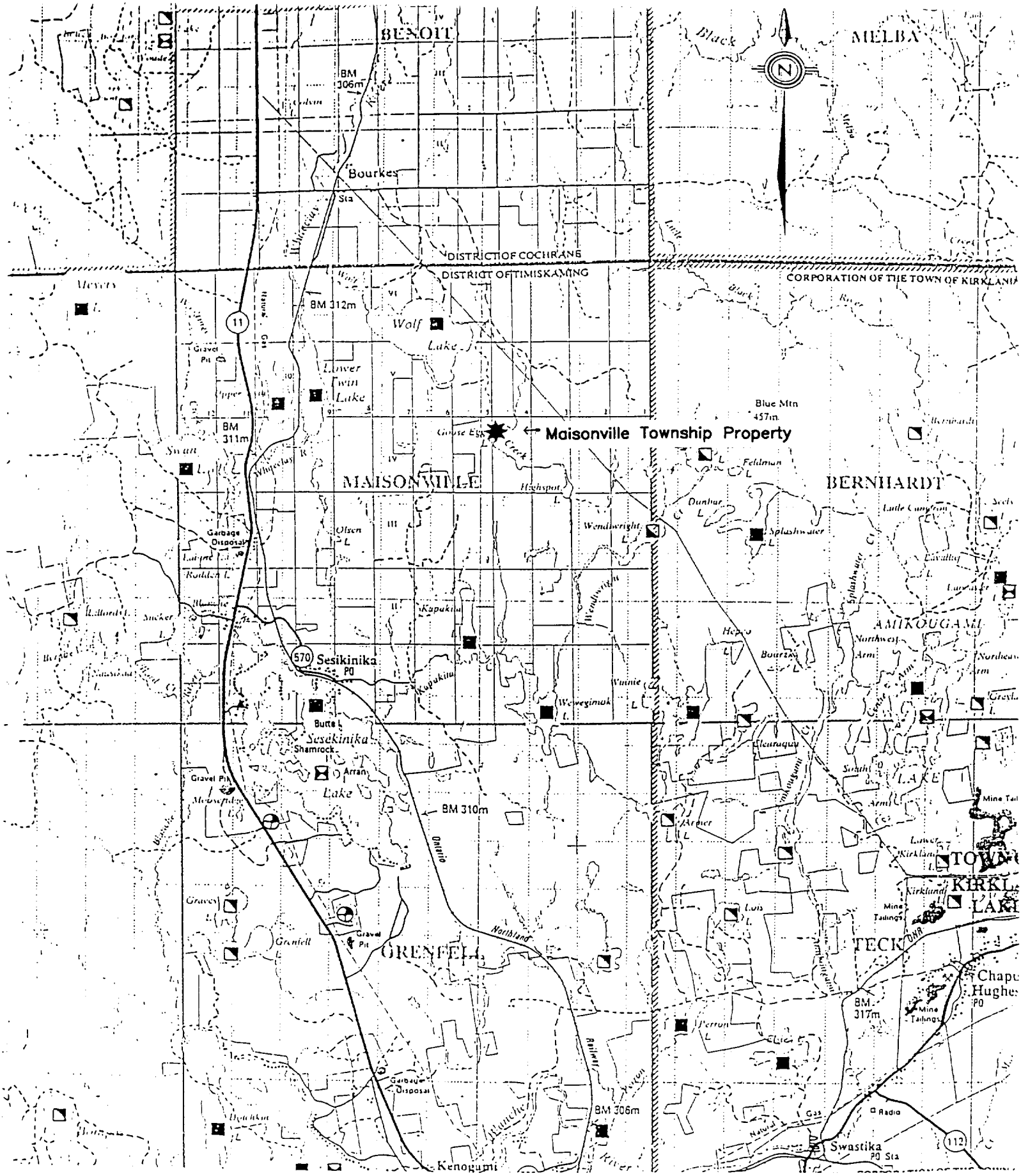


FIGURE 1: PROPERTY LOCATION MAP

1:100,000

Power transmission lines capable of supplying adequate electrical power for mining and milling operations cross the property. A natural gas pipeline comes within several kilometres to the west of the property.

2.3 Property and Agreements

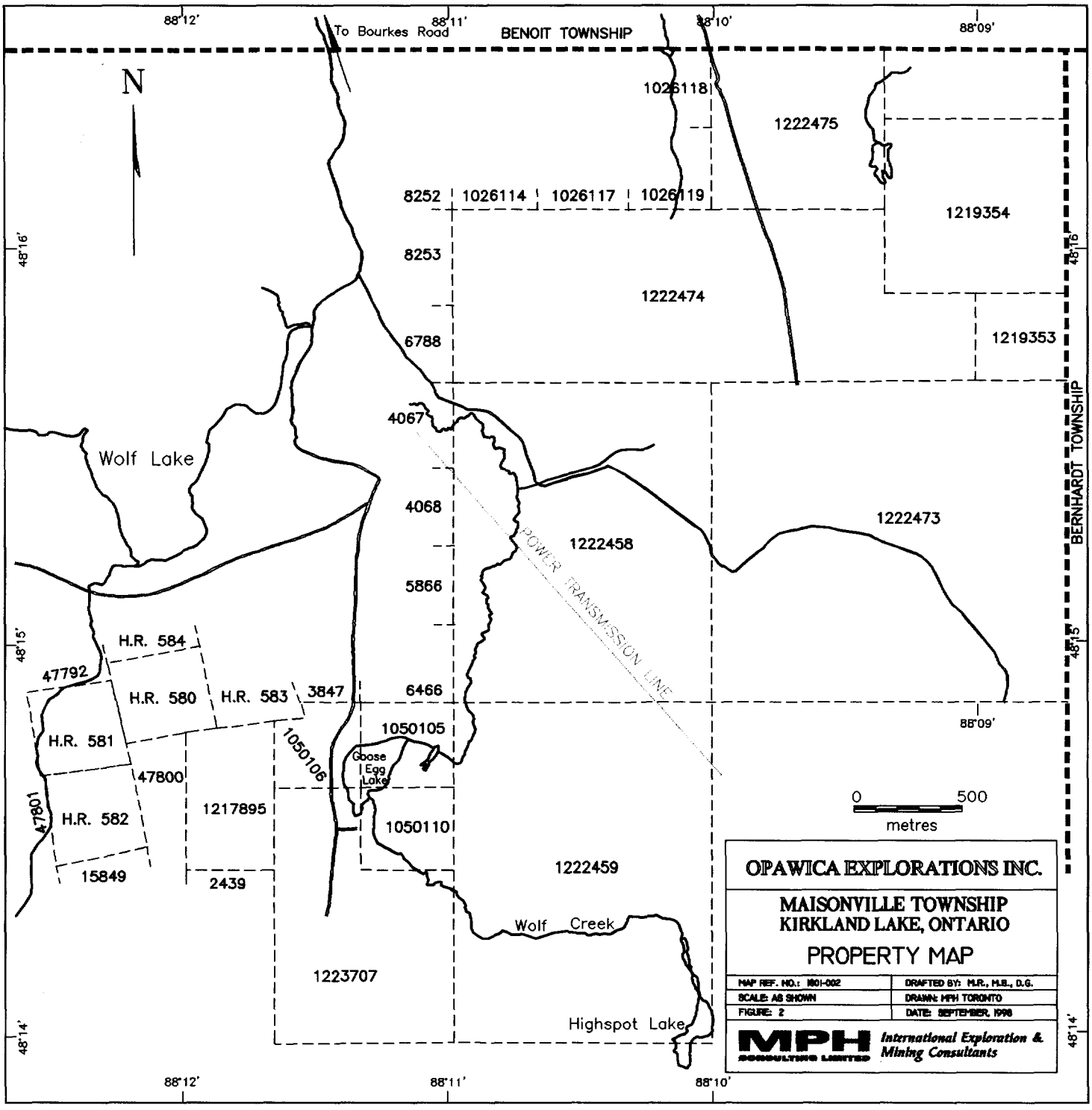
The Maisonville property consists of 11 unpatented and 3 patented mining claims in Maisonville Township. The unpatented mining claims were either acquired from Mr. Thomas Obradovich or staked by Opawica Explorations Inc. The patents were acquired from Joutel Resources Limited through an agreement with Mr. Obradovich.

The mining claims and patents are located in lots 1, 2, 3, 4, 5, 6 in Concessions 1V, V and V1, south and southeast of Wolf Lake (Figure 2). Property details are summarized in Table 1.

Table 1: Property Details

Project (ownership)	Agreements	Claims	Number of Units
Opawica	Obradovich	1050105	1
		1050106	1
		1050110	1
		1217895	2
		1223707	5
		1222458	12
		1222459	12
Opawica	Joutel	HR581	1
	Patents	HR582	1
		HR580	1
Opawica	Staked	1222473	16
		1222474	11
		1222475	4
		Total	68

The status of these properties is not certified by MPH Consulting Limited. Details of the various agreements are outside of the terms of reference for this report.


88°12'
To Bourkes Road
88°11'
BENOIT TOWNSHIP
88°10'
88°09'
N
1026118
1222475
8252
1026114
1026117
1026119
1219354
8253
1222474
6788
1219353
4067
Wolf Lake
4068
1222473
1222458
POWER TRANSMISSION LINE
5866
BERNHARDT TOWNSHIP
48°16'
48°15'
H.R. 584
47792
H.R. 580
H.R. 583
3847
6466
H.R. 581
1050105
1050106
Goose Egg Lake
47800
47801
H.R. 582
1217895
1050110
15849
2439
1222459
Wolf Creek
1223707
Highspot Lake
48°14'
0
500
metres
OPAWICA EXPLORATIONS INC.
MAISONVILLE TOWNSHIP
KIRKLAND LAKE, ONTARIO
PROPERTY MAP
MAP REF. NO.: 1801-002
DRAFTED BY: M.R., M.B., D.G.
SCALE: AS SHOWN
DRAWN: MPH TORONTO
FIGURE: 2
DATE: SEPTEMBER, 1998
MPH CONSULTING LIMITED
International Exploration & Mining Consultants

3.0 Previous Exploration Work

The earliest recorded work on the property was conducted on patented claim H.R. 580, which was staked by Dan Smith in 1908 and patented in 1911. A northeast-striking quartz-carbonate vein cross-cutting felsic volcanic rocks was stripped over 61 metres. The vein was described as averaging 0.31 metres in width, consisting of quartz along the veins margin cored by calcite, that hosts an estimated 30% pyrite, sphalerite, galena and chalcopyrite. A 12.2 metre shaft was sunk on the vein with several tons of material removed. Approximately 160 metres to the southwest of the main vein, a second similar type vein cross-cutting cherty argillite was discovered on ground located on patented claim H.R. 581 (Lovell, 1971). N.E. Nelson in 1946 resampled mineralized vein material from the shaft dump and other locations. The highest assays recorded were 34.2% Pb and 31% Zn, with no significant gold or silver content (Whelan, 1994). The claims were optioned from the Bradford Syndicate in 1947 by Geometal Mines Limited. A picket line grid was established, but no follow-up work is known to have be completed (Lovell, 1971).

Over the period between 1965 to 1969, Kerr Addison Mines Limited drilled 7 holes totaling 1,014 metres in the immediate area of Goose Egg Lake. The drilling tested a northeast-trending airborne electromagnetic anomaly over a strike length of 610 metres. All of the holes intersected graphitic sediments intercalated with mafic and felsic volcanic rocks, cross-cut by feldspar porphyry and diorite. The graphitic zones were interpreted to be northeast-striking and dipping northwest, typically contained nodular, disseminated and bedded pyrite and minor pyrrhotite. Sub-economic base metal values were reported over core lengths of 4-17 metres. Two styles of mineralization was evident based on the Kerr Addison drill log descriptions. The first style of mineralization was described as disseminated sphalerite with traces of galena and chalcopyrite, hosted by sulfidic (pyrrhotite/pyrite) graphitic or argillaceous horizons. The mineralized host rocks included brecciated andesitic, dacitic and rhyolitic volcanic flow top, flow breccia and breccia units respectively. The second style of mineralization was in the form of pyritic quartz-calcite fractures containing sphalerite, galena and chalcopyrite. They occur predominately in either graphitic tuff or cherty argillite, but was observed in volcanic units, cross-cutting the

breccia hosted mineralization. The highest reported mineralized sections coincided with 1-3% visible disseminated and fracture controlled sphalerite in holes 67-1 and 67-2. Hole 67-1 intersected 1.39% Zn was over 6.1 m hosted by graphitic tuff and 1.16% Zn over 8.8 m, including 2.12% Zn over 1.2 m hosted by rhyolite breccia. Hole 67-1 intersected 1.76% Zn over 4.6 m, including 2.35% Zn over 2.1 m and 1.33% Zn over 4.3 m hosted by rhyolite breccia.

Ecstall Mining Ltd. in 1974 performed magnetometer and electromagnetic surveys over 5 claims in the Goose Egg Lake area. Five definite EM conductors were defined, but no follow-up diamond drilling was completed to test any of these targets.

In 1979, Questor Surveys Limited was commissioned by the Ontario Geological Survey to complete an Airborne Electromagnetic and Total Intensity Magnetic Survey over the Kirkland Lake (KLIP) area including Maisonville Township.

In 1980 Lacana Mining Ltd. drilled four holes totaling 519 metres. Three of the drill holes tested surface auriferous quartz-carbonate veins approximately 427 metres northwest of the Kerr Addison drilling, immediately south of Wolf Lake. All three holes intersected altered massive volcanic flow, and flow-top breccia, intercalated cherty sediments. GL-1 intersected a 4.0 metre wide mineralized zone with disseminated to massive pyrite hosted in a flow breccia. Within this mineralized zone, a 0.31 metre wide section of massive pyrite-carbonate veins containing visible gold, assayed 28g/t (0.9oz/t) gold. The fourth Lacana hole was drilled approximately 305 metres southwest of the Kerr Addison drilling. This hole intersected and was terminated in cherty sedimentary rocks. No gold assays were recorded and base metals were not analyzed for.

In 1988 Joutel Resources Ltd. and Canuc Resources began a joint venture to explore the base metal potential between Kirkland Lake and Matheson. Five separate groups of claims were staked including ground covering the present day Maisonville Township property. Initial work on the property by the joint venture was the establishment of a grid and ground VLF electromagnetic geophysical survey in 1989. The purpose of this work was to identify areas of further interest for detailed mapping and prospecting and HLEM geophysical surveys. A 110

line kilometre AEM geophysical survey was flown in 1991 over the area paid in part (50% of costs) by the Ontario government as part of their Ontario Mineral Incentive Program. Follow-up prospecting of ground and airborne EM anomalies was initiated in the fall of 1993. A single drill hole in 1994 tested east-trending VLF conductor, 240 metres northeast of the Kerr Addison base metal horizon. Only weak anomalous base metal and gold assays were recorded. The last recorded exploration on the property was HLEM surveying. A number of well defined conductors were outlined on the property, two of which coincided with the Kerr Addison base metal and Lacana gold horizons respectively. No drilling was completed and the conductors remained untested.

4.0 Regional and Property Geology

The Maisonville Township property is located within the southern portion of the Abitibi Subprovince of the Archean Superior Province of the Canadian Shield. The Abitibi greenstone belt is approximately 700 km long by 300 km wide (Figure 3), making it by far the world's largest preserved Archean greenstone belt (Heather 1998).

The Abitibi Subprovince is bounded to the north by high-grade rocks of the Opatica gneiss belt (Benn et al. 1992, as quoted by Heather 1998) which appear to structurally underlie lower-grade volcanic rock assemblages (Sawyer and Benn 1993, as quoted by Heather 1998). To the south, metasedimentary rocks of the Pontiac belt are apparently in fault contact with, and extend beneath, the southeastern margin of the Abitibi Greenstone Belt (Dimroth et al. 1992; Jackson et al. 1990; Ludden et al. 1993, as quoted by Heather 1998). To the west, the Abitibi subprovince is truncated by high-grade metamorphic rocks of the Kapuskasing Structural Zone and tonalitic gneisses of the Wawa Gneiss Domain. To the east, the Abitibi subprovince is truncated by the Grenville front which separates it from the Proterozoic Grenville Province (Heather, 1998).

The Abitibi greenstone belt is comprised of a complex and diverse array of volcanic, sedimentary and plutonic rock types typically metamorphosed only to greenschist and subgreenschist grade (Jolly 1978, as quoted by Heather 1998), but locally attaining amphibolite grade adjacent to large plutonic bodies.

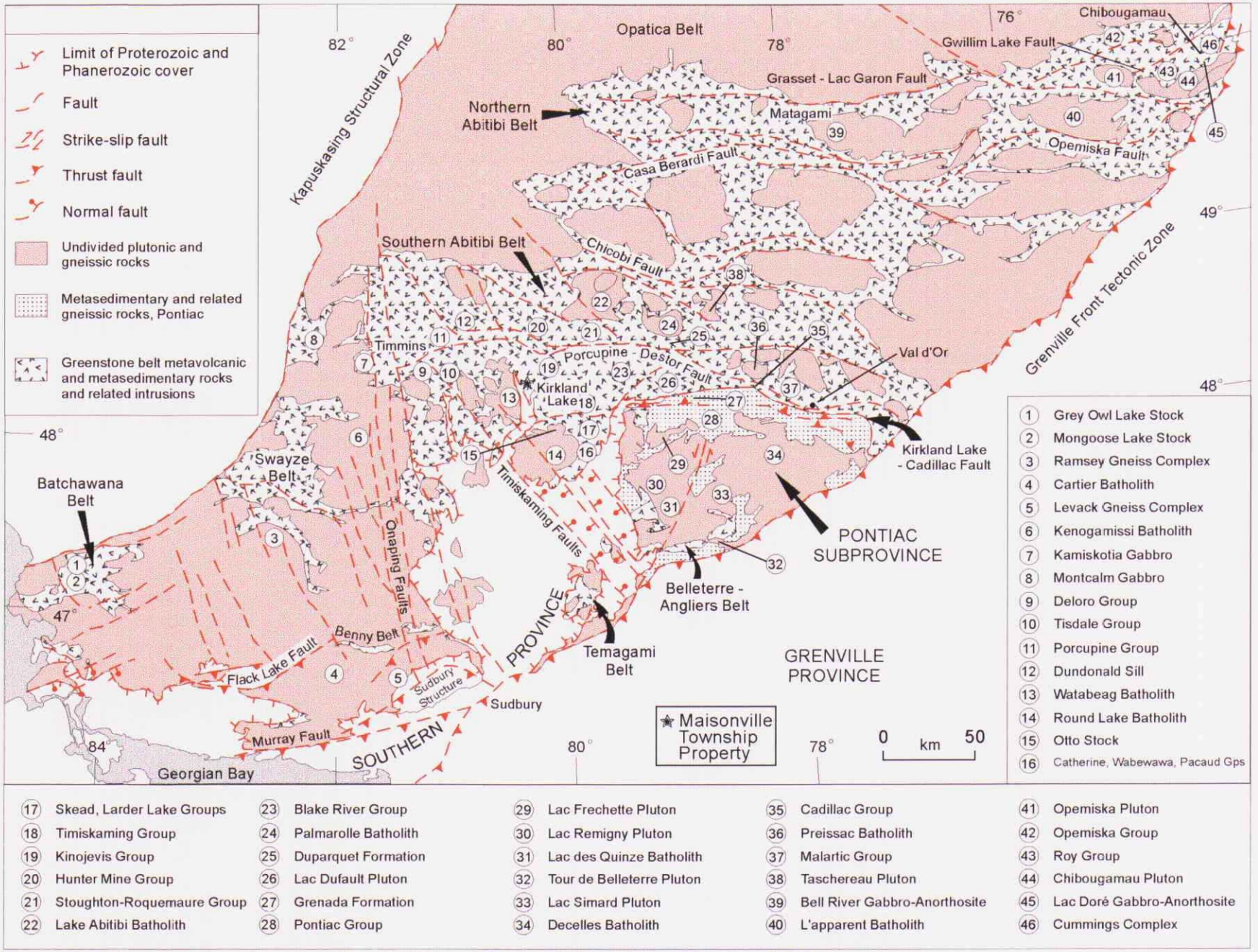


Figure 3. Major geological elements of the Abitibi and Pontiac Subprovinces (Heather, 1998)

Mineral production and reserves are significant in the Abitibi greenstone belt particularly in relation to world-class Archean volcanogenic massive sulfide deposits and lode gold deposits. For the past 100+ years the region has been the focus for mineral exploration and exploitation. Over this time span, the Porcupine, Kirkland Lake, Noranda, Malartic and Val d'Or mining camps were developed and they continue to produce significant quantities of zinc, copper, silver and gold.

Maisonville Township was mapped by H.L. Lovell in 1965 and 1966 at 1" to ¼ mile as part of the Bourkes area project for the Ontario Department of Mines and Northern Affairs. Lovell's geological report entitled "The Geology of the Bourkes Area, District of Timiskaming" (GR 92) was released to the public in 1971.

Based on the mapping completed by Lovell and historical diamond drill results, the Maisonville Township property is underlain by felsic to mafic volcanics and coeval gabbroic intrusions with minor mafic syenite and lamprophyry. A narrow band of folded sediments occurs between Goose Egg Lake and patented claim HR 581. These rocks are thought to represent the Kinojevis South group of the central Abitibi Greenstone Belt. North to northeast trending "Matachewan" diabase dykes cross-cut all rock-types.

In the southern part of Maisonville Township the volcanic and sedimentary rocks are steeply dipping and strike north-south, whereas in the north they strike northwest-southeast. The abrupt change in strike occurs in the area of Goose Egg Lake where Lovell (1971) identified a north plunging syncline. This interpretation would explain the presence of an arcuate band of sediments identified in outcrop on patented mining claim HR 581 and its correlative eastern limb extension at Goose Egg Lake identified in diamond drilling. The north plunging syncline is inferred to be younger than the southeast-plunging syncline identified to the north of the property which is parallel to the regional trend of the Abitibi Greenstone Belt (Lovell, 1971). The younger syncline may represent deformation related to the emplacement of the Winnie Lake granitic stock to the southeast.

5.0 Diamond Drilling

5.1 General

A diamond drill program consisting of 5 holes totaling 1,167 metres (3,829 feet) was carried out on the property from January 25, 1998 to February 25, 1998. Diamond drilling was performed by Norex Drilling Limited of Porcupine, Ontario. Drilling was supervised and logged by Michael Rosatelli. Core is currently stored at the coreshack facilities of Mr. Thomas Obradovich in Kirkland Lake, Ontario.

A summary of drilling is provided below:

Table 2: Summary of Diamond Drilling

Hole No.	Location	Dip	Azimuth	Overburden (m)	Depth (m)
MT98-1	L2850W, 1100S	-45	320	14	164
MT98-2	L3600W, 800S	-45	320	14	185
MT98-3	L4050W, 1100S	-50	320	2	392
MT98-4	L6503W, 2400N	-45	50	4.5	209
MT98-5	L3450W, 900S	-45	320	25	71*
MT98-5A	L3450W, 902S	-51	320	21	146

* Hole terminated due to shallowing

A total of 571 samples of diamond drill core were split and sent to Swastika Laboratories in Swastika, Ontario for zinc, lead, copper, silver and gold geochemical analysis.

Core logging facilities, core splitting and general field technician duties were provided by Thomas J. Obradovich Mineral Exploration Services.

5.2 Results Of The Diamond Drilling Program

Drilling was conducted to test horizontal loop electromagnetic (HLEM) conductors and to confirm and provide preliminary geological information as to the former Kerr Addison diamond drill results. Prior to the commencement of drilling, a first ever, combined geological and geophysical compilation of the property was completed. The former imperial grid was partially re-established and in-fill lines cut for HLEM and magnetic surveying. A brief description of the geological units encountered and assay results for the five drill holes is summarized below.

5.2.1 MT98-1

Hole MT98-1 was collared in a variable altered and sheared intermediate volcanic flow sequence at 14.0 m. The predominate alteration assemblage is penetrative carbonatization (calcite), rendering the rock a buff to light grey colour. Fine to coarse-grained centimetre wide zones of sub-rounded to sub-angular fragments are present with interstitial or fracture controlled graphitic alteration. These zones are inferred to represent flow-top pillow breccia horizons. Blebby pyrrhotite with traces of visible chalcopyrite and sphalerite is hosted by the graphitic alteration. A subsequent deformational event has sheared, disrupted and altered the breccia horizons, obliterating easily recognizable primary volcanic features. Alteration consisted of chloritization of the graphitic matrix and overprinted by pyritic quartz-carbonate (ankerite?) flooding and fracturing. When flow brecciation is minimal, the rock resembles a massive flow, as was the case at 38.0 to 43.2 m. Penetrative calcite alteration is still prevalent, but instead of graphitic alteration, quartz-calcite fracturing exceeds 10% volumes.

Elevated zinc, lead, copper and gold values below 61.0 m corresponded with an increase in disseminated pyrrhotite (1-3%) and traces of chalcopyrite and rare sphalerite hosted by interstitial graphitic alteration. From 79.6 m to the lower contact of the flow sequence at 91.6 m, pyrrhotite content increased to between 10-30%. In this section, a pronounced mineral zonation was observed with pyrite pseudomorphs after pyrrhotite and magnetite rims around individual pyrite grains. There is a corresponding decrease in carbonatization of the groundmass and breccia fragments, related to an increase in sulfide content, resulting in the recognition of two distinct sets of late quartz-calcite fractures. The early set is at steep angles to the core axis. The latter set is at low angles to the core axis and cross-cut the earlier fractures. They also carry pyrite, but become pyrrhotite-bearing downhole. The best assay results from this section of the hole are related to a increase in late quartz-calcite fractures cross-cutting sulfidic breccia horizons. Assay results include the following intercepts: 337 ppm Zn, 222 ppm Pb, 79 ppm Cu, 0.3 g/t Ag and 101 ppb Au over 1.6 m starting at 62.2 m; 256 ppm Zn, 1 ppm Pb, 108 ppm Cu, 0.1 g/t Ag and 153 ppb Au over 1.0 m at 78.0 m and 267 ppm Zn, 1 ppm Pb, 104 ppm Cu, 0.1 g/t Ag and 96 ppb Au over 1.0 m at 80.5 m. Cherty to pink-red alteration of the breccia fragments proximal to and at the lower contact and the absence of penetrative carbonatization suggests either a silicification or albitization event is related to the sulfide deposition and on-set of sedimentation.

Graphitic argillite is in sharp contact with the upper intermediate volcanic flow breccia from 91.6 - 103.2 m. Traces of visible sphalerite and chalcopyrite were observed in late pyritic quartz-calcite fractures. Between 92.3 to 93.2 m, a lamprophyre dyke was intersected. The argillite above the dyke assayed 2,660 ppm Zn, 20 ppm Pb, 498 ppm Cu and 0.3 g/t Ag over 0.7 m, whereas the lower argillite graded 1,402 ppm Zn, 45 ppm Pb, 223 ppm Cu and 0.73 g/t Ag over 5.2 m starting at 98.0 m.

Sedimentation continued downhole with the deposition of a thick unit of greywacke interbedded with thinly laminated to thinly bedded chert to 109.8 m. As opposed to the upper argillite, late mineralized pyritic quartz-calcite fracturing was rare, replaced by graphitic fractures locally exceeding 10%. As a result, no anomalous base metal or silver assays are recorded in the

greywacke. The grading of individual beds, from chert to greywacke, indicates tops are downhole or to the north. At 105.5 to 106.1 m, a magnetic lamprophyre dyke is intruded into the greywacke unit. The lower contact of the greywacke was marked by a 0.9 m graphitic argillite bed from 107.7 to 108.6 m. The argillite bed graded 3,000 ppm Zn, 40 ppm Pb, 632 ppm Cu and 1.2 g/t Ag.

The lower contact of the greywacke is in sharp contact with intermediate massive porphyritic flow sequence. A lamprophyre dyke was intersected proximal to the upper contact at 111.0 to 112.1 m. From 144.4 to 146.6 m, the massive flow grades downhole into a well developed and recognizable variable altered and deformed flow breccia unit. The best zinc assay was recorded in a sheared flow-top breccia with abundant late pyritic quartz-calcite fractures at the lower contact of the massive flow. The breccia horizon graded 1,350 ppm Zn, 334 ppm Pb, 107 ppm Cu and 0.4 g/t Ag over 1.2 m between 143.2 to 144.4 m. The upper contact of the flow breccia was anomalous in silver and gold related to an increase in high and low angle pyritic quartz-calcite fractures to +15%. A single two centimetre wide vein was intersected. The sample graded 112 ppm Zn, 28 ppm Pb, 92 ppm Cu, 1.8 g/t Ag and 130 ppb gold.

A strongly altered and deformed interbedded graphitic argillite and greywacke unit was in contact with the upper flow to 147.5 m. Well developed differentiated alteration was present. The argillite was silicified, mottled black to grey and the greywacke was either grey and calcite altered or light green and sericitized; 10-15% late quartz-calcite fractures are present, but they carry little visible pyrite. A sample over this unit assayed 419 ppm Zn, 45 ppm Pb, 65 ppm Cu and 0.7 g/t Ag over 1.0 m.

A weakly developed intermediate flow breccia was in contact with the upper sediments, grading downhole into a strongly fractured, medium greenish-grey massive flow at 153.4 m. The best assay result recorded from this section of the drill hole was located at the upper contact with the sediments. The 0.5 m sample assayed 14,800 ppm Zn, 5,480 ppm Pb, 113 ppm Cu and 1.3 g/t Ag. Visible honey-coloured mm scale sphalerite banding was noted adjacent to late quartz-calcite fractures, hosted in sheared and chloritized wallrock. Further down in the hole, a 1.0 m

sample graded 1,860 ppm Zn, 870 ppm Pb, 77 ppm Cu and 2.0 g/t Ag, related to 5-10% late quartz-calcite fractures. Locally the fractures hosted semi-massive pyrite and occasional disseminated pyrrhotite was observed in the wallrock. Overall the entire flow breccia section from 147.5 to 153.9 m was anomalous in silver, averaging 1.1 g/t over 6.4 m.

The drill hole was terminated in a relatively unaltered and weakly pyritic feldspar porphyry at 164.0 m.

5.2.2 MT98-2

Hole MT98-2 was collared in a medium greyish-green, massive quartz/feldspar porphyritic intermediate flow from 14.0 to 59.9 m. The volcanics are intruded by a gabbro at 18.9 to 54.0 m. The core of the gabbro is glomerophyric with upwards of 10% coarse-grained feldspar phenocrysts. Aphanitic, cherty greenish-grey intermediate dykes occur at the fine-grained chilled margins. The upper contact of the gabbro and flow is sharp and conformable. Increasing shearing and quartz-carbonate flooding with trace pyrite is evident in the flow proximal to the gabbro contact. A late lamprophyre dyke is intruded along the lower gabbro contact to 54.7 m.

Below the gabbro, the flow is strongly fractured with quartz-carbonate (ankerite?) alteration to 57.2 m and is replaced downhole with graphitic fractures to 59.8 m, giving the rock a weakly developed flow breccia appearance. Pyrite is the dominant sulfide either hosted in the graphite fractures or occasional late quartz-calcite fracture. The lower contact of the flow breccia is silicified, cherty grey to beige colour, with 20-30% pyritic chlorite-quartz fractures over a 10 cm width.

A thick succession of intercalated greywacke interbedded with laminated discontinuous chert beds and graphitic argillite was in contact with the upper flows at 59.9 to 67.0 m. Significant zinc and silver mineralization was intersected between two individual greywacke beds at 60.4 to 61.3 m. Mineralization is hosted by a 30 cm wide aphanitic, beige coloured unit from 60.4 to 60.7 m in contact, with a chert horizon at 60.7 to 61.3 m. The upper unit contained 10-20% hairline quartz fractures containing galena. These fractures are cross-cut by a stockwork of

chlorite-quartz fractures hosting semi-massive or disseminated pyrite and traces of sphalerite. The presence of fine-grained quartz fragments, siliceous groundmass and conformable and dyked contacts, suggests the unit may represent a felsic fragmental. The interval assayed 5,180 ppm Zn, 251 ppm Pb, 6 ppm Cu and 0.2 g/t Ag. The lower chert horizon was strongly mineralized at its upper contact containing semi-massive pyrite with 10-15% sphalerite and 2-3% peripheral brassy coloured pyrite. As was the case in the upper unit, mineralization was associated with 20% chlorite altered graphitic stockwork fracturing. The chert interval assayed 4.41% Zn, 162 ppm Pb, 410 ppm Cu and 3.4 g/t Ag over 0.6 m. The weighted average of the inferred felsic/chert mineralized zone, assayed 31,127 ppm (3.11%) Zn, 192 ppm Pb, 275 ppm Cu and 2.3 g/t Ag over 0.9 m, from 60.4 to 61.3 m. Further downhole, a 12 cm wide silicified and fractured (15-20% chlorite-quartz fractures containing 2-3% sphalerite, 1-2% galena and traces of chalcopyrite) section of greywacke at 63.6 m assayed 4,210 ppm Zn, 2,000 ppm Pb, 444 ppm Cu and 2.2 g/t Ag over 0.8 m. The sample width was extended over strongly fractured and mineralized wallrock.

