GM 60746

REPORT ON AIRBORNE MAGNETOMETER SURVEY, GROUND MAGNETOMETER SURVEY AND DIAMOND DRILLING, HERNIA PROJECT



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REPORT ON

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AIRBORNE MAGNETOMETER SURVEY

GROUND MAGNETOMETER SURVEY

AND

DIAMOND DRILLING

HERNIA PROJECT NTS 32M AND 32L

DUMONT NICKEL INC. SUITE 512-120 ADELAIDE ST. W. TORONTO, ONTARIO, CANADA M5H1T1

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The map is a grey scale scene of the total magnetic intensity of eastern north America illustrating the outline of the Archean Superior Craton and the location of the project near the west border of Quebec.

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1.0 INTRODUCTION

The Hernia Project is an integrated program of target conceptualization, airborne magnetometer surveying, target selection, ground magnetometer surveying, and diamond drilling which was developed and implemented in the period June through December 2001. Eight targets were drill tested. Each of the targets can be explained by magnetite-bearing formations in a deformed, metamorphosed basement complex.

2.0 LOCATION, ACCESS, AND SERVICES

The centre of the project is in NTS 32M at 51°10'N, 79°W. The targets that were tested are between the Nottaway and Missisicabi Rivers draining into James Bay. The nearest community is Waskaganish (formerly Rupert House) on the coast of James Bay with a population of approximately 1,800. Waskaganish is 50 km NNE of the project area and connected by an all weather gravel road to paved Highway 109 which connects to Matagami. Accommodation, groceries, and supplies can be acquired at Waskaganish which is served by daily flights to Val d'Or. Acces to the project area is by helicopter from Waskaganish. During the winter months it is possible to drive a tractor into the project area.

3.0 REGIONAL GEOLOGY AND EXPLORATION PREMISE

In northwestern Quebec there is an apophysis of Paleozoic platformal rocks forming a south-trending embayment into the Archean Craton along the border with Ontario (Figure 1). The physiographic region that this comprises in Quebec is part of the James Bay Lowlands. In the Ontario segment of the James Bay Lowlands De Beers has discovered 15 diamond-bearing kimberlite pipes near the village of Attawapiskat (Wood, 2000), one of which, the 18 ha Victor Pipe, is in the pre-feasibility stage of exploration. There are also other kimberlite-family intrusions throughout the James Bay Lowlands in Ontario.

The Quebec segment of the James Bay lowlands is an embayment of platformal Paleozoic rocks which is 50 km x 100 km. The embayment is a graben-like structural feature which has preserved the Paleozoic basin and underlying Archean crust from erosion. An interpretation is that the graben was formed because a thermal anomaly of post-Paleozoic age attenuated the Archean crust and the younger platformal rocks. The attenuated crust may have provided structural preparation for kimberlite intrusions and the negative topographic anomaly may enhance the preservation of kimberlite pipes as in Ontario.

Although the controls to the distribution of kimberlite pipes in the Ontario segment of the James Bay Lowlands are not well documented, the physiographic region is known for the presence of kimberlite-family intrusions ranging in age from 1100 Ma (Proterozoic) in the instance of the kimberlite discovered by Spider Resources (Novak 2000), to ages of 155 Ma to 170 Ma (Jurassic) at the De Beers Attawapiskat kimberlite swarm (Novak 2000). The platformal cover rocks of the James Bay Lowlands at Attawapiskat range in age from Ordovician to Devonian, hence the Jurassic intrusions, including the Victor Pipe perforate the cover sequence and subcrop below glacial overburden.



Figure 1. Geology of Quebec showing the location of the Paleozoic embayment in yellow, the location of the Hernia Project, modified from Geology of Quebec (1994).

At Attawapiskat, Ontario, a northwest-trending structural corridor defined by linear element in the magnetic anomaly map and defined by the distribution of kimberlite pipes is interpreted as the dominant control to the distribution of the kimberlite field (Kong et al. 1998). At the Hernia, Quebec, Moorehead et al. (1999, 2000) interpreted a northwest-trending linear corridor called the couloir de Nottaway or "Nottaway Corridor" trending northwest at 320°. The structural corridor passes through NTS maps 32L and 32M and is 50 km wide and approximately 250 km long (Figure 2). Although there is no published geologic or geophysical evidence for a northwest extension of the Nottaway corridor, if one extends the corridor across James Bay (Figure 3) it would pass through the Attawapiskat kimberlite field, which as previously noted is also controlled by a northwest structure.

Hence, the exploration premise is that the NW-trending Nottaway Corridor through the platformal rocks in the Quebec segment of the James Bay Lowlands is a prospective area to explore for diamond-bearing kimberlite. Should the intrusions be present, their magnetic signature should contrast with the non-magnetic limestone sequence causing a high frequency magnetic anomaly with a shallow model depth.

4.0 DESCRIPTION OF PREVIOUS WORK IN THE AREA

There has been minor exploration work in the area. The geophysical data in the public domain consists of the following surveys:

Quebec 10 (1969 to 1971) 305 m mean terrane clearance (MTC) Quebec 12 1967 to 1968) 305 m MTC Quebec 15 (1958 to 1960) 152 m MTC

The line spacing of these surveys varies from 400 m to 800 m, with most of the data covering the area at 800 m line spacing. Considering that kimberlite pipe targets are commonly on the order of 100 to 300 m in diameter and a few hundred nT magnetic susceptibility at zero altitude, much or all of the archived government survey data is useful only in the delineation of structural elements at scales greater than 1:50,000 (such as the work of Moorehead et al. (1999)) and not in the direct detection of kimberlite intrusions. A compilation of the government magnetic survey is illustrated in Figure 4.

Caledonia Mining Corporation explored the eastern part of the Nottaway corridor in 1995 (McDowall 1996) (GM 54470) (Figure 4). The basis for the work done by Caledonia was that diamond indicator minerals were known from river sediments draining the James Bay Lowlands of Ontario discovered in the 1960's and 1970's and that a sample from the Wakwayowkastic River in Quebec reportedly contained a single G10 garnet. Caledonia staked several scattered claim blocks (436 claims) with a total area of 6976 ha and commissioned an airborne magnetometer and VLF survey covering an area of 216,200 ha (10,887 line-km). The survey was flown with a line spacing of 200 m and 27 m MTC. Selected infill was done at 100 m line spacing. Seventy-nine possible kimberlite targets were outlined by the geophysical survey. No further work was done on the project and the claims were allowed to expire.



Intrusions alcalines: Zones structurales: Allemand-Tasiat, RGZ: Zone Richmond Gulf, SCZ: Zone Saindon-Cambrian, WCZ: Zone Wemindji-Caniapiscau, TCZ: Zone Allemand-Tasiat, RGZ: Zone Richmond Gulf, SCZ: Zone Saindon-Cambrian, WCZ: Zone Memindji-Caniapiscau, TCZ: Zone Témiscamingue, OBG: Graben d'Ottawa-Bonnechère. Champs de kimberlites: Tomgat (KMT); Otish (KOT); Desmaraisville (KDE); Témiscamingue (KTE).