The remainder of the sedimentary section consisted of intercalated graphitic argillite and greywacke to 167.2 m. Two lamprophyry dykes at 113.4 to 118.0 m and 124.2 to 137.2 m was intersected at graphitic argillite and greywacke contacts. Locally late pyritic quartz-calcite fractures hosted disseminated sphalerite, traces of chalcopyrite and rare galena was confined to the graphitic argillite beds. A second massive chert bed was intersected at 118.0 to 118.4 m, however zinc and silver values were low. Sample highlights from this section include the following intercepts: 2,047 ppm Zn, 352 ppm Pb, 444 ppm Cu and 0.65 g/t Ag over 6.5 m from 68.5 to 75.0 m; 4,766 ppm Zn, 1081 ppm Pb, 217 ppm Cu and 0.94 g/t Ag over 3.5 m from 81.0 to 84.5 m, including 9,040 ppm Zn, 1,770 ppm Pb, 211 ppm Cu and 1.2 g/t Ag over 1.5 m; 1,490 ppm Zn, 825 ppm Pb, 149 ppm Cu and 0.8 g/t Ag over 1.5 m from 110.0 to 111.5 m; 1,653 ppm Zn, 227 ppm Pb, 171 ppm Cu and 1.26 g/t Ag over 9.5 m from 137.2 to 146.7 m; 1,020 ppm Zn, 46 ppm Pb, 161 ppm Cu and 0.8 g/t Ag over 2.1 m starting at 149.9 m and 1,882 ppm Zn, 313 ppm Pb, 160 ppm Cu and 1.0 g/t Ag over 15.2 m from 152.0 to 167.2 m, including 3,240 ppm Zn, 209 ppm Pb, 175 ppm Cu and 1.1 g/t Ag over 1.4 m at 161.1 m and 3,540 ppm Zn, 583 ppm Pb, 109 ppm Cu and 1.1 g/t Ag. The hole was stopped at 185.0 m in a glomerophric gabbro.

5.2.3 MT98-3

Hole MT98-3 was collared in a medium grained glomerophyric gabbro at 2.0 m. From 34.5 to 109.9 m the drillhole intersected a thick succession of intermediate volcanic flow breccia. Two distinctive flow breccia units are recognizable at 34.5 to 45.2 m and 64.6 to 109.9 m. The contact between the two flows is marked by the intrusion of a weakly altered and mineralized feldspar porphyry body at 45.2 to 63.7 m.

The upper flow breccia unit is medium green and porphyritic with minor fine grained visible feldspar/quartz phenocrysts. Brecciation of the unit is well developed over metre-scale intervals, however the brecciation intensity is quite variable from fine to coarse grained matrix verses fragment supported breccias respectively. The matrix interstitial to the fragments is graphitic. Subsequent pyritic (10-15% disseminations and stringers) quartz-carbonate (ankerite?) flooding/fracturing and weak chloritization is superimposed on the graphitic altered matrix due to a moderate shearing/deformation event. Anomalous zinc values from 111 ppm to 817 ppm were recorded over the length of the unit. An elevated copper value of 120 ppm was recorded with the highest zinc assay. Carbonatization (calcite alteration) of the fine-grained groundmass and fragments is only weakly developed with mottled light green alteration proximal to the most intense breccia zones.

The porphyry is in contact with a narrow (63.7 to 64.6 m) cherty grey to beige coloured felsic volcanic breccia unit intruded by a 30 cm wide lamprophyry dyke. This unit is interpreted as being the top for either the upper or lower flow breccia sequences. Strong shearing and deformation coupled with chlorite alteration (30% stockwork fracturing) has resulted in strong brecciation of the inferred flow-top. Shearing and chlorite alteration decreases below the lamprophyre dyke. The lower contact is massive and fine-grained. Zinc, copper and lead values are low, however anomalous silver assays of 0.5 g/t and 0.8 g/t were recorded.

The second lower flow breccia is similar in appearance as per the upper flow described at 34.5 to 45.2 m. Well developed altered breccia zones are present at 64.6 to 80.8 m with pyrite and

pyrrhotite that replaces the latter as the dominate sulfide downhole. With decreasing shearing downhole, locally recognizable flow-top pillow breccia horizons can be distinguished. Well developed metre-scale sulfidic (pyrrhotite) flow-top pillow breccia horizons from 80.8 to 107.6 m host significant zinc, lead and silver mineralization. Visible disseminated sphalerite and minor galena is hosted in the graphitic (decreasing shearing and chloritization downhole) altered flow breccia matrix. Sulfides are observed to be remobilized with the introduction of late quartz-calcite fractures and minor flooding. Sampling highlights include the following intercepts: 7,051 ppm Zn, 396 ppm Pb, 63 ppm Cu and 0.36 g/t Ag over 3.5 m starting at 82.0 m, including 18,600 ppm Zn, 43 ppm Pb, 41 ppm Cu and 0.40 g/t Ag over 0.7 m at 83.8 m; 13,600 ppm Zn, 282 ppm Pb, 136 ppm Cu and 0.4 g/t Ag over 1.3 m starting at 88.0 m; 4,500 ppm Zn, 1,260 ppm Pb, 82 ppm Cu and 0.4 g/t Ag over 1.6 m starting at 95.0 m and 4,714 ppm Zn, 3,790 ppm Pb, 75 ppm Cu and 1.26 g/t Ag over 2.8 m starting at 100.5 m, including 11,900 ppm Zn, 10,800 ppm Pb, 137 ppm Cu and 2.3 g/t Ag over 0.8 m at 102.5 m. Between 107.6 to 109.9 m the flow breccia is more massive and porphyritic. Minor sheared and deformed centimetre scale brecciated horizons interpreted to represent deformed flow-top pillow breccia horizons are observed. Alteration of the matrix is now dominated by chlorite and late quartz-calcite alteration with subordinate sericite alteration.

A well developed and distinct coarse-grained felsic lapilli tuff was intersected from 109.9 to 118.7 m. Strong quartz-carbonate (ankerite?) alteration with 10-20% pyrrhotite-pyrite was noted at the lower contact. Elevated zinc values of 582 ppm and 523 ppm were recorded over the lower 2.5 m.

The third intermediate volcanic flow breccia sequence similar in appearance to that described at 107.6 to 109.9 m was in contact with the upper felsic unit. The predominate alteration assemblage was late quartz-carbonate (ankerite?) flooding and fracturing. Pyrrhotite content was low rarely exceeding 10%. No significantly anomalous zinc, lead, copper, silver or gold values are recorded.

The volcanic sequence was interrupted with the deposition of a thick greywacke-graphitic argillite sequence to 336.3 m. The upper contact of the sedimentary sequence is marked by a 20 cm wide greywacke bed. The lower graphitic argillite is subdivided into an alternating sequence of carbonaceous argillite, argillite and laminated to thinly bedded argillite and greywacke beds. Visible sphalerite with traces galena and chalcopyrite was hosted by late pyritic quartz-calcite fractures. The higher grade sections are associated with the carbonaceous argillite beds. Significant assays include the following results: 1,320 ppm Zn, 160 ppm Pb, 150 ppm Cu and 0.6 g/t Ag over 3.2 m starting at 188.5 m; 2,002 ppm Zn, 478 ppm Pb, 133 ppm Cu and 0.73 g/t Ag over 12.5 m starting at 201.5 m, including 3,430 ppm Zn, 469 ppm Pb, 216 ppm Cu and 0.7 g/t Ag over 1.6 m at 211.0; 1985 ppm Zn, 99 ppm Pb, 188 ppm Cu and 0.69 g/t Ag over 4.0 m starting at 255.0 m, including 2,570 ppm Zn, 123 ppm Pb, 216 ppm Cu and 0.8 g/t Ag over 2.5 m at 256.5 m; 1280 ppm Zn, 56 ppm Pb, 149 ppm Cu and 0.5 g/t Ag over 2.0 m starting at 295.0 m; 1,070 ppm Zn, 56 ppm Pb, 144 ppm Cu and 0.4 g/t Ag over 3.0 m at 308.0 m; 1,224 ppm Zn, 68 ppm Pb, 142 ppm Cu and 0.73 g/t Ag over 8.0 m starting at 314.0 m and 1,319 ppm Zn, 65 ppm Pb, 167 ppm Cu and 0.77 g/t Ag over 8.6 m starting at 325 m, including 2,080 ppm Zn, 93 ppm Pb, 224 ppm Cu and 1.0 g/t Ag over 3.0, at 328.0 m.

The drillhole ended at 392.0 m in a carbonatized, chloritized and quartz-carbonate (ankerite?) fractured intermediate volcanic flow breccia. Intermittent sulfidized flow breccia was observed, however no significant base metal, silver or gold assays were recorded. The predominate sulfide was pyrite as opposed to pyrrhotite as described in the upper zinc mineralized flows.

5.2.4 MT98-4

MT98-4 was collared in a thick interbedded sequence of black argillite and greywacke at 4.5 m. Three 1.2 m, 0.4 m and 0.30 m lamprophyre dykes cross-cut the sediments in the upper part of the hole. Late pyritic quartz quartz-calcite fracturing is common and locally hosts disseminated sphalerite, traces of galena and rare chalcopyrite. Two separate fracture systems are evident with a barren pyritic quartz-calcite high-angle set (does contain remobilized sphalerite) and late, low-angle sphalerite-pyrite-quartz-calcite fracture set. Intense centimetre to metre (where mineralized) scale wide flooded zones have effected both the greywacke and argillite

differentially. The greywacke is buff grey, whereas the argillite is mottled black to cherty grey. A significant zinc mineralized zone was intersected between 39.0 to 50.9 m. The entire section assayed 2,684 ppm Zn, 493 ppm Pb, 64 ppm Cu and 0.49 g/t Ag over 8.0 m. Individual higher grade samples included the following intercepts: 3,360 ppm Zn, 645 ppm Pb, 67 ppm Cu and 0.8 g/t Ag over 1.0 m at 39.0, 5,400 ppm Zn, 1090 ppm Pb, 79 ppm Cu and0.6 g/t Ag over 0.5 m at 42.5 m and 6,700 ppm Zn, 273 ppm Pb, 127 ppm Cu and 0.5 g/t Ag over 1.0 m at 45.0 m. Additional zinc mineralized argillite was intersected from 50.1 to 50.9 m. The narrow carbonaceous bed assayed 1,730 ppm Zn, 566 ppm Pb, 98 ppm Cu and 0.4 g/t Ag over 0.8. Two fault zones were intersected over 5.4 m and 1.0 m below 72.1 m.

The sediments are in contact with a porphyritic intermediate volcanic flow breccia unit from 117.4 to 123.7 m. Local narrow and diffuse coarse-grained flow-top pillow breccia was developed. Alteration was confined only to quartz-carbonate (ankerite) flooding and fractures, hosting 10-20% pyrite. Late quartz-calcite fractures are minimal. Zinc assays did not exceed 147 ppm. The flow is in sharp conformable contact with a distinctive grey, fine-grained tuff to lapilli tuff downhole to 127.5 m. Quartz-ankerite alteration is well developed interstitial to the fragments, hosting disseminated pyrite. 10% late quartz-calcite±chlorite fractures host disseminated pyrrhotite-pyrite and traces of sphalerite and galena. The best zinc assay graded 272 ppm Zn over 0.4 m.

A second sedimentary sequence was intersected at 127.5 to 131.6 m. The upper half to 129.6 was black argillite in contact with greywacke to 131.6 m. Alteration is minimal and late quartz-calcite fractures are limited to the early high-angle barren vein set. The argillite assayed 440 ppm Zn.

The remainder of the hole consisted of variable altered and mineralized intermediate volcanic flow breccia. Locally intense altered zones were intersected consisting of quartz-carbonate (ankerite?) flooding and fracturing with semi-massive pyrrhotite-pyrite. No significant zinc mineralization was associated with these zones, however a 1.0 m sample assayed 147 ppb gold.

5.2.5 MT98-5

MT98-5 was terminated at 71.0 m due to extreme shallowing.

5.2.6 MT98-5A

MT98-5A was collared in a intermediate volcanic flow breccia unit at 21.0 m. A lamprophyre dyke cross-cuts the volcanic stratigraphy at 29.7 to 30.9 m. The flow breccia is bleached grey due to penetrative quartz-carbonate (ankerite?) alteration. Well developed and visually apparent coarse grained flow-top pillow breccia occur within a chloritized and fractured (cherty grey quartz-ankerite) fine grained matrix. Late quartz-calcite fractures represent a second alteration event. Calcite alteration is also seen overprinting the first-order matrix alteration. Strong shearing is noted below 38.2, corresponding with an increase in quartz-calcite fractures that can host 20% disseminated pyrite. A representative sample from this section assayed 396 ppb Au over 2.0 m at 45.0 m.

The upper flow breccia was in sharp contact with a light greyish-green carbonatized massive intermediate volcanic flow at 74.9 m. The flow was characterized by strong fracture controlled graphitic alteration (30% downhole) hosting an average of 2-3% pyrite that can locally exceed 20% over 2-5 cm widths. Late quartz-calcite fracturing is low but tends to be best developed where the graphitic alteration is strongest. No anomalous base or precious metal assays were recorded over the interval.

Thickly bedded argillite with subordinate laminated to thinly bedded greywacke proceeded the massive flows from 88.3 m to the end of the hole at 146.0 m. A lamprophyre dyke is intruded along the contact between the upper flow and argillite at 85.1 to 88.3 m. The upper section of argillite to 98.0 m contained upwards of 20% pyritic quartz-calcite fractures hosting disseminated sphalerite, galena and chalcopyrite. Two separate and distinct high and low-angle fracture sets are apparent. The more common type is at high-angles to the core axis. These fractures general contain little base metal sulfides unless they are cross-cut by the low-angle fractures and than may host remobilized sphalerite. The less common low-angle fractures

generally average 1-3%, cross-cut and offset the high-angle gashes and stringers and contain pyrite, sphalerite, galena and chalcopyrite. Assay results from this mineralized zone include the following intercepts: 2,597 ppm Zn, 768 ppm Pb, 126 ppm Cu and 1.0 g/t Ag over 5.7 m starting at 88.3 m, including 5,020 ppm Zn, 1340 ppm Pb, 108 ppm Cu and 2.0 g/t Ag over 1.0 m at 92.0 m and 2, 230 ppm Zn, 143 ppm Pb, 152 ppm Cu and 0.85 g/t Ag over 2.0 m starting at 96.0 m, including 3,260 ppm Zn, 188 ppm Pb and 154 ppm Cu and 1.0 g/t Ag at 97.0 m.

The argillite/greywacke sequence is broken with the intrusion of glomerophyric gabbro between 100.5 to 123.7 m.

Below the gabbro, late quartz-calcite fracturing was reduced in the argillite to 2-3% volume. The best assay result recorded 1,030 ppm Zn, 27 ppm Pb, 180 ppm Cu and 0.4 g/t Ag over 3.0 m starting at 134.0 m.

6.0 Conclusions and Recommendations

Opawica Explorations Inc. recently completed an initial 5 hole diamond drill program on the Maisonville Township project. The original 7 claim property located 16 kilometres northwest of Kirkland Lake was optioned from Mr. Thomas J. Obradovich. Subsequent to the initial agreement, 5 claim units were staked and 3 patents owned by Joutel Resources Limited were acquired northeast and northwest of the original claims respectively.

The property was acquired by Opawica Explorations Inc., based on the area's potential to host economic VMS mineralization. Historical exploration results on the property around Goose Egg Lake by Kerr Addison Mines Limited between 1965 to 1969, intersected sub-economic zinc mineralization over core lengths of 4-17 m. Disseminated sphalerite, galena and chalcopyrite was described as being hosted in either graphitic breccia horizons or quartz-calcite fractures, proximal to the contact between graphitic sediments and intermediate to felsic volcanics. The best assay result recorded was 1.76% Zn over 4.6 m, including 2.35% Zn over 2.1 m hosted in rhyolite breccia. The style and nature of the mineralization was inferred to be representative of a sulfide stringer zone distal to a potential massive sulfide system, either along strike or at depth.

The initial diamond drill program was designed to test specific HLEM targets interpreted to represent sulfide mineralization defined previously by Kerr Addison. A combined HLEM and magnetic survey was completed in December 1997 over the known mineralization and along strike. The purpose of the survey was to provide current data for interpretation and for a comparison of the previous survey results. Based on the 1998 survey results, the stratigraphy was inferred to be vertically to steeply south-dipping, as opposed to the previous operators. If the interpretation of the HLEM data was correct, the Kerr Addison drilling could possibly not have adequately tested the conductors laterally and at depth.

Holes MT98-1, MT98-2 and MT98-3 tested the Kerr Addison zinc horizon. The drill results defined a thick succession of variable altered and mineralized intermediate volcanic flow breccia, intercalated and subordinate fine and coarse-grained felsic volcanic fragmental lithological units. The volcanic stratigraphy is interrupted with the deposition of a thick, interbedded and folded graphitic argillite and greywacke sedimentary sequence to the north, reflecting the causative source of the HLEM conductors traced at surface. North of the sediments, the flow breccia sequence continued, albeit weakly altered and mineralized. Coeval feldspar porphyry and glomerophyric gabbro bodies was intersected in the southern and northern flow breccia domains. Abundant, narrow Lamprophyre dykes cross-cut all lithological rock types, preferentially intruded along contacts.

Three styles of zinc-silver base metal mineralization were observed in the drill core. The first style of mineralization was observed as fine to coarse disseminated or aggregates of sphalerite and minor galena and trace chalcopyrite, occurring in graphitic altered flow-top pillow breccia horizons. There is a strong correlation between zinc grade and an increase in disseminated pyrrhotite hosted by graphitic alteration. Late chlorite alteration and quartz-carbonate (ankerite?) fracturing and flooding of the graphitic matrix, was the result of a post-mineralization deformation event, likely related to the emplacement of the Winnie Lake stock. The best assay samples representative of this style of mineralization was recorded in hole MT98-3. Two sub-economic grade intersections graded 7,051 ppm Zn over 3.5 m, including 18,600 ppm Zn over 0.7 m and 13,600 ppm Zn over 1.3 m. The second style of mineralization noted was confined to

late Quartz-calcite fractures. Tension gashes, stringers and veinlets hosted primarily by graphitic or carbonaceous argillite was intersected in all three of the drill holes. The best result graded 9040 ppm Zn, 1,770 ppm Pb and 1.2 g/t Ag over 1.5 m in hole MT98-3. Only minor remobilized sphalerite was noted to be hosted by quartz-calcite fractures, cross-cutting early stage breccia-hosted mineralization.

The highest recorded zinc assay of the drill program was recorded in MT98-2, at the south or structural hangingwall contact between graphitic argillite and intermediate flow breccia. A 10 cm wide band of semi-massive pyrite with 10-15% disseminated sphalerite was hosted in chert horizon in contact with a narrow 0.6 m wide felsic volcanic fragmental to the south. A pronounced graphite-chlorite-quartz fracture stockwork enveloped the mineralized zone. The chert horizon assayed 4.41% Zn and 3.4 g/t Ag over 0.6 m. When the upper felsic unit is included, the mineralized zone's weighted average was 31, 127 ppm (3.11%) Zn and 2.3 g/t Ag over 0.9 m.

Hole MT98-4 was designed to test the downdip extension of the high-grade vein material (34.2% Pb and 31% Zn) on patented claim HR581. The HLEM and magnetic survey was extended to the northwest to obtain coverage over this area. The HLEM survey defined a subtle conductor associated with the high-grade surface showing. The hole intersected two parallel graphitic argillite and greywacke sequences. The upper unit was silicified and carbonatized. Abundant late quartz-calcite fractures containing sphalerite was intersected over 8.0 m, however the hole failed to duplicate the surface lead and zinc grades. The best assay graded 6,700 ppm Zn over 1.0 m

The final hole of the program, MT98-5, was designed to test for the on-strike and down-dip extensions of the narrow zone of massive sulfide mineralization intersected in MT98-2. The hole was collared 46 m (150 ft) to the east of, and 31 m (100 ft) south of MT98-2. Severe flattening due to an underlying bedrock ledge, forced the termination of the hole at 71.0 m prior to reaching the targeted depth. MT98-5A was collared approximately 1 m behind the original set-up at a steeper angle. The hole intersected a variable altered intermediate massive and

brecciated flow sequence in contact with greywacke and graphitic argillite. The volcano-sedimentary stratigraphy is intruded by gabbro and lamprophyre dykes. Correlation between holes MT98-2 and MT98-5A is excellent based on similar rock types and contact relationships. At the favourable contact between the flows and graphitic argillite, a lamprophyre dyke was intersected at the expected position of the chert horizon hosting high-grade zinc mineralization in MT98-2.

The presence of widespread, low-grade zinc-silver stringer mineralization hosted by graphitic sediments and footwall intermediate volcanic rocks, intercalated with coarse-grained felsic fragmental and coeval feldspar porphyry intrusions is encouraging for the property's potential to host an economic VMS system. Significant massive sulfide mineralization was intersected, that appears to be stratiform in nature. Although the best zinc intersection was narrow and the grade not economic, potential does exist along strike and at depth for an improvement in both grade and thickness. Several test lines of induced polarization (IP) and downhole geophysical surveying is recommend to determine if any subtle geophysical response is associated with the zinc horizon along the south flank of the sediments. A 1,000 metre follow-up drill program has been recommended contingent on results of the separate geophysical surveys.

The estimated cost of the recommended program is as follows:

Geophysics: IP and downhole survey	$20,000
Diamond Drilling: 1,000 m @ $100.00/m all inclusive	$100,000
	$120,000
Contingency @ 10%	$12,000
GRAND TOTAL APPROXIMATELY	$132,000

Respectfully Submitted,

Michael P. Rosatelli, M.Sc.

7.0 References

Benham, W., 1993, Joutel Resources Limited, Canuc Project Prospecting Report Goose Egg Lake - Duff/Miller Properties, Maisonville Township, Ontario, 10p.

de Carle, R.J., 1991, Report On A Combined Helicopter Borne Magnetic, Electromagnetic and VLF Survey, Canuc Property, Maisonville Township, Larder Lake Mining Division Ontario, For Joutel Resources Limited, By Aerodat Limited, 30p.

Dyment, L.M., 1990, Report On VLF Electromagnetic Geophysical Survey, Joutel-Canuc J.V. Goose Egg Lake Property, Maisonville Township, Larder Lake Mining Division, Ontario, 10p.

Heather, K.B., 1998, New Insights on the Stratigraphy and Structural Geology of the Southwestern Abitibi Greenstone Belt: Implications for the Tectonic Evolution and Setting of Mineral Deposits in the Superior Province; p. 63-101, *In* The First Age Of Giant Ore Formation: Stratigraphy, Tectonics and Mineralization in the Late Archean and Early Proterozoic, Prospectors and Developers Association of Canada, Metro Toronto Convention Centre, Sunday March 8, 1998, 162p.

Kerr Addison Mines Limited, November 24, 1965; May 2, 1966; July 11, 1966; April 1967 and February 28, 1970. Diamond Drill Logs: 65-1; 66-1; 66-2 and 66-3; 67-1 and 67-2 and 69 GL 6. Kirkland Lake Resident Geologist Office, Assessment Report Files.

Lacana Mining Corporation, September 19, 1980 Diamond Drill Logs: GL-1, GL-2, GL-3 and GL-4. Kirkland Lake Resident Geologist Office, Assessment Report Files.

Lovell, H.L., 1971, Geology of the Bourkes Area District of Timiskaming; Geological Report 92, Ontario Department Of Mines And Northern Affairs, 37p.

Ontario Geological Survey, 1979, Airborne Electromagnetic and Total Intensity Magnetic Survey, Kirkland Lake Area, Maisonville Township, District of Timiskaming, by Questor Surveys Limited for the Ontario Geological Survey, Prelim. Map P.2256, Series scale 1:20,000, Survey and Compilation, February and March 1979.

McGuinty, W.J., 1992, Report on a Combined Helicopter Borne Magnetic-Electromagnetic-VLF Survey on the Maisonville Property of the Canuc Project, OMIP Designation No. OM91-019, 17p.

Ministry of Northern Development and Mines, April 27, 1998, Claim Plan Map (G-3669), Township of Maisonville, District Of Timiskaming, Larder Lake Mining Division.

Whelan, J.M., 1994, Report On Magnetic and Horizontal Loop Electromagnetic Surveys Over the Goose Egg Lake Property, Maisonville Township, Ontario, NTS 42A/1, For Joutel Resources Ltd., 14p.

APPENDIX I
CERTIFICATION OF EXPENDITURES

MPH Consulting Limited

150 York Street, Suite 1800
Toronto, Canada M5H 3S5
Tel: (416) 365 0930
Fax: (416) 365 1830

CERTIFICATION OF EXPENDITURES ON EXPLORATION PROGRAMME CARRIED OUT AT MAISONVILLE TOWNSHIP PROPERTY, ONTARIO JANUARY 1, TO JULY 31, 1998

Geological Consulting	$	31,972.50
Drilling		54,245.11
Analysis		10,258.75
Support Costs		
- Food & accommodation		1,908.11
- Communications		171.94
- Freight & courier		299.70
- Vehicle rental		2,072.64
- Printing/copies		119.74
- Maps		1,187.18
- Geological support		9,456.06
Administration		11,789.41
	$	123,481.14

Neville Wolf B.Com CA
Chief Financial Officer

APPENDIX II

DIAMOND DRILL LOGS (MT98-1 TO MT98-5A)

MPH CONSULTING LIMITED

DRILL HOLE RECORD

HOLE NO.: MT98-1

CLIENT: Opawica Explorations Inc.
PROPERTY: Maisonville Township
CLAIM NO.: 1050105
COLLAR CO-ORDINATE: L2850W, 1100S
COLLAR ELEVATION: 0
AZIMUTH: 320
INCLINATION: -45
LENGTH: 164 m
CORE LOCATION: Tom Obradovich Office, Kirkland Lake
REMARKS: To Test HLEM Conductor

COMMENCED: 1/26/98
COMPLETED: 1/29/98
DRILLED BY: Norex Drilling Limited
HOLE TYPE: Diamond
CORE SIZE: BQ
CASING LEFT IN HOLE: 14 m
LOGGED BY: Michael P. Rosatelli

M.P. Rosatelli

DOWN HOLE SURVEY INFORMATION

METHOD: SPERRY SUN

DEPTH (m)	AZIMUTH	INCLINATION
0	320	-45
60	320	-44
164	325	-43

FROM	TO	DESCRIPTION
0.0	14.0	**Overburden** Hole reamed to 15.0.
14.0	30.5	**2d (gf, cb)** Light grey to buff coloured intermediate to felsic volcanic breccia. Poorly sorted flow breccia. Consists of intercalated sequence of fine grained to coarse grained sub-rounded fragments. Fragment supported, graphitic+/-ankerite matrix. Trace blebby pyrite. Pervasive carbonatization (calcite) of fragments. 1-2% glassy quartz-calcite veinlets and veins at 30-50 degrees to core axis. Occasionally contain pyrite. Diffuse pyritic wallrock contacts, trace to 10% very fine to fine grained cubic pyrite.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
15	16	1	1	94	1	97	0.1	3
16	17	2	1	109	1	81	0.1	0
17	18	3	1	133	1	108	0.1	0
18	19	4	1	119	1	90	0.1	0
19	20	5	1	107	1	87	0.1	7
20	21	6	1	109	1	86	0.1	50

FROM	TO	DESCRIPTION
		24.9 - Sheared at 40 degrees to core axis. Predominately medium to coarse grained foliated/stretched fragments. 27.8 - 28.3 - Strongly sheared section. Weakly to moderately chloritized. +30% quartz-calcite veining, trace pyrite. 29.0 - Sericitization of fragments. 29.1 - Decreasing graphitic matrix. Faint fragmental appreance due to shearing and coarser grained. Decreasing carbonatization to lower contact.
30.5	30.9	**7** Sharp contacts at 50 degrees to core axis. Very fine grained brown matrix 2-3% fine grained black amphibole. Minor brown biotite clots. +20% feathery calcite laths.
30.9	33.0	**2d (cb)** Similar in appearance as upper unit at 14.0 - 30.5. Very fine grained breccia with minor visible coarser grained sub-rounded fragments and/or cm scale densely packed banding (sheared) at 30 degrees to core axis. Carbonate (ankerite?) altered matrix. 1-2% quartz-calcite-graphite tension gashes. Trace visible pyrite. Gradational lower contact.
33.0	38.0	**2d (gf-chl)** Continuation of upper unit.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
21	22	7	1	98	1	83	0.1	12
22	23	8	1	114	1	90	0.1	0
23	24	9	1	113	1	90	0.1	34
24	25	10	1	74	1	84	0.1	5
25	26	11	1	100	2	92	0.1	14
26	27	12	1	86	1	75	0.1	7
27	28	13	1	69	1	70	0.1	2
28	29	14	1	91	2	61	0.1	0
29	30.5	15	1.5	105	1	77	0.1	2
30.5	30.9	16	0.4	0	0	0	0	0
30.9	32	17	1.1	94	1	87	0.1	10
32	33	18	1	68	1	87	0.1	9
33	34	19	1	85	1	104	0.1	0
34	35	20	1	89	1	69	0.1	0

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		Increasing shearing and deformation downhole, 20 degrees to core axis to lower contact. Consists predominately of fine grained fragments with an average of 10% coarse grained sub-rounded fragments. 10% quartz-calcite veinlets to lower contact, at high angles to core axis (cross-cutting), parallel to foliation downhole. Chloritized (graphitic) wallrock contacts. Trace to 2-3% fine disseminated cubic pyrite. 35.0 - 35.3 - 3-5% coase grained pyrrhotite clots interstitial fragments. Trace fine grained cubic pyrite. 35.9 - 36.3 - Yellow overprint of quartz-calcite stringers and matrix. Gradational lower contact.	35	35.3	21	0.3	90	1	81	0.1	3
			35.3	36.5	22	0.2	95	1	62	0.1	2
			36.5	38	23	1.5	103	1	74	0.1	5
38.0	43.2	**2a (cb)** Buff to light grey. Massive. Pervasive calcite alteration. Moderately fractured, 10% quartz-calcite gashes,stringers and veinlets Trace visible sulfides. Fine grained fragmental to lower contact. sheared with 1-2 cm wide bands at 40 degrees to core axis. Sharp veined lower contact at 30 degrees to core axis.	38	39.5	24	1.5	87	2	98	0.1	2
			39.5	41	25	1.5	73	3	103	0.1	0
			41	42.5	26	1.5	74	1	98	0.1	7
			42.5	43.2	27	0.7	83	1	97	0.1	9
43.2	56.1	**2d (gf-chl)** Light to medium grey-green. Predominately fine to medium grained fragments intercalated with minor massive (same as 38.0 - 43.1) flow units, gradational contacts. Weak to moderate deformation and shearing. Variable chloritized (graphitic) and quartz-calcite altered matrix, +15-20% breccia. 44.6-44.9 - Massive flow section, buff coloured, pervasive calcite alteration, 1-2% fine	43.2	44	28	0.8	77	1	110	0.1	2
			44	45.5	29	1.5	71	1	123	0.1	0
			45.5	47	30	1.5	67	1	106	0.1	3
			47	48.5	31	1.5	79	1	107	0.1	2
			48.5	50	32	1.5	63	1	103	0.1	5

FROM	TO	DESCRIPTION
		grained disseminated cubic pyrite in fractures.
		55.0 - Buff/bleached grey to lower contact. Pervasive calcite alteration.
		Sharp lower contact at 30 degrees to core axis.
56.1	61.0	**2d (cb, gf-chl)** Light grey to green. Intercalated sequence of fine to coarse grained fragments, diffuse contacts. Strong interstitial calcite alteration, weak graphitic (chloritized) alteration. 10-15% quartz-ankerite stringers and veinlets, hairline tension gashes associated with coarser grained sections.
		59.3 - 60.3 - Sheared grey calcite banding at 20 degrees to core axis.
		61.0 - Fault Gouge, mm scale, at 55 degrees to core axis.Sharp veined lower contact at 50 degrees to core axis.
61.0	64.3	**2d (cb, gf-chl)** Fine grained breccia with less than 10% coarse grained fragments set in a fine grained graphitic groundmass.
		61.0 - 62.2 - Similar buff coloured and calcite altered as per upper unit. Increasing graphitic fracturing downhole, average of 10%.Occasional associated blebby pyrrhotite. Cross-cut by quartz-calcite fractures, locally pyritic, either as fine cubic disseminations or massive, trace chalcopyrite.
		62.2 - 63.8 - Sheared and deformed section, green where graphite altered to chlorite. Increased pyrite content in quartz-calcite fracturing, 3-5%, 1-3% pyrrhotite.
		63.8 - 64.3 - Chlorite-Quartz-Calcite Schist. Well defined contacts at 50 and 40 degrees to

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
50	51.5	33	1.5	61	1	97	0.1	10
51.5	53	34	1.5	59	1	106	0.1	7
53	54.5	35	1.5	54	1	98	0.1	5
54.5	56.1	36	1.6	54	1	102	0.1	0
56.1	57.5	37	1.4	85	1	100	0.1	3
57.5	59	38	1.5	69	1	98	0.1	0
59	60	39	1	92	1	89	0.1	0
60	61	40	1	83	1	98	0.1	0
61	62.2	41	1.2	124	9	74	0.1	31
62.2	63.8	42	1.6	337	222	79	0.3	101
63.8	64.3	43	0.5	139	197	111	0.5	21