Figure 2. Champs de kimberlites du Bouclier canadien, avec distances en kilomètres. Figure 3. Champs de kimberlites, zones structurales, la zone tectonique de Kapuskasing avec sa projection NE et cercles d'un rayon de 470 km centrés sur les 3 kimberlites les plus au nord de la Province du Supérieur. Les régions d'intersection (1-4) entre les cercles et les zones structurales cassantes peuvent représenter des régions-cibles pour l'exploration du diamant.

Figure 2. The location of linear elements in Quebec including the Nottaway Corridor illustrated as "NZ", from Moorehead et al. (2000).



Figure 3. The track of the Nottaway corridor (blue) interpreted as an extended NW structure would pass through Attawapiskat kimberlite field, modified from Moorehead et al. (1999).



Figure 4. Total magnetic intensity of Hernia, showing the outline of Paleozoic rocks (thin black line), Nottaway Corridor (thick black lines), location of Hernia Project (yellow rectangle), and previous work by Caledonia Mining Corporation (black dashed rectangle). The west edge of the map is the Ontario border. Data compiled from published government sources. The grid cells are 10 km.

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Majescor Resources Inc. (<u>www.majescor.com</u>) is exploring the Wemindji Project 200 km north of the Hernia in the exposed Archean Craton. The project is at the grass roots stage of exploration. Majescor has been working in the area since 1988 following up on the work of De Beers who discovered a very prospective diamond indicator mineral train including kimberlite fragments in glacial overburden. The abundance and variety of diamond indicator minerals, and their chemical composition strongly suggests that kimberlite intrusions are present in that area.

5.0 DESCRIPTION AND LOCATION OF EXPLORATION WORK

5.1 Airborne magnetometer survey, modeling, and claim staking

The survey is described in detail in an operations report by Terraquest Limited (Appendix A) and has the following corner coordinates in NAD27 UTM Zone 17:

	UTM E	UTM N
NW corner	630000	5690000
NE corner	655000	5680000
SE corner	645000	5650000
SW corner	620000	5660000

The line spacing is 400 m and the terrane clearance is 80 m. The equipment used was a Cessna 206U with a tail stinger and wing tip magnetometers. The digital and map products provide a high resolution survey of the total magnetic intensity and a model of the horizontal gradient vectors (indicating position of magnetic anomalies relative to flight lines) registered to the local UTM grid (Map of Total Magnetic Intensity in back of report). The area is approximately 25 km x 30 km and consists of 2178 km of grid flight lines and 465 km of tie lines for a total survey of 2643 line km.

The digital magnetometer data was then processed into a total horizontal derivative by MPH Consulting (Map of THD in back of report) and a high band pass filter was used to select shallow high frequency anomalies for ranking. Twenty prospective anomalies on the TMI were staked (Table 1). Fifteen magnetic anomalies were modeled (Appendix B), and 9 targets were ranked for drilling (Table 1).

5.2 Ground Magnetometer Surveys

Ground magnetometer surveys were made of the top 8 targets with a Scintrex MP-2 analogue proton precession magnetometer. The survey method was to fly to the centre point of the magnetic anomaly from the airborne survey and mark a picket on the ground. A line was then cut at 100 degrees across the anomaly and the line was surveyed to find the anomaly peak which was usually a few 10's of metres either east or west of the flight line and noted on the horizontal gradiometer data of the airborne survey. A second line was cut at 020 degrees with the centre of the line on the peak of the magnetic anomaly. The survey lines were generally 250 long. The drill hole collar was spotted on the magnetic anomaly peak on the north-trending line. The survey data and profiles are reported in Appendix C.

5.3 Diamond Drilling

Diamond drill holes were collared, in most instances, at the peak of the ground magnetic

Target	Rank	Diameter	Model Depth	Status	Depth-80 m	Susceptibility	NTS Sheet	Date staked	Claims
M22	5	80	116/110	HP-01- 06	33	0.015	32m03	2 Nov. 2001	R20/C55,C56; R19/C55.C56
M25 (11)	6	200	110/115	HP-01- 03	32	0.0104	32m03	4 Oct. 2001	R14/C55,C56; R13/C55,C56
M33	7	165	80/90	HP-01- 02	5	0.0035	32m03	2 Nov. 2001	R6/C56,C57; R7/C56,C57
M36	8	275	83/118	HP-01- 01	20	0.0088	32m02	2 Nov. 2001	R5/C10,C11; R6/C10,C11
M40 (12)	4	160	150	HP-01- 04	70	0.0167	32m03	4 Oct. 2001	R13/C57,C58
M27 (10)	3	220	150	HP-01- 05	70	0.0149	32m03	4 Oct. 2001	R13/C51,C52
M16	1	200	120	Hp-01- 08	40	-0.0255	32m02	6 Dec. 2001	R18/C14,C15; R19/C14,C15
M20	2	265	160	HP-01- 07	80	0.17	32m02	6 Dec. 2001	R15/C9,C10; R16/C9,C10
M21 (9)	9	300	300	n.d.	55	0.0134	32m02	4 Oct. 2001	R15C2,C3
M01 (1)	10	180	190	n.d.	110	0.0151	32M07	4 Oct. 2001	R8/C1,C2; R7/C1,C2
8 (also M39)	11	60	100	n.d.	20	0.0062	32m03	4 Oct. 2001	R19/C45,C46; R18/C45,C46

Table 1. Target characteristics, rank, and claim
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Notes: n.d.=not determined or not drilled

survey anomaly. Eight holes were drilled for a total metreage of 773.5 m. The drill logs are in Appendix D. In 7 of the drill holes magnetite-bearing basement rocks were intersected. Drill hole HP-01-07 did not reach bedrock. None of the targets are kimberlite.

6.0 CONCLUSIONS AND RECOMMENDATIONS

None of the eight holes drilled intersected kimberlite or any other commercially interesting formation. No further work is recommended in the area.

Respectfully submitted,

DUMONT NICKEL INC.

Jon North, Ph.D. Vice President, Exploration

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APPENDIX A

TERRAQUEST AIRBORNE MAGNETOMETER SURVEY

OPERATIONS REPORT

HIGH SENSIVITY MAGNETIC AIRBORNE SURVEY

NOTTAWAY PROJECT

QUEBEC

for

DUMONT NICKEL INC.

by

TERRAQUEST LTD.

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June 15, 2001

B-050

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MAPS colour plots at 1:50,000 scale Total Magnetic Field Vertical and Horizontal Gradient

APPENDIX I	Personnel
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APPENDIX III	Flight Log, Line Lists

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1.0 INTRODUCTION

This report describes the specification and results of an airborne geophysical survey carried out for DUMONT NICKEL INC., address 512-120 Adelaide Street West, Toronto, ON, M5H 1T1, attention Mr. Jon North, telephone 416-366-9192. The survey was performed by Terraquest Ltd., 1373 Queen Victoria Avenue, Mississauga, Ontario, Canada L5H 3H2, telephone 905-274-1795 and fax 905-274-3936.

The purpose of the survey of this type is to collect geophysical data that can be used to prospect directly for anomalous magnetic areas in the earth's crust which may be caused by or related to economic minerals. Secondly, the geophysical patterns may be used indirectly for exploration by mapping the geology in detail, including the faults, shear zones, folding, alteration zones and other structures.

To obtain this data, the area was systematically traversed by an aircraft carrying geophysical equipment along parallel flight lines spaced at even intervals and oriented so as to intersect the geology and structure in a way as to provide optimum contour patterns of the geophysical data.

2.0 SURVEY AREA

The survey area is in northern Quebec approximately 110 kilometres east of the town of Moosonee (Ontario) and 180 kilometres northwest of the town of Matagami (Quebec). The survey area straddles the Nottaway River. The survey area is rectangular with the long axis pointing to the northeast. The centre of the survey is approximately 51degrees 10 minutes north and 79 degrees west. The survey coordinates in the NAD27 datum Zone 17 as supplied by the client are as follows

6300005690000655000568000064500056500006200005660000

3.0 EQUIPMENT SPECIFICATIONS

3.1 AIRCRAFT

The survey was carried using a single engine Cessna 206U aircraft registration C-GGLS, which carries three high sensitivity magnetometers. It is equipped with long range tanks, outboard tanks (total 9 hours range), tundra tires, cargo door and full avionics.

The aircraft has been extensively modified to support a tail stinger and two wing tip extensions. The transverse separation between the wing tip sensors is 13.5 metres and the longitudinal separation to the tail sensor is 7.2 metres. Considerable effort has been made to remove all ferruginous materials near the sensors and to ensure that the aircraft electrical system does not create any interference or noise. The figure of merit using Geological Survey of Canada standards is approximately 9 nT uncompensated and approximately 0.8 to 1.2 nT compensated depending on the latitude and geological environment..

The aircraft is owned and operated by Terraquest Ltd. under full Canadian Ministry of Transport approval and certification for specialty flying including airborne geophysical surveys. The aircraft is maintained at base operations by a regulatory AMO facility, Leggat Aviation Inc. and when in the field, by a Terraquest Ltd. AME who is also in association with Leggat Aviation Inc.



3.2 **AIRBORNE GEOPHYSICAL EQUIPMENT**

The primary airborne geophysical equipment includes three high sensitivity cesium vapour magnetometers. Ancillary support equipment includes a tri-axial fluxgate magnetometer, video camera, video recorder, radar altimeter, barometric altimeter, laser altimeter, GPS receiver, GPS receiver with a real-time correction service, and a navigation system. The navigation system comprises a left/right-up/down indicator for the pilot and a screen showing the survey area, planned flight lines, and the real time flight path. All data were collected and stored by the data acquisition system. The following provides detailed equipment specifications:

Cesium Vapour Magnetometer Sensor (mounted in tail stinger and wing tip extensions)

••••	Model	(S-2
	Manufacturer	Scintrey
	Desolution	0.001 nT counting at 0.1 per second
	Sencitivity	$\pm 1/2$ 0.005 nT
	Dimamic Pange	15 000 to 100 000 mT
	Equath Difference	
	Fourth Difference	0.02 m
Tri-Axi	al Fluxgate Magnetic Senso	or (for compensation, mounted in midpart of tail stinger)
	Model	MAG-03MC
	Manufacturer	Bartington Instruments Ltd.
	Input	24-34 VDC, >30 milliamps
	Field Range	+/- 100,000 nanotesla
	Internal noise	at 1Hz to 1 kHz: 0.6 nT rms.
	Bandwidth	0 to 1 kHz maximally flat, -12 dB/octave roll off beyond 1 kHz
	Freq. Response	1 to 100 Hz:+/-0.5%; 100 to 500 Hz:+/-1.5%; 0.5 to 1 kHz:+/-5.0%
	Calibration. Accuracy	+/-0.5%
	Orthogonality	+/-0.5% worst case
	Package alignment	+/-0.5% over full temperature range
	Scaling Error	absolute:+/-0.5%; between axes; +/-0.5%
Video C	Camera (mounted in belly o	f aircraft)
	Model	VDC-2982 (colour)
	Manufacturer	Sanvo
	Serial Number	698000-30
	Specifications	¹ / ₂ ", 470hr, 1.3LX, 12 VDC, C/CS, EI/ES, backlite compensation
	Lens	Rainbow 2/3", 4.7 mm, F1,8-360, auto iris
Video F	Recorder (mounted in rack)	
	Model	AG 2400 (commercial grade) 12 VDC
	Manufacturer	Panasonic
	Media	VHS cassette
	Serial Number	C8TA00281
Radar A	ltimeter	
	Model	KRA-10A
	Manufacturer	King
	Serial Number	071-1114-00
	Accuracy	5% up to 2,500 feet
	Calibrate accuracy	1%
	Output	Analog for pilot, converted to digital for data acquisition
Baroma	tric Altimator	
Daronic	Model	T X18001 AN
	Monufacturar	
	Source	counted to aircraft harometric system
	Source	coupled to allerant barometric system

Navigation Interface (console mounted in rack with remote displays for pilot)

Model	PNAV 2001
Manufacturer	Picodas Group Inc.
Data input	real time processing of GPS output data
Pilot readout	left/right and up/down pilot indicator
Operator readout	screen modes: map, survey and line
Data recording	all data recorded in real time by PDAS 1000
Real-Time GPS Correction (conn	ects to Novatel GPS receiver see below)
Model	Landstar Mark III
Manufacturer	Racal
Antenna	post type
Operating temperature	0-50 °C
Broadcast Services	Service Satellite Link: American Satellite Corp. (AMSC)
	L band broadcast (1525 to 1559 MHz satellite band
	Data update 2 seconds, Data latency 5-6 seconds
	Cold acquisition 12 seconds
	Reacquisition 7 seconds

Power supplies:

- 1) PC6B converter to convert 13.75 volt aircraft power to 27.5 volts DC.
- 2) Power distribution unit located in the instrument rack, manufactured by Picodas Group Inc., interfaces with the aircraft power and provides filtered and continuous power at 13.75 and 27.5 VDC to components.
- 3) The 1000A console manufactured by Picodas Group Inc. contains three 32 VDC switching power supply for the cesium vapour magnetometer sensors; console also provides switching power for fluxgate magnetometer (real time magnetic compensation), radar altimeter, barometric altimeter, and ancillary equipment.