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		core axis. Consists of 20-30% quartz-calcite veining, 40% silicified and pyritic wallrock (sericitized to lower contact) and interstitial chlorite (after graphite). Sufide rich section, zoned, pyritic top, pyrrhotite lower contact, average 10-20% pyrite (in quartz-calcite fractures) and pyrrhotite (in chlorite alteration). Coarse grained rounded fragment (raft of lower unit?) at lower contact.									
64.3	65.5	**2d (gf-chl)** Same as 61.0 - 64.3, light grey to buff coloured. Decreasing calcite alteration downhole, coarse grained fragments are not calcite altered. 10-15% graphitic fractures, locally pyrrhotite rich above 65.0 metres. 10% fine grained disseminated pyrite in quartz-calcite stringers, veinlets and wallrock, 15-20% over 20 cm at lower contact, 1-2 cm widths.	64.3	65.5	44	1.2	192	3	76	0.2	3
65.0	79.6	**2d (gf-chl, cb)** Consists of 50-60% sub-rounded to sub-angular variable altered intermediate to felsic volcanic fragments set within a sulfide-rich graphitic matrix. Massive with weak development of any foliation. Sharp upper contact at 60 degrees to core axis. 8cm wide Graphite- (Chlorite)-Quartz-Calcite Shist. 2cm wide band of medium grained cubic pyrite at lower contact in quartz-calcite veining. 65.0 - 72.1 - Buff to light grey fragments, variable altered, quartz-calcite altered at upper contact, ankeritized? downhole. Sericitized from 67.5 - 68.2. 1-3% quartz-calcite tension gashes, stringers and veinlets. Patchy sulfides, traces of visible pyrrhotite, locally 1-2% blebby pyrrhotite in graphitic matrix, traces of chalcopyrite. 68.2 - 68.7 - Well mineralized section. Average of 10% fine disseminated pyrite, traces of chalcopyrite and fine visible sphalerite? flakes, proximal to pyrrhotite band. Sharp lower contact, alteration front, at 20 degrees to core axis.	65.5	66.5	45	1	190	4	141	0.2	7
			66.5	67.5	46	1	174	3	97	0.1	33
			67.5	68.2	47	0.7	114	5	74	0.1	14
			68.2	68.7	48	0.5	139	1	84	0.1	5
			68.7	70	49	1.3	182	2	91	0.1	34
			70	71	50	1	177	5	84	0.1	2
			71	72.1	51	1.1	178	1	88	0.1	7
			72.1	73	52	0.9	184	2	83	0.1	15
			73	74	53	1	162	1	85	0.1	0
			74	75	54	1	163	1	81	0.1	0
			75	76	55	1	136	1	86	0.1	9

FROM	TO	DESCRIPTION
		72.1 - 79.6 - Weakly altered (ankeritized?, silicified). Medium to coarse grained as per upper section with fine grained altered (quartz) matrix. Increased quartz-calcite fracturing to 5%. Average of 2-3% blotchy pyrrhotite in graphitic matrix, locally 10% over 30-70 cm widths. Traces of chalcopyrite. Pyrrhotite-rich sections usually associated with increased quartz-calcite fractures, pyritic. 77.8 - Chloritization of graphitic matrix.
79.6	90.7	**2d (gf)** Sharp upper contact at 40 degrees to core axis. Little alteration of fragments. Biege coloured, cherty. Visible fine grained matrix texture. Continuation of upper unit (similar unaltered fragments noted). 3-5% late-stage quartz-calcite gashes and stringers, at steep angles to core axis. Well mineralized unit, well defined pyrrhotite/pyrite zonation. Variable pyrrhotite content, ranges from 10-30%, suggestive as complete replacement of graphitic matrix.Traces fine cubic pyrite. Also observed as replacement of quartz fragments. 79.6 - 83.5 - 1-3% fine cubic pyrite associated with early quartz-calcite tension gashes, stringers and veinlets, at low angles to core axis, cut by high-angle quartz-calcite fractures. Gradationally become pyrrhotite-rich downhole, 3-5%. 83.5 - 90.7 - Steady decreasing pyrrhotite content downhole. Replaced by pyrite (cores of pyrite and rimmed by pyrrhotite) than by magnetite (either as rims or fine grained disseminations around pyrite or as disseminations dispersed in disseminated pyrrhotite or pyrite. 10% or less sulfides to lower contact (below 87.5). Sulfides are interstitial fragments, replacement of graphitic matrix, downhole to lower contact, matrix is silicified. Pyritic late high-angle quartz-calcite veinlets to lower contact.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
76	77	56	1	217	1	75	0.1	0
77	78	57	1	225	1	87	0.1	57
78	79	58	1	256	1	108	0.1	153
79	79.6	59	0.6	201	1	85	0.1	5
79.6	80.5	60	0.9	214	1	79	0.1	0
80.5	81.5	61	1	267	1	104	0.1	96
81.5	82.5	62	1	186	1	75	0.1	3
82.5	83.5	63	1	171	1	66	0.1	2
83.5	84.5	64	1	179	1	74	0.1	50
84.5	85.5	65	1	182	2	64	0.1	12
85.5	86.5	66	1	153	5	72	0.2	7
86.5	87.5	67	1	248	3	76	0.1	5
87.5	88.5	68	1	231	4	85	0.1	5
88.5	89.5	69	1	142	2	89	0.1	10
89.5	90.7	70	1.2	187	2	83	0.1	9
90.7	91.6	71	0.9	237	21	97	0.6	55

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		86.2 - 86.4 - Semi-massive pyrite, replacement of pyrrhotite. 83.8 - 3 cm wide fine grained flow band at 60 degrees to core axis.									
90.7	91.6	**2d (sil, cb, gf)** Continuation of upper unit. Sharp upper contact at 35 degrees to core axis. Silicified (albitized) pinkish-red fragments. Overprinted by late hairline quartz-calcite tension gashes, stringers and veinlets, pervasive calcite alteration of fine grained graphite altered matrix. Well mineralized. +10-15% coarse grained pyrite clots interstitial coarse grained fragments, pyrrhotite rich at upper contact, cross-cut by quartz-calcite fractures. Also includes very fine disseminated pyrite in silicified fragments. Occasional fine grained flow banding (shearing?) at 30-40 degrees to core axis. Sheared and graphitic lower contact, over 12 cm, +15-20% pyrite, increased quartz-calcite veinlets to 10%, cross-cuts lower contact.									
91.6	92.3	**4a (qcv-sp,cp)** Black. Massive, faint very thinly laminated bedding or shearing at 40 degrees to core axis. Sharp undurating upper contact at 30-40 degrees to core axis. 2-3% to 5% bedded pyrite, trace to .2% visible chalcopyrite with the pyrite. 30% quartz-calcite fractures at upper contact, 5-10% downhole, pyritic. Coarse grained fragment of Lamprophyre Dyke at lower contact.	91.6	92.3	72	0.7	2660	20	498	0.3	0
92.3	93.2	**7** Similar to 30.5 - 30.9. Sharp intrusive contacts at 30 and 50 degrees to core axis. Pervasive calcite alteration. 3-5% glassy grey quartz-calcite stringers and veinlets.	92.3	93.2	73	0.9	0	0	0	0	0

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		10% fine biotite set in a aphanitic groundmass. Pyritic, +15-20% very fine grained disseminated pyrite. Contains graphitic fragments.									
93.2	103.2	**4a (qcv-sp)** Black to grey. Consists of 60% carbonaceous material interbedded with greywacke. Strongly deformed, where bedding not disturbed at 40 degress to core axis. Trace to 20% fine to coarse grained blotchy pyrite, hosted in carbonaceous material at contacts with greywacke beds. 2-3% quartz-calcite fractures, 10% at contacts.	93.2	95	74	1.8	665	34	132	0.3	9
			95	96.5	75	1.5	599	41	128	0.3	5
			96.5	98	76	1.5	466	26	77	0.2	3
			98	99.5	77	1.5	1070	57	172	1.2	27
			99.5	101	78	1.5	1480	50	273	0.7	15
			101	102.5	79	1.5	1190	32	187	0.4	0
			102.5	103.2	80	0.7	2400	34	299	0.5	10
103.2	105.5	**4b** Grey, fine grained. Weakly altered, occasional quartz-calcite (cross-cut graphite fractures) and graphitic fractures, 5-10% at upper contact, decreasing downhole, no carbonatization. Medium to thickly bedded sequence, predominently greywacke with thickly laminated cherty sediment and thinly laminated carbonaceous beds, at 50 degrees to core axis, folded. Carbonaceous upper contact. 104.9 - 105.2 - Cherty sediment, sharp contacts at 50 and 60 degrees to core axis, interbedded with thinly laminated to thinly bedded greywacke beds at 50 degrees to core axis. Upper greywacke contact is carbonaceous. Tops are suggestive downhole, chert grades into greywacke downhole at lower contact. Well mineralized throughout with at least 10% visible fine disseminated pyrite in greywacke, chert is poorly mineralized. Upper part of unit is dominated by coarser grained blebby pyrite and stringers associated with quartz-calcite fractures to 103.5. Steady increase in	103.2	104.9	81	1.7	83	3	49	0.1	0
			104.9	105.5	82	0.6	84	5	82	0.1	0

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		disseminated pyrite downhole. 105.2 - 20-25% fine to coarse grained pyrrhotite clasts (rounded graphite fragments?), 10% disseminated cubic pyrite at contacts in greywacke.									
105.5	106.1	**7** Reddish-brown aphanitic groundmass. 10-20% white and salmon coloured calcite phenocrysts. Pervasive calcite alteration of groundmass. Trace fine blebby magnetite. 1-2% hairline pyritic quartz-calcite fractures. Sharp intrusive contacts at 45 degrees to core axis.	105.5	106.1	83	0.6	58	10	15	0.1	12
106.1	107.7	**4b** Continuation of unit described at 103.2 - 105.5. Carbonaceous upper and lower contacts. +10% graphitic fractures. Pyrite content lower, 10% or less, coarser grained. 107.4 - 107.7 - Very thinly bedded, cherty sediment beds, under 1 cm, deformed, at 50 degrees to core axis. Lower contact defined by 3 cm wide dark grey-black carbonaceous chert bed. Pyritic quartz-calcite fractures.	106.1	107.7	84	1.6	56	3	39	0.1	0
107.7	108.6	**4a (qcv-sp)** Same as 91.6 - 92.3. Little bedded pyrite, at lower contact, no visible chalcopyrite. 10% quartz-calcite stringers, pyritic. Sharp contacts at 40 and 50 degrees to core axis, lower contact deformed.	107.7	108.6	85	0.9	3000	40	632	1.2	36

FROM	TO	DESCRIPTION
108.6	109.8	**4b** Same as 106.1 - 107.7. Dark grey-black carbonaceous greywacke. Thinly laminated to thickly bedded (shearing?) at 30 degrees to core axis, dark carbonaceous banding. Decreased pyrite content to 3-5%, 10% at graphitic fractured upper and lower contacts, increased density of pyritic quartz-calcite fracturing. Pyrite exhibits growth parallel bedding or shearing, increased content proximal fractures.
109.8	111.0	**2a (cb, gf)** Light grey-green to buff coloured. Fine grained granular texture, massive. Porphyritic, fine grained quartz/feldspar? phenocrysts. Pervasive calcite alteration. Upwards of 10% hairline quartz-calcite fractures and lesser stringers and veinlets. 3-5% graphitic fractures, weak breccia appearance. Decreasing blebby pyrite from upper contact.
111.0	112.1	**7** Same as 92.3 - 93.2. Sharp contacts at 60 degrees to core axis.
112.1	144.4	**2a (cb, sil, gf)** Similar to 109.8 - 111.0. Little sulfide mineralization. Variable altered, diffuse contacts. 112.1 - 115.1 - Light greyish-green. Weakly calcite altered, 10% or less quartz-calcite fractures. Little calcite alteration of matrix. Weak brecciated appearance.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
108.6	109.8	86	1.2	118	4	61	0.1	0
109.8	111	87	1.2	106	1	96	0.1	0
111	112.1	88	1.1	0	0	0	0	0
112.1	113.5	89	1.4	78	1	109	0.1	5
113.5	115	90	1.5	57	1	104	0.1	2
115	116.5	91	1.5	66	1	102	0.1	3
116.5	118	92	1.5	76	1	100	0.1	0
118	119.5	93	1.5	195	1	120	0.1	7

FROM	TO	DESCRIPTION
		115.1 - 119.4 - Same as above, but silicified. Increasing breccia zones downhole, fine to coarse grained, dominant trend (breccias) at 40-60 degrees to core axis.
		119.4 - 128.7 - Light grey to buff. Calcite altered, increased density of quartz-calcite fractures. Well developed breccia to 122.0, patchy downhole, 30-60 degrees to core axis.
		127.2 - 127.5 - Strongly sheared at 30 degrees to core axis, 1-3% fine-medium grained pyrite.
		128.7 - 136.4 - Silicified as per 115.1 - 119.4. 50% of unit moderate to well developed graphitic breccia. Contacts when developed at 60 degrees to core axis.
		133.9 - 15 cm quartz-calcite vein, traces of pyrite.
		136.4 - 143.2 - Calcite altered as 119.4 - 128.7. Well developed breccia as described above.
		143.2 - 144.4 - Continuation of upper unit at 109.8 - 111.0. Strongly foliated graphitic laminae and stretched and elongated fragments, well developed graphitic breccia. Pervasive calcite alteration of fragments, increased intensity of quartz-calcite fracturing including hairline tension gashes. Cross-cut foliated graphite matrix.
		144.2 - Yellow carbonate in quartz-calcite veinlets.
		Ocasional smeared pyrite along low-angle slips.
144.4	146.6	**2d (cb, gf-chl)** Continuation of upper sheared unit at 143.2. Light to medium green to grey. Graphite altered to chlorite, remnant wispy graphite still visible. Increased pervasive calcite alteration as fine to medium grained rhombs in fragments.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
119.5	121	94	1.5	200	1	118	0.1	0
121	122.5	95	1.5	154	1	125	0.1	0
122.5	124	96	1.5	90	1	109	0.1	0
124	125.5	97	1.5	68	1	113	0.1	0
125.5	127	98	1.5	108	1	120	0.1	0
127	128.7	99	1.7	151	1	108	0.1	0
128.7	130	100	1.3	77	1	100	0.1	0
130	131.5	101	1.5	113	1	106	0.1	0
131.5	133	102	1.5	66	1	101	0.1	3
133	134.5	103	1.5	123	1	106	0.1	5
134.5	136.4	104	1.9	79	1	110	0.1	7
136.4	138	105	1.6	68	1	106	0.1	2
138	139.5	106	1.5	105	1	130	0.1	0
139.5	141	107	1.5	116	1	115	0.1	7
141	142.5	108	1.5	87	1	99	0.1	5
142.5	143.2	109	0.7	96	6	118	0.2	5
143.2	144.4	110	1.2	1350	374	107	0.4	7
144.4	145.5	111	1.1	112	28	92	1.8	130
145.5	146.6	112	1.1	150	5	115	0.3	0

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		Quartz-calcite fracture content increased to +15%, pyritic either as disseminations in wallrock at vein contacts or as late stringers composed of quartz-calcite that off-set earlier fractures. Foliation decreasing to 40 degrees to core axis downhole. 2-3% fine disseminated pyrite in veining and wallrocks, locally reaching 10%. 145.0 - 2 cm wide quartz-calcite vein at 40 degrees to core axis. Traces of visible fine disseminated magnetite to lower contact, possible replacement of graphite.									
146.6	147.5	**4a (sil, ser)** Highly altered and deformed section. Difficult to discern rocktype, based on carbonaceous content and nature probable graphitic argillite/greywacke sequence similiar to that described at 107.7 - 109.8. Sharp upper contact at 50 degrees to core axis. Stongly silicified, consists of 70% carbonaceous graphitic argillite/greywacke beds, mottled black and grey (represents intensely silicified hostrock verses the lesser altered carbonaceous material). Interbedded with 18 and 15 cm wide light green (sericitized) and grey (calcite) altered beds, strongly deformed, sharp contacts at 40 to 50 degrees to core axis, probable represents altered greywacke beds. 10-15% pyritic quartz-calcite gashes, stringers and veinlets. Sharp lower contact at 60 degrees to core axis, 8 cm wide unaltered carbonaceous argillite.	146.5	147.5	113	1	419	45	65	0.7	12
147.5	153.4	**2a, d (gf-chl)** Weakly developed graphitic breccia. Variable chloritization of graphitic fractures. Fine grained where decreased graphitic content. Little pervasive calcite alteration.	147.5	148	114	0.5	14800	5480	113	1.3	0
			148	149	115	1	550	133	49	0.4	0
			149	150	116	1	155	56	140	0.7	2
			150	151	117	1	1860	870	77	2	2

FROM	TO	DESCRIPTION
		Upper 10 cm is strongly sheared and chloritized as per 144.4 - 146.6. Foliation at 30 degrees to core axis. .5-1% mm scale honey coloured sphalerite at 50 degrees to core axis, associated with pyritic quartz-calcite fractures, cross-cut chlorite laminations.
		147.6 - 147.8 - Lamprophyre Dyke. Sharp contacts at 30-40 degrees to core axis.10% glassy grey quartz veinlets, cross-cut by quartz-calcite fractures. 5-10% fine to medium grained pyrite at wallrock contacts of quartz-calcite fractures (cross-cut Lamprophyre Dyke contacts).
		147.8 - 148.0 - Average of 1-3% (10% over lower 3 cm) 1-3mm wide honey coloured sphalerite laminations. At wallrock contacts with quartz-calcite stringers and veinlets, at 50 degrees to core axis.
		147.9 - Fault Gouge. mm scale.
		148.1 & 148.2 - Fault Gouge. Broken and blocky ground over 5 cm.
		148.3 - 148.5 - 30% glassy grey quartz veining. Similar to that describe at 147.6 - 147.8, Pyrrhotite as opposed to pyrite in wallrock and late quartz-calcite fractures. Strong chloritization of graphitic altered wallrock, dark green. Pervasive calcite alteration of wallrock. Single 2 cm wide vein at 148.7.
		148.6 - 152.0 - Locally pyrite rich cm scale wide zones associated with increased late quartz-calcite fracturing, 10% to semi-massive, in vein material mostly, occasionaly pyrrhotite in wallrock. Comprises at least 5-10% volume of unit.
		152.0 - 152.8 - Continuation of above, pyrite content increased to 10%.
		152.8 - 153.4 - As above, pyrite content now 20-25%. Pyrite best developed at quartz-calcite vein contacts where graphitic/chloritized.
		Well developed Graphitic Breccia at upper contact, 10 cm wide, sharp contacts at 50-60 degrees to core axis.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
151	152	118	1	850	484	87	1.2	9
152	152.8	119	0.8	421	252	147	1	3
152.8	153.4	120	0.6	95	41	179	1.2	19

FROM	TO	DESCRIPTION
		Semi-massive medium grained pyrite, in graphitic matrix.
153.4	153.9	**2a (qtz-ank)** Medium greenish-grey. Little or no carbonatization (calcite). Strongly brecciated, 30-70% quartz-ankerite? (calcite overprint) matrix. Fine to coarse grained. Similar in appearance as the graphitic breccias described previously, however, no graphite matrix. Most intensely brecciated sections are mafic to intermediate in composition. Sharp upper contact at 30 degrees to core axis. Average 2-3% pyrite interstitial quartz-calcite matrix. 153.6 - Fault Gouge, mm scale, at 50 degrees to core axis.
153.9	164.0	**6a** Feldspar Porphyry. Cream and yellow coloured medium grained feldspar phenocryst. Orange-brown aphanic groundmass. Weakly magnetic. Traces of fine disseminated cubic pyrite. 159.4 - 162.2 - Non-porphyritic, fine grained, sheared at 30 degrees to core axis, medium grained chlorite clots (after amphibole). Calcite-quartz altered lower contact, banded at 60 degrees to core axis. Diffuse upper contact. 164.0 - End Of Hole.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
153.4	153.9	121	0.5	82	12	89	0.6	26
153.9	155	122	1.1	0	0	0	0	5

MPH CONSULTING LIMITED

DRILL HOLE RECORD

HOLE NO.: MT98-2

CLIENT: Opawica Explorations Inc.
PROPERTY: Maisonville Township
CLAIM NO.: 1050105
COLLAR CO-ORDINATE: L3600W, 800S
COLLAR ELEVATION: 0
AZIMUTH: 320
INCLINATION: -45
LENGTH: 185m
CORE LOCATION: Tom Obradovich Office, Kirkland Lake
REMARKS: To Test HLEM Conductor

COMMENCED: 1/29/98
COMPLETED: 1/30/98
DRILLED BY: Norex Drilling Limited
HOLE TYPE: Diamond
CORE SIZE: BQ
CASING LEFT IN HOLE: 14m
LOGGED BY: Michael P. Rosatelli

M.P. Rosatelli

DOWN HOLE SURVEY INFORMATION

METHOD: SPERRY SUN

DEPTH (m)	AZIMUTH	INCLINATION
0	320	-45
74	325	-42
185	332	-40

FROM	TO	DESCRIPTION
0.0	14.0	**OVB** Hole reamed to 14.6
14.0	18.9	**2a** Medium grey-green. Fine grained granular texture, minor fine disseminated amphibole, massive, occasional fine rounded visible quartz-feldspar? phenocrysts (porphyritic). Weak quartz-calcite fracturing, trace fine disseminated cubic pyrite in veining and wallrock. Weakly brecciated appearance, bleached grey quartz+/-carbonate alteration, locally to 10%. 16.9 - 18.2 - Sheared (50 degrees to core axis) section, cm scale to 20 cm wide bleached quartz-carbonate alteration zones, .1-.3% very fine disseminated pyrite in alteration. Cross-cut by quartz-calcite veining.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
14.6	16.9	123	2.3	76	1	132	0.1	0
16.9	18.9	124	2	62	1	51	0.1	3

FROM	TO	DESCRIPTION
		Sharp lower contact 40 degrees to core axis. Banded and fine grained speckled quartz-carbonate alteration conformable to lower contact.
18.9	54.0	**5b** Gabbro. Variable fine and coarse grained phases. 18.9 - 25.1 - Fine grained grey altered feldspathic matrix with 5-10% dark amphibole phenocrysts. Locally 10% quartz-calcite stringers. Glomerophyric, 1-2% medium to coarse grained orange-brown feldspar, ankeritized?, locally fine grained remnant cream-coloured feldspar phenocrysts. May represent a coarse grained glomerophyric flow. 21.4 - 25.1 - Increasing density of aphanitic (cherty-like) Intermediate Dykes downhole, at +70 degress to core axis, 40 degrees to core axis downhole. Greenish-grey. 22.9 - 50 - 90% dykes, disseminated cubic pyrite increasing downhole, in both dyke and gabbro, 10-15% over lower 20 cm. 24.3 - 24.5 - 10% pyrrhotite-chlorite fractures, hosted in gabbro. Sharp lower contact at 40 degrees to core axis. 25.1 - 35.0 - Fine grained chill upper contact. Aphanitic and pyritic composition similar to dykes described above. Coasening downhole, typical medium grained greenish-grey gabbro (similar to above section albeit weak alteration of feldspathic groundmass), weak chloritization of amphibole. Glomerophyric with upwards of 10% of coarse grained altered feldspar phenocrysts. Weak pyrtic quartz-calcite fracturing, occasional red wallrock alteration. Locally magnetic. Gradational lower contact. 35.0 - 39.5 - Intercalated fine (as per 18.9 - 25.1) and coarse grained gabbroic phases. Gradational lower contact. 39.5 - 54.0 - Fine grained, medium greyish-green, increased mafic component. Little matrix

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
22.9	24.3	125	1.4	58	1	104	0.1	2
24.3	25.1	126	0.8	84	1	91	0.1	3
25.1	26	127	0.9	62	1	128	0.1	0
53	54	128	1	240	1	134	0.1	0

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		alteration. 38.9 - 42.5 - Orange-brown carbonate (ankerite?) alteration, banded, at 40 degrees to core axis. Non-glomerophric. 49.9 - Increasing fine to medium grained cubic pyrite to lower contact, locally to 10%. 53.0 - 54.0 - 10-50% 1-3 cm wide Intermediate Dykes as per 21.4 - 25.1. Oriented at 50-80 degrees to core axis. Deformed and fragmented.									
54.0	54.7	**7** Sharp contacts at 65 and 30 degrees to core axis. Reddish-brown, fine grained. Strong grey carbonate alteration. Little visible sulfides. 3-5% quartz-calcite-chlorite fractures. Uphole contact contains Intermediate Dyke fragments.	54	54.7	129	0.7	71	6	72	1	0
54.7	59.8	**2a, d (qtz-ank, gf-chl)** Similar medium grey-green flow as per 14.0 to 18.9. Stongly altered, brecciated and sheared (30 degrees to core axis). Grey to beige coloured quartz-carbonate (ankerite?) alteration, fracture controlled leading to brecciated appearance. Associated with very fine disseminated pyrite. Locally 20 cm wide bleached zones at 55.8 and 56.4. Some silicification of hostrock, cherty looking and hard. Dark grey-black graphitic (altered to chlorite) below 57.2, fine to coarse grained fractures interstitial fractured hostrock, mottled appearance. 57.2 - 59.2 - 10% medium grained blebby pyrite in core of zone, gradational, pyrite rims graphite/chlorite alteration. 59.4 - 59.8 - 20% pyrite. 2-3% quartz-calcite fractures, pyritic to lower contact, cross-cut all other alteration.	54.7	56	130	1.3	135	6	80	0.1	0
			56	57.2	131	1.2	173	1	85	0.2	0
			57.2	58.5	132	1.3	128	9	107	0.3	0
			58.5	59.2	133	0.7	105	9	98	0.2	0
			59.2	59.8	134	0.5	155	12	85	0.3	5

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		Locally visible fine quartz phenocrysts. Numerous isolated individual or groups of densely packed cherty greyish-green pyritic Intermediate Dykes (Diabase) described previously above. 56.7, 58.4 & 58.7 - 2-6 cm wide dykes, at 45, 50 and 30 degrees to core axis. 59.2 - 59.4 - 50% dykes, strongly deformed. Cross-cut cm scale Syenite Dyke at low angles to core axis. 59.4 - 59.8 - 10% .5 cm wide dykes at 40 degrees to core axis, fragmented.									
59.8	59.9	**2d (chl-qtz)** Grey to beige coloured, cherty. Sharp upper at 45 degrees to core axis. Upper two-thirds of unit is massive fine grained flow, increasing shearing downhole, coarse grained flow banding at 40 degrees to core axis, gradational lower contact. Strongly brecciated, 20-30% hairline chlorite-quartz fractures, pyritic at upper and lower contacts. Late Diabase Dykes (2) at 20 and 10 degrees to core axis cut across contact and extends 20 cm downhole.									
59.9	60.4	**4b** Medium greenish-grey, fine grained. Thinly to thickly laminated discontinuous cherty beds at 40 degrees to core axis. Decreased chlorite-quartz fracturing downhole. Pyritic to lower contact, 20% fine-medium grained blebs, overprint greywacke and chert beds. Associated with silicification.	59.8	60.4	135	0.6	145	13	6	0.2	24

FROM	TO	DESCRIPTION
60.4	60.7	**3c (chl-qtz-gn,sp)** Beige, aphanitic with 10% fine rounded quartz fragments. 2 cm wide Diabase Dyke to lower contact, at 30 degrees to core axis. 10-20% hairline quartz fractures, contain galena at lower contact, cross-cut by chlorite-quartz fractures, well mineralized with either massive pyrite or disseminated pyrite and traces of visible sphalerite, cross-cut Diabase Dyke. Sharp lower contact at 50 degrees to core axis.
60.7	61.3	**4b (Chert-py,sp)** Fine grained, granular texture. Medium greyish-green. Silicified and brecciated (20% fine to medium grained fracture controlled graphite alteration, variable altered to chlorite, upper 10 cm, gradational lower contact, silicified lower 20 cm, cherty appearance). Semi-massive pyrite with +10-15% fine sphalerite, associated with graphitic altered matrix. 2-3% fine brassy disseminated pyrite peripheral to other pyrite. Remainder of unit show little alteration with the exception of minor quartz-calcite fractures (increasing intensity to lower contact), .1-.3% fine visible sphalerite in veinlets at wallrock contacts. Sharp lower contact at 60 degrees to core axis.
61.3	67.0	**4b, a (qcv-sp,cp)** Continuation of greywacke described above (59.9 - 60.4) with the addition of 10-20% thinly laminated to medium bedded graphitic argillite, average 50 degrees to core axis, strong brecciation. Moderate quartz-calcite fracturing, locally contain fine disseminated sphalerite, average .1-.2%, traces of chalcopyrite. 63.6 - 12 cm wide silicified greywacke, strongly fractured with 15-20% chlorite-quartz fractures, contain 1% chalcopyrite, 2-3% sphalerite and 1-2% galena. Mineralized zone bounded by 30 cm graphitic argillite beds. Strongly fractured with 30% hairline quartz-calcite fractures, 1-2% pyrite, trace to .2% sphalerite, pyritic halo extends up and downhole.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
60.4	60.7	136	0.3	5180	251	6	0.2	15
60.7	61.3	137	0.6	44100	162	410	3.4	36
61.3	62.5	138	1.2	118	300	6	0.2	0
62.5	63.5	139	1	54	34	6	0.2	0
63.5	64.3	140	0.8	4210	2000	444	2.2	0
64.3	65	141	0.7	71	83	11	0.2	0
65	66	142	1	435	49	23	0.2	0
66	67	143	1	83	82	7	0.1	0

FROM	TO	DESCRIPTION
		63.2 - 2 cm wide Fault Gouge, at 70 degrees to core axis. Broken and blocky ground over entire unit. Sharp lower contact.
67.0	113.4	**4a (qcv-sp,cp)** Black graphitic argillite intercalated with thinly laminated to very thinly bedded siliceous greywacke beds, average 45 degrees to core axis, calcite altered. Weak quartz-calcite fracturing. Locally pyritic and is associated with increased sphalerite and chalcopyrite, overall between .2-.5% sphalerite and trace chalcopyrite. 68.5 - Sphalerite-quartz-calcite veinlet, medium grained bleb of chalcopyrite 68.7 - 69.5 - 3-5% pyrite, .2-.3% sphalerite, .1% chalcopyrite. 71.0 - Trace chalcopyrite. 73.0 - 76.2 - Patchy pyrite rich fracturing with minor sphalerite to sphalerite-quartz-calcite fractures with trace to .1% chalcopyrite at 74.7 - 75.0. 77.4 - 1% sphalerite in 1 cm wide veinlet. 79.9 - 84.5 - Carbonaceous Argillite. Moderate quartz-calcite fracturing, to 10-15%, pyritic (3-5%), overall unit is sphalerite rich, average of 1% over entire section. Locally sphalerite-rich quartz-calcite veinlets at upper and lower contacts, traces of metallic reddish-brown and lesser honey-coloured sphalerite. .5-1% chalcopyrite. Gradational contacts. 84.5 - 93.6 - Trace to .1% fine sphalerite in quartz-calcite fractures, marked decrease of pyrite in fractures, 1-3% over entire section. 85.8 - 86.6 - Greywacke bed, sharp upper contact at 40 degrees to core axis. 40% thinly laminated argillite (40 degrees to core axis), decreasing content downhole. Greywacke coarsening downhole. Gradational lower contacts. As in upper graphitic argillite above 79.9,

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
67	68.5	144	1.5	154	88	36	0.4	0
68.5	69.5	145	1	3630	52	197	0.7	0
69.5	71	146	1.5	1420	750	188	0.7	3
71	72	147	1	1030	69	257	0.7	0
72	73	148	1	962	119	61	0.4	0
73	74	149	1	3220	277	195	0.7	0
74	75	150	1	2330	646	164	0.7	0
75	76.2	151	1.2	304	34	71	0.4	0
76.2	78	152	1.8	761	83	62	0.3	0
78	79.9	153	1.9	61	734	53	0.5	0
79.9	81	154	1.1	378	349	208	0.7	0
81	82	155	1	1560	1520	161	0.9	9
82	83	156	1	1560	509	280	1.2	5
83	84.5	157	1.5	9040	1770	211	1.2	0
84.5	85.8	158	1.3	373	171	56	0.3	0
85.8	86.6	159	0.8	139	54	26	0.1	0
86.6	88	160	1.4	186	14	43	0.2	0

FROM	TO	DESCRIPTION
		little pyrite in hostrock.
		93.6 - 94.9 - Carbonaceous Argillite. Same as 79.9 - 84.5. Decreased quartz-calcite fracturing, most intense at contacts, at 60 degrees to core axis, cm scale, increased galena content at upper contact. Cm scale Fault Gouge at upper contact, contains .3-.5% sphalerite. Fractures at 20 degrees to core axis at lower contact, dominated by pyrite, .1-.3% sphalerite, trace visible galena.
		94.9 - 113.4 - Continuation of upper Graphitic Argillite.
		97.2 - 98.0 - Greywacke. Same as 85.8 - 86.6.
113.4	118.0	**7** Sharp intrusive contacts at 50 and 40 degrees to core axis. Cross-cut bedding and quartz-calcite fractures. Greyish-brown. Fine to medium grained clots of amphibole altered to chlorite, visible brown biotite.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
88	89.5	161	1.5	132	18	41	0.2	0
89.5	91	162	1.5	178	11	45	0.2	5
91	92.5	163	1.5	146	8	52	0.2	2
92.5	93.6	164	1.1	327	64	53	0.3	2
93.6	94.9	165	1.3	796	411	105	0.6	5
94.9	97.2	166	2.3	258	16	51	0.2	0
97.2	98	167	0.8	241	18	30	0.3	5
98	99.5	168	1.5	42	28	31	0.2	0
99.5	101	169	1.5	97	9	51	0.2	0
101	102.5	170	1.5	560	171	70	0.4	10
102.5	104	171	1.5	896	216	49	0.3	3
104	105.5	172	1.5	400	127	47	0.3	3
105.5	107	173	1.5	204	33	41	0.3	2
107	108.5	174	1.5	134	24	29	0.2	0
108.5	110	175	1.5	107	23	36	0.2	3
110	111.5	176	1.5	1490	825	149	0.8	7
111.5	113.4	177	1.9	166	10	52	0.2	2

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		Pervasive calcite altered matrix, moderate calcite-quartz fracturing, pyritic.									
118.0	118.4	**4b (chl-cal)** Grey massive chert bed. 10-15% hairline chlorite-calcite (alteration overprint of quartz) fractures, pyritic at upper contact. Sharp lower contact at 40 degrees to core axis..	118	118.4	178	0.4	641	21	77	0.2	7
118.4	122.9	**4b,a (qcv-sp)** Continuation of unit described uphole at 67.0 - 113.4. Upper 3 cm is stongly brecciated with 30% quartz-calcite hairline fractures. Increased pyrite content in quartz-calcite veining, but little visible sphalerite, chalcopyrite or galena.	118.4	120	179	1.6	940	34	134	0.9	14
			120	121.5	180	1.5	857	37	182	0.8	5
			121.5	122.9	181	1.4	455	35	191	0.6	9
122.9	124.2	**4b** Carbonaceous greywacke, fine grained. Sharp upper contact at 40 degrees to core axis. Silicified lower contact over 20 cm, chert grey, resembles unit described at 118.0 - 118.4. Recogniable coarser grained greywacke beds (altered to buff grey), whereas carbonaceous finer grained greywacke are cherty grey.	122.9	124.2	182	1.3	230	11	66	0.1	0
124.2	137.2	**7** Sharp upper contact at 30 degrees to core axis. Same as 113.4 - 118.0. Sharp lower contact at 30 degrees to core axis. 6 cm wide Graphitic Argillite raft.									
137.2	167.2	**4a (qcv-sp)** Carbonaceous as per units described at 67.0 - 113.4.	137.2	140.4	183	3.2	1710	52	190	0.9	10
			140.4	141.5	184	1.1	2610	1050	141	2.8	0

FROM	TO	DESCRIPTION
		No obvious sulfide mineralization in quartz-calcite veins other than pyrite. Less than 10% greywacke bedding.
		Locally impressive calcite-quartz veined and/or breccia zones at:
		140.4 - 141.5 - Fine to coarse grained breccia (fragment supported), 30 degrees to core axis.
		142.4 - 143.0 - 1-2 cm wide veinlets, at 30 degrees to core axis.
		144.1 - 144.8 - As above.
		146.7 - 147.5 - Breccia, medium to coarse grained.
		147.8 - 148.7 - 40 cm wide vein, 10% wallrock fragments, lower weakly developed breccia/veining, 30 degrees to core axis.
		151.5 - 15 cm wide vein at 10 degrees to core axis.
		152.7 - 2 cm wide vein at 30 degrees to core axis.
		160.6 - 161.1 - Vein, vuggy, at 30 degrees to core axis, .5% disseminated sphalerite.
		160.0 - 160.6 - Breccia and veining.
		149.4 - 149.7 - Fault Gouge. Oriented at 30 degress to core axis. Veined upper and lower contact.
		158.0 - 158.2 - .5-1% chalcopyrite with pyrite in quartz-calcite fractures. Occasionally observed between 153.5 -157.5.
		165.5 - 167.2 - 3-5% fine dissemenated blebby pyrite. Mottled, sugery grey silicification and cherty lesser altered dark carbonaeous material. Cherty grey to lower contact, 10 cm wide.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
141.5	143	185	1.5	1610	105	211	1.3	5
143	144.8	186	1.8	1650	266	195	1.6	5
144.8	146.7	187	1.9	1040	105	100	0.6	2
146.7	148.7	188	2	390	89	44	0.3	2
148.7	149.9	189	1.2	685	60	120	0.7	5
149.9	151	190	2.1	1020	46	161	0.8	0
151	152	191	1	418	28	78	0.6	0
152	153.5	192	1.5	1180	40	143	0.8	5
153.5	155	193	1.5	1440	59	188	0.7	9
155	156.5	194	1.5	2940	84	154	1	12
156.5	158	195	1.5	1260	345	211	1.2	7
158	159	196	1	999	87	235	0.8	10
159	160	197	1	761	413	228	0.9	0
160	161.1	198	1.1	1130	1090	53	1.3	9
161.1	162.5	199	1.4	3240	209	175	1.1	14
162.5	164	200	1.5	1810	242	120	1.2	21
164	165.5	201	1.5	3540	583	109	1.2	14
165.5	167.2	202	1.7	1650	452	162	0.7	17

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		166.7 - 4 cm wide beige coloured cherty Felsic Tuff unit (silicified sediment?). Sharp contacts at 50 degrees to core axis. 10% fine grained visible quartz fragments.									
167.2	185.0	**5b** Gabbro. Sharp upper contact at 30 degrees to core axis, cherty medium green. Coarsens downhole to medium grained, glomerophyric as per 25.1 - 35.0. 185.0 - End Of Hole.									

MPH CONSULTING LIMITED

DRILL HOLE RECORD

HOLE NO.: MT98-3

CLIENT: Opawica Explorations Inc.
PROPERTY: Maisonville Township
CLAIM NO.: 1050105
COLLAR CO-ORDINATE: L4050W, 1100S
COLLAR ELEVATION: 0
AZIMUTH: 320
INCLINATION: -50
LENGTH: 392 m
CORE LOCATION: Tom Obradovich Office, Kirkland Lake
REMARKS: To Test HLEM Conductor

COMMENCED: 2/2/98
COMPLETED: 2/5/98
DRILLED BY: Norex Drilling Limited
HOLE TYPE: Diamond
CORE SIZE: BQ
CASING LEFT IN HOLE: 2 m
LOGGED BY: Michael P. Rosatelli

M. P. Rosatelli

DOWN HOLE SURVEY INFORMATION

METHOD: SPERRY SUN

DEPTH (m)	AZIMUTH	INCLINATION
0	320	-50
74	321	-50
158	328	-52
230	338	-54
353	338	-54
392	340	-50

FROM	TO	DESCRIPTION
0.0	2.0	**OVB** Hole reamed 20 cm into bedrock.
2.0	34.5	**5b** Medium grained, glomerophyric Gabbro. Described in detail in MT98-2 Now moderately magnetic.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
34	34.5	203	1.5	81	6	124	0.1	7

FROM	TO	DESCRIPTION
		27.5 - Fine grained lower contact, gradational. Still magnetic. 34.0 - 34.5 - Cherty medium greyish-green to lower contact. 10% quartz-calcite fracturing, 1-2% disseminated pyrite. Non-magnetic. 10% visible remnant fine mafic phenocrysts. Sharp lower contact at 70 degrees to core axis.
34.5	45.2	**2d (gf-chl, qtz-ank)** Medium green. Fine grained granular texture. Porphyritic with quartz-feldspar? phenocrysts. Occasional medium to coarse grained cherty grey sub-angular felsic volcanic fragments, stretched and foliated. Variable brecciated, metre wide scale fine to coarse grained breccia, fragment supported, grey quartz-carbonate (ankerite?)-graphitic (chlorite altered) matrix intercalated with more massive weakly brecciated rock, weakly developed foliation (stretching) at 30 degrees to core axis. Well mineralized, overall 10-15% fine to medium grained blebby, coarse grained aggregates and stringer pyrite (where foliated), hosted by quartz-cabonate matrix, increased percentage in areas of stronger graphite-chlorite alteration. Second fine cubic pyrite noted in fragments, appears to be related to minor quartz-calcite stringers and veinlets. Weak mottled carbonatization (calcite), lighter green and medium green less altered fragments. 34.5 - 34.8 - 10% hairline pyritic chlorite-quartz-calcite hairline fractures. 34.9 - 10 cm wide Diabase Dyke, at 40 degrees to core axis. Sheared calcite altered (veining) wallrock contacts. Little contact alteration at lower contact.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
34.5	35	204	0.5	394	5	96	0.2	2
35	36.5	205	1.5	386	4	73	0.1	5
36.5	38	206	1.5	817	3	120	0.2	0
38	39.5	207	1.5	176	4	75	0.2	0
39.5	41	208	1.5	137	3	68	0.1	5
41	42.5	209	1.5	192	1	82	0.2	0
42.5	44	210	1.5	214	1	66	0.3	0
44	45.2	211	1.2	111	1	64	0.2	0

FROM	TO	DESCRIPTION
45.2	63.7	**6a** Feldspar Porphyry. 30% cream coloured feldspar phenocrysts set in a medium greenish-grey hard aphanitic matrix with 10% fine amphibole phenocrysts. Sharp intrusive upper contact at 80 degrees to core axis. Narrow fine grained upper contact, 10 cm, coarsening downhole. Weakly fractured, 10% quartz-calcite stringers and veinlets. Non-magnetic. Patchy coarse grained fine grained disseminated pyrite to 45.6, traces to locally 1% downhole. 60.5 - 63.4 - Intercalated fine grained and porphyritic phases, gradational contacts. Sharp lower contact at 60 degrees to core axis. 63.4 - 63.7 - Fine grained lower contact, bleached grey quartz-carbonate (dolomite?) altered, brecciated with 20-30% unaltered fine to medium grained porphyry fragments. 2-3% fine disseminated pyrite in fragments. Flow-banded lower contact.
63.7	64.0	**2d, 3a,d (chl)** Cherty grey to beige coloured. Strongly sheared at between 30-40 degrees to core axis. 30% green interstitial chlorite alteration, matrix and chlorite fracture controlled alteration, resulting breccia appearance, hosts at least 10% fine-medium grained blebby pyrite.
64.0	64.3	**7** Sharp intrusive contacts at 30 degrees to core axis. Same as per detailed description in MT98-2. Finer grained version, decreased mafic component, no pervasive calcite alteration of matrix, strong quartz-calcite fracturing.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
45.2	46	212	0.8	34	1	18	0.1	2
63	63.7	213	0.7	56	1	45	0.4	5
63.7	64	214	0.3	32	3	49	0.5	10

FROM	TO	DESCRIPTION
64.3	64.6	**2d, 3a (chl)** Continuation of unit described at 63.7 - 64.0. Massive fine grained lower contact. Sharp lower contact at 40 degrees to core axis.
64.6	69.3	**2d (cb, qtz-ank)** Similar to 34.5 to 45.2. Fine grained, medium greyish-green to green, mottled appearance with greyer pervasive calcite alteration and lesser altered darker green matrix. *Porphyritic in nature with fine to coarse grained buff to orange-brown quartz-feldspar?* (altered to chlorite-calcite), sub-rounded to sub-angular (coarser grained), general fining downhole. 71.5 - 77.0 - *Locally 10-20 cm wide coarse grained flow breccia banding, sharp to* gradational contacts, sheared and stretched, average 40 degrees to core axis. Variable brecciated. 64.5 - 64.9 - Fine to coarse grained fragment supported breccia. 20% grey quartz-carbonate (ankerite?) matrix, probably flow-top pillow breccia subsequently brecciated and altered. 5-10% fine diseminated and stringer pyrite. Cherty silicification of fragments. Occasional intermediate to felsic (altered) coarse grained fragments from upper unit. 64.9 - 65.3 - Gradational lower contact, brecciated and silicified, more massive section. Decreased pyrite content to below 5%. 65.3 - 69.3 - Weakly brecciated section, local well developed breccia zone as described at 64.5 - 64.9, over cm scale widths, appearance of cherty bluish-grey overprint of quartz-carbonate matrix alteration, may represent silicification event noted at 64.5 - 64.9 or may reflect silicified graphitic matrix, sulfidic with pyrite-pyrrhotite, pyrrhotite dominated downhole. Weak development of late quartz-calcite fracturing.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
64.3	64.6	215	0.3	76	5	103	0.8	7
64.6	65.3	216	0.7	116	3	84	0.4	5
65.3	66.5	217	1.2	84	1	69	0.2	39
66.5	68	218	1.5	95	1	88	0.1	0
68	69.3	219	1.3	96	1	84	0.1	17

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		65.8 - 4 cm wide Lamprophyre Dyke at 30 degrees to core axis. 67.5 - 68.0 - Flow-top breccia									
69.3	70.6	**7** Similar to 64.0 - 64.3. Coarser grained, calcite altered matrix. Sharp intrusive contacts, 30 degrees and 50-90 degrees to core axis respectively.									
70.6	80.8	**2d (cb, qtz-ank)** Continuation of unit described at 64.6 - 69.3. Weakly brecciated as par 65.3 - 69.3. Locally Flow-top Pillow Breccia zones. Increased pervasive calcite alteration and late quartz-ankerite (altered to calcite) fracturing to upwards of 15%. 79.4 - 80.2 - Bleached grey zone, 10% interstitial coase grained aggregates of pyrrhotite, distinctly zone with reddish-brown (pyrrhotite) rims with metallic bronze cores. Sulfide zonation is evident uphole at 76.5. Sharp lower contact at 35 degrees to core axis.	70.6	72	220	0.4	86	1	78	0.1	3
			72	73.5	221	1.5	76	2	82	0.4	29
			73.5	75	222	1.5	98	1	75	0.4	9
			75	76.5	223	1.5	86	1	87	0.2	10
			76.5	78	224	1.5	60	1	74	0.3	0
			78	79.4	225	1.4	61	1	77	0.3	7
			79.4	80.8	226	1.4	57	1	66	0.2	3
80.8	93.7	**2a/2d (gf-chl-sp,gn,cp)** Medium green. Fine grained, similar appearance as upper unit, albeit no visible fragments, massive for most part. Significant decrease in late quartz-calcite fracturing, corresponding decrease in matrix calcification. Moderate development of graphitic (variable chloritized) alteration as fine grained disseminations and hairline tension gashes, comprise at least 10% of rock.	80.8	82	227	1.2	120	3	63	0.2	0
			82	83	228	1	2960	1050	104	0.6	2
			83	83.8	229	0.8	7460	30	83	0.2	14
			83.8	84.5	230	0.7	18600	43	41	0.3	2
			84.5	85.5	231	1	2730	281	21	0.3	10

FROM	TO	DESCRIPTION
		80.8 - 83.0 - Flow-top pillow breccia. Fine to very coarse grained with 10-30% grey quartz-carbonate (ankerite?) matrix. 1-2% bronze/reddish brown pyrrhotite to 82.0, fine grained blebby pyrite from 82.0 - 82.6, .2-.5% medium grained blebby galena in graphitic/chloritic matrix. Fine sphalerite noted in late quartz-calcite veinlet at 82.0. Gradational lower contact.
		83.0 - 89.5 - Sphalerite Mineralized Zone. Highly variable reddish-purple fine to coarse grained blebby sphalerite, hosted by chloritized graphitic fractures, locally percentage of sphalerite reaches 10%, probably higher amounts but fine grained nature of the mineralization and graphitic host obscures much of the visible sphalerite. Only a minor amount of the sphalerite is hosted in quartz-calcite fractures (remobilized), also their is a late quartz-calcite overprint of the chloritized graphitic alteration. Pyrite mineralization is weak, average of 1-3%. Minor visible chalcopyrite and galena associated with the sphalerite.
		Visually higher grade zones at 83.8 - 84.5 (.5-1% of sphalerite is honey-coloured) and 88.0 - 89.3.
		89.5 - 93.7 - Continuation of mineralized zone described above, albeit only minor visible sphalerite.
		91.0 - Increasing quartz-calcite fracturing, bleached grey cherty wallrock, pyritic (fine disseminations), increasingly sheared to lower contact at 40 degrees to core axis.
		93.4 - Cherty tan quartz-carbonate (ankerite?)-graphitic flooding/breccia, 40 cm wide.
		Gradational lower contact.
93.7	107.6	**2a/2d (gf-sp,gn, qcv)** Continuation of upper unit. Addition of matrix controlled graphitic alteration, variably moderately developed breccia units over .5 to 1 metre widths intercalated with weakly brecciated zones. Graphitic alteration increasing in intensity downhole from fine grained disseminations and tensions gashes to fine to very coase grained fragment supported graphitic breccia, graphite content consists of approximately 10-20%, weak-moderate chloritization.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
85.5	86.5	232	1	200	981	25	0.6	29
86.5	88	233	1.5	195	827	10	0.3	3
88	89.3	234	1.3	13600	282	136	0.4	2
89.3	91	235	1.3	108	34	73	0.3	9
91	92.5	236	1.5	106	4	71	0.2	0
92.5	93.7	237	1.7	66	4	59	0.2	0
93.7	95	238	1.3	116	12	73	0.1	5
95	96.6	239	1.6	4550	1260	82	0.4	9
96.6	98	240	1.4	108	12	78	0.4	0
98	99.5	241	1.5	104	1	62	0.3	0

FROM	TO	DESCRIPTION
		Weakly pyritic as in upper unit.
		100.5, 100.8 & 100.9 - 1cm wide Fault Gouge, at 60 degrees to core axis.
		101.3 - Possible flow-top contact at 55 degrees to core axis, lower flow may represent 30 cm wide *Flow-top Breccia, intense grey quartz-carbonate (ankerite?)-graphite altered matrix.* Sulfidized (blebby brassy pyrite) upper contact. Sharp lower contact at 60 degrees to core axis.
		Sphalerite Mineralized Zones at:
		95.7 - 96.5 - 1-3%, remobilized at quartz-calcite vein contacts with wallrock. Traces of sphalerite outbroad.
		100.5 - 101.3 - .1-.2% fine sphalerite in graphitic matrix, increasingly pyritic downhole, 10-15%, in graphite.
		99.7 - 20% fine disseminated sphalerite in banded quartz-calcite alteration, 4 cm wide, uphole from Fault Gouge.
		102.5 - 103.3 - Patchy concentrated sphalerite, pyritic as per 100.5 - 101.3 (looks to be related to late quartz-calcite fracturing).
		102.6 - 10% remobilized fine sphalerite, over 5 cm. .5% downhole to 109.0.
		103.0 - 3 cm wide clot of graphite, at least 20% sphalerite composition. 1% from 109.0 to end of sample.
		1% or less sphalerite to lower contact.
107.6	109.9	**2a (chl, qcv,ser)**
		Sharp upper contact at 15 degrees to core axis.
		Similar appearance as per upper unit without graphitic alteration.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
99.5	100.5	242	1	326	132	74	0.4	7
100.5	101.3	243	0.8	1840	1120	94	0.9	14
101.3	102.5	244	1.2	1840	896	20	0.8	9
102.5	103.3	245	0.8	11900	10800	137	2.3	19
103.3	105	246	1.7	381	125	81	0.4	5
105	106.5	247	1.5	145	17	92	0.3	7
106.5	107.6	248	1.1	157	10	94	0.3	9
107.6	109	249	1.4	118	13	69	0.3	22
109	109.9	250	0.9	116	1	82	0.2	7

FROM	TO	DESCRIPTION
		Fine grained, granular matrix, porphritic with the appearance of fine grained quartz-feldspar? phenocrysts, occasional cherty grey angular medium to coarse grained sub-angular fragments. 107.6 - 109.0 - Variable altered. Brecciated calcite altered upper contact, gradational lower contact to more massive and weakly fractured flow or tuff below 108.6. 2-3% fine to medium grained disseminated pyrite in quartz-calcite alteration. 108.0 - 108.3 - Sericitized, gradational contacts. 108.4 - 108.6 - Coarse grained flow breccia. Sharp contacts at 60 degrees to core axis. Chloritized and quartz-calcite altered matrix. Cherty grey fine-coarse grained sub-angular fragment supported. Increasing silicification below 108.6. Minor banded sericite alteration at 50 degrees to core axis, fragmented (altered flow breccia) 109.0 - 109.9 - Massive weakly fractured section. Sharp alteration front contact at 50 degrees to core axis, quartz flooded. 10% pyritic quartz-calcite fracturing at upper contact, decreasing to 2-3% downhole, corresponding increase to 10% of grey quartz-carbonate (ankerite) fracturing, weak brecciated appearance, increased sulfide content to 10%, in quartz-calcite fractures and disseminated in silicified wallrock. 109.2 - Two 1cm wide chlorite-sericite shears at 60-80 degrees to core axis. Sharp lower contact at 30 degrees to core axis.
109.9	118.7	**3c (ser, qtz-ank)** Coarse grained Lapilli Tuff. Buff coloured, sericitized fragments, sub-rounded, tuffaceous, fine grained (quartz) granular composition. Intercalated with fine ash tuff (matrix) to 111.5 Strong interstial quartz-carbonate (ankerite?) alteration of varying composition, well

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
109.9	111.5	251	1.6	164	3	57	0.1	0
111.5	113	252	1.5	201	6	84	0.2	14
113	114.2	253	1.2	173	5	100	0.2	3

FROM	TO	DESCRIPTION
		mineralized.
		109.9 - 111.5 - Quartz-ankerite? (calcite overprint) altered (matrix and 2-3% fractures, cherty grey - silicified in sericitized lapilli tuff beds). Variable mineralized, lapilli tuff beds are pyrrhotite rich with local sections of 10% coarse grained aggregates interstial fragments, 10% fine to medium rounded aggregates hosted by fragments. The tuffaceous beds are dominated by fine disseminated cubic pyrite adjacent to quartz-calcite fractures, 5-10%, 20% to lower contact.
		111.5 - 118.7 - Quartz-ankerite? (calcite overprint) altered matrix, little veining, cherty grey (silicified). 10-20% interstitial medium to coarse grained aggregates of pyrrhotite-pyrite, appear to be related to matrix alteration and replacement of fragments, further 10% or more fine to medium grained sulfide aggregates in remaining fragments. Sulfides are predominately reddish-brown pyrrhotite, pyrite rich core at 114.2 - 116.2, semi-massive sections.
		Sharp lower contact at 20 degrees to core axis. 3 cm wide pyritic-quartz-calcite-chlorite alteration.
118.7	124.2	**2d (chl, qtz-ank)**
		Similar medium greenish-grey unit as per 107.6 - 109.9 Coarse grained flow breccia appearance with darker coloured fine grained brecciated chloritized matrix, porphyritic with 10% fine grained cream coloured feldspar phenocrysts. Weakly altered, 10-20% late grey quartz-carbonate (ankerite?) alteration of fine grained flow breccia, locally up to 10-15% coarse grained pyrrhotite aggregates over cm scales (to 0.5m) to 123.3. Less than 10% late quartz-calcite fractures, pyritic in pyrrhotite mineralized zones.
		121.4 - Wispy banded sphalerite at 10 degrees to core axis.
		Sharp lower contact at 30 degrees to core axis.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
114.2	116.2	254	2	149	15	64	0.3	12
116.2	117.5	255	1.3	582	9	73	0.2	3
117.5	118.7	256	1.2	523	8	72	0.2	0
118.7	120	257	1.3	109	1	67	0.1	5
120	121	258	1	134	2	68	0.1	0
121	122	259	1	89	3	72	0.1	5
122	123.3	260	1.3	93	4	54	0.1	3
123.3	124.2	261	0.9	154	1	73	0.1	15

FROM	TO	DESCRIPTION
124.2	128.0	**2d (gf, qtz-ank)** Continuation of upper Porphyritic Flow Breccia. Predominately graphitic alteration of fine grained interstitial flow breccia, gradational with replacement of grey quartz-dolomite alteration. 1% fine to medium grained blebby pyrrhotite in graphite (host of sphalerite mineralized zones uphole). 1-3% late quartz-calcite fractures, cross-cut carbonate-graphite alteration, not pyritic. Pervasive calcite alteration of groundmass. Sharp lower contact at 30 degrees to core axis, strong quartz-calcite veining/banding over lower 20 cm, +50% of rock, bleached wallrock.
128.0	135.0	**2d (qtz-ank, sil)** Same as 118.7 - 124.2. Progressively increasing grey interstitial quartz-carbonate (ankerite?) alteration downhole, making for well developed breccia appearance below 131.0. Brecciated sections contain between 5-10% coarse grained pyrrhotite aggregates (wallrock to quartz-ankerite alteration), corresponds to increased intensity of late pyritic quartz-calcite fracturing. 133.3 - 135.0 - Cherty grey silicification of quartz-ankerite alteration, weakly sheared and deformed (at 40 degrees to core axis). Decreasing quartz-carbonate (ankerite?) alteration (patchy pyrrhotite mineralization), silicification of wallrock, cherty. Strong fine disseminated cubic pyrite adjacent quartz+/-calcite fractures. Coarsening of feldspar phenocysts downhole, medium grained, aggregates, calcite and chlorite altered. Sharp undurated lower contact at 50 degrees to core axis.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
124.2	125	262	0.8	203	1	107	0.1	29
125	126.5	263	1.5	194	1	84	0.1	2
126.5	128	264	1.5	170	1	80	0.1	0
128	129.5	265	1.5	275	7	89	0.2	15
129.5	131	266	1.5	233	1	81	0.2	0
131	132	267	1	260	1	77	0.1	24
132	133.3	268	1.3	174	2	62	0.2	27
133.3	135	269	1.7	195	1	55	0.2	28

FROM	TO	DESCRIPTION
135.0	135.2	**4b** Grey, fine grained, massive. Minor quartz-calcite fractures, pyritic aureole. Increasing fine disseminated pyrite to lower contact. Sharp lower contact at 20 degrees to core axis. 2 cm coarse grained Greywacke-Lithic Arenite marks lower contact. Graphitic fragments and laminated bedding to lower contact. Semi-massive pyrrhotite-pyrite. Strong grey quartz-carbonate (ankerite?) alteration interstitial fragments.
135.2	336.3	**4a (qcv-sp,gn,cp)** 135.2 - 137.4 - Mostly black argillite with 10-20% thinly laminated fine grained granular greywacke beds, at 20 degrees to core axis (pervasive calcite altered). 10% conformable quartz banding, pyritic with fine-medium grained blebby pyrrhotite cores. 2-3% pyrrhotite-pyrite (sphalerite-chalcopyrite) late fractures. Sharp lower contact at 30 degrees to core axis, marked by 2 cm fine to coarse grained calcite breccia. 137.4 - 147.5 - Opposite of upper unit where argillite/greywacke lithologies are roughly equal proportions. Several fold noses parallel to core axis between 140.5 - 143.5. Weakly mineralized, confined to late quartz-calcite fractures, pyritic with sulfidized wallrock, minor visible sphalerite, traces of chalcopyrite and galena. Argillite is variable silicified throughout unit, cherty grey-black. Possible fine bedded sphalerite in greywacke at 143.0 - 143.5 and 147.0 - 147.5. Bedding steepening to 80 degrees to core axis to lower contact. Sharp lower contact at 70 degrees to core axis. 147.5 - 149.7 - Carbonaceous Argillite. Black, graphitic composition. Similar to unit at 135.2 - 137.4 with thinly laminated dark argillaceous greywacke beds at 50 degrees to core axis, well mineralized.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
135	135.5	270	0.5	97	11	60	0.2	38
135.2	137.4	271	2.2	195	11	100	0.3	27
137.4	138.5	272	1.1	151	5	54	0.2	12
138.5	140	273	1.5	117	3	43	0.1	14
140	141.5	274	1.5	50	1	34	0.1	10
141.5	143	275	1.5	63	1	32	0.1	9
143	144	276	1	89	1	35	0.2	0
144	146	277	2	109	7	39	0.1	12
146	147.5	278	1.5	160	8	46	0.1	15
147.5	149.7	279	2.2	203	99	127	0.2	24
149.7	151.8	280	2.1	133	3	46	0.1	5

FROM	TO	DESCRIPTION
		148.3 - 148.7 - Weakly brecciated, quartz-calcite altered. Gradational lower contact. 149.7 - 151.8 - Same as 137.4 - 147.5. Bedding at 50 degrees to core axis. Variable silicified, upper contact confined to greywacke beds downhole selective silicification of argillite beds, argillite dominate lithology below 151.0. Weakly mineralized. 151.8 - 153.8 - Carbonaceous argillite. Gradational lower contacts. 153.8 - 160.8 - Fine grained greywacke is dominate lithology. Thickly bedded,three distinct uniform beds starts off with 50 cm carbonaceous upper contact (thicker downhole), grades into greywacke with thinly laminated argillite beds (20 degrees to core axis) to fine to coarse grained (downhole) sub-angular carbonaceous argillite fragments (core of unit). Appearance of fine grained disseminated cubic pyrite, increasing intensity downhole, late overprinting in all lithologies, 10% to lower contact. 160.8 - 188.5 - Argillite. Black, less than 10% thinly laminated to very thinly bedded greywacke, at 30-50 degrees to core axis. Moderate to strong quartz-calcite fracturing (including the odd vein), from 10% (fractured) to 30% over narrow cm to +1metre wide sections, weakly pyrite,1-2%, as fine to medium grained disseminations, blebs (aggregates) and stringers, traces of visible sphalerite. 171.5 - 174.0 - Greywacke bed, gradational contacts, 10% fine sub-angular argillite fragments, fine upper contact, weak quartz-calcite fracturing. 181.0 - 181.7 - Same as above, sharp contacts at 50 degrees to core axis, fragmental contacts. 188.5 - 191.7 - Carbonaceous Argillite. Same as 147.5 - 149.7. Sharp contacts at 30 and 60 degrees to core axis. Brecciated, moderate to strong pyritic quartz-calcite alteration, locally with visible fine grained sphalerite and minor galena, cross-cuts earlier bedded pyrite

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
151.8	153.8	281	2	225	19	90	0.2	21
153.8	155.3	282	1.5	164	3	44	0.1	0
155.3	156.9	283	1.6	200	3	42	0.1	2
156.9	159.6	284	2.7	136	3	36	0.1	17
159.6	160.8	285	1.2	237	9	58	0.1	7
160.8	164	286	3.2	848	100	168	0.4	22
164	167	287	3	840	87	174	0.4	19
167	170	288	3	642	30	136	0.3	21
170	171.5	289	1.5	699	12	175	0.4	27
171.5	174	290	2.5	284	73	54	0.2	7
174	176	291	2	327	11	114	0.2	21
176	179	292	3	327	10	90	0.2	15
179	181	293	2	515	8	93	0.3	38
181	181.7	294	0.7	210	8	71	0.2	17
181.7	185	295	3.3	716	122	160	0.5	27
185	188.5	296	3.5	772	55	137	0.5	5
188.5	191.7	297	3.2	1320	160	150	0.6	14
191.7	194	298	2.3	333	25	90	0.3	24
194	197	299	3	521	26	125	0.3	21
197	200	300	3	199	8	72	0.1	7

FROM	TO	DESCRIPTION
		stringers and disseminations.
		189.4 - 190.3 - Interbedded argillite and greywacke bed, sharp contacts at 20-30 degrees to core axis, strongly deformed contacts.10-15% pyritic quartz-calcite fractures with visible sphalerite.
		191.7 - 202.9 - Argillite. Same as 160.8 - 188.5. 10% or less late pyritic quartz-calcite fractures, show well developed halos of pyrite extending .5 cm into wallrock, traces of visible sphalerite. Very thickly bedded, beds marked by greywacke or lithic arenite beds greater than 20 cm in width, show either coarsening of grain or argillite/greywacke fragment size down hole respectively.
		201.5 - 202.9 - Massive, increasing carbonaceous (graphitic) content. Weak quartz-calcite fractures.
		202.9 - 212.6 - Carbonaceous Argillite. Same as 188.5 - 191.7. Sharp contacts at 30 and 15 degrees to core axis.
		206.0 - 212.6 - Broken and blocky core.
		212.6 - 263.4 - Argillite. Same as 191.7 - 202.9. Greywacke bedding averages 20-30 degrees to core axis. Individual greywacke/lithic arenite sedimentary contacts, at 221.3, 224.4, 226.4, 228.7, 237.1, .5-1 metre widths, show general coasening downhole (graphitic lithic fragments). Increased conformable stringer pyrite and medium to coarse grained aggregates of fine to medium disseminated cubic pyrite.
		237.5 - 241.0 - Increased quartz-calcite fracturing. Well developed intermittent matrix (quartz-calcite) breccias at 238.8 and 239.0 (10-20 cm wide), intercalated with weaker developed breccia to lower contact, 10% pyrite with pyrrhotite, patchy cherty silicification of quartz-ankerite alteration. Sharp upper contact (lithic arenite) at 30 degrees to core axis, sharp lower contact at 30 degress to core axis (laminated to bedded argillite/greywacke and black argillite downhole).