Data Acquisition System (mounted in rack)

	•
Model	PDAS 1000
Manufacturer	Picodas Group Inc.
Operating System	MSDOS
Microprocessor	80486dx-66 CPU
Coprocessor	Intel 80486dx
Memory	on board 8 MB, page interleaving, shadow RAM for BIOS, EMS 4.0
Clock	real time, hardware implementation of MC14618 in the integrated peripheral controller
I/O slots	5 AT and 3 PC compatible slots
Display	electroluminescent 640 x 400 pixels
Graphic display	scrolling analog chart with 5 windows operator selectable, freeze display capability to hold image for inspection
Recording media	standard hard drive with extra shock mounts, standard floppy drive and quarter inch tape backup (QIC format)
Sampling	selectable sampling for each input type: 1.0, 0.5, 0.25, 0.2, 0.1 seconds
Inputs	12 differential analog input with 16 bit resolution
Serial ports	2 RS-232C (expandable)
Parallel ports	10 definable 8 bit I/O; 2 definable 8 bit outputs

The PDAS 1000 contains several boards as described below:

 Magnetometer Board (three boards, one for each magnetometer sensor)

 Model
 PCB

 Manufacturer
 Picodas Group Inc.

Input range	20,000 – 100,000 nT
Sampling	1,000 per second
Bandwidth	selectable 0.7, 1.0 or 2.0 Hz
Resolution	0.0001 nT
Microprocessor	TMS 9995
Firmware	8 Kbit EPROM board resident
Internal crystal	18,432 kHz
Crystal accuracy	absolute <0.01%
Host interfacing	8 kByte dual port memory
Address selection	within 20 bit addressing in 8 kByte software selectable steps
Input signal	TTL, CMOS, open collectible compatible or sine wave with decoupler
Input impedance	TTL>1 kOhm

Magnetic compensation for aircraft and heading effects is done in real time. Raw magnetic values are also stored and thus compensation with different variable can be performed at a later date.

GPS Differential Receiver Board	
Model	GPS card 3951 R
Manufacturer	Novatel
Antenna	Model 511, low profile
Channels	12
Position update	0.2 second for navigation
Accuracy	position with SA implement 100 metres, with no SA 10 metres, velocity 0.1 knot time recovery 1pps, 100 nsec pulse width
Data recording	all raw GPS and positional data logged by PDAS1000
Analog Processor Board	
Model	PCB
Manufacturer	Picodas Group Inc.
	Provides separate A/D converter for each analog input with no multiplexing; each channel is sampled at a rate of 1,000 samples per second with digital processing applied

3.3 BASE STATION EQUIPMENT

High sensitivity magnetic base station data was provided by a cesium vapour magnetometer logging onto a notebook and with time synchronization from the GPS base station receiver.

The magnetometer is the same as used in the aircraft, a CS-2 magnetometer manufactured by Scintrex. The processor is also the same as used in the aircraft but is housed in a portable box model MEP-710, manufactured by Picodas Group Inc. The logging software is written by Picodas Group Inc., BASEMAG version 5.02 for an IBM compatible PC (notebook) with RS232 input. It supports real time graphics, automatic startup, compressed data storage, selectable start/stop times, plotting of data to screen or printer at user-selected scales, and fourth-digital difference and diurnal quality flags which are set by user in BASEPLOT. Time recorded is taken from the base GPS receiver.

The GPS base station data are provided by a GPS receiver, with logging onto a notebook. These data were used to perform post flight differential corrections using C3NAVs software to the flight path data.

		~		
Model	MX 4200D			
Manufacturer	Magnavox			
Serial number	5057			
Туре	continuous tracking, L1 frequency, C/A ode (independent	SPS),	6-ch	annel
Receiver sensitivity	-143 dBm Costas threshold			
Logging rate	1 per second			

4.0 SURVEY SPECIFICATIONS

4.1 LINES AND DATA

Survey lines	2178 km
Tie lines	465 km
Total Survey	2643 km
Survey Line Interval	400 metres
Tie Line Interval	2 km
Survey Line Direction	018.5 degrees
Tie Line Direction	288.5 degrees
Terrain Clearance	80 metres (mean terrain clearance)
Average Ground Speed	60 metres/second
Data Point Interval	6 metres

4.2 TOLERANCES

- Line Spacing: Reflights will take place if the final differentially corrected flight path deviates from the intended flight path by +/-25% of the line spacing over a distance greater than 1 kilometre.
- Terrain Clearance: The aircraft terrain clearance will be smoothly maintained at 80 metres MTC in a drape mode. Reflights will take place if the final differentially corrected altitude deviates from the flight altitude by +/-25% over a distance of one kilometre or more.
- Aircraft Speed: Aircraft speed should not exceed 220 km/hr.
- Diurnal Magnetic Variation: The airborne survey will be confined to periods in which the diurnal activity is 10 nT or less over a chord of 1 minute in length.
- GPS Data: GPS data shall include at least four satellites for accurate navigation and flight path recovery. There shall be no significant gaps in any of the digital data including GPS and magnetic data.

4.3 NAVIGATION AND RECOVERY

The satellite navigation system was used to ferry to the survey sites and to survey along each line. The survey coordinates of each area outline was supplied by the client and was used to establish the survey boundaries and the flight lines. The Clark 1866 ellipsoid for Canada East was used with x-y-z delta shifts of 22, -160 and -190 respectively. The UTM zone is 17.

The flight path guidance accuracy is variable depending upon the number and condition (health) of the satellites employed. The selective availability normally imposed by the military was at a minimum during this period and consequently the accuracy was for the most part better than 10 metres. Real-time correction using the Racal (receiver and broadcast services) improves the accuracy to about 3 metres or less. Post flight differential correction, which corrects for satellite range errors, using the base station data improves the accuracy of the recovered flight to less than 2-3 metres.

A video camera recorded the ground image along the flight path. A video display screen in the cockpit enabled the operator to monitor the flight path during the survey.

4.4 **OPERATIONAL LOGISTICS**

The base of operations was at the airport in Moosonee, Ontario. The base station (combined high sensitivity magnetic and GPS) was set up behind the Osprey Inn. The survey was flown in 4 flights from G149 to G152 including compensation, testing and Figure of Merit from May 8th to May 10th 2001. No reflights were required.

4.0 SURVEY SPECIFICATIONS

4.1 LINES AND DATA

Survey lines	2178 km
Tie lines	465 km
Total Survey	2643 km
Survey Line Interval	400 metres
Tie Line Interval	2 km
Survey Line Direction	018.5 degrees
Tie Line Direction	288.5 degrees
Terrain Clearance	80 metres (mean terrain clearance)
Average Ground Speed	60 metres/second
Data Point Interval	6 metres

4.2 TOLERANCES

Line Spacing: Reflights will take place if the final differentially corrected flight path deviates from the intended flight path by +/-25% of the line spacing over a distance greater than 1 kilometre.

Terrain Clearance: The aircraft terrain clearance will be smoothly maintained at 80 metres MTC in a drape mode. Reflights will take place if the final differentially corrected altitude deviates from the flight altitude by +/-25% over a distance of one kilometre or more.

Aircraft Speed: Aircraft speed should not exceed 220 km/hr.

Diurnal Magnetic Variation: The airborne survey will be confined to periods in which the diurnal activity is 10 nT or less over a chord of 1 minute in length.

GPS Data: GPS data shall include at least four satellites for accurate navigation and flight path recovery. There shall be no significant gaps in any of the digital data including GPS and magnetic data.

4.3 NAVIGATION AND RECOVERY

The satellite navigation system was used to ferry to the survey sites and to survey along each line. The survey coordinates of each area outline was supplied by the client and was used to establish the survey boundaries and the flight lines. The Clark 1866 ellipsoid for Canada East was used with x-y-z delta shifts of 22, -160 and -190 respectively. The UTM zone is 17.

The flight path guidance accuracy is variable depending upon the number and condition (health) of the satellites employed. The selective availability normally imposed by the military was at a minimum during this period and consequently the accuracy was for the most part better than 10 metres. Real-time correction using the Racal (receiver and broadcast services) improves the accuracy to about 3 metres or less. Post flight differential correction, which corrects for satellite range errors, using the base station data improves the accuracy of the recovered flight to less than 2-3 metres.

A video camera recorded the ground image along the flight path. A video display screen in the cockpit enabled the operator to monitor the flight path during the survey.

4.4 **OPERATIONAL LOGISTICS**

The base of operations was at the airport in Moosonee, Ontario. The base station (combined high sensitivity magnetic and GPS) was set up behind the Osprey Inn. The survey was flown in 4 flights from G149 to G152 including compensation, testing and Figure of Merit from May 8th to May 10th 2001. No reflights were required.

5.0 DATA PROCESSING

The data were transmitted via an FTP site to Controlled Geophysics Inc. (CGI) processing laboratory in Thornhill, Ontario, Canada where it was reviewed thoroughly for quality control and tolerances on all channels. This included post flight differential GPS corrections to the flight path, making flight path plots, importing the base station data, creating a database on a flight by flight basis, and posting the data. All data were checked for continuity and integrity. Any errors or omission or data beyond tolerances were flagged for reflight and the crew was notified by return FTP transmission, ready for their flight in the morning.

The final processing involved tie line leveling in the standard manner by tying the survey lines to the tie lines using GEOSOFT software. The total field was gridded and microlevelled in the Fourier domain (generally less than 1 nT corrections) to reduce any linear noise along the flight path without degrading the geologic signal. The vertical magnetic gradient was calculated from the final processed total magnetic field gridded data. The final levelled datasets were gridded and contoured. The magnetic data were plotted as colour images at a scale of 1:50,000.

The measured horizontal gradient was obtained as follows: a) the transverse gradient is the value from the left sensor minus the value from the right sensor divided by their separation, b) the longitudinal gradient is the difference between the tail sensor and the average of the left and right senors, and divided by the longitudinal separation, c) the horizontal gradient is the vector sum of the transverse and longitudinal gradients. In addition every other line is flipped to accommodate the flight direction and a shift is applied to equalize the sensors. The horizontal gradient is then plotted as discrete vectors along the flight path superimposed over the vertical gradient contoured data.

The final processed database and gridded data are included in the CD-ROM archive. All preliminary and final products were shipped to Stratagex in Toronto.

6.0 SUMMARY

An airborne high sensitivity magnetic survey with three magnetometers was performed at 80 metre mean terrain clearance, 400 metre line interval, 2 kilometre tie line interval, and data sample points at 6 metres along the flight lines. A high sensitivity magnetic and a GPS base station located in Moosonee, Ontario recorded the diurnal magnetic activity and reference GPS data during the survey for adherence to survey tolerances and post flight corrections in the flight path.

The data were subjected to final processing to produce total magnetic field and calculated vertical magnetic gradient as colour plots. All data have been archived on a CD-ROM. All products were shipped to Stratagex in Toronto.

Respectfully Submitted PLOGICA, CHARLES Q. BARRIE TERRAOUEST LTD Charles Q. Barrie, M.Sc.

APPENDIX I

PERSONNEL

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Field:	Pilot Operators	Brian Harvey Paul Beaubien
Office:	Chief Geophysicist Manager	Chris Vaughan (CGI) Charles Barrie

APPENDIX II

CERTIFICATE OF QUALIFICATION

I, Charles Barrie, certify that I:

- 1) am registered as a Fellow with the Geological Association of Canada and work professionally as a geologist,
- hold an Honours degree in Geology from McMaster University, Canada, obtained in 1977,
- 3) hold an M.Sc. in Geology from Dalhousie University, Canada, obtained in 1980,
- 4) am a member of the Prospectors and Developers Association of Canada,
- 5) am a member of the Canadian Institute of Mining, Metallurgy and Petroleum,
- 6) have worked as a geologist for over twenty five years,
- 7) am employed by and am an owner of Terraquest Ltd., specializing in high sensitivity airborne geophysical surveys, and
- 8) have prepared this operations and specifications report pertaining to airborne data collected by Terraquest Ltd..

Mississauga, Ontario, Canada June 15, 2001

Signed

Charles Q. Barrie, M.Sc. Vice President, Terraquest Ltd.

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FLIGHT GLS149	
AIRPORT BARO:	2978
AIRPORT TEMP:	20'C

FIDS			COMMENT	
1570.0E	5	779	17:38:10	17:51:05
1560.OW	780	1319	17:51:33	18:00:33
1550.0E	1320	1856	18:01:13	18:10:10
1540.OW	1857	2374	18:10:47	18:19:25
1530.0E	2375	2924	18:19:58	18:29:08
1520.OW	2925	3452	18:29:53	18:38:41
1510.0E	3453	3986	18:39:22	18:48:16
1500.OW	3987	4514	18:48:51	18:57:39
1490.0E	4515	5048	18:58:23	19:07:17
1480.0W	5049	5586	19:07:57	19:16:55
1470.0E	5587	6126	19:17:37	19:26:37
1460.OW	6127	6670	19:27:10	19:36:14
1450.0E	6671	7218	19:36:52	19:46:00
1440.OW	7219	7744	19:46:27	19:55:13
1430.0E	7745	8305	19:55:39	20:05:00
1420.OW	8306	8818	20:05:38	20:14:11
1410.0E	8819	9371	20:14:42	20:23:55
680.0S	9372	10072	20:25:32	20:37:13
670.ON	10073	10669	20:37:43	20:47:40
660.0S	10670	11435	20:48:15	21:01:01
650.ON	11436	12003	21:01:25	21:10:53
640.0S	12004	12760	21:11:15	21:23:52
630.ON	12761	13317	21:24:39	21:33:56
620.0S	13318	14070	21:34:16	21:46:49
	FIDS 1570.0E 1560.0W 1550.0E 1540.0W 1530.0E 1520.0W 1510.0E 1500.0W 1490.0E 1480.0W 1490.0E 1460.0W 1470.0E 1460.0W 1450.0E 1420.0W 1410.0E 680.0S 670.0N 660.0S 650.0N 640.0S 630.0N 620.0S	FIDS1570.0E51560.0W7801550.0E13201540.0W18571530.0E23751520.0W29251510.0E34531500.0W39871490.0E45151480.0W50491470.0E55871460.0W61271450.0E66711440.0W72191430.0E77451420.0W83061410.0E8819680.0S9372670.0N10073660.0S10670650.0N11436640.0S12004630.0N12761620.0S13318	FIDS1570.0E57791560.0W78013191550.0E132018561540.0W185723741530.0E237529241520.0W292534521510.0E345339861500.0W398745141490.0E451550481480.0W504955861470.0E558761261460.0W612766701450.0E667172181440.0W721977441430.0E774583051420.0W830688181410.0E88199371680.0S937210072670.0N1007310669660.0S1067011435650.0N1143612003640.0S1200412760630.0N1276113317620.0S1331814070	FIDSCOMMENT1570.0E577917:38:101560.0W780131917:51:331550.0E1320185618:01:131540.0W1857237418:10:471530.0E2375292418:19:581520.0W2925345218:29:531510.0E3453398618:39:221500.0W3987451418:48:511490.0E4515504818:58:231480.0W5049558619:07:571470.0E5587612619:17:371460.0W6127667019:27:101450.0E6671721819:36:521440.0W7219774419:46:271430.0E7745830519:55:391420.0W8306881820:05:381410.0E8819937120:14:42680.0S93721007220:25:32670.0N100731066920:37:43660.0S106701143520:48:15650.0N114361200321:01:25640.0S120041276021:11:15630.0N127611331721:24:39620.0S133181407021:34:16