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
200	201.5	301	1.5	745	162	123	0.3	15
201.5	202.9	302	1.4	1860	87	134	0.6	26
202.9	206	303	3.1	2120	299	162	0.8	19
206	208	304	2	1460	271	133	0.8	36
208	210	305	2	2010	672	50	0.8	26
210	211	306	1	1340	1850	55	0.8	14
211	212.6	307	1.6	3430	469	216	0.7	24
212.6	215	308	1.4	1490	310	145	0.5	27
215	217	309	2	265	13	76	0.2	9
218	221	310	3	334	14	90	0.4	19
221	224	311	3	274	17	89	0.3	15
224	227	312	3	279	12	81	0.3	0
227	230	313	3	264	12	74	0.2	7
230	233	314	3	323	18	93	0.3	0
233	236	315	3	624	19	120	0.4	7
236	237.5	316	1.5	348	25	178	0.3	5
237.5	241	317	1.5	834	18	112	0.4	0
241	243	318	2	734	36	276	0.7	3
243	246	319	3	736	21	146	0.5	3
246	249	320	3	314	10	79	0.2	2

FROM	TO	DESCRIPTION
		245.0 - 263.4 - Weakly fractured, 2-3% late quartz-calcite fractures. Massive continuous argillite+/-greywacke sequence.
		256.1 - 257.4 - Fault Zone. Carbonaeous argillite, weak quartz-calcite alteration, broken and blocky ground. At 20 degrees to core axis.
		258.0 - Fault Gouge (same as above). 1 cm wide, at 20 degrees to core axis. Progressive *increase in quartz-calcite fractures from upper contact.*
		263.4 - 274.6 - Predominately argillaceous (fine grained, speckled) greywacke with 20% laminated to thinly bedded black argillite beds at 20-30 degrees to core axis. Weak quartz-calcite fracturing. Dark argillaceous contacts.
		274.6 - 336.3 - Argillite. Same as 212.6 - 263.4. Variable mineralized:
		274.6 - 285.6 - Predominately pyrite in late quartz-calcite fractures with well developed pyritic wallrock halos (see 191.7 - 202.9), only minor conformable sulfide (pyrrhotite +/- pyrite).
		297.0 - 319.5 - Gradational conversion from pyrite to pyrrhotite, increased visual fine spahalerite to .2 - .3%.
		284.7 - 320.5 - Addition of 1-3% conformable pyrite.
		283.7 - 284.7 - Argillaceous Greywacke (same as 263.4 - 274.6), laminated argillite bedding at 30 degrees to core axis, tops are suggestive downhole, coarsening argillite fragments.
		285.6 - 289.3 - Thickly bedded greywacke (as above), approximately 50% of section, strongly deformed folded core parallel to core axis, silicification or carbonatization of greywacke (bleached), microfaulting of beds (mm scale dextral offsets).
		301.8 - 303.4 - Debris Flow, sharp contacts at 40 and 30 degrees to core axis. Consists of

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
249	252	321	3	361	9	104	0.1	3
252	255	322	3	414	12	102	0.1	2
255	256.5	323	1.5	1010	59	140	0.5	5
256.5	259	324	2.5	2570	123	216	0.8	14
259	262	325	3	728	52	122	0.4	2
262	263.4	326	1.4	771	45	189	0.4	7
263.4	266	327	2.6	215	11	51	0.1	2
266	269	328	3	141	5	46	0.1	0
269	272	329	3	169	7	51	0.1	5
272	274.6	330	2.6	197	8	58	0.1	3
274.6	278	331	3.4	358	14	89	0.1	2
278	281	332	3	470	18	115	0.2	7
281	283.7	333	2.7	454	16	92	0.2	2
283.7	285.6	334	1.9	347	19	64	0.1	0
285.6	287	335	1.4	468	30	63	0.1	0
287	289.3	336	2.3	186	34	41	0.1	0
289.3	292	337	2.7	780	28	100	0.3	0
292	295	338	3	739	32	133	0.4	5
295	297	339	2	1280	56	149	0.5	9
297	300	340	3	630	24	138	0.4	5

FROM	TO	DESCRIPTION
		coarse grained argillite (30-40%) sub-rounded argillite fragments set in a grey fine grained greywacke matrix with fine argillite fragments.
		328.0 - Carbonaceous slips along wallrock contacts of random oriented quartz-calcite fractures.
		333.6 - 334.7 - Lamprophyre Dyke. Sharp contacts at 50 degrees to core axis. Same as 69.3 - 70.6.
		Sharp lower contact at 70 degrees, 5 cm quartz-calcite vein
336.3	392.0	**2d (qtz-ank, chl)**
		Same as 128.0 - 135.0.
		Light greyish-green, hard, porphyritic with an average of 10% fine grained creamed coloured feldspar phenocrysts and minor quartz, variable calcite-chlorite altered.
		Moderate to strong grey quartz-carbonate (ankerite?) alteration, variably brecciated appearance (re-fracturing of original flow breccia) medium to coarse grained.
		Intermittent cm scale pyrite+/-pyrrhotite zones, semi-massive, hosted by quartz-carbonate alteration, very fine to fine sulfide aggregates, pyrite overprints pyrrhotite.
		Weak late quartz-calcite fracturing, pyritic (remobilized) in sulfide zones noted above.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
300	301.8	341	1.8	496	16	97	0.2	7
301.8	303.4	342	1.6	369	11	76	0.1	0
303.4	305	343	1.6	577	18	76	0.3	3
305	308	344	3	783	37	131	0.4	12
308	311	345	3	1070	56	144	0.4	9
311	314	346	3	414	23	94	0.2	5
314	317	347	3	1030	48	142	0.6	12
317	319.5	348	2.5	1640	89	144	1	17
319.5	322	349	2.5	1040	72	139	0.6	0
322	325	350	3	556	46	156	0.4	0
325	328	351	3	918	54	132	0.7	10
328	331	352	3	2080	93	224	1	26
331	333.6	353	2.6	904	44	147	0.6	22
334.7	336.3	354	1.6	470	6	108	0.2	7
336.3	337	355	0.7	80	1	87	0.1	5
337	339	356	2	89	1	57	0.1	3
339	341	357	2	85	4	74	0.2	19
341	343	358	2	75	1	67	0.1	3
343	344.5	359	1.5	97	1	75	0.1	7
344.5	346	360	1.5	100	1	64	0.1	7

FROM	TO	DESCRIPTION
		336.3 - 337.0 - Mineralized and altered upper contact. 15-20% pyrrhotite over upper 40 cm, increased late quartz-calcite fracturing. Gradational lower contact, decreasing sulfide (pyrite dominated) and fractures.
		346.7 - 349.9 - Interspersed fine grained breccia, locally strong chloritization of hostrock fragments, heavily mineralized 10-30 cm semi-massive pyrite zones, little pyrrhotite.
		349.9 - 370.7 - 10% 1-4 cm wide fine grained chloritized breccia as described above, not mineralized (mineralization confined to coarser breccias), average 30 degrees to core axis, some at 60 degrees.
		353.0 - Odd random glassy grey quartz (fine to medium grained pyrrhotite at wallrock boundaries) and quartz-calcite veinlets (355.1 - hard orange-brown rim) to lower contact.
		356.7 - Cherty grey quartz flooding of matrix and quartz-carbonate alteration.
		370.7 - 377.5 - Fine grained chloritized (fine grained disseminated speckled chlorite alteration of fragments) flow breccia, strong interstitial grey quartz-carbonate (ankerite?) alteration. Strong very fine grained interstitial (with carbonate) pyrrhotite, 10% average.
		373.0 - 374.8 - Fine grained massive porphyritic flow. Diffuse contacts. Brecciated upper contact, chery grey flooding quartz-ankerite matrix. 20% glassy grey pyrrhotite quartz (see 353.0) veinlets/veins at 20 degrees to core axis. Veining extends uphole to 271.9. Gradational lower contact.
		377.5 - 386.2 - Continuation of flow described at 349.9 - 370.7.
		379.5 - 381.0 - Orange-brown ankerite? alteration of interstitial quartz-calcite alteration.10-30% pyrrhotite mineralization.
		386.2 - 390.8 - Same as 370.7 - 377.5. Broken upper contact, ground and lost core from 385.9 - 387.7. Sharp lower contact at 40 degrees to core axis.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
346	347	361	1	80	1	90	0.2	0
347	348	362	1	86	1	78	0.2	0
348	349	363	1	58	2	56	0.1	0
349	349.9	364	0.9	79	4	99	0.2	5
349.9	352	365	2.1	90	1	66	0.1	0
352	354	366	2	97	1	76	0.1	5
354	356	367	2	70	3	78	0.2	0
356	358	368	2	112	1	120	0.1	0
358	360	369	2	83	1	78	0.2	0
360	362	370	2	78	4	72	0.3	5
362	364	371	2	96	1	82	0.2	0
364	366	372	2	90	1	76	0	17
366	368	373	2	88	1	90	0.2	5
368	369.5	374	1.5	85	1	74	0.3	12
369.5	370.7	375	1.2	95	1	133	0.1	0
370.7	371.9	376	1.2	104	1	132	0.1	0
371.9	373	377	1.1	103	1	87	0.1	0
373	374.8	378	1.8	83	1	72	0.1	2
374.8	376	379	1.2	99	1	94	0.1	5
376	377.5	380	1.5	73	1	90	0.1	3

FROM	TO	DESCRIPTION
		389.4 - 389.8 - 20% grey quartz+/-calcite veinlets at 50 degrees to core axis.
		390.8 - 392.0 - Continuation of coarse grained breccia as per 377.5 - 386.2, minor fine grained breccia, little sulfides.
		392.0 End Of Hole.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
377.5	379.5	381	2	76	1	68	0.1	0
379.5	381	382	1.5	86	1	75	0.1	43
381	383	383	2	98	1	71	0.1	3
383	385	384	2	57	1	85	0.1	0
385	386.2	385	1.2	54	1	67	0.2	0
386.2	387.7	386	1.5	63	3	38	0.1	0
387.7	389	387	1.3	49	1	70	0.1	5
389	390.8	388	1.8	69	1	54	0.1	3
390.8	392	389	1.2	68	1	65	0.1	2

MPH CONSULTING LIMITED

DRILL HOLE RECORD

HOLE NO.: MT98-4

CLIENT: Opawica Explorations Inc.

PROPERTY: Maisonville Township

CLAIM NO.: ~~584/582~~ 580/581

COLLAR CO-ORDINATE: L6503W, 2400N

COLLAR ELEVATION: 0

AZIMUTH: 50

INCLINATION: -45

LENGTH: 209 m

CORE LOCATION: Tom Obradovich Office, Kirkland Lake

REMARKS: To Test HLEM Conductor

COMMENCED: 2/10/98

COMPLETED: 2/12/98

DRILLED BY: Norex Drilling Limited

HOLE TYPE: Diamond

CORE SIZE: BQ

CASING LEFT IN HOLE: 4.5 m

LOGGED BY: Michael P. Rosatelli

M.P. Rosatelli

DOWN HOLE SURVEY INFORMATION

METHOD: SPERRY SUN

DEPTH (m)	AZIMUTH	INCLINATION
0	50	-45
89	54	-40
206	60	-40

FROM	TO	DESCRIPTION
0.0	4.5	**OVB** Hole reamed to 5.0.
4.5	10.0	**4a,b (qtz-cb, sil, qcv)** Variable altered and mineralized argillite/greywacke sequence. 4.5 - 8.7 - Black massive Argillite, minor laminated grey fine grained granular Greywacke beds at 60 degrees to core axis. 10% pyritic quartz-calcite hairline tension gashes and stringers, two distinctive sets (low angle more common and contains majority of pyrite). Pyrite occurs in both sets of fractures as either individual blebs or aggregates forming pyrite-quartz-calcite fractures. Upper 30 cm of unit is only weakly fractured to 4.8 m. Patchy zones of intense quartz+/-carbonate flooding or quartz-calcite fracturing. Broken and blocky core to 5.7 m.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
4.5	6.6	390	2.1	153	14	63	0.2	0
6.6	7.4	391	0.8	154	22	42	0.1	0
7.4	8.7	392	1.3	105	32	50	0.2	0
8.7	9.5	393	0.8	130	22	47	0.2	2
9.5	10	394	0.5	60	5	42	0.2	12

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		6.6 - 6.9 - Quartz+/-Carbonate Altered Zone. Sharp contacts at 60 and 70 degrees to core axis. Gradational increasing silicification downhole, hard cherty silicified argillite at lower contact. Core of zone (8cm) marked by lithological differentiated alteration consisting of buff coloured cherty (argillite) and granular (greywacke) quartz+/-carbonate flooding. Flooding intensity decreasing downhole, mottled cherty grey (argillite). Very fine disseminated and slips of pyrite noted to be associated with alteration. 7.4 - 7.5 - Quartz-Calcite Breccia. At 30 and 20 degrees to core axis, fragment supported. 2-3% fine disseminated pyrite in alteration. 7.8 - 8.1 - *Quartz+/-Carbonate Altered Zone. Cherty grey flooded alteration, mottled with* 10% unaltered argillite. Intensity of alteration increasing downhole, pyritic. Sharp lower contact at 30 degrees to core axis. Occurrence of late, very soft green fractures with calcite 8.5 - Quartz+/-Carbonate Altered Zone. Sharp alteration front contact at 50 degrees to core axis. Diffuse alteration, grey, cherty to granular at upper contact over 4 cm, mottled and than banded (randomly oriented) downhole. Cross-cut by pyritic quartz-calcite fractures. 8.7 - 9.2 - Fine grained Argillaceous Greywacke. Weak late pyritic quartz-calcite fractures, well developed fine disseminated pyrite halo adjacent veinlet. Gradational contacts. 9.2 - 9.5 - *Argillite as per 4.5 - 8.7. Broken and blocky core. Fractured and mineralized as* above. Sharp veined (5mm quartz-calcite) lower contact at 60 degrees to core axis. 9.5 - 10.0 - Fine grained Greywacke. Argillaceous upper contact, weakly veined and pyritic wallrock halos as described at 8.7 - 9.2. Minor laminated fragmented argillite beds at 60 degrees to core axis. Silicified to lower contact. 20% wispy calcite alteration.									
10.0	11.2	**7** Sharp upper contact at 60 degrees to core axis, 5 mm quartz-calcite veinlet. Bleached mottled (at contacts) grey calcite altered upper contact (15 cm). Visible fine grained feldspathic matrix.	10	11.2	395	1.2	103	3	63	0.2	14

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		Reddish-brown, very fine grained matrix, minor mafic component, grey soft interstitial matrix (carbonate altered?), non-magnetic. Weak quartz-calcite fracturing with minor fine to medium grained disseminated pyrite, cross-cut upper contact, mm scale dextral offset, cross-cut by low-angle calcite fractures with soft green mineral. Three 15, 6 and 20 cm wide rafts of argillite, oriented at 70 degrees to core axis, strongly fractured as per upper unit, weakly mineralized. Sharp lower contact at 55 degrees to core axis.									
11.2	12.1	**4a (sil, qtz-cb, qcv)** Same as 4.5 to 8.7. 11.2 - 11.7 - Mottled, black silicified argillite and medium grey quartz-carbonate flooding. Strong late quartz-calcite fracturing, 10-15%, minor pyrite. 11.0 - 11.1 - Fine grained argillaceous greywacke/argillite over lower 14 cm, argillite bedding at 60 degrees to core axis, weakly fractured.	11.2	12.1	396	0.9	122	1	54	0.2	0
12.1	12.7	**4b (cb)** Fine grained and argillaceous. Finer grained downhole. Altered 20 cm core, bleached grey pervasive calcite altered to cherty coarse grained quartz-carbonate altered downhole. Weak development of late quartz-calcite fracturing.	12.1	12.7	397	0.6	108	4	68	0.1	0
12.7	15.9	**4a (sil, qtz-cb)** Continuation of unit argillite described at 11.2 - 12.1 Sharp upper contact at 60 degrees to core axis. Decrease in late quartz-calcite fracturing from 10% at upper contact to 1-2% downhole, well developed pyritic halos adjacent to veinlets above 13.9 10-30% laminated fine grained greywacke beds at upper contact and below 13.9 (strongly folded and sheared to lower contact.	12.7	14	398	1.3	113	4	65	0.2	3
			14	14.8	399	0.8	104	8	46	0.2	0
			14.8	15.9	400	1.1	61	11	45	0.2	0

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		14.8 - 15.9 - Deformed, Altered and Veined Zone. Quartz+/-Carbonate flooded upper contact (40 cm), grades downhole from fine grained grey granular quartz-carbonate flooding to cherty grey downhole. Silicified hard cherty medium grey greywacke downhole, strong hairline chlorite-quartz-calcite fractures, lesser tension gashes and stringers. Strongly sheared and veined glassy grey quartz-calcite veining (<1 cm), traces of pyrite, cross-cut by late pyritic quartz-calcite tension gashes, chloritized wallrock, at 20 degrees to core axis.									
15.9	16.3	**7** Similar to 10.0 - 11.2. Very fine reddish-brown hard groundmass. Sharp sheared intrusive contacts at 20 degrees to core axis. Fine grained interstitial carbonate altered. Upper half is fractured, <10% quartz-calcite fractures, weakly pyritic, 4 cm wide zone of 20% fine disseminated pyrite, increased density of fractures (30%).	15.9	16.3	401	0.4	84	8	126	0.4	21
16.3	16.8	**4a (qtz-cb, sil, qcv)** Same as 11.2 - 12.1. 16.3 - 16.6 - Laminated argillite/greywacke bed (upper half) to greywacke dominate bedding with minor fragmented laminated argillite to lower contact. Quartz+/-Carbonate Flooded Zone. Differentiated alteration consisting of buff-grey coloured greywacke and mottled black to cherty grey argillite. Moderately fractured, 5-10% hairline quartz-calcite fractures, cross-cut by quartz-calcite fractures with soft green mineral. Sharp deformed lower contact at 50-70 degrees to core axis. 16.6 - 16.8 - Black pyritic quartz-calcite fractured argillite. Moderate altered lower contact, 30% mottled grey quartz+/-carbonate altered lower contact, 1 cm wide.	16.3	16.8	402	0.5	475	9	107	0.3	12

FROM	TO	DESCRIPTION
16.8	17.1	**7** Same as 15.9 - 16.3. Sharp undeformed contacts at 50 and 60 degrees. Lower contact more diffuse with incorporation of lower argillite wallrock fragments (fine to medium grained, conformable with contact) and interfingering.
17.1	20.1	**4b,a (qtz-cb, qcv-sp, ser)** Black variable quartz+/-carbonate altered as par upper units. Mostly fine grained grey to buff coloured (upper contact), laminated to fragmented argillite bedding at 40-50 degrees to core axis. Strongly veined quartz-calcite fractured zones from 17.1 - 17.2 and 17.6 - 17.9. Cherty grey flooding of greywacke and strongly fractured and brecciation of argillite wallrocks. Upper zone veins contain 2-3% fine disseminated pyrite with traces of sphalerite. 18.1 - 18.3 - Cherty grey quartz+/-carbonate alteration. Diffuse alteration fronts at 60 and 40 degrees to core axis. 19.5 - 20.1 - Patchy sericite alteration (Greywacke). Fragments of argillite at 30 degrees to core axis, decreasing amounts downhole. Well developed cm scale pyritic halos around quartz-calcite stringers/veinlets. Sharp lower contact at 60 degrees to core axis.
20.1	21.8	**4a** Black argillite, minor laminated greywacke beds at 40 degrees to core axis. Weak pyritic quartz-calcite fracturing. Increased low angle hairline quartz+/-calcite fractures with green soft mineral, 10% volume, pyritic, contains tan coloured carbonate. Lower 30 cm consist of alternating laminated argillite and greywacke beds at 50 degrees to

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
16.8	17.1	403	0.3	133	11	67	0.2	0
17.1	18.3	404	1.2	288	29	69	0.2	0
18.3	19.5	405	1.3	79	15	47	0.2	5
19.5	20.1	406	0.6	88	28	35	0.1	0
20.1	21.8	407	0.7	111	5	59	0.3	3

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		core axis, sharp lower contact.									
21.8	25.1	**4b (qtz-cb, qcv)** 21.8 - 23.2 - Very fine grained and grey. Argillaceous to lower contact.Thinly laminated argillite proximal upper contact, at 50-40 degrees to core axis. 22.9 - 10 cm wide coarser grained greywacke bed with +20% fine to medium grained argillite fragments conformable to contacts at 40 degrees to core axis. 21.8 - 22.7 - Decreasing intensity of banded cm scale fine granular quartz+/-carbonate banding conformable to bedding, contains fine disseminated rusty pyrite to 10%. Variable altered wallrock at upper contact. 1-2% low-angle hairline fractures describe in detail in upper section. Sharp deformed lower contact at 50 degrees to core axis. 23.2 - 25.1 - Fine grained greywacke. Laminated argillite at upper contact at 50 degrees to core axis, fragmented fine to coarse grained at upper contact, occasional laminated argillite bed downhole, fragmented fine to medium grained. 24.0 & 24.6 - 15-20 cm wide bleached zones consisting of interstitial and fine grained calcite alteration. 1-3% low-angle hairline fractures, increased calcite and pyrite content, red hematized wallrock contacts, fine grained chlorite altered. Argillaceous below alteration to lower contact, increased argillite bedding.	21.8	23.2	408	1.4	86	6	44	0.2	0
			23.2	25.1	409	1.9	155	8	58	0.2	3
25.1	32.8	**4a (qcv)** Similar to 20.1 - 21.8. Less than 10% laminated greywacke beds at 50 degrees to core axis. 3-5% late cross-cutting pyritic quartz-calcite fracturing, cross-cut by 1-2% low-angle hairline fractures describe in upper section. 25.8 - 26.8 - Thinly to thickly bedded fine grained greywacke beds (60% volume) with laminated argillite, sharp bedding contacts at 50 degrees to core axis.	25.1	26.8	410	1.7	237	59	56	0.3	0
			26.8	29	411	2.2	282	82	47	0.4	3
			29	31	412	2	855	299	57	0.5	5
			31	32.8	413	1.8	227	26	80	0.5	24

FROM	TO	DESCRIPTION
		Sharp lower contact at 50 degrees to core axis.
32.8	37.5	**4a (sil, qcv, qtz-cb, ser)** Fractured and Silicified Argillite. Broken and blocky core. 32.8 - 33.4 - Gradational upper contact. Consists of laminated to thinly bedded argillite and greywacke. Sheared (60 degrees to core axis) differentiated alteration consisting of fine grained quartz+/-carbonate and weak sericite alteration of greywacke beds and intense cherty grey hairline quartz+/-carbonate (dolomite?) fracturing (gives rock medium to coarse grained breccia appearance). Subsequently refractured and calcite altered. 33.4 - 37.1 - Intensely fractured and silicified (hard cherty) argillite. 33.4 - 35.4 - Core of alteration. Broken and blocky core. Cherty grey fracturing and flooding, almost complete replacement of argillite, 10-30% subangular unaltered argillite fragments (breccia), 10-15 cm Fault Gouge/Breccia at upper and lower contacts, oriented at 70 degrees to core axis. 35.4 - 36.3 - Addition of chlorite (silicified) to quartz-calcite fractures. 37.1 - 37.5 - Gradational decreasing fracturing and silicification of wallrock to lower contact. Weak presence of the late low-angle mineralized (pyrite +/-sphalerite? fractures throughout entire unit. Are observed to offset quartz-calcite fractures (less than 5% volume of rock), 1 cm of sinistral movement.
37.5	42.5	**4a (qcv-sp)** Black Argillite similiar to 25.1 - 32.8 with only minor greywacke beds at 50 degrees to core axis. Sharp upper and lower contacts at 50 degrees to core axis. Weakly developed low-angle pyrite-sphalerite fractures, mostly as discontinuous gashes.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
32.8	33.4	414	0.6	130	31	84	0.5	0
33.4	35.4	415	1.1	322	88	35	0.2	0
35.4	37.5	416	2.1	324	43	39	0.3	2
37.5	39	417	1.5	688	326	75	0.7	5
39	40	418	1	3360	645	67	0.8	3
40	41.5	419	1.5	1330	784	63	0.7	5

FROM	TO	DESCRIPTION
		39.5 - Sphalerite-quartz-calcite veinlet at 20 degrees to core axis. Millimetre sinistral off-set of pyritic-quartz-calcite stringers/veinlets (at 60 degrees to core axis, cross-cut bedding), also contain sphalerite (remobilized?), visual sphalerite in these veins observable 50 cm up and downhole. 42.1 - 42.5 - Increased low angle fracturing to 10% at lower contact. Contain visual sphalerite, average 20% volume (much of fracture material weathered-out which is a common characteristic of this type of fracture elsewhere in hole).
42.5	48.7	**4a (qtz-cb, qcv-sp,gn)** Similar altered argillite as per 32.8 - 37.5. Grey to buff coloured upper contact, predominately soft carbonate alteration (flooding of argillite). 42.7 - 43.0 - Fine grained pyritic greywacke. Weakly fractured, visual sphalerite in both high angle and low angle (10 degrees to core axis) quartz-calcite fracture types. Broken upper contact, sharp lower contact at 40 degrees to core axis, bleached grey carbonate (dolomite?) altered, over 5 cm. Sericitized lower contact. 43.0 - 47.4 - Intensely fractured core, patchy 5 -30+ cm wide granular (dolomite dominated) to cherty (quartz dominated) grey replacement zones, diffuse contacts. Increased pyritic quartz-calcite fracturing to 5-10%, contain remobilized disseminated sphalerite. 47.4 - 48.7 - Gradational lower contact, 50-60% unaltered to weakly altered argillite, increased laminated greywacke bedding locally at 50 degrees to core axis. 1-2% low angle quartz-calcite fractures, contain minor visible sphalerite and trace fine disseminated galena.
48.7	50.1	**4a** Black argillite with 10% laminated greywacke beds at 50 degrees to core axis. Sharp altered contacts at 50 degrees to core axis.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
41.5	42.5	420	1	2240	551	54	0.5	3
42.5	43	421	0.5	5400	1090	79	0.6	0
43	44	422	1	1750	397	39	0.3	0
44	45	423	1	1110	173	46	0.3	3
45	46	424	1	6700	273	127	0.5	2
46	47	425	1	1620	182	45	0.2	2
47	48	426	1	114	38	42	0.2	0
48	48.7	427	0.7	830	342	52	0.3	0
48.7	50.1	428	1.4	402	182	64	0.4	2

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		Weak quartz-calcite (including low-angle) fracturing. 48.8 - 49.2 - Fractured and silicified argillite as per 42.5 - 48.7. Sharp contacts at 50 degrees to core axis.									
50.1	50.9	**4a (qtz-cb, qcv-sp, ser)** Same as 42.5 to 48.7. Continuation of upper argillite/greywacke sequence. Variable altered. 50.1 - 51.0 - Carbonate (ankerite?)+/-quartz dominated, flooding and replacement of beds, selective, starting with greywacke beds at upper contact and incorporation of argillite bedding downhole, sericitized altered greywacke contacts. 57.7 - 57.9 - Argillite bed, cherty buff to grey quartz-ankerite? altered, medium to coarse grained breccia, 2-3% fine to medium grained disseminated pyrite in quartz-calcite stringers/veinlets. Sharp lower contact at 50 degrees to core axis.	50.1	50.9	429	0.8	1730	566	98	0.4	7
50.9	51.5	**4a (qtz-cb)** Black argillite with thinly laminated greywacke beds (Same as 48.7 - 50.1). Weak bleaching due to carbonate (ankerite?)-quartz flooding. 51.2 - 51.3 - Broken and blocky core. Several 2-4 cm wide Fault Gouge, oriented at 60 degrees to core axis. Increased quartz-calcite alteration up and downhole, as medium grained tension fractures (blebs) and stringers/veinlets.	50.9	51.5	430	0.6	358	141	35	0.5	21

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
51.5	52.9	**4a (qtz-cb, sil)** Fractured and silicified argillite. Cherty grey quartz-ankerite? fractures and replacement zones (1-2 cm wide bands at 60 degrees to core axis). 1% late quartz-calcite fractures. Sharp alteration contacts at 50 degrees to core axis. Unaltered black argillite beds at 51.8 - 51.9 and 52.4 - 52.5.	51.5	52.9	431	1.4	107	38	45	0.3	0
52.9	54.5	**4a (qtz-cb, qcv)** Black argillite as per 50.9 - 51.5. 10% late quartz-calcite fractures, at 70 degrees to core axis, cross-cut bedding. 2-3% low-angle quartz-calcite hairline fractures to lower contact that contained sphalerite and galena uphole.	52.9	54.5	432	1.6	86	20	43	0.3	0
54.5	58.7	**4a (qtz-cb, sil)** Intercalated fractured and silicified argillite (same as 51.5 - 52.9) with black unaltered argillite (same as 52.9 - 54.5). 55.6 - 56.3 , 57.1 - 57.4 and 57.8 - 58.0 Unaltered argillite beds. Upper unit is strongly deformed. Diffuse contacts. Blocken and blocky ground over entire section.	54.5	56	433	1.5	127	37	51	0.3	3
			56	57.5	434	1.5	81	8	41	0.3	7
			57.5	58.7	435	1.2	66	10	42	0.2	2
58.7	61.1	**4a (qtz-cb, qcv)** Black argillite as per 52.9 - 54.5. Blocky and broken ground. 60.6 - 61.1- Increased pyritic quartz-calcite fracturing to 10%, cross-cut by 2-3% hairline low-angle fractures, mm dextral off-sets of first fracture set.	58.7	61.1	436	2.4	67	8	51	0.1	0

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
61.1	62.4	**4a (qtz-cb, sil, qcv)** Altered and fractured argillite similar to altered units describe above. Alteration consists mostly of grey to buff coloured flooding of argillite matrix with minor fractures. Distinct increase in late pyritic quartz-calcite fracturing and grey to buff coloured alteration, to 20%. Minor low-angle fractures to lower contact. Sharp alteration contacts at 50 and 40 degrees to core axis.	61.1	62.4	437	1.3	132	27	55	0.1	0
62.4	68.1	**4a (qtz-cb)** Continuation of black argillite at 58.7 - 61.1. Extremely broken core below 64.7. Decreasing quartz-calcite fracturing downhole from upper contact.	62.4	65	438	1.6	84	10	54	0.2	5
			65	68.1	439	3.1	95	14	38	0.2	0
68.1	70.2	**4a (sil, qtz-cb)** Fractured and silicified argillite. Broken upper contact. Consists of weakly fractured and silicified cherty black argillite intercalated with 20% cherty grey and grey to buff coloured quartz+/-carbonate replacement zones, range from 2-3 cm to 30 cm (at upper contact). Weak development of late quartz-calcite fracturing, 1-2%. Sharp altered lower contact at 70 degrees, sericitized (silicified) greywacke.	68.1	69	440	0.9	47	1	38	0.2	22
			69	70.2	441	1.2	46	1	45	0.1	7
70.2	72.1	**4a (qtz-cb)** Black argillite as per 62.4 - 68.1. 80% of late fractures are devoid of quartz-calcite vein material along the core surface suggesting some late deuteric alteration event.	70.2	72.1	442	1.9	88	2	49	0.1	10
72.1	77.5	**FTZ (qtz-cb, sil, qcv)** Black Argillite as per above.	72.1	74	443	1.9	104	15	59	0.2	9
			74	75	444	1	97	10	66	0.2	2

FROM	TO	DESCRIPTION
		75.0 - 77.0 - Extremely broken (chips) and blocky core. Locally quartz+/-carbonate (dolomite?) flooded or strongly fractured and silicified cherty black argillite zones, <10 cm widths, approximately 10-15% volume of rock. 72.1 - 74.0 - Strong matrix and refracturing of hostrock and earlier alteration, gives the rock a kind of vuggy or pitted appearance. Locally cm scale fine to medium grained disseminated pyrite. Sharp altered contacts at 50 and 30 degrees to core axis.
77.5	87.2	**4a (qtz-cb)** Black argillite. Similar to 70.2 - 72.1. Quartz-calcite fracture material remains intact, minor low-angle harline fractures, mm dextral of earlier fractures. Variable altered. 10% .5 to 15 cm wide cherty to fine grained granular buff to grey coloured quartz-carbonate flooded zones, at high-angles to core axis (80 degrees to core axis), cross-cut by late quartz-calcite fractures and offset by low-angle fractures, mm scale dextral movement.
87.2	89.9	**4b** Fine grained greywacke. Gradational contacts, argillaceous with medium to coarse grained foliated argillite lithic fragments or laminated beds at 60 and 70 degrees to core axis. 88.7 - 89.2 - Black argillite bed. 10% quartz-calcite fractures.
89.9	97.3	**4a (qtz-cb, qcv)** Continuation of black argillite described at 77.5 - 87.2.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
75	77.5	445	2.5	98	7	93	0.3	0
77.5	80	446	2.5	109	4	62	0.2	9
80	83	447	3	81	2	48	0.2	3
83	86	448	3	71	3	36	0.1	2
86	87.2	449	1.2	166	7	67	0.1	12
87.2	89.9	450	2.7	104	6	59	0.1	3
89.9	92	451	2.1	210	6	56	0.1	69
92	94	452	2	129	9	50	0.1	14