AIRPORT BARO: AIRPORT TEMP:

2973 20'C

FLIGHT GLS150		
AIRPORT BARO:	2987	
AIRPORT TEMP:	10'C	

UP TIME: 08:30 DOWN TIME: 12:50

FILE	LINE#	FIDS		COMMENT
				COMP BOX
				HD FIDS
S1050912.B33	630.0s	1	430	10' P: 25 R: 55 Y: 85
				20' P: 160 R: 160 Y: 230
				30' P: 305 R: 340 Y: 370
S1050913.B14	640.ON	431	844	100' P: 445 R: 480 Y: 510
				110' P: 570 R: 615 Y: 645
				120' P: 720 R: 760 Y: 790
S1050913.B22	650.0S	845	1298	190' P: 870 R: 905 Y: 940
				200' P:1020 R:1055 Y:1090
				210' P:1165 R:1210 Y:1240
S1050913.B30	660.ON	1299	1720	280' P:1345 R:1380 Y:1410
				290' P:1470 R:1505 Y:1535
				300' P:1605 R:1640 Y:1670
				FOM BOX
S1050913.B38	670.0S	1721	1947	20' P:1825 R:1855 Y:1890
S1050913.B43	680.ON	1948	2096	110' P:1985 R:2015 Y:2040
S1050913.B46	690.0S	2097	2229	200' P:2115 R:2150 Y:2180
S1050913.B49	700.0N	2230	2354	290' P:2235 R:2265 Y:2300
s1050914.B12	10.0s	2513	3268	14:12:52 14:25:28
S1050914.B25	20.0N	3269	3837	14:25:55 14:35:24
S1050914.B35	30.0s	3838	4576	14:35:41 14:48:00
S1050914.B48	40.0N	4577	5139	14:48:27 14:57:50
S1050914.B58	50.0S	5140	5869	14:58:23 15:10:33
S1050915.B10	60.0N	5870	6435	15:10:56 15:20:22
S1050915.B20	70.0s	6436	7175	15:20:40 15:33:00
S1050915.B33	80.ON	7176	7753	15:33:19 15:42:57
S1050915.B43	90.0S	7754	8467	15:43:38 15:55:32
S1050915.B55	100.0N	8468	9018	15:56:08 16:05:19
s1050916.B05	110.0s	9019	9777	16:05:46 16:18:25
	6 00 8			

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AIRPORT BARO: 2987 AIRPORT TEMP: 15'C

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FLIGHT GLS151 AIRPORT BARO: 2985 AIRPORT TEMP: 17'C

UP TIME: 14:30 DOWN TIME: 16:40

FILE	LINE#	FIDS		COMI	ÆNT
S1050918.B33	120.0N	1	645	19:05:35	19:16:20
S1050919.B16	130.0s	646	1403	19:16:39	19:29:17
S1050919.B29	140.ON	1404	2007	19:29:36	19:39:40
S1050919.B39	150.0S	2008	2729	19:39:59	19:52:01
S1050919.B52	160.ON	2730	3315	19:52:23	20:02:09
S1050920.B02	170.0s	3316	4083	20:02:24	20:15:12
S1050920.B15	180.ON	4084	4672	20:15:39	20:25:28
S1050920.B25	190.0s	4673	5420	20:25:52	20:38:20
S1050920.B38	200.0N	5421	6009	20:38:42	20:48:31
S1050920.B49	210.0S	6010	6710	20:49:22	21:01:03
S1050921.B01	220.ON	6711	7281	21:01:56	21:11:27
s1050921.B11	230.0S	7282	7996	21:11:59	21:23:54
S1050921.B24	240.ON	7997	8581	21:24:18	21:34:03
S1050921.B34	250.05	8582	9318	21:34:18	21:46:35
S1050921.B46	260.ON	9319	9889	21:46:55	21:56:26
S1050921.B56	270.05	9890	10608	21:56:52	22:08:51
AIRPORT BARO:	2983				

AIRPORT BARO: AIRPORT TEMP:

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19'C

FLIGHT GLS152 AIRPORT BARO: 2993 AIRPORT TEMP: 10'C

UP TIME: 08:35 DOWN TIME: 13:50

FILE	LINE#	FIDS		COMN	<u>TENT</u>
S1051012.B44	280.0N	1	623	13:15:27	13:25:50
S1051013.B26	290.0s	624	1295	13:26:11	13:37:23
S1051013.B37	300.ON	1296	1931	13:37:42	13:48:18
S1051013.B48	310.0S	1932	2615	13:48:33	13:59:57
S1051014.B00	320.ON	2616	3243	14:00:14	14:10:42
S1051014.B10	330.0s	3244	3930	14:11:02	14:22:29
S1051014.B22	340.ON	3931	4552	14:22:47	14:33:09
S1051014.B33	350.0S	4553	5250	14:33:28	14:45:06
S1051014.B45	360.ON	5251	5852	14:45:30	14:55:32
S1051014.B55	370.0S	5853	6545	14:55:50	15:07:23
S1051015.B07	380.ON	6546	7146	15:07:46	15:17:47
S1051015.B17	390.0S	7147	7840	15:18:02	15:29:36
S1051015.B29	400.ON	7841	8448	15:29:59	15:40:07
S1051015.B40	410.0S	8449	9148	15:40:29	15:52:09
S1051015.B52	420.ON	9149	9749	15:52:30	16:02:31
S1051016.B02	430.0s	9750	10457	16:03:00	16:14:48
S1051016.B14	440.ON	10458	11072	16:15:06	16:25:21
S1051016.B25	450.0S	11073	11755	16:25:50	16:37:13
S1051016.B37	460.ON	11756	12346	16:37:45	16:47:36
S1051016.B47	470.0S	12347	13046	16:47:52	16:59:32
S1051016.B59	480.ON	13047	13649	16:59:50	17:09:53
S1051017.B10	490.0S	13650	14328	17:10:12	17:21:31