FROM	TO	DESCRIPTION
		89.9 - 94.0 - Strong late quartz-calcite fracturing, mostly as hairline tension gashes, 30% volume, gradational lower contact. Sheared (50 degrees to core axis) carbonaceous upper contact.
97.3	98.3	**FTZ (qtz-cb, qcv)** Carbonaceous Argillite. Intense quartz+/-calcite alteration as banding and lesser hairline tension gashes, sheared at 50 degrees to core axis. Sharp bedded upper contact at 50 degrees to core axis. Lower contact marked by 10 cm wide Fault Gouge.
98.3	114.0	**4a (qtz-cb, qcv)** Black argillite continuation from 89.9 - 97.3. Broken upper contact to 99.7. Decreased fracturing, locally up to 10%. Appearance again of fractures devoid of vein material, represent at least 80% of fractures, cross-cut by late quartz-calcite fractures (steeper angles) that are in turn off-set by the low-angle fractures. 113.0 - 114.0 - Increased density of quartz-calcite hairline fracturing (tension gashes) and fooding (10-20%) hosted by grey cherty quartz+/-carbonate (ankerite?) fractured and flooded zones (same as those described uphole) at 113.4 - 113.6 and 114.0. Silicified cherty medium grey-black argillite. Alteration contains up to 2-3% fine disseminated cubic pyrite, 20-30% 5 mm wide bands of pyrite aggregates in sheared (50 and 30 degrees to core axis) in lower zone, alteration/pyrite cross-cuts lower contact. 1-2% fine disseminated cubic pyrite in wallrock adjacent fractures. Associated with low-angle hairline/micro pyrite-quartz-calcite fractures. Sharp lower contact at 50 degrees to core axis.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
94	97.3	453	3.3	215	10	62	0.2	2
97.3	98.3	454	1	320	20	55	0.2	0
98.3	101	455	2.7	142	3	44	0.2	2
101	104	456	3	73	3	44	0.2	0
104	107	457	3	126	4	50	0.2	7
107	110	458	3	85	1	46	0.1	2
110	113	459	3	138	2	54	0.1	5
113	114	460	1	238	52	60	0.2	5

FROM	TO	DESCRIPTION
114.0	117.4	**4b** Grey, fine grained, massive. Variable quartz-calcite alteration as described in upper section. Massive (20% unaltered hostrock fragments) pyrite banding hosted in quartz-calcite alteration at 40, 50 and 60 (downhole) degrees to core axis, at upper contact (2cm wide band), 114.2 - 114.4 and 114.5 - 114.6. Downhole roughly 3-5% as coarse grained aggregates or cm scale wide zones of fine to medium grained disseminated cubic pyrite. As in upper unit quartz-calcite fractures overprint earlier cherty grey to tan coloured quartz-carbonate (ankerite?) flooding, no fracturing/brecciation. Also present is a cherty grey alteration event not observed to be associated with the above described alteration and mineralization. Occurs as fracturing filling resulting in coarse grained brecciation of greywacke bed. Overprinted by quartz-calcite fractures. Possible represents an early silicification event? Sharp lower contact at 50 degrees to core axis.
117.4	123.7	**2a, d (qtz-ank)** Porphyritic with visible cream to grey fine grained feldspar phenocrysts, 10%. Locally narrow, diffuse coarse grained flow breccia, weak interstitial granular and cherty grey quartz-carbonate (ankerite?) alteration, under 50 cm widths, at +1 metre intervals, pyritic (10-20%), fine grained disseminated pyrite and coarse grained aggregates. Weak late quartz-calcite fracturing. Light greenish-grey to lower contact.
123.7	127.5	**3b,c** Grey, fine grained tuffaceous groundmass with visible sub-angular grey fragments. Sharp upper contact at 50 degrees to core axis. 5 mm wide Fault Gouge immediately below contact, at 50 degrees to core axis. Silicified upper 50 cm, cherty and hard.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
114	115	461	1	240	11	57	0.2	3
115	116	462	1	288	4	67	0.1	0
116	117.4	463	1.4	296	3	66	0.1	0
117.4	119	464	1.6	147	2	76	0.1	5
119	122	465	3	141	4	77	0.2	0
122	123.7	466	1.7	112	1	74	0.1	2
123.7	124.4	467	0.7	154	7	73	0.1	3
124.4	126.2	468	1.8	140	5	65	0.2	7
126.2	126.6	469	0.4	272	184	151	0.3	5

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		Strong fine grained grey interstitial quartz-ankerite? alteration. Variably quartz-calcite fractured. 123.7 - 224.4 - 10% quartz-calcite micro tension gashes and minor stringers/veinlets. 224.4 - 127.5 - Quartz-calcite fracturing replaced by micro fractures, devoid of vein material in most cases, occasional they can be observed to contain green chlorite and pyrite, 1-5%. Entire unit is pyritic, suggests to be hosted in matrix, as fine cubic disseminations or coarse grained aggregates, zoned by chlorite alteration, cross-cut by pyrite-chlorite micro fractures, traces of sphalerite. 126.2 - 126.6 - Fine grained reddish-brown pyrrhotite in a micro fracture. .2-.5% (downhole) fine disseminated galena in wallrock adjacent pyrite and micro fractures. 127.0 - 127.1 - Fault Zone. Cm scale gouge at 80 degrees to core axis intercalated with medium grained fault breccia. Semi-massive medium grained pyrite at lower contact	126.6	127.5	470	0.9	70	20	66	0.2	7
127.5	129.6	**4a** Black argillite, massive, no obvious greywacke bedding. 10% conformable quartz+/-quartz bands at 40 degrees to core axis, locally strongly deformed, occasionaly pyritic. 1-3% late cross-cutting quartz-calcite stringers/veinlets, 1-2% pyrite. Sharp upper contact at 70 degrees to core axis. Marked by 4 cm wide quartz-calcite matrix supported breccia, hosts 10% coarse sub-angular argillite fragments and 20-30% interstitial (alteration) fine to medium grained blebby pyrrhotite. 10% fine to medium grained disseminated pyrite at pyrrhotite margins (included in upper sample). Gradational lower contact.	127.5	129.6	471	2.1	440	9	140	0.3	9

FROM	TO	DESCRIPTION
129.6	131.6	**4b (qcv)** Grey, fine grained and massive. Similar to greywacke described at 114.0 - 117.4. Argillaceous upper contact. Variable quartz-calcite fracturing. 1-2% stringers and veinlets at high-angles to core axis, trace to 3-5% fine grained disseminated cubic pyrite, locally well developed pyritic halos in wallrock, orange-brown carbonate (ankerite) in veinlet at 131.2. 1-2% late quartz+/-calcite micro-fracturing, cross-cut first set of fractures, at lower angles, some are devoid of vein material, pyritic with fine grained blebby disseminations or stringers. Patchy fine grained quartz-carbonate (ankerite?) alteration interstitial grains, increasing intensity to lower contact, locally sheared, silicified? banding, at 70-80 degrees to core axis. 10 cm and 20 cm wide bleached grey and buff to grey fine grained granular quartz-carbonate (ankerite?) alteration zones, diffuse alteration contacts at 70 and 80 degrees to core axis, at 130.0 and 131.4 respectively.
131.6	134.7	**2d (qtz-ank)** Well developed coarse grained flow breccia. Sharp upper contact at 60 degrees to core axis, marked by 5 mm pyrrhotite band overprinted by fine to medium grained disseminated pyrite. Sheared (70 degrees to core axis) upper contact to 132.2, 20% mm scale grey cherty quartz-carbonate (ankerite?) alteration banding. Sulfidic and cherty grey matrix, overall unit contains 10% fine grained interstitial pyrrhotite overprinted by pyrite. Minor quartz-calcite fracturing. Sharp lower contact at 40 degrees to core axis.
134.7	209.0	**2a, d (qtz-ank, chl)** Light greyish-green porphyritic flow breccia as described at 117.4 - 123.7. Variable altered and mineralized. 134.7 - 155.1 - Light greyish-green section. Faint/weakly developed flow breccia. Moderate

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
129.6	131.6	472	2	297	3	63	0.2	22
131.6	133	473	1.4	268	3	86	0.2	21
133	134.7	474	1.7	263	2	117	0.3	27
134.7	137	475	2.3	148	1	95	0.2	7
137	138.5	476	1.5	164	1	159	0.2	5
138.5	140	477	1.5	61	4	88	0.1	5

FROM	TO	DESCRIPTION
		development of late quartz-carbonate (ankerite?) alteration, greyish colouration of rock attributed to fine grained flooding, minor cherty grey altered fine grained flow breccia horizons. Locallized zones of increased alteration, bleached, represent coarser grained better developed flow breccia horizons. Increased pyrrhotite-pyrite mineralization, from 10-30%. At 137.0 - 138.5 (fine grained interstitial flooding), 140.0 - 141.5 (cherty grey interstitial flooding) & 147.5 - 149.5 (fine grained interstitial flooding), diffuse contacts. Associated with chlorite (light green)-quartz-calcite hairline fractures, some are devoid of any vein material, pyrrhotite-rich, remobilized. Overall rest of unit contains patchy cm scale wide (1-4 cm) disseminated to semi-massive aggregates of coarse grained pyrrhotite-pyrite zones hosted by altered flow breccia.1-2% late pyritic (fine disseminated cubic pyrite) quartz-calcite stringers/veinlets.
		154.6 -154.7 - Fine grained flow breccia or flow. Sharp contacts at 40 degrees to core axis.
		155.1 - 209.0 - Medium to dark green, choritized hostrock. Gradational upper contact. Weak to moderate shearing at 40 degrees to core axis. 10% cherty grey interstitial quartz-ankerite? alteration of flow breccia horizons, fine to coarse grained, little sulfide mineralization.
		168.0 - 176.5 - Intensely Altered Zone. Bleached cherty grey fllooding, coarse grained flow breccia horizon?, 10-30% unaltered chloritized or weakly flooded hostrock, moderately sheared at 40-50 degrees to core axis.
		170.0 - 173.0 - 10-20% tan to brown colouration of quartz-ankerite? alteration peripheral quartz-calcite stringers/veinlets, at 20 degrees to core axis. Gradational contacts.
		183.0 - 206.0 - Moderate Altered Zone. Similar to above section, intermittent (weakly altered from 177.5 - 186.6 and weakly altered to unaltered massive porphyritic flow downhole, lighter grey to lower contact with increasing fine grained quartz-ankerite? flooding from 189.5 - 195.6). Increased unaltered or weakly altered chloritized wallrock to 50%. Patchy tan to brown overprint of quartz-ankerite? alteration at 182.9 - 185.0 and 187.9 - 189.4, over 10-20 cm widths, 10%, faint between 195.6 - 206.0.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
140	141.5	478	1.5	51	1	189	0.2	7
141.5	143	479	1.5	83	1	190	0.2	5
143	146	480	3	65	1	220	0.3	2
146	147.5	481	1.5	60	1	154	0.3	5
147.5	149.5	482	2	56	1	120	0.2	5
149.5	151	483	1.5	57	1	78	0.2	9
151	153	484	2	63	1	77	0.1	7
153	155.1	485	2.1	54	1	83	0.1	9
155.1	158	486	2.9	65	1	70	0.1	15
158	161	487	3	39	1	68	0.1	12
161	164	488	3	38	1	67	0.1	0
164	167	489	3	32	1	76	0.1	3
167	168	490	1	44	1	120	0.1	12
168	170	491	2	62	1	130	0.1	2
170	171	492	1	55	1	96	0.1	5
171	172	493	1	66	1	96	0.1	0
172	173	494	1	48	1	100	0.1	0
173	174.5	495	1.5	41	1	95	0.1	3
174.5	176.5	496	2	63	1	101	0.1	0
176.5	179	497	2.5	45	1	63	0.1	5

FROM	TO	DESCRIPTION
		209.0 - End Of Hole.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
179	181	498	2	42	1	62	0.1	5
181	182.5	499	1.5	47	1	73	0.2	81
182.5	185	500	2.5	36	1	125	0.1	70
185	186.5	9501	1.5	56	1	69	0.1	19
186.5	188	9502	1.5	62	1	84	0.1	10
188	189.5	9503	1.5	41	4	113	0.1	9
189.5	191.5	9504	2	54	1	106	0.1	2
191.5	194	9505	1.5	55	1	62	0.1	3
194	195.5	9506	1.5	61	1	65	0.1	0
195.5	197	9507	1.5	30	1	55	0.1	0
197	198.5	9508	1.5	42	1	66	0.1	27
198.5	200	9509	1.5	43	1	107	0.1	9
200	201.5	9510	1.5	43	1	80	0.1	147
201.5	203	9511	1.5	27	1	66	0.1	27
203	204.5	9512	1.5	61	1	108	0.1	12
204.5	206	9513	1.5	39	1	152	0.1	2
206	209	9514	3	60	1	67	0.1	2

MPH CONSULTING LIMITED

DRILL HOLE RECORD

HOLE NO.: MT98-5

CLIENT: Opawica Exploration Inc.
PROPERTY: Maisonville Township
CLAIM NO.: 1050105
COLLAR CO-ORDINATE: L3450W, 1000S
COLLAR ELEVATION: 0
AZIMUTH: 320
INCLINATION: -45
LENGTH: 71 m
CORE LOCATION: Tom Obradovich Office, Kirkland Lake
REMARKS: To Test HLEM Conductor

COMMENCED: 2/17/98
COMPLETED: 2/18/98
DRILLED BY: Norex Drilling Limited
HOLE TYPE: Diamond
CORE SIZE: BQ
CASING LEFT IN HOLE: 25 m
LOGGED BY: Michael P. Rosatelli

DOWN HOLE SURVEY INFORMATION

METHOD: SPERRY SUN

DEPTH (m)	AZIMUTH	INCLINATION
0	320	-45
62	325	-40
71	326	-40

FROM	TO	DESCRIPTION
0.0	25.0	**OVB** Casing lost in hole.
25.0	27.1	**2d (cb, qtz-ank, chl, qcv)** Same as MT98-05A at 21.0 - 29.7.
27.1	28.4	**7** Upper and lower contacts at 40 and 50 degrees to core axis respectively.
28.4	67.8	**2d (cb, qtz-ank, chl, qcv, ser), 2a (gf)** Same as MT98-05A at 30.9 - 74.9 and 74.9 - 77.0.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)

MPH
CONSULTING LIMITED

DRILL HOLE RECORD

HOLE NO.: MT98-5

CLIENT: Opawica Exploration Inc.
PROPERTY: Maisonville Township
CLAIM NO.: 1050105
COLLAR CO-ORDINATE: L3450W, 900S
COLLAR ELEVATION: 0
AZIMUTH: 320
INCLINATION: -45
LENGTH: 71 m
CORE LOCATION: Tom Obradovich Office, Kirkland Lake
REMARKS: To Test HLEM Conductor

COMMENCED: 2/17/98
COMPLETED: 2/18/98
DRILLED BY: Norex Drilling Limited
HOLE TYPE: Diamond
CORE SIZE: BQ
CASING LEFT IN HOLE: 25 m
LOGGED BY: Michael P. Rosatelli

M.P. Rosatelli

DOWN HOLE SURVEY INFORMATION

METHOD: SPERRY SUN

DEPTH (m)	AZIMUTH	INCLINATION
0	320	-45
62	325	-40
71	326	-40

FROM	TO	DESCRIPTION
0.0	25.0	**OVB** Casing lost in hole.
25.0	27.1	**2d (cb, qtz-ank, chl, qcv)** Same as MT98-05A at 21.0 - 29.7.
27.1	28.4	**7** Upper and lower contacts at 40 and 50 degrees to core axis respectively.
28.4	67.8	**2d (cb, qtz-ank, chl, qcv, ser), 2a (gf)** Same as MT98-05A at 30.9 - 74.9 and 74.9 - 77.0.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
67.8	70.9	**7** Upper and lower contacts at 35 and 50 degrees to core axis respectively.									
70.9	71.0	**4a (qcv-sp,pb,cp)** Same as MT98-05A at 88.3 - 100.5. 71.0 - End of Hole. Terminated due to shallowing.									

MPH CONSULTING LIMITED

DRILL HOLE RECORD

HOLE NO.: MT98-5A

CLIENT: Opawica Explorations Inc.
PROPERTY: Maisonville Township
CLAIM NO.: 1050105
COLLAR CO-ORDINATE: L3450W, 902S
COLLAR ELEVATION: 0
AZIMUTH: 320
INCLINATION: -51
LENGTH: 146 m
CORE LOCATION: Tom Obradovich Office, Kirkland Lake
REMARKS: To Test HLEM Conductor

COMMENCED: 2/18/98
COMPLETED: 2/21/98
DRILLED BY: Norex Drilling Limited
HOLE TYPE: Diamond
CORE SIZE: BQ
CASING LEFT IN HOLE: 21 m
LOGGED BY: Michael P. Rosatelli

M. P. Rosatelli

DOWN HOLE SURVEY INFORMATION

METHOD: SPERRY SUN

DEPTH (m)	AZIMUTH	INCLINATION
0	320	-51
29	325	-50
146	332	-52

FROM	TO	DESCRIPTION
0.0	21.0	**OVB** No reaming into bedrock.
21.0	29.7	**2d (cb, qtz-ank, chl, qcv)** Bleached grey, pervasive quartz-carbonate (ankerite?) altered. Well developed and visually apparant coarse grained flow breccia consisting of coarse grained fragments with cm scale wide interstitial fine grained chloritized (dark green) and calcite altered fragments hosted in a cherty grey (quartz-ankerite?) fracture controlled matrix, late overprinted fine grained disseminated pyrite, 2-3%. Increasing shearing downhole, dominate orientation at 30 degrees to core axis, locally at 50 degrees to core axis. Increased cherty grey quartz-ankerite alteration of flow breccia horizons, replacement of calcite alteration, overprint of chlorite (lighter green, chlorite disrupted, fine grained) and

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
21	23	9515	2	83	1	67	0.2	0
23	25	9516	2	95	1	78	0.1	41
25	27	9517	2	104	1	70	0.1	5
27	29.7	9518	2.7	87	1	69	0.1	10

FROM	TO	DESCRIPTION
		alteration (flooding, cherty) of fragments. Moderate late quartz-calcite alteration, 15-20%, as stringers/veinlets, and micro tension gashes (3-5% to 10%) and fine to medium grained disseminations (10%), minor pyrite noted, mostly confined to stringers/veinlets and wallrock contacts.
29.7	30.9	**7** Sharp contacts at 60 degrees to core axis. Fine grained, 10-15% biotite/amphibole. Pervasive calcite altered matrix.
30.9	74.9	**2d (cb, qtz-ank, chl, qcv, ser)** Continuation of upper unit at 21.0 - 29.7. Sheared throughout. Locally strongly sheared (probable coarser grained flow breccia horizons). Late fine grained quartz-calcite alteration of altered interstitial fine breccia, pyritic, can host 20% fine disseminated cubic pyrite. At 38.2 - 38.7, 40.5 - 41.0, 42.5 - 43.0, 50.4 - 50.7, 56.0 - 62.0 (+20 cm intervals), 66.6 - 70.7 (+20 cm intervals), 71.7 - 72.4 and 73.9 - 74.5. Breccias below 66.1 show a weak development of wispy laminated sericite alteration, sheared and altered wallrock fragments.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
30.9	33	9519	2.1	66	1	70	0.1	14
33	35	9520	2	94	1	76	0.1	5
35	37	8521	2	107	1	74	0.2	45
37	38	9522	1	93	1	70	0.1	26
38	39	9523	1	84	1	68	0.2	17
39	40.5	9524	1.5	79	1	68	0.1	2
40.5	41.5	9525	1	67	1	76	0.2	2
41.5	42.5	9526	1	73	1	75	0.2	17
42.5	43.5	9527	1	68	2	69	0.1	5
43.5	45	9528	1.5	93	4	78	0.2	10
45	47	9529	2	72	3	72	0.1	396
47	49	9530	1	97	1	76	0.2	9
49	50	9531	1	89	1	72	0.1	72

FROM	TO	DESCRIPTION
74.9	77.0	**2a (gf)** Light greyish-green. Sharp veined (quartz-calcite, 10% fine disseminated pyrite) upper contact at 50 degrees to core axis. Distinct lithological contrast (colour, alteration) with upper described flow breccia. 2-3% visible quartz-calcite stringers/veinlets and a weak fine grained alteration of matrix. Moderate brecciation (fine to coarse grained) marked by interstitial graphitic alteration (20-30%), occasional hosts fine to medium grained blebby pyrite usually associated with quartz-calcite fractures.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
50	51	9532	1	64	1	68	0.1	7
51	53	9533	1	59	1	67	0.2	0
53	56	9534	3	75	1	64	0.2	33
56	58	9535	2	75	1	52	0.3	2
58	60	9536	2	65	1	67	0.2	7
60	62	9537	2	62	1	61	0.1	2
62	65	9538	3	73	1	69	0.2	10
65	66.6	9539	1.6	81	1	70	0.2	0
66.6	68	9540	1.4	118	1	61	0.2	19
68	69.5	9541	1.5	153	1	56	0.3	17
69.5	70.7	9542	1.2	133	1	70	0.2	7
70.7	71.7	9543	1	82	1	75	0.1	2
71.7	72.4	9544	0.7	62	1	63	0.1	5
72.4	73.9	9545	1.3	65	1	63	0.1	0
73.9	74.9	9546	1	62	1	67	0.1	21
74.9	77	9547	2.1	126	1	76	0.2	2

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		76.0 - Sheared downhole at 50 degrees to core axis, bleached, increased quartz-carbonate (dolomite?).									
77.0	81.0	**7** Same as 29.7 - 30.9. Sharp contacts at 50 and 30 degrees to core axis. Contacts are defined as being finer grained and contain little mafic minerals. Increased mafic component. Variable sheared at 20 to 40 degrees to core axis, either mafic bands or clots. Pervasive calcite altered matrix at upper contact, ankeritized? to lower contact.									
81.0	85.1	**2a (gf)** Continuation of unit described at 74.9 - 77.0. Sheared contacts at 30 degrees to core axis (upper 20 cm) and 40-20 degrees to lower contact from 83.7. Increased graphitic alteration to +30%. Increased pyrite content to 2-3%, locally to 20% over 2-5 cm, strong pyritic quartz-calcite stringers/veinlets.	81	83	9548	2	84	3	72	0.2	2
			83	85.1	9549	1.1	136	13	85	0.3	0
85.1	88.3	**7** Same as 77.0 - 81.0. Sharp upper and lower contacts at 20-30 degrees to core axis and 40 degrees to core axis respectively. Coarse grained sub-rounded argillite fragment at lower contact.									
88.3	100.5	**4a (qcv-sp,gn,cp)** Black argillite with minor laminated to thinly bedded deformed (crenulated) greywacke at 30-40 degrees to core axis. Fine grained argillaceous greywacke bed marks upper contact, 10 cm wide, sharp lower contact at 40 degrees to core axis, contains 10% thinly laminated and fragmented	88.3	89.8	9550	1.5	1610	49	134	1	10
			89.8	91.1	9551	1.3	2100	530	58	0.4	5
			91.1	91.5	9552	0.4	3520	1540	51	0.6	9
			91.5	92	9553	0.5	2400	1040	356	1.1	7

FROM	TO	DESCRIPTION
		conformable argillite beds. Sharp lower contact at 45 degrees to core axis.
		Moderate development of quartz-calcite fracturing. Two distinctive sets, the first and dominant set is defined by micro stringers and gashes at 50 to 80 degrees to core axis, average +10% volume of core, roughly 30% are pyrite+/-quartz-calcite stringers, the second less common set (1-3% volume of rock) average 30 degrees to core axis, average 1 cm wide, offset first set of fractures over mm scale dextral displacements, contain variable quantities of sphalerite, galena and chalcopyrite.
		89.0 - 98.0 - Mineralized Pyrite-Sphalerite-Galena-Chalcopyrite Zone. Sphalerite dominates ranging from 1% to +10% volume of veinlet, either disseminated throughout vein or at wallrock contacts, disseminated galena and chalcopyrite rarely exceeds 3% and 1% of veinlet respectively, locally galena exceeds sphalerite content. In all cases where these three sulfides are observed fine disseminated cubic pyrite was noted in veinlets ranging from 2-5% to +20%. Gradational contacts, only occasion visible sphalerite or galena noted.
		91.5 - 91.7 - High-Grade Zone. Increased fracturing to 20%, at least 10% fine and medium grained disseminated sphalerite and 2-3% galena over entire 20 cm section.
		89.8 - 91.1 - Greywacke/Argillite Beds. Approximately 60/40 greywacke (pervasive calcite altered) and argillite, thinly laminated to thickly bedded at 40 to 50 (downhole) degrees to core axis, lower contact (20 cm) marked by fine grained subangular graphitic fragments, 10% fine blebby pyrite. Increased late quartz-calcite stingers/veinlets (1 mm widths), contain 20% sphalerite to lower contact, only mineralized in argillite portions of vein.
		91.1 - 91.5 - Silicified Argillite. Sharp upper and lower contacts at 50 and 30 degrees to core axis. 20% early micro tension fractures and 3-5% late 5 mm-1cm wide late quartz-calcite tension gashes at contacts, 1-2% fine to medium grained sphalerite, 3-5% fine to medium grained disseminated galena and .5-1% fine disseminated chalcopyrite over 5 cm widths.
		92.5 - 5 cm wide grey argillite (weakly quartz-dolomite? flooding). +20% fine blebby deseminated pyrite and single 5 mm pyrite bed conformable to bedding at 40 degrees to core axis, hosts visible very fine galena and chalcopyrite. Proximal late quartz-calcite veinlet

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
92	93	9554	1	5020	1340	108	2	0
93	94	9555	1	2030	1140	135	0.9	3
94	95	9556	1	89	56	54	0.6	7
95	96	9557	1	49	40	83	0.5	2
96	97	9558	1	1200	97	150	0.7	12
97	98	9559	1	3260	188	154	1	7
98	99.5	9560	1.5	150	26	135	0.5	5
99.5	100.5	9561	1	490	60	77	0.8	7

FROM	TO	DESCRIPTION	FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
		with chalcopyrite. 97.2 - Tan to brown colouration to late quartz-calcite veinlet. Medium grained sphalerite at lower contact and in wallrock, rest of vein only weakly mineralized with pyrite, sphalerite and chalcopyrite. 97.8 - Early high-angle veinlet, pyritic with 1% fine diseminated galena. 99.8 - 100.1 - Fault Breccia Zone. Fine to coarse grained, mostly matrix supported quartz-calcite altered matrix. Core of fault defined by two mm scale Fault Gouge oriented at 50 degrees to core axis. Weakly pyritic, 1%, single visible medium grained section of very fine disseminated galena. Sharp veined lower contact at 40 degrees to core axis.									
100.5	123.7	**5b** Gabbro. Fine grained contacts, glomerophyric core. 100.5 - 101.2 - Quartz-calcite fractured, 10% (as per 88.3 - 100.5), no visible sphalerite, galena or chalcopyrite in late stringers/veinlets, weakly pyritic. Visible fine galena noted in early set of micro pyritic fractures (partially devoid of vein material). Section contains rafts of argillite hosted by either the host gabbro or caught-up within fractures. Gradational lower contact. 123.3 - 123.7 - Increased fracturing (early set of quartz-calcite fractures), weakly pyritic, majority of micro fractures devoid of any vein material. Show well developed chloritized wallrock contacts. Minor late cross-cutting fractures.	100.5	101.5	9562	1	147	40	120	0.4	3
			123	123.7	9563	0.7	130	6	145	0.2	3

FROM	TO	DESCRIPTION
123.7	146.0	**4a** Same as 88.3 to 100.5. Sharp veined upper contact at 30 degrees to core axis. Greywacke bedding steepening to 50 degrees to core axis. Marked decrease in quartz-calcite fracturing, 2-3% of the early set and rare late fractures. Upper 1 metre is the exception, 10% as par 88.3 to 100.5, no obvious sphalerite, galena or chalcopyrite in this section or elsewhere. Appearance of fine grained disseminated bedded cubic pyrite, occur in greywacke beds where cross-cut by late low angle quartz-calcite fractures (pyritic where they cross-cut bedded pyrite, suggest remobilization of pyrite into stringers/veinlets. 146.0 - End Of Hole.

FROM	TO	SAMPLE NO.	SAMPLE WIDTH (m)	Zn (ppm)	Pb (ppm)	Cu (ppm)	Ag ppm)	Au (ppb)
123.7	125	9564	1.3	243	15	147	0.3	7
125	128	9565	3	292	18	113	0.4	0
128	131	9566	3	736	36	156	0.4	5
131	134	9567	3	688	38	155	0.5	9
134	137	9568	3	1030	27	180	0.4	2
137	140	9569	3	726	29	175	0.4	10
140	143	9570	3	844	17	190	0.5	7
143	146	9571	3	610	17	229	0.5	9

APPENDIX III
ASSAY CERTIFICATES

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0218-RG1

Company: **MPH CONSULTING LIMITED** Date: FEB-04-98
Project: Maisonville Twp
Attn: M. Rosatelli

We hereby certify the following Geochemical Analysis of 44 Core samples submitted FEB-02-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
Y-01	3	-	0.1	97	1	94
Y-02	Nil	-	0.1	81	1	109
Y-03	Nil	3	0.1	108	1	133
Y-04	Nil	-	0.1	90	1	119
Y-05	7	-	0.1	87	1	107
Y-06	50	-	0.1	86	1	109
Y-07	12	-	0.1	83	1	98
Y-08	Nil	-	0.1	90	1	114
Y-09	34	-	0.1	90	1	113
Y-10	5	7	0.1	84	1	74
Y-11	14	-	0.1	92	2	100
Y-12	7	-	0.1	75	1	86
Y-13	2	-	0.1	70	1	69
Y-14	Nil	-	0.1	61	2	91
Y-15	2	-	0.1	77	1	105
Y-16	Nil	-	-	-	-	-
Y-17	10	-	0.1	87	1	94
Y-18	9	-	0.1	87	1	68
Y-19	Nil	-	0.1	104	1	85
Y-20	Nil	-	0.1	69	1	89
Y-21	3	2	0.1	81	1	90
Y-22	2	-	0.1	62	1	95
Y-23	5	-	0.1	74	1	103
Y-24	2	-	0.1	98	2	87
Y-25	Nil	-	0.1	103	3	73
Y-26	7	-	0.1	98	1	74
Y-27	9	-	0.1	97	1	83
Y-28	2	-	0.1	110	1	77
Y-29	Nil	-	0.1	123	1	71
Y-30	3	-	0.1	106	1	67

One assay ton portion used.

Certified by G. Leb

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0218-RG1

Company: **MPH CONSULTING LIMITED**
Project: Maisonville Twp
Attn: M. Rosatelli

Date: FEB-04-98

We hereby certify the following Geochemical Analysis of 44 Core samples submitted FEB-02-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
Y-31	2	-	0.1	107	1	79
Y-32	5	-	0.1	103	1	63
Y-33	10	-	0.1	97	1	61
Y-34	7	-	0.1	106	1	59
Y-35	5	-	0.1	98	1	54
Y-36	Nil	-	0.1	102	1	54
Y-37	3	-	0.1	100	1	85
Y-38	Nil	-	0.1	98	1	69
Y-39	Nil	-	0.1	89	1	92
Y-40	Nil	-	0.1	98	1	83
Y-41	31	-	0.1	74	9	124
Y-42	101	110	0.3	79	222	337
Y-43	21	-	0.5	111	197	139
Y-44	3	-	0.2	76	3	192

One assay ton portion used.

Certified by _____

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0228-RG1

Company: **MPH CONSULTING LIMITED** Date: FEB-05-98
Project: Maisonville Twp
Attn: M.Rosatelli

We hereby certify the following Geochemical Analysis of 27 Core samples submitted FEB-03-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
45	7	-	0.2	141	4	190
46	33	43	0.1	97	3	174
47	14	-	0.1	74	5	114
48	5	-	0.1	84	1	139
49	34	21	0.1	91	2	182
50	2	-	0.1	84	5	177
51	7	-	0.1	88	1	178
52	15	-	0.1	83	2	184
53	Nil	-	0.1	85	1	162
54	Nil	-	0.1	81	1	163
55	9	-	0.1	86	1	136
56	Nil	-	0.1	75	1	217
57	57	-	0.1	87	1	225
58	153	177	0.1	108	1	256
59	5	-	0.1	85	1	201
60	Nil	-	0.1	79	1	214
61	96	111	0.1	104	1	267
62	3	-	0.1	75	1	186
63	2	-	0.1	66	1	171
64	50	-	0.1	74	1	179
65	12	-	0.1	64	2	182
66	7	-	0.2	72	5	153
67	5	-	0.1	76	3	248
68	5	-	0.1	85	4	231
69	10	-	0.1	89	2	142
70	9	-	0.1	83	2	187
71	55	51	0.6	97	21	237

One assay ton portion used.

Certified by G. Leblanc

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0263-RG1

Company: **MPH CONSULTING LTD** Date: FEB-09-98
Project: Maisonville Twp. PO# 1801
Attn: M.Rosatelli

We hereby certify the following Geochemical Analysis of 3 Core samples submitted FEB-08-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Zn %
135	24	34	0.4	51	13	145	-
136	15	-	1.8	1880	251	5180	-
137	36	-	3.4	410	162	>20000	4.41

One assay ton portion used.

Certified by Denis Chartre

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0240-RG1

Company: **MPH CONSULTING LIMITED** Date: FEB-06-98
Project: Maisonville Twp
Attn: M. Rosatelli

We hereby certify the following Geochemical Analysis of 51 Core samples submitted FEB-04-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
72	Nil	-	0.3	498	20	2660
73	Nil	-	-	-	-	-
74	9	-	0.3	132	34	665
75	5	-	0.3	128	41	599
76	3	-	0.2	77	26	466
77	27	24	1.2	172	57	1070
78	15	-	0.7	273	50	1480
79	Nil	-	0.4	187	32	1190
80	10	-	0.5	299	34	2400
81	Nil	-	0.1	49	3	83
82	Nil	-	0.1	82	5	84
83	12	-	0.1	15	10	58
84	Nil	-	0.1	39	3	56
85	36	39	1.2	632	40	3000
86	Nil	-	0.1	61	4	118
87	Nil	-	0.1	96	1	106
88	Nil	-	-	-	-	-
89	5	-	0.1	109	1	78
90	2	-	0.1	104	1	57
91	3	-	0.1	102	1	66
92	Nil	-	0.1	100	1	76
93	7	2	0.1	120	1	195
94	Nil	-	0.1	118	1	200
95	Nil	-	0.1	125	1	154
96	Nil	-	0.1	109	1	90
97	Nil	-	0.1	113	1	68
98	Nil	-	0.1	120	1	108
99	Nil	-	0.1	108	1	151
100	Nil	-	0.1	100	1	77
101	Nil	-	0.1	106	1	113

One assay ton portion used.

Certified by _____

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0240-RG1

Company: **MPH CONSULTING LIMITED** Date: FEB-06-98
Project: Maisonville Twp
Attn: M. Rosatelli

We hereby certify the following Geochemical Analysis of 51 Core samples submitted FEB-04-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
102	3	-	0.1	101	1	66
103	5	-	0.1	106	1	123
104	7	10	0.1	110	1	79
105	2	-	0.1	106	1	68
106	Nil	-	0.1	130	1	105
107	7	-	0.1	115	1	116
108	5	-	0.1	99	1	87
109	5	-	0.2	118	6	96
110	7	-	0.4	107	374	1350
111	130	118	1.8	92	28	112
112	Nil	-	0.3	115	5	150
113	12	-	0.7	65	45	419
114	Nil	-	1.3	113	5480	14800
115	Nil	-	0.4	49	133	550
116	2	-	0.7	140	56	155
117	2	-	2.0	77	870	1860
118	9	-	1.2	87	484	850
119	3	-	1.0	147	252	421
120	19	-	1.2	179	41	95
121	26	24	0.6	89	12	82
122	5	-	-	-	-	-

One assay ton portion used.

Certified by G. Leboy

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0275-RG1

Company: **MPH CONSULTING LIMITED** Date: FEB-10-98
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

We hereby certify the following Geochemical Analysis of 9 Core samples submitted FEB-09-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
229	14	-	0.2	83	30	7460
230	2	3	0.3	41	43	18600
231	10	-	0.3	21	281	2730
232	29	-	0.6	25	981	200
233	3	-	0.3	10	827	195
234	2	-	0.4	136	282	13600
239	9	-	0.4	82	1260	4550
243	14	-	0.9	94	1120	8360
245	19	17	2.3	137	10800	11900

One assay ton portion used.

Certified by Denis Chartre

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0264-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M.Rosatelli

Date: FEB-12-98

We hereby certify the following Geochemical Analysis of 77 Core samples submitted FEB-08-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
123	Nil	-	0.1	132	1	76
124	3	-	0.1	51	1	62
125	2	-	0.1	104	1	58
126	3	-	0.1	91	1	84
127	Nil	Nil	0.1	128	1	62
128	Nil	-	0.1	134	1	240
129	Nil	-	0.1	72	6	71
130	Nil	-	0.1	80	6	135
131	Nil	-	0.2	85	1	173
132	Nil	-	0.3	107	9	128
133	Nil	-	0.2	98	9	105
134	5	-	0.3	85	12	155
138	Nil	-	0.2	6	300	118
139	Nil	-	0.2	6	34	54
140	Nil	-	2.2	444	2000	4210
141	Nil	-	0.2	11	83	71
142	Nil	-	0.2	23	49	435
143	Nil	-	0.1	7	82	83
144	Nil	Nil	0.4	36	88	154
145	Nil	-	0.7	197	52	3630
146	3	-	0.7	188	750	1420
147	Nil	-	0.7	257	69	1030
148	Nil	-	0.4	61	119	962
149	Nil	5	0.7	195	277	3220
150	Nil	-	0.7	164	646	2330
151	Nil	-	0.4	71	34	304
152	Nil	-	0.3	62	83	761
153	Nil	-	0.5	53	734	61
154	Nil	-	0.7	208	349	378
155	9	-	0.9	161	1520	1560

One assay ton portion used for gold.

Certified by G. Leboss

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0264-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M.Rosatelli

Date: FEB-12-98

We hereby certify the following Geochemical Analysis of 77 Core samples submitted FEB-08-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
156	5	-	1.2	280	509	1560
157	Nil	-	1.2	211	1770	9040
158	Nil	-	0.3	56	171	373
159	Nil	-	0.1	26	54	139
160	Nil	-	0.2	43	14	186
161	Nil	-	0.2	41	18	132
162	5	-	0.2	45	11	178
163	2	-	0.2	52	8	146
164	2	-	0.3	53	64	327
165	5	Nil	0.6	105	411	796
166	Nil	-	0.2	51	16	258
167	5	-	0.3	30	18	241
168	Nil	-	0.2	31	28	42
169	Nil	-	0.2	51	9	97
170	10	10	0.4	70	171	560
171	3	-	0.3	49	216	896
172	3	-	0.3	47	127	400
173	2	-	0.3	41	33	204
174	Nil	-	0.2	29	24	134
175	3	-	0.2	36	23	107
176	7	-	0.8	149	825	1490
177	2	-	0.2	52	10	166
178	7	-	0.2	77	21	641
179	14	15	0.9	134	34	940
180	5	-	0.8	182	37	857
181	9	-	0.6	191	35	455
182	Nil	-	0.1	66	11	230
183	10	-	0.9	190	52	1710
184	Nil	Nil	2.8	141	1050	2610
185	5	-	1.3	211	105	1610

One assay ton portion used for gold.

Certified by G. Leb

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0264-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M.Rosatelli

Date: FEB-12-98

We hereby certify the following Geochemical Analysis of 77 Core samples submitted FEB-08-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
186	5	-	1.6	195	266	1650
187	2	Nil	0.6	100	105	1040
188	2	-	0.3	44	89	390
189	5	-	0.7	120	60	685
190	Nil	-	0.8	161	46	1020
191	Nil	-	0.6	78	28	418
192	5	-	0.8	143	40	1180
193	9	-	0.7	188	59	1440
194	12	-	1.0	154	84	2940
195	7	-	1.2	211	345	1260
196	10	3	0.8	235	87	999
197	Nil	-	0.9	228	413	761
198	9	-	1.3	53	1090	1130
199	14	-	1.1	175	209	3240
200	21	21	1.2	120	242	1810
201	14	-	1.2	109	583	3560
202	17	15	0.7	162	452	1650

One assay ton portion used for gold.

Certified by G. Leboy

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0278-RG1

Company: **MPH CONSULTING LIMITED** Date: FEB-12-98
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

We hereby certify the following Geochemical Analysis of 37 Core samples submitted FEB-09-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
203	7	-	0.1	124	6	81
204	2	-	0.2	96	5	394
205	5	-	0.1	73	4	386
206	Nil	-	0.2	120	3	817
207	Nil	Nil	0.2	75	4	176
208	5	-	0.1	68	3	137
209	Nil	-	0.2	82	1	192
210	Nil	-	0.3	66	1	214
211	Nil	-	0.2	64	1	111
212	2	-	0.1	18	1	34
213	5	-	0.4	45	1	56
214	10	-	0.5	49	3	32
215	7	-	0.8	103	5	76
216	5	-	0.4	84	3	116
217	39	-	0.2	69	1	84
218	Nil	-	0.1	88	1	95
219	17	-	0.1	84	1	96
220	3	-	0.1	78	1	86
221	29	24	0.4	82	2	76
222	9	-	0.4	75	1	98
223	10	-	0.2	87	1	86
224	Nil	Nil	0.3	74	1	60
225	7	-	0.3	77	1	61
226	3	-	0.2	66	1	57
227	Nil	-	0.2	63	3	120
228	2	-	0.6	104	1050	2960
235	9	-	0.3	73	34	108
236	Nil	-	0.2	71	4	106
237	Nil	-	0.2	59	4	66
238	5	-	0.1	73	12	116

One assay ton portion used for gold.

Certified by G. Leboy

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Established 1928

Assaying - Consulting - Representation

Geochemical Analysis Certificate

8W-0278-RG1

Company: **MPH CONSULTING LIMITED**
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

Date: FEB-12-98

We hereby certify the following Geochemical Analysis of 37 Core samples submitted FEB-09-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
240	Nil	-	0.4	78	12	108
241	Nil	-	0.3	62	1	104
242	7	-	0.4	74	132	326
244	9	10	0.8	20	896	1840
246	5	-	0.4	81	125	381
247	7	-	0.3	92	17	145
248	9	-	0.3	94	10	157

One assay ton portion used for gold.

Certified by G. Leboy

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0318-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

Date: FEB-17-98

We hereby certify the following Geochemical Analysis of 22 Core samples submitted FEB-13-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
249	22	-	0.3	69	13	118
250	7	-	0.2	82	1	116
251	Nil	-	0.1	57	3	164
252	14	-	0.2	84	6	201
253	3	7	0.2	100	5	173
254	12	-	0.3	64	15	149
255	3	-	0.2	73	9	582
256	Nil	-	0.2	72	8	523
257	5	-	0.1	67	1	109
258	Nil	-	0.1	68	2	134
259	5	2	0.1	72	3	89
260	3	-	0.1	54	4	93
261	15	-	0.1	73	1	154
262	Nil	-	0.1	107	1	203
263	29	-	0.1	84	1	194
264	2	-	0.1	80	1	170
265	Nil	-	0.2	89	7	275
266	15	-	0.2	81	1	233
267	Nil	-	0.1	77	1	260
268	24	22	0.2	62	2	174
269	27	-	0.2	55	1	195
270	38	-	0.2	60	11	97

One assay ton portion used.

Certified by _____

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0325-RG1

Company: **MPH CONSULTING LIMITED** Date: FEB-17-98
Project: Maisonville Twp PO# 1801
Attn: M.Rosatelli

We hereby certify the following Geochemical Analysis of 18 Core samples submitted FEB-13-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
271	27	34	0.3	100	11	195
272	12	-	0.2	54	5	151
273	14	-	0.1	43	3	117
274	10	-	0.1	34	1	50
275	9	-	0.1	32	1	63
276	Nil	-	0.2	35	1	89
277	12	-	0.1	39	7	109
278	15	-	0.1	46	8	160
279	24	22	0.2	127	99	203
280	5	-	0.1	46	3	133
281	21	26	0.2	90	19	225
282	Nil	-	0.1	44	3	164
283	2	-	0.1	42	3	200
284	17	-	0.1	36	3	136
285	7	-	0.1	58	9	237
286	22	-	0.4	168	100	848
287	19	-	0.4	174	87	840
288	21	-	0.3	136	30	642

One assay ton portion used.

Certified by G. Leboss

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Established 1928

Assaying - Consulting - Representation

Geochemical Analysis Certificate

8W-0348-RG1

Company: **MPH CONSULTING LTD** Date: FEB-18-98
Project: Maisonville Twp po# 1801
Attn: M. Rosatelli

We hereby certify the following Geochemical Analysis of 31 Core samples submitted FEB-16-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
347	12	-	0.6	142	48	1030
348	17	21	1.0	144	89	1640
349	Nil	-	0.6	139	72	1040
350	Nil	-	0.4	156	46	556
351	10	-	0.7	132	54	918
352	26	-	1.0	224	93	2080
353	22	-	0.6	147	44	904
354	7	-	0.2	108	6	470
355	5	-	0.1	87	1	80
356	3	-	0.1	57	1	89
357	19	-	0.2	74	4	85
358	3	-	0.1	67	1	75
359	7	-	0.1	75	1	97
360	7	-	0.1	64	1	100
361	Nil	-	0.2	90	1	80
362	Nil	-	0.2	78	1	86
363	Nil	-	0.1	56	2	58
364	5	9	0.2	99	4	79
365	Nil	-	0.1	66	1	90
366	5	-	0.1	76	1	97
367	Nil	-	0.2	78	3	70
368	Nil	-	0.1	120	1	112
369	Nil	-	0.2	78	1	83
370	5	-	0.3	72	4	78
371	Nil	-	0.2	82	1	96
372	17	10	0.	76	1	90
373	5	-	0.2	90	1	88
374	12	-	0.3	74	1	85
375	Nil	-	0.1	133	1	95
376	Nil	-	0.1	132	1	104
377	Nil	-	0.1	87	1	103

One assay ton portion used.

Certified by G. Thompson

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0330-RG1

Company: **MPH CONSULTING LIMITED**
Project: Maisonville Twp
Attn: M.Rosatelli

Date: FEB-18-98

We hereby certify the following Geochemical Analysis of 58 Core samples submitted FEB-15-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
289	27	-	0.4	175	12	699
290	7	-	0.2	54	73	284
291	21	-	0.2	114	11	327
292	15	-	0.2	90	10	327
293	38	29	0.3	93	8	515
294	17	-	0.2	71	8	210
295	27	-	0.5	160	122	716
296	5	-	0.5	137	55	772
297	14	-	0.6	150	160	1320
298	24	-	0.3	90	25	333
299	21	-	0.3	125	26	521
300	7	-	0.1	72	8	199
301	15	-	0.3	123	162	745
302	26	-	0.6	134	87	1860
303	19	-	0.8	162	299	2120
304	36	-	0.8	133	271	1460
305	26	31	0.8	50	672	2010
306	14	-	0.8	55	1850	1340
307	24	-	0.7	216	469	3430
308	27	-	0.5	145	310	1490
309	9	-	0.2	76	13	265
310	19	14	0.4	90	14	334
311	15	-	0.3	89	17	274
312	Nil	-	0.3	81	12	279
313	7	-	0.2	74	12	264
314	Nil	-	0.3	93	18	323
315	7	-	0.4	120	19	624
316	5	-	0.3	178	25	348
317	Nil	-	0.4	112	18	834
318	3	-	0.7	276	36	734

One assay ton portion used.

Certified by _____

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0330-RG1

Company: **MPH CONSULTING LIMITED** Date: FEB-18-98
Project: Maisonville Twp
Attn: M.Rosatelli

We hereby certify the following Geochemical Analysis of 58 Core samples submitted FEB-15-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
319	3	-	0.5	146	21	736
320	2	-	0.2	79	10	314
321	3	-	0.1	104	9	361
322	2	-	0.1	102	12	414
323	5	-	0.5	140	59	1010
324	14	12	0.8	216	123	2570
325	2	-	0.4	122	52	728
326	7	-	0.4	189	45	771
327	2	-	0.1	51	11	215
328	Nil	-	0.1	46	5	141
329	5	-	0.1	51	7	169
330	3	-	0.1	58	8	197
331	2	-	0.1	89	14	358
332	7	-	0.2	115	18	470
333	2	-	0.2	92	16	454
334	Nil	-	0.1	64	19	347
335	Nil	-	0.1	63	30	468
336	Nil	-	0.1	41	34	186
337	Nil	-	0.3	100	28	780
338	5	-	0.4	133	32	739
339	9	9	0.5	149	56	1280
340	5	-	0.4	138	24	630
341	7	-	0.2	97	16	496
342	Nil	-	0.1	76	11	369
343	3	-	0.3	76	18	577
344	12	-	0.4	131	37	783
345	9	14	0.4	144	56	1070
346	5	-	0.2	94	23	414

One assay ton portion used.

Certified by _____

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0353-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

Date: FEB-19-98

We hereby certify the following Geochemical Analysis of 12 Core samples submitted FEB-17-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
378	2	-	0.1	72	1	83
379	5	-	0.1	94	1	99
380	3	-	0.1	90	1	73
381	Nil	-	0.1	68	1	76
382	43	48	0.1	75	1	86
383	3	-	0.1	71	1	98
384	Nil	-	0.1	85	1	57
385	Nil	-	0.2	67	1	54
386	Nil	-	0.1	38	3	63
387	5	5	0.1	70	1	49
388	3	-	0.1	54	1	69
389	2	-	0.1	65	1	68

One assay ton portion used.

Certified by G. Thomas

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Established 1928

Assaying - Consulting - Representation

Geochemical Analysis Certificate

8W-0386-RG1

Company: **MPH CONSULTING LTD** Date: FEB-20-98
Project: Maisonville Twp PO#1801
Attn: M. Rosatelli

We hereby certify the following Geochemical Analysis of 12 Core samples submitted FEB-19-97 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
460	5	-	0.2	60	52	238
461	3	7	0.2	57	11	240
462	Nil	-	0.1	67	4	288
463	Nil	-	0.1	66	3	296
464	5	2	0.1	76	2	147
465	Nil	-	0.2	77	4	141
466	2	-	0.1	74	1	112
467	3	-	0.1	73	7	154
468	7	-	0.2	65	5	140
469	5	-	0.3	151	184	272
470	7	-	0.2	66	20	70
471	9	7	0.3	140	9	440

One assay ton portion used.

Certified by _____

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0382-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

Date: FEB-23-98

We hereby certify the following Geochemical Analysis of 24 Core samples submitted FEB-18-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
390	Nil	3	0.2	63	14	153
391	Nil	-	0.1	42	22	154
392	Nil	-	0.2	50	32	105
393	2	-	0.2	47	22	130
394	12	-	0.2	42	5	60
395	14	-	0.2	63	3	103
396	Nil	-	0.2	54	1	122
397	Nil	-	0.1	68	4	108
398	3	2	0.2	65	4	113
399	Nil	-	0.2	46	8	104
400	Nil	-	0.2	45	11	61
401	21	-	0.4	126	8	84
402	12	-	0.3	107	9	475
403	Nil	-	0.2	67	11	133
404	Nil	-	0.2	69	29	288
405	5	-	0.2	47	15	79
406	Nil	-	0.1	35	28	88
407	3	-	0.3	59	5	111
408	Nil	-	0.2	44	6	86
409	3	-	0.2	58	8	155
410	Nil	5	0.3	56	59	237
411	3	-	0.4	47	82	282
412	5	-	0.5	57	299	855
413	24	-	0.5	80	26	227

One assay ton portion used.

Certified by G. Thomas

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0399-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

Date: FEB-23-98

We hereby certify the following Geochemical Analysis of 32 Core samples submitted FEB-19-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
414	Nil	-	0.5	84	31	130
415	Nil	-	0.2	35	88	322
416	2	-	0.3	39	43	324
417	5	2	0.7	75	326	688
418	3	-	0.8	67	645	3360
419	5	-	0.7	63	784	1330
420	3	-	0.5	54	551	2240
421	Nil	-	0.6	79	1090	5400
422	Nil	-	0.3	39	397	1750
423	3	-	0.3	46	173	1110
424	2	-	0.5	127	273	6700
425	2	-	0.2	45	182	1620
426	Nil	-	0.2	42	38	114
427	Nil	-	0.3	52	342	830
428	2	-	0.4	64	182	402
429	7	-	0.4	98	566	1730
430	21	-	0.5	35	141	358
431	Nil	-	0.3	45	38	107
432	Nil	2	0.3	43	20	86
433	3	-	0.3	51	37	127
434	7	-	0.3	41	8	81
435	2	-	0.2	42	10	66
436	Nil	-	0.1	51	8	67
437	Nil	-	0.1	55	27	132
438	5	2	0.2	54	10	84
439	Nil	-	0.2	38	14	95
440	22	-	0.2	38	1	47
441	7	-	0.1	45	1	46
442	10	-	0.1	49	2	88
443	9	-	0.2	59	15	104

One assay ton portion used.

Certified by G. Leblanc

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0399-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

Date: FEB-23-98

We hereby certify the following Geochemical Analysis of 32 Core samples submitted FEB-19-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
444	2	-	0.2	66	10	97
445	Nil	-	0.3	93	7	99

One assay ton portion used.

Certified by _____

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of TSL/Assayers Inc.

Established 1928

Assaying - Consulting - Representation

Geochemical Analysis Certificate

8W-0416-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

Date: FEB-23-98

We hereby certify the following Geochemical Analysis of 3 Core samples submitted FEB-20-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
472	22	-	0.2	63	3	297
473	21	-	0.2	86	3	268
474	27	31	0.3	117	2	263

One assay ton portion used.

Certified by _____

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of TSL/Assayers Inc.

Established 1928

Assaying - Consulting - Representation

Geochemical Analysis Certificate

8W-0417-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

Date: FEB-26-98

We hereby certify the following Geochemical Analysis of 10 Core samples submitted FEB-20-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
446	9	7	0.2	62	4	109
447	3	-	0.2	48	2	81
448	2	-	0.1	36	3	71
449	12	-	0.1	67	7	166
450	3	-	0.1	59	6	104
451	69	77	0.1	56	6	210
452	14	-	0.1	50	9	129
453	2	-	0.2	62	10	215
454	Nil	-	0.2	55	20	320
455	2	-	0.2	44	3	142

One assay ton portion used.

Certified by G. Leb

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of TSL/Assayers Inc.

Established 1928

Assaying - Consulting - Representation

Geochemical Analysis Certificate

8W-0422-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

Date: FEB-26-98

We hereby certify the following Geochemical Analysis of 14 Core samples submitted FEB-22-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
456	Nil	-	0.2	44	3	73
457	7	-	0.2	50	4	126
458	2	-	0.1	46	1	85
459	5	10	0.1	54	2	138
475	7	-	0.2	95	1	148
476	5	-	0.2	159	1	164
477	5	-	0.1	88	1	61
478	7	-	0.2	189	4	51
479	5	-	0.2	190	1	83
480	2	-	0.3	220	1	65
481	5	-	0.3	154	1	60
482	5	2	0.2	120	1	56
483	9	-	0.2	78	1	57
484	7	-	0.1	77	1	63

One assay ton portion used.

Certified by G. Leblanc

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of TSL/Assayers Inc.

Established 1928

Assaying - Consulting - Representation

Geochemical Analysis Certificate

8W-0423-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

Date: FEB-26-98

We hereby certify the following Geochemical Analysis of 30 Core samples submitted FEB-23-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
485	9	-	0.1	83	1	54
486	15	-	0.1	70	1	65
487	12	-	0.1	68	1	39
488	Nil	-	0.1	67	1	38
489	3	-	0.1	76	1	32
490	12	3	0.1	120	1	44
491	2	-	0.1	130	1	62
492	5	-	0.1	96	1	55
493	Nil	-	0.1	96	1	66
494	Nil	-	0.1	100	1	48
495	3	-	0.1	95	1	41
496	Nil	-	0.1	101	1	63
497	5	-	0.1	63	1	45
498	5	-	0.1	62	1	42
499	81	74	0.2	73	1	47
500	70	77	0.1	125	1	36
9501	19	-	0.1	69	1	56
9502	10	-	0.1	84	4	62
9503	9	-	0.1	113	1	41
9504	2	-	0.1	106	1	54
9505	3	-	0.1	62	1	55
9506	Nil	-	0.1	65	1	61
9507	Nil	-	0.1	55	1	30
9508	27	-	0.1	66	1	42
9509	9	-	0.1	107	1	43
9510	147	110	0.1	80	1	43
9511	27	-	0.1	66	1	27
9512	12	-	0.1	108	1	61
9513	2	-	0.1	152	1	39
9514	2	-	0.1	67	1	60

One assay ton portion used.

Certified by G. Thomas

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0443-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M.Rosatelli

Date: FEB-27-98

We hereby certify the following Geochemical Analysis of 32 Core samples submitted FEB-23-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
9515	Nil	-	0.2	67	1	83
9516	41	27	0.1	78	1	95
9517	5	-	0.1	70	1	104
9518	10	-	0.1	69	1	87
9519	14	-	0.1	70	1	66
9520	5	-	0.1	76	1	94
9521	45	60	0.2	74	1	107
9522	26	-	0.1	70	1	93
9523	17	-	0.2	68	1	84
9524	2	-	0.1	68	1	79
9525	2	-	0.2	76	1	67
9526	17	-	0.2	75	1	73
9527	5	-	0.1	69	2	68
9528	10	-	0.2	78	4	93
9529	396	195	0.1	72	3	72
9530	9	-	0.2	76	1	97
9531	72	-	0.1	72	1	89
9532	7	-	0.1	68	1	64
9533	Nil	-	0.2	67	1	59
9534	33	-	0.2	64	1	75
9535	2	-	0.3	52	1	75
9536	7	-	0.2	67	1	65
9537	2	-	0.1	61	1	62
9538	10	-	0.2	69	1	73
9539	Nil	-	0.2	70	1	81
9540	19	-	0.2	61	1	118
9541	17	-	0.3	56	1	153
9542	7	-	0.2	70	1	133
9543	2	Nil	0.1	75	1	82
9544	5	-	0.1	63	1	62

One assay ton portion used.

Certified by G. Leb

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0443-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M.Rosatelli

Date: FEB-27-98

We hereby certify the following Geochemical Analysis of 32 Core samples submitted FEB-23-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
9545	Nil	-	0.1	63	1	65
9546	21	-	0.1	67	1	62

One assay ton portion used.

Certified by G. Leborf

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0450-RG1

Company: **MPH CONSULTING LTD**
Project: Maisonville Twp PO# 1801
Attn: M. Rosatelli

Date: FEB-27-98

We hereby certify the following Geochemical Analysis of 25 Core samples submitted FEB-25-98 by .

Sample Number	Au PPB	Au Check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM
9547	2	-	0.2	76	1	126
9548	2	-	0.2	72	3	84
9549	Nil	-	0.3	85	13	136
9550	10	-	1.0	134	49	1610
9551	5	-	0.4	58	530	2100
9552	9	-	0.6	51	1540	3520
9553	7	-	1.1	356	1040	2400
9554	Nil	-	2.0	108	1340	5020
9555	3	-	0.9	135	1140	2030
9556	7	3	0.6	54	56	89
9557	2	-	0.5	83	40	49
9558	12	-	0.7	150	97	1200
9559	7	-	1.0	154	188	3260
9560	5	-	0.5	135	26	150
9561	7	-	0.8	77	60	490
9562	3	-	0.4	120	40	147
9563	3	-	0.2	145	6	130
9564	7	-	0.3	147	15	243
9565	Nil	-	0.4	113	18	292
9566	5	2	0.4	156	36	736
9567	9	-	0.5	155	38	688
9568	2	-	0.4	180	27	1030
9569	10	-	0.4	175	29	726
9570	7	-	0.5	190	17	844
9571	9	-	0.5	229	17	610

One assay ton portion used.

Certified by G. Leboff

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 Fax (705)642-3300

Ontario Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use)
W9980.00087
Assessment Files Research Imaging

Maisonville Prospect

42A01NE2016 2.19344 MAISONVILLE 900

ubsection 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, sessment work and correspond with the mining land holder. Questions about this rthern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury,

Instructions: - For work performed on Crown Lands before **recording** a claim, use form 0240.
- Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary) 2.19344

Name	
Tom Obradovich	177382
Address	Telephone Number
P.O. Box 1146	(705) 567-6883
Kirkland Lake, Ontario P2N 3M7	Fax Number (705) 567-6873
Name	Client Number
Address	Telephone Number
	Fax Number

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

☐ Geotechnical: prospecting, surveys, assays and work under section 18 (regs) ☑ Physical: drilling stripping, trenching and associated assays ☐ Rehabilitation

Work Type	Office Use
Diamond Drilling	Commodity
	Total $ Value of Work Claimed 123,481
Dates Work Performed From 25 Day 01 Month '98 Year To 28 Day 02 Month '98 Year	NTS Reference
Global Positioning System Data (if available) Township/Area Maisonville	Mining Division Larder Lake
M or G-Plan Number G-3669	Resident Geologist District Kirkland Lake

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name	Telephone Number
MPH Consulting Limited - M. Rosatelli	(416) 365-0930
Address 150 York Street - Suite 1800, Toronto, Ont M5H 3S5	Fax Number (416) 365-1830
Name	Telephone Number
Address	Fax Number
Name	Telephone Number
Address	Fax Number

4. Certification by Recorded Holder or Agent

I, Larry J. Stoliker (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent Larry J. Stoliker	Date January 04, 1999
Agent's Address 103 Carter Avenue, Kirkland Lake, Ont P2N 1Z6 Telephone Number (705) 567-9980	Fax Number (613) 962-1583

0241 (03/97)

RECEIVED
JAN 12 1999
GEOSCIENCE ASSESSMENT OFFICE

Recd Apr 12/1999

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mi land where work was performed, at the time work was performed. A map showing the contiguous link must accompany form.

W9980.00087 Masonville Pro

	Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of w to be distributed at a future date
eg	TB 7827	16 ha	$26,825	N/A	$24,000	$2,825
eg	1234567	12	0	$24,000	0	0
eg	1234568	2	$ 8,892	$ 4,000	0	$4,892
1	HR580 8000012		$14,941			$14,941
2	HR581 8000013		7,162	2.19344		7,162
3	L-1050105	1	80,139			80,139
4	L-1050106	1	7,656			7,656
5	L-1050110	1	13,583			13,583
6	~~L-1223707~~	~~5~~				
7	~~L-1224~~ 45					
~~7~~ 8	~~L-1222458~~	~~12~~				
~~8~~ 9	~~L-1222459~~	~~12~~				
~~9~~ 10	~~L-1222473~~	~~16~~				
~~10~~ 11	~~L-1222474~~	~~11~~				
~~11~~ 12	~~L-1222475~~	~~4~~				
~~12~~	~~L-1217895~~	~~2~~				
14						
15						
	Column Totals	65 claims	$123,481			$123,48

I, Larry J. Stoliker (Print Full Name), do hereby certify that the above work credits are eligible unc subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing	Date
Larry J. Stoliker	January 04, 1999

6. Instruction for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish t prioritize the deletion of credits:

- ☒ 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- ☐ 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- ☐ 3. Credits are to be cut back equally over all claims listed in this declaration; or
- ☐ 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
	Approved for Recording by Mining Recorder (Signature)	

RECEIVED
JAN 12 1999 12:30
GEOSCIENCE ASSESSMENT OFFICE

0241 (03/97)

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use)
W9980.00087
Maisonville Prospect

Personal information collected on this form is obtained under the authority of subsection 6 (1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, this information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of work Depending on the type of work, list the number of hours/day worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
Diamond Drilling	1167m	2.19344	$54,245.11
Geological Consulting			31,972.50
Geological Support			9,456.06
Administration - preparation (field & reports)			11,789.41
- map/sketch production			
- office logistics etc.			
Assays	571 samples for Zn, Pb, Cu, Ag and Au.		10,258.78
Associated Costs (e.g. supplies, mobilization and demobilization).			
Maps			1,187.18
Printing/copies			119.74
Communications			171.94
Transportation Costs			
Vehicle Rental			2,072.64
Freight & Courier			299.70
Food and Lodging Costs			
Food and Accomodations			1908.11
		Total Value of Assessment Work	$123,481.11

RECEIVED
JAN 12 1999
3:30
OFFICE

Calculations of Filing Discounts:

1. Work filed within two years of performance is calculated at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK x 0.50 = Total $ value of worked claimed.

Note:
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

I, Larry J. Stoliker (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as Agent (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature	Date
Larry J. Stoliker	January 04, 1999

0212 (03/97)

Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

Ontario

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (877) 670-1555

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

April 22, 1999

THOMAS JOHN ELI OBRADOVICH
P.O. BOX 1146
KIRKLAND LAKE, Ontario
P2N-3M7

Dear Sir or Madam:

Submission Number: 2.19344

Subject: Transaction Number(s):		**Status**
	W9980.00087	*Deemed Approval*

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Lucille Jerome by e-mail at lucille.jerome@ndm.gov.on.ca or by telephone at (705) 670-5858.