AIRPORT BARO: AIRPORT TEMP: 2982 08'C

APPENDIX B

REPORT ON MAGNETIC ANOMALY MODELS BY MPH CONSULTING



150 York Street, Suite 1800 Toronto, Ontario, Canada M5H 3S5

TO:	Jon North, Dumont Nickel Inc.
FROM:	Jeremy Brett, Senior Consulting Geophysicist
DATE:	October 30, 2001
RE:	Aeromagnetic Interpretation, Lac Victoire Project, Quebec
JOB:	C-300

PRELIMINARY COMMENTS

The following anomalies were modeled to determine depth to magnetic causative body (please refer to the attached model plots):

	Target	Diameter (m)	Depth (m)	Avg. Depth sans 80m	Susceptibility (mSI)
(later)3	M03	260	112 / 114	33	0.0072
Ć	M21	300	121 / 150	X 55	0.0134
B +	M22	80	116 / 110	33 ,~	0.0150 32n/03
Ċ	M23	350	156 / 201	98	0.0132
il)B	M24	250	100 / 104	22	0.0035
Bt	M25	200	110/115	32	0.0104 32m/03
, d) B	M30	300	102 / 126	34	0.0094
Bt U	M33	165	80 / 90	5 -	0.0035 32m/03
Bt	M35	400	120 / 114	37 🗸	0.0062 32m/0 2
Bt V	M36	275	83 / 118	20 _	0.0088 32m/ve
C+	M37	550	164 / 127	X (dyent of on M36)	0.0072

Respectfully Submitted,

MPH Consulting Limited

25-B

Jeremy S. Brett, M.Sc.



150 York Street, Suite 1800 Toronto, Ontario, Canada M5H 3S5

то:	Jon North, Dumont Nickel Inc.
FROM:	Jeremy Brett, Senior Consulting Geophysicist
DATE:	November 29, 2001
RE:	Revised Aeromagnetic Interpretation, Lac Victoire Project, Quebec
JOB:	C-300

Fixed-wing aeromagnetic data, provided by Dumont Nickel Inc., was interpreted using shaded Total Magnetic Intensity (TMI) and Total Horizontal Derivative (THD) filter treatments, designed to enhance the magnetic signature of diatremes. The data was interpreted for the purpose of drill recommendations, using the a mean sensor-ground clearance of ~80m, as provided by Dumont Nickel Inc.

Magnetic anomalies were evaluated on the degree of a discrete signature, as indicated with the TMI and closure of the THD "ring". Further assessment was based on local structural associations, which may indicate if the causative body had intruded into the local formations.

Priority anomalies were modeled using the MAGIXXL potential field modeling software package, then depth estimations and causative body susceptibility estimates were provided. The mean sensor-terrain clearance was then subtracted to yield the estimated depth below ground surface.

<u>Target</u>	Diameter (m)	Depth (m)	Avg. Depth sans 80m	Susceptibility (mSI)	
M03	260	112/114	33	0.0072	
M20	265	160	80	0.170	
M21	300	121 / 150	55	0.0134	
M22	80	116/110	33	0.0150	
M24	250	100 / 104	22	0.0035	1
M25	200	110/115	32	0.0104	
M27	220	150	70	0.0149	
M33	165	80 / 90	5	0.0035	
M36	275	83 / 118	20	0.0088	
M37	550	164 / 127	66	0.0072	

TABLE 1: Summary of results,	as per our	discussion,	November26,	2001	(discussion
and evaluation of targets)					

<u>Target</u>	Diameter (m)	Depth (m)	Avg. Depth sans 80m	Susceptibility (mSI)	
M01	180	190	110	0.0151	1
M16	200	120	40	-0.0255 (neg. anom.)	
M38	360	220	140	0.0697	
M39	60 (small)	100	20	0.0062	8
M40	160	150	70	0.0167	12

 TABLE 2: Additional targets resulting from the re-examination of the aeromagnetic data, as per your request

Note that targets M38, M39 and M40 are new designations for targets corresponding to priority targets identified from the mylar interpretation provided by you on November 26th. Based on the modeled depths, **I would recommend adding Targets M16, M39** and M40 to the current program, though target M39 is very small.

TABLE 2B: New target locations (UTM, NAD27, Zone 17N) – ESTIMATED –please verify against Terraquest Survey Maps

<u>Target</u>	UTM Easting (m)	UTM Northing (m)
M38	643255	5677725
M39	631015	5667725
M40	637920	5662950

As per our discussion, I recommend that the indicated priority targets be follow-up with ground magnetic data acquisition and field interpretation. These data should then be modeled prior to drilling, if logistically feasible.

With regard to the positioning of survey data, the data is assumed to be projected using UTM, NAD27, Zone 17N, as provided by Dumont Nickel Inc., and this is assumed verified against the Terraquest airborne survey maps.

Respectfully Submitted,

MPH Consulting Limited

Jeremy S. Brett, M.Sc.





















APPENDIX C

GROUND MAGNETOMETER SURVEY DATA AND PROFILES

HP-01-01: Target M36 Magnetometer survey data

Notes: 00+00 is at 646150 5656000, the E-W line was put in first and then the N-S cross line was put in at 0+75E. All values n+57000 nT. Survey made 30 November 2001, hole spotted at 1+50 N. South and west are negative stations.

station	E-W line nT	N-S line nT
-250	675	681
-237.5	670	674
-225	650	690
-212.5	720	716
-200	721	710
-187.5	718	669
-175	664	676
-162.5	714	668
-150	654	661
-137.5	659	666
-125	656	671
-112.5	660	652
-100	661	655
-87.5	662	644
-75	671	650
-62.5	664	662
-50	679	665
-37.5	679	673
-25	670	692
-12.5	701	710
0	683	716
12.5	738	701
25	711	692
37.5	726	722
50	731	736
62.5	762	781
75	716	801
87.5	744	836
100	734	869
112.5	724	899
125	739	902
137.5	752	915
150	717	922
162.5	735	919
175	735	921
187.5	758	908
200	718	899
212.5	726	898
225	743	907
237.5	744	884
250	742	903



M36 Magnetometer Survey

HP-01-02: Target M33

Notes: 00+00 is at 637950 5656750, the E-W line was put in first and then the N-S cross line was put in at 0+12.5 W. All values n+57000 nT. Survey made 1 December 2001, hole spotted at 37.5 S. South and west are negative stations.