Yours sincerely,

ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 13621

Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.19344

Date Correspondence Sent: April 22, 1999 **Assessor:** Lucille Jerome

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9980.00087	1050105	MAISONVILLE	Deemed Approval	April 13, 1999

Section:
16 Drilling PDRILL

Correspondence to:

Resident Geologist
Kirkland Lake, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):

Larry J. Stoliker
KIRKLAND LAKE, ONTARIO

THOMAS JOHN ELI OBRADOVICH
KIRKLAND LAKE, Ontario

BENTLEY TWP - M 326

LEE TWP - M 360

BERNHARDT TWP - M 327

GRENFELL TWP - M 351

MAISONVILLE

DISTRICT OF
TIMISKAMING

LARDER LAKE
MINING DIVISION

SCALE: 1 INCH 40 CHAINS

LEGEND

PATENTED LAND
CROWN LAND SALE
LEASES
LOCATED LAND
LICENSE OF OCCUPATION
MINING RIGHTS ONLY
SURFACE RIGHTS ONLY
ROADS
IMPROVED ROAD
KING'S HIGHWAY
RAILWAYS
POWER LINE
MARSH OR MUSKEG
MINES
CANCELLED
PATENTED LAND

DATE OF ISSUE
APR 27 1999
PROVINCIAL RECORDING
OFFICE - SUDBURY

NOTES

400' surface rights reservation along the shores of all lakes and rivers

Areas withdrawn from staking

WITHDRAWN FROM STAKING, SECTION 43
PENDING APPLICATION UNDER PUBLIC LANDS ACT

ALL ISLANDS IN SESEKINIKA LAKE ARE WITHDRAWN FROM STAKING BY ORDER-IN-COUNCIL DATED DEC. 7, 1921

(R2) SURFACE RIGHTS WITHDRAWN FROM STAKING, SEC. 43/70 NOV. 8, 1970. FILE 22032

(R3) SURFACE RIGHTS WITHDRAWN FROM STAKING, SEC. 43/70. N.R.W. 5/81 JAN. 23, 1981. FILE 22032

Surface Rights Withdrawn under Sec. 36,
The Mining Act R.S.O. 1980. ORDER NO. W-01/91/ONT
(Trans Canada Pipeline Right of Way and Buffer
Zone particularly 40.25 meters or 132 ft. on
either side of centre line of right of way)

DATE RECEIVED JAN 20/89

PLAN NO G - 3669

MINISTRY OF NORTHERN DEVELOPMENT AND MINES

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

NOTICE OF FORESTRY ACTIVITY

THIS TOWNSHIP / AREA FALLS WITHIN THE
TIMISKAMING MANAGEMENT UNIT
AND MAY BE SUBJECT OF FORESTRY OPERATONS.
THE MNR UNIT FORESTER FOR THIS AREA CAN BE
CONTACTED AT: P.O. BOX 129
SWASTIKA, ONT.
POK 1TO
705-642-3222

COPY OF THIS MYLAR ARCHIVED DEC 06/91
ARCHIVED JUNE 28, 1994
ARCHIVED MAY 22/96
ARCHIVED JULY 9/97

COPY OF THIS MYLAR ARCHIVED JUNE 1, 1992

42A01NE2016 2.19344 MAISONVILLE 200

To Bourkes Road

Wolf Lake

1050105

1050106

1050110

1223707

1222475

1222474

1222473

1222458

1222459

1217895

47793

47797

47794

47790

47795

47792

47796

47798

47799

47800

47801

15849

H.R. 584

H.R. 580

H.R. 582

No Outcrop

Goose Egg Lake

Wolf Creek

Highspot Lake

Zn,Pb,Cu, Ag,Au

1.76%Zn/4.6m incl. 2.35%Zn/2.1m

0.05oz/ton Au

0.90oz/ton Au/0.3m

0.62%Zn/27.9m incl. .39%Zn/6.1m

1.33%Zn/4.6m

2.05%Zn/0.8m

0.66%Zn/0.6m

0.96%Zn/0.9m

1.16%Zn/8.8m incl. 2.02%Zn/1.2m

No Assays

0 150 metres

Diamond Drill Hole (Location Approximate)

0 500 metres

LEGEND

- 7 Diabase
- 6 Felsic Intrusives
  - a, Granodiorite, Feldspar Porphyry
  - b, Syenite, Syenite Porphyry, Quartz Syenite
- 5 Mafic Intrusives
  - a, Serpentinite, Peridotite
  - b, Gabbro, Diorite
- 4 Sediments
  - a, Graphitic Argillite
  - b, Greywacke
- 3 Felsic Volcanics
  - a, Massive
  - b, Fine Grained Tuff
  - c, Lapilli Tuff
  - d, Breccia
- 2 Intermediate Volcanics
  - a, Massive
  - b, Coarse Grained Flow
  - c, Pillowed
  - d, Flow Breccia
  - e, Lapilli Tuff to Tuff
- 1 Mafic Volcanics
  - a, Massive
  - b, Coarse Grained Flow
  - c, Pillowed
  - d, Flow Breccia
- FTZ Fault Zone

- sp Sphalerite
- gn Galena
- cp Chalcopyrite
- po Pyrrhotite
- py Pyrite
- gf Graphite
- bl Bleached
- chl Chloritized
- sil Silicified
- ser Sericitized
- qtz Quartz
- cb Carbonate
- cal Calcite
- qcv Quartz–Calcite Vein
- ank Ankerite

- Outcrop (1965,1966 Mapping – OGS Map 2215)
- Outcrop (1993 Mapping – Joutel Resources Ltd.)
- 5080 X Grab Sample
- Inferred Geological Contact
- Bedding
- Foliation
- Pit, Shaft
- Inferred Fault
- Swamp
- Road
- GL84–2 Diamond Drill Hole (Location Approximate)
- MT98–1 1998 Diamond Drill Hole
- A HLEM Conductor
- A VLF Conductor
- Power Line
- [1050105] Claim Boundary and Number
- 1–2 mhos / 0–1 mhos — 1991 Joutel Resources Ltd Frequency Domain AEM Anomaly
- 6 Channel Anomaly
- 5 Channel Anomaly
- 4 Channel Anomaly
- 3 Channel Anomaly
- 2 Channel Anomaly
  - 1979 OGS Time Domain AEM Anomaly

2.19344

OPAWICA EXPLORATIONS INC.

MAISONVILLE TOWNSHIP KIRKLAND LAKE, ONTARIO

DIAMOND DRILL HOLE LOCATION MAP

MAP REF. NO.: 1801-001	DRAFTED BY: M.R., M.B., D.G.
SCALE: 1:10,000	DRAWN: MPH TORONTO
PLATE No.: 1	DATE: SEPTEMBER, 1998

MPH CONSULTING LIMITED — International Exploration & Mining Consultants

42A01NE2016 2.19344 MAISONVILLE 210

Note: Original data converted from imperial and drafted in metric.

1300S | 1200S | 1100S | 1000S | 900S | 800S | 700S | 600S

MT98-1

Azimuth 320°
Dip -45°

L2850W

Claim 1050105

-100m

337, 222, 79, 0.3, and 101 / 1.5
256, 1, 108, 0.1 and 153 / 1.0
267, 1, 104, 0.1 and 96 / 1.0
2660, 20, 498, 0.3 / 0.7
1402, 45, 223, 0.73 / 5.2
1350, 374, 107, 0.4 / 1.2
112, 28, 92, 1.8, and 130 / 1.1
419, 45, 65, 0.7 / 1.0
14800, 5480, 113, 1.3 / 0.5
1860, 870, 77, 2.0 / 1.0
1.10g/t Ag / 3.4

164m

0 100
Metres

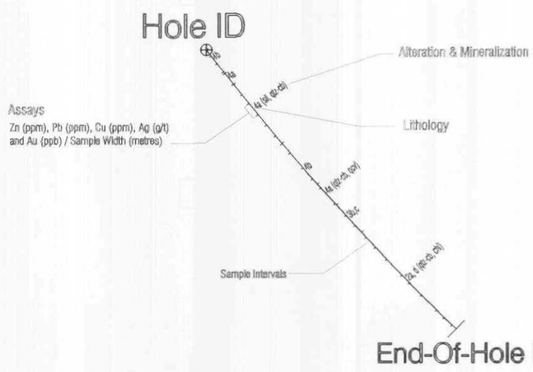
-200m

-300m

LEGEND

8	Diabase
7	Lamprophyre Dykes
6	Felsic Intrusives
a,	Granodiorite, Feldspar Porphyry
b,	Syenite, Syenite Porphyry, Quartz Syenite
5	Mafic Intrusives
a,	Serpentinite, Peridotite
b,	Gabbro, Diorite
4	Sediments
a,	Graphitic Argillite
b,	Greywacke
3	Felsic Volcanics
a,	Massive
b,	Fine Grained Tuff
c,	Lapilli Tuff
d,	Breccia
2	Intermediate Volcanics
a,	Massive
b,	Coarse Grained Flow
c,	Pillowed
d,	Flow Breccia
e,	Lapilli Tuff to Tuff
1	Mafic Volcanics
a,	Massive
b,	Coarse Grained Flow
c,	Pillowed
d,	Flow Breccia
FTZ	Fault Zone

sp	Sphalerite
gn	Galena
cp	Chalcopyrite
po	Pyrrhotite
py	Pyrite
gf	Graphite
bl	Bleached
chl	Chloritized
sil	Silicified
ser	Sericitized
qtz	Quartz
cb	Carbonate
cal	Calcite
qcv	Quartz-Calcite Vein
ank	Ankerite



2.19344

OPAWICA EXPLORATIONS INC.

MAISONVILLE TOWNSHIP PROPERTY
KIRKLAND LAKE, ONTARIO

CROSS-SECTION 2850W
(LOOKING WEST)

MAP REF. NO.: 1801-003	DRAFTED BY: M.C., D.G.
SCALE: 1:500	DRAWN: MPH TORONTO
PLATE No.: 2	DATE: SEPTEMBER, 1998

MPH CONSULTING LIMITED — International Exploration & Mining Consultants

1000S 900S 800S 700S 600S 500S 400S 300S 200S

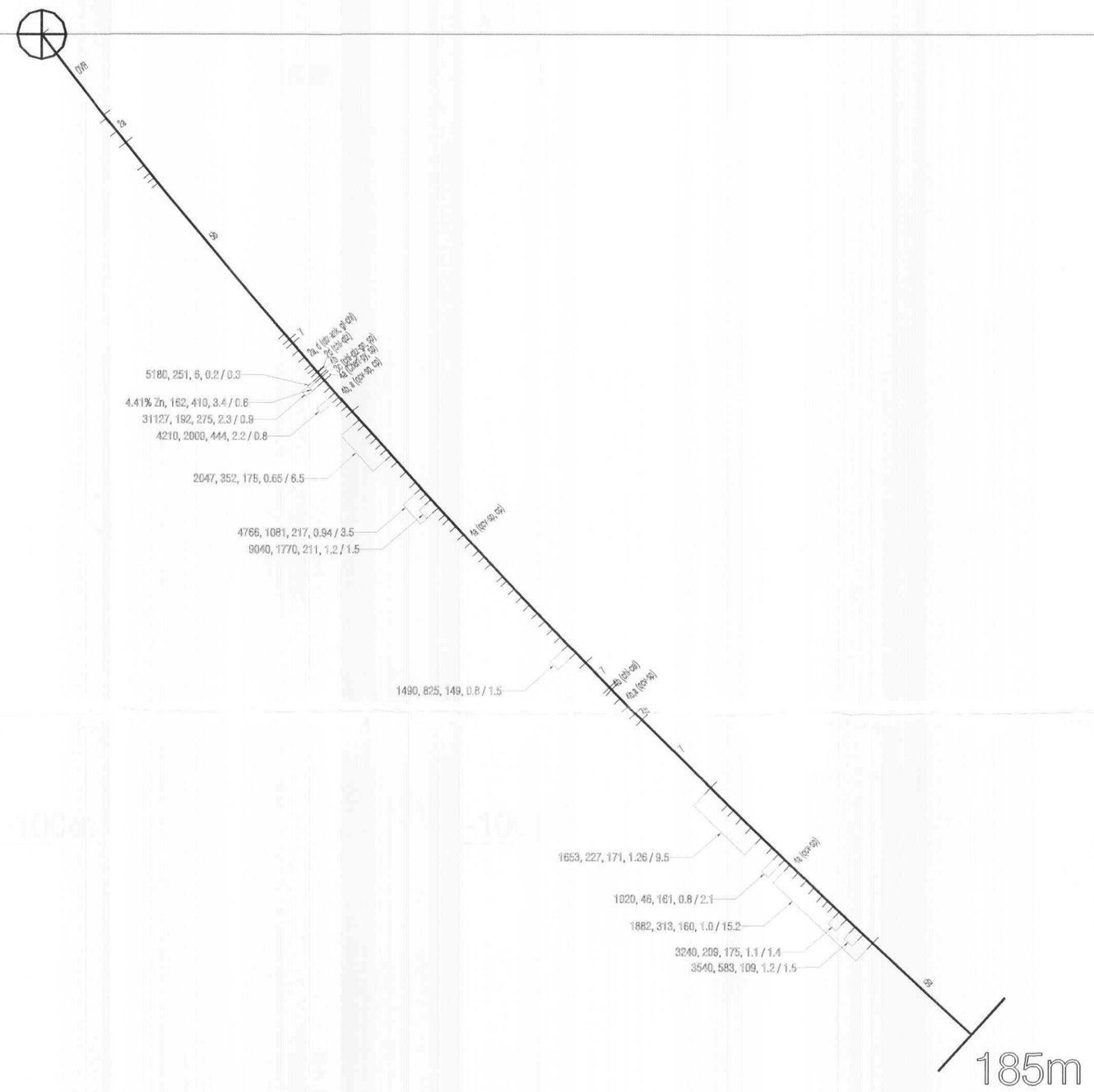
MT98-2

Azimuth 320°
Dip -45°

L3600W

Claim 1050105

-100m



-200m

0 100

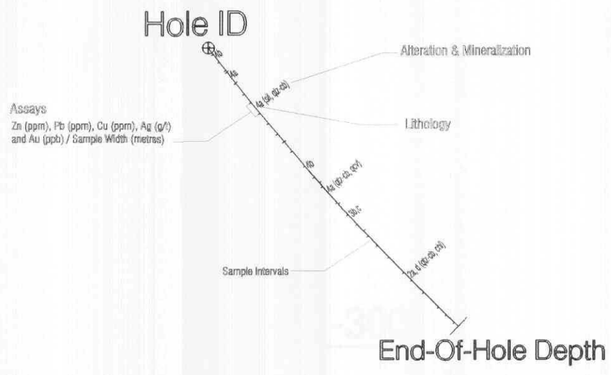
Metres

-300m

LEGEND

8	Diabase
7	Lamprophyre Dykes
6	Felsic Intrusives
a,	Granodiorite, Feldspar Porphyry
b,	Syenite, Syenite Porphyry, Quartz Syenite
5	Mafic Intrusives
a,	Serpentinite, Peridotite
b,	Gabbro, Diorite
4	Sediments
a,	Graphitic Argillite
b,	Greywacke
3	Felsic Volcanics
a,	Massive
b,	Fine Grained Tuff
c,	Lapilli Tuff
d,	Breccia
2	Intermediate Volcanics
a,	Massive
b,	Coarse Grained Flow
c,	Pillowed
d,	Flow Breccia
e,	Lapilli Tuff to Tuff
1	Mafic Volcanics
a,	Massive
b,	Coarse Grained Flow
c,	Pillowed
d,	Flow Breccia
FTZ	Fault Zone

sp	Sphalerite
gn	Galena
cp	Chalcopyrite
po	Pyrrhotite
py	Pyrite
gf	Graphite
bl	Bleached
chl	Chloritized
sil	Silicified
ser	Sericitized
qtz	Quartz
cb	Carbonate
cal	Calcite
qcv	Quartz-Calcite Vein
ank	Ankerite



2.19344

OPAWICA EXPLORATIONS INC.

MAISONVILLE TOWNSHIP PROPERTY
KIRKLAND LAKE, ONTARIO

CROSS-SECTION 3600W
(LOOKING WEST)

MAP REF. NO.: 1801-005	DRAFTED BY: M.C., D.G.
SCALE: 1:500	DRAWN: MPH TORONTO
PLATE No.: 3	DATE: SEPTEMBER, 1998

MPH CONSULTING LIMITED *International Exploration & Mining Consultants*

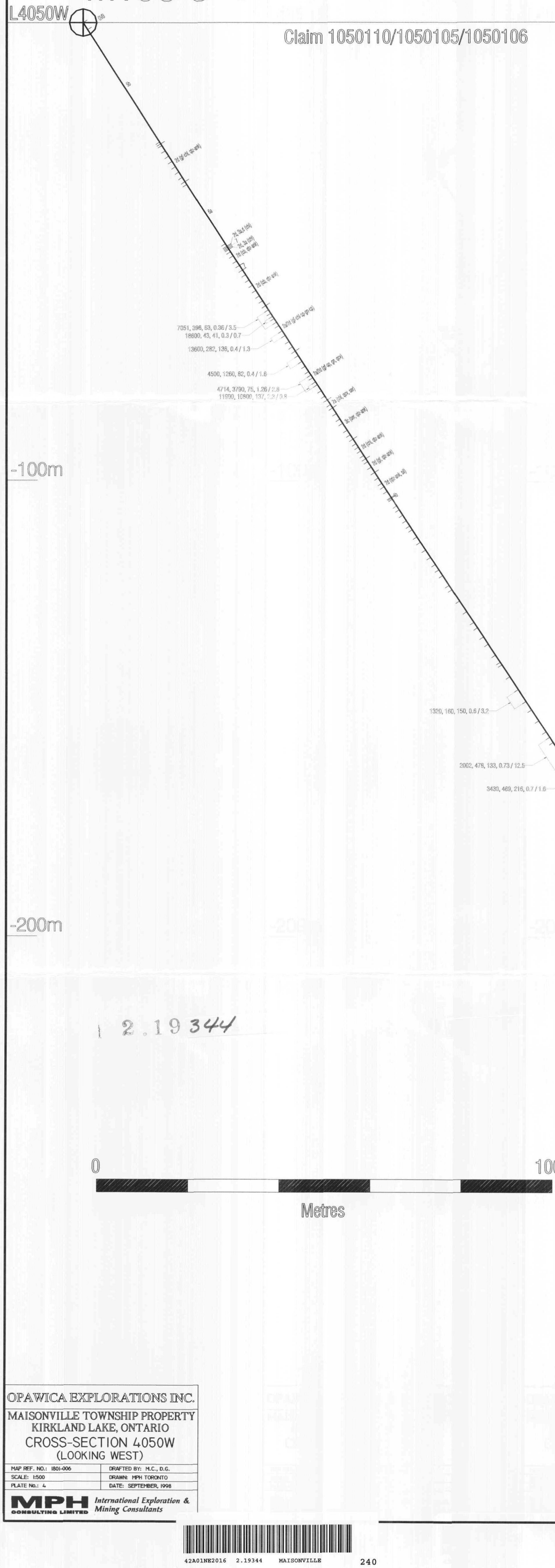
1100S 1000S 900S 800S 700S 600S 500S 400S

MT98-3

Azimuth 320°
Dip -50°

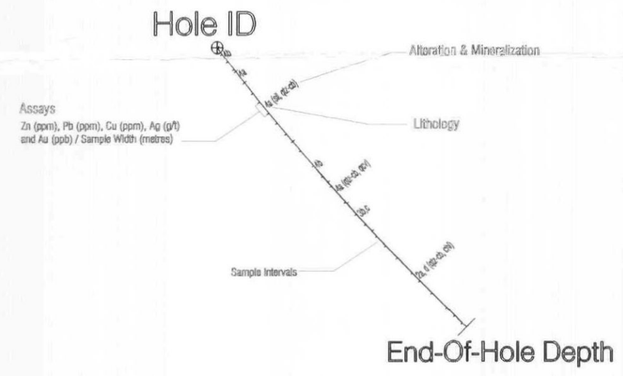
L4050W

Claim 1050110/1050105/1050106



LEGEND

8	Diabase	sp	Sphalerite
7	Lamprophyre Dykes	gn	Galena
6	Felsic Intrusives	cp	Chalcopyrite
a,	Granodiorite, Feldspar Porphyry	po	Pyrrhotite
b,	Syenite, Syenite Porphyry, Quartz Syenite	py	Pyrite
5	Mafic Intrusives	gf	Graphite
a,	Serpentinite, Peridotite	bl	Bleached
b,	Gabbro, Diorite	chl	Chloritized
4	Sediments	sil	Silicified
a,	Graphitic Argillite	ser	Sericitized
b,	Greywacke	qtz	Quartz
3	Felsic Volcanics	cb	Carbonate
a,	Massive	cal	Calcite
b,	Fine Grained Tuff	qcv	Quartz-Calcite Vein
c,	Lapilli Tuff	ank	Ankerite
d,	Breccia		
2	Intermediate Volcanics		
a,	Massive		
b,	Coarse Grained Flow		
c,	Pillowed		
d,	Flow Breccia		
e,	Lapilli Tuff to Tuff		
1	Mafic Volcanics		
a,	Massive		
b,	Coarse Grained Flow		
c,	Pillowed		
d,	Flow Breccia		
FTZ	Fault Zone		



0 100

Metres

OPAWICA EXPLORATIONS INC.	
MAISONVILLE TOWNSHIP PROPERTY KIRKLAND LAKE, ONTARIO CROSS-SECTION 4050W (LOOKING WEST)	
MAP REF. NO.: 1801-006	DRAFTED BY: M.C., D.G.
SCALE: 1:500	DRAWN: MPH TORONTO
PLATE No.: 4	DATE: SEPTEMBER, 1998

MPH CONSULTING LIMITED *International Exploration & Mining Consultants*

2.19344

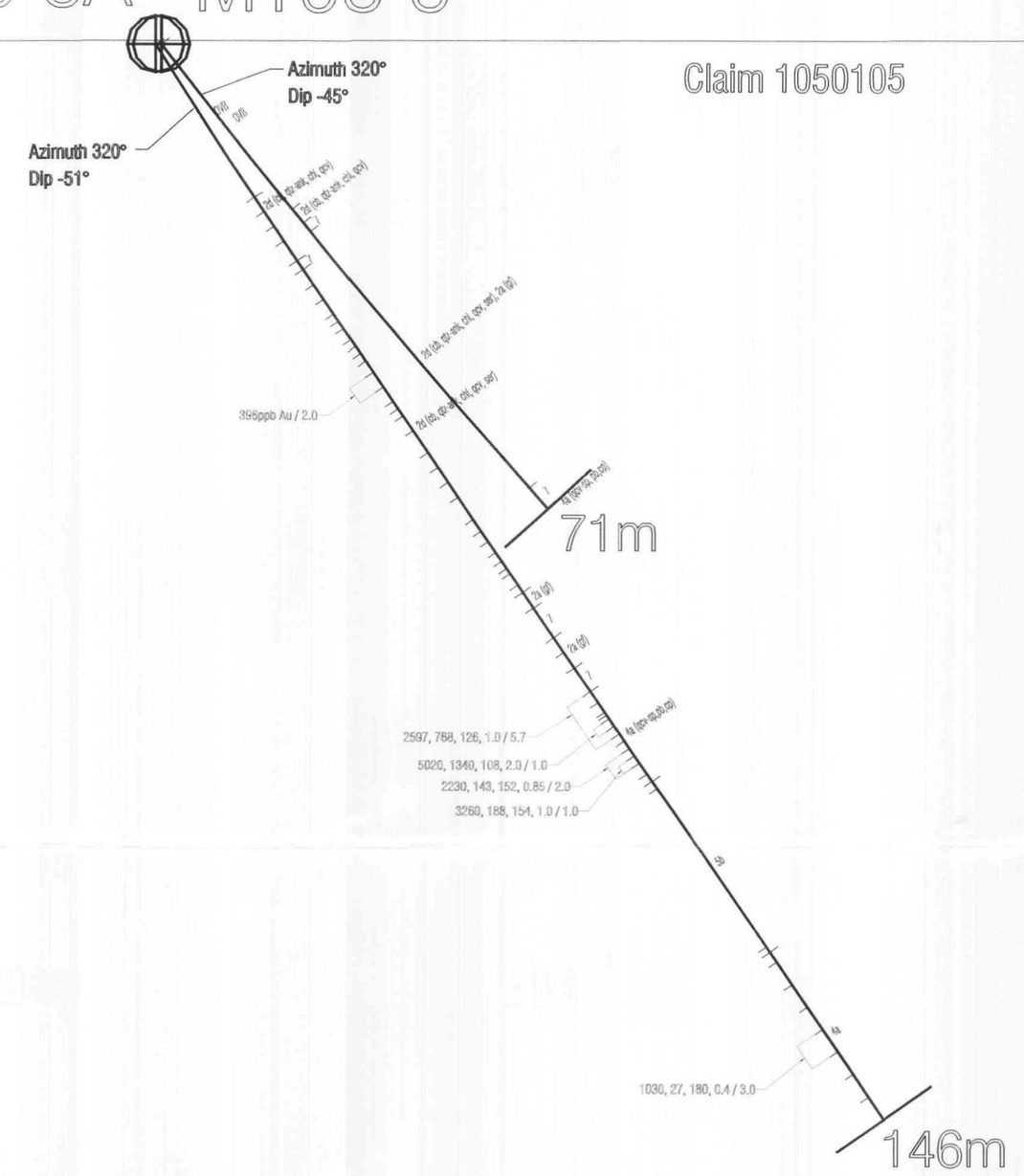
42A01NE2016 2.19344 MAISONVILLE 240

1100S 1000S 900S 800S 700S 600S 500S 400S

L3450W

MT98-5A MT98-5

Claim 1050105



-100m

-200m

-300m

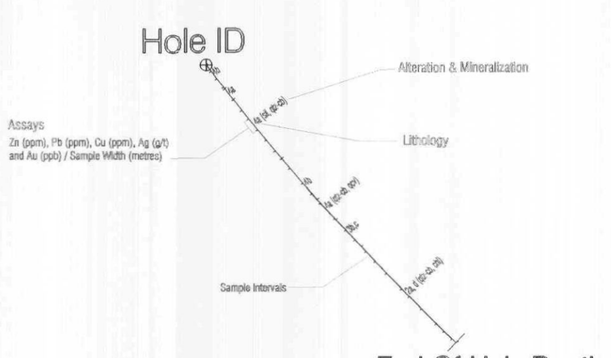
0 100

Metres

LEGEND

8	Diabase
7	Lamprophyre Dykes
6	Felsic Intrusives
a,	Granodiorite, Feldspar Porphyry
b,	Syenite, Syenite Porphyry, Quartz Syenite
5	Mafic Intrusives
a,	Serpentinite, Peridotite
b,	Gabbro, Diorite
4	Sediments
a,	Graphitic Argillite
b,	Greywacke
3	Felsic Volcanics
a,	Massive
b,	Fine Grained Tuff
c,	Lapilli Tuff
d,	Breccia
2	Intermediate Volcanics
a,	Massive
b,	Coarse Grained Flow
c,	Pillowed
d,	Flow Breccia
e,	Lapilli Tuff to Tuff
1	Mafic Volcanics
a,	Massive
b,	Coarse Grained Flow
c,	Pillowed
d,	Flow Breccia
FTZ	Fault Zone

sp	Sphalerite
gn	Galena
cp	Chalcopyrite
po	Pyrrhotite
py	Pyrite
gf	Graphite
bl	Bleached
chl	Chloritized
sil	Silicified
ser	Sericitized
qtz	Quartz
cb	Carbonate
cal	Calcite
qcv	Quartz-Calcite Vein
ank	Ankerite



2.19344

42A01NE2016 2.19344 MAISONVILLE 250

OPAWICA EXPLORATIONS INC.

MAISONVILLE TOWNSHIP PROPERTY
KIRKLAND LAKE, ONTARIO

CROSS-SECTION 3450W
(LOOKING WEST)

MAP REF. NO.: 1801-004	DRAFTED BY: M.C., D.G.
SCALE: 1:500	DRAWN: MPH TORONTO
PLATE No.: 6	DATE: SEPTEMBER, 1998

MPH CONSULTING LIMITED *International Exploration & Mining Consultants*

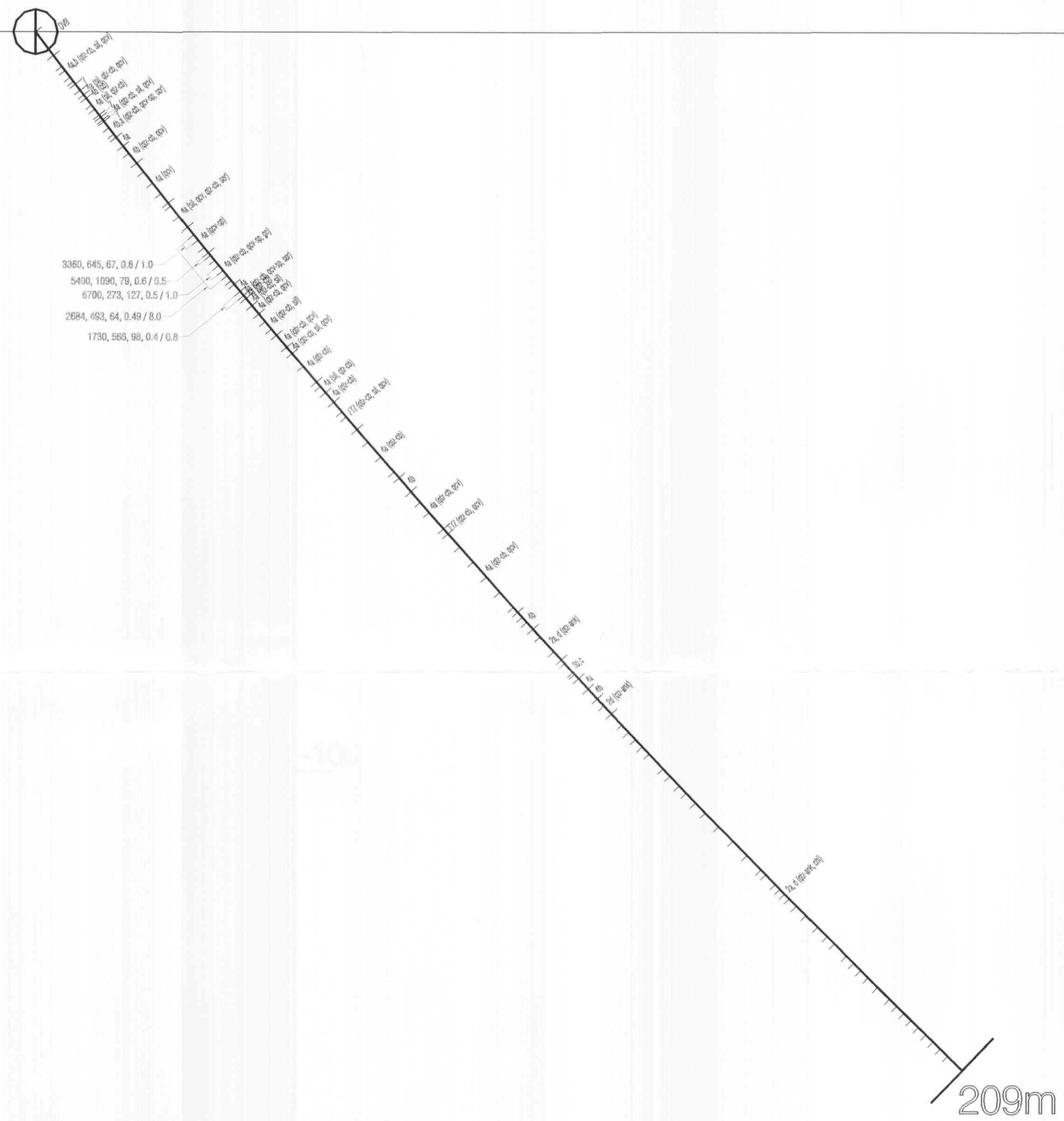
6700W | 6600W | 6500W | 6400W | 6300W | 6200W | 6100W | 6000W

MT98-4

Azimuth 050°
Dip -45°

L2400N

H.R. 581/580



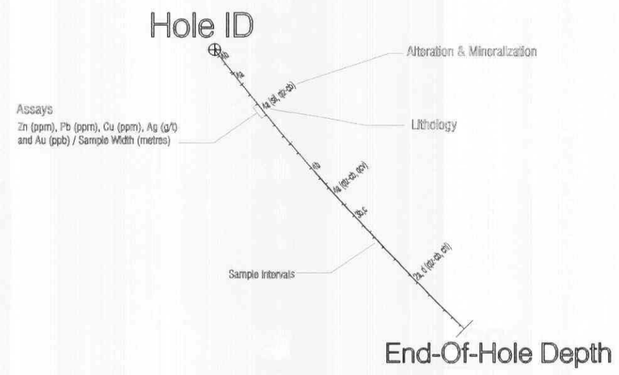
-100m

-200m

LEGEND

8	Diabase
7	Lamprophyre Dykes
6	Felsic Intrusives
a,	Granodiorite, Feldspar Porphyry
b,	Syenite, Syenite Porphyry, Quartz Syenite
5	Mafic Intrusives
a,	Serpentinite, Peridotite
b,	Gabbro, Diorite
4	Sediments
a,	Graphitic Argillite
b,	Greywacke
3	Felsic Volcanics
a,	Massive
b,	Fine Grained Tuff
c,	Lapilli Tuff
d,	Breccia
2	Intermediate Volcanics
a,	Massive
b,	Coarse Grained Flow
c,	Pillowed
d,	Flow Breccia
e,	Lapilli Tuff to Tuff
1	Mafic Volcanics
a,	Massive
b,	Coarse Grained Flow
c,	Pillowed
d,	Flow Breccia
FTZ	Fault Zone

sp	Sphalerite
gn	Galena
cp	Chalcopyrite
po	Pyrrhotite
py	Pyrite
gf	Graphite
bl	Bleached
chl	Chloritized
sil	Silicified
ser	Sericitized
qtz	Quartz
cb	Carbonate
cal	Calcite
qcv	Quartz-Calcite Vein
ank	Ankerite



-300m

2.19344

OPAWICA EXPLORATIONS INC.

MAISONVILLE TOWNSHIP PROPERTY
KIRKLAND LAKE, ONTARIO

CROSS-SECTION 2400N
(LOOKING NORTH)

MAP REF. NO.: 1801-002	DRAFTED BY: M.C., D.G.
SCALE: 1:500	DRAWN: MPH TORONTO
PLATE No.: 5	DATE: SEPTEMBER, 1998

MPH CONSULTING LIMITED — International Exploration & Mining Consultants