station	E-W line nT	N-S line nT
-250	578	
-237.5	563	
-225	532	470
-212.5	500	430
-200	445	527
-187.5	479	513
-175	445	543
-162.5	440	549
-150	432	519
-137.5	419	525
-125	433	497
-112.5	437	485
-100	438	505
-87.5	443	522
-75	441	522
-62.5	475	533
-50	475	554
-37.5	491	582
-25	338	553
-12.5	562	569
0	530	562
12.5	513	533
25	498	529
37.5	476	507
50	448	511
62.5	409	488
75	390	479
87.5	416	476
100	386	460
112.5	377	486
125	374	487
137,5	368	522
150	339	536
162.5	320	537
175	294	553
187.5	293	566
200	296	583
212.5	318	595
225	331	572
237.5	344	5 9 8
250	357	594

M33 Magnetometer Survey



HP-01-03: Target M25

Notes: 00+00 is a 637250 5663450, the E-W line was put in first and then the N-S cross line was put in at 162.5 W. All values n+57000 nT. Survey made 3 December 2001, hole spotted at 137.5 S. South and west are negative stations.

station	E-W line nT	N-S line nT
-250	397	428
-237.5	416	357
-225	426	447
-212.5	409	474
-200	422	466
-187.5	430	467
-175	422	429
-162.5	445	468
-150	390	472
-137.5	405	472
-125	378	437
-112.5	373	459
-100	378	459
-87.5	395	440
-75	358	417
-62.5	372	423
-50	369	399
-37.5	345	406
-25	331	393
-12.5	319	380
0	319	445
12.5	216	397
25	280	393
37.5	333	393
50	251	407
62.5	278	398
75	282	383
87.5	264	389
100	237	384
112.5	239	399
125	238	392
137.5	278	391
150	251	410
162.5	160	412
175	208	444
187.5	213	436
200	233	450
212.5	258	479
225	219	463
237.5	237	461
250	212	501





HP-01-04: Target M40

Notes: 00+00 is at 637920 5662950, the E-W line was put in first and then the N-S cross line was put in at 0+25 W, collar at 12.5 N. All values n+ 57000 nT. Survey made 4 December 2001, hole spotted at 12.5 N. South and west are negative stations.

station	E-W line nT	N-S line nT
-250	461	415
-237.5	421	400
-225	441	433
-212.5	476	463
-200	409	398
-187.5	419	391
-175	447	363
-162.5	434	367
-150	405	412
-137.5	401	393
-125	355	389
-112.5	333	388
-100	355	374
-87.5	345	379
-75	329	381
-62.5	352	395
-50	328	333
-37.5	365	276
-25	369	313
-12.5	371	326
0	330	369
12.5	335	376
25	340	365
37.5	330	363
50	320	387
62.5	312	366
75	311	378
87.5	303	381
100	295	389
112.5	292	383
125	293	396
137.5	292	383
150	295	391
162.5	286	388
175	285	399
187.5	308	399
200	293	409
212.5	288	412
225	295	421
237.5	291	40 4
250	267	430



M40 Magnetometer Survey

HP-01-05: Target M27

Notes: 00+00 is at 634600 5663000, the E-W line was put in first and then the N-S cross line was put in at 0+00, same as collar, all values n+57000 nT. Survey made 8 December 2001, hole spotted at 0+00 centre of grid. South and west are negative stations.

station	E-W line nT	N-S line nT
-250		283
-237.5		281
-225		265
-212.5		269
-200		259
-187.5		274
-175	267	275
-162.5	283	278
-150	241	276
-137.5	263	268
-125	276	275
-112.5	252	269
-100	258	274
-87.5	250	278
-75	288	270
-62.5	278	273
-50	295	275
-37.5	299	278
-25	301	283
-12.5	292	284
0	301	301
12.5	293	298
25	297	293
37.5	296	302
50	292	289
62.5	296	299
75	293	286
87.5	289	294
100	290	282
112.5	294	298
125	302	294
137.5	289	329
150	293	349
162.5	287	361
175	293	380
187.5	292	394
200	304	417
212.5	298	428
225	291	456
237.5	302	485
250	292	416

M27 Magnetometer Survey



HP-01-06: Target M22

Notes: 00+00 is at 637075 5669275, the E-W line was put in first and then the N-S cross line was put in at 0+00, all values n+57000 nT. Survey made 9 December, 2001. Mag storm 5,000 gamma peak to peak at 8:45, ending at about 9:30. Hole spotted at 137.5 N. South and west are negative stations.

station	E-W line nT	N-S line nT
-250	281	350
-237.5	286	350
-225	282	352
-212.5	282	353
-200	283	342
-187.5	289	331
-175	289	329
-162.5	287	323
-150	297	308
-137.5	295	298
-125	298	292
-112.5	304	279
-100	312	284
-87.5	319	266
-75	317	275
-62.5	339	274
-50	346	287
-37.5	348	293
-25	344	306
-12.5	356	325
0	360	360
12.5	351	370
25	363	410
37.5	374	431
50	364	452
62.5	351	473
75	363	497
87.5	345	504
100	337	516
112.5	338	530
125	330	533
137.5	321	532
150	304	534
162.5	291	529
175	302	520
187.5	286	519
200	272	499
212.5	276	482
225	274	483
237.5	278	446
250	261	449



M22 Magnetometer Survey

HP-01-07: Target M20

Notes: 00+00 is at 645100 5665550, the E-W line was put in first and then the N-S cross line was put in at 87.5 W, all values n+57000 nT. Survey made December 11th, 2001, ddh collar at 0+25N. South and west are negative stations.

station	F-W line nT	N-S line nT
-250		
-237 5		
-225	57964	
-212.5	57958	
-200	57964	57956
-187.5	57968	57991
-175	57990	58004
-162.5	58002	57999
-150	58044	58018
-137.5	58062	58019
-125	58101	58053
-112.5	58218	58073
-100	58201	58058
-87.5	58223	58014
-75	58208	58090
-62.5	58210	58077
-50	58211	58120
-37.5	58191	58123
-25	58190	58215
-12.5	58183	58180
0	58170	58223
12.5	58181	58239
25	58192	58298
37.5	58101	58254
50	58119	58201
62.5	58090	58230
75	58075	58230
87.5	58051	58211
100	58033	58192
112.5	58020	58188
125	58056	58186
137.5	58036	58170
150	58019	58151
162.5	57999	58168
175	58007	58165
187.5	57984	58162
200	57908	58135
212.5	58033	58136
225	57955	58105
237.5	57972	58085
250	57991	58087





HP-01-08: Target M16

Notes: 00+00 is at 648275 5668650, the E-W line was put in first and then the N-S cross line was put in at 0+00. Survey made 12 December 2001, N-S cross line at 0+00, ddh collar at 0+25 S. South and west are negative stations.

station	E-W line nT	N-S line nT
-250	58068	
-237.5	58048	
-225	58013	
-212.5	58002	
-200	57951	58219
-187.5	57966	58230
-175	57949	58218
-162.5	57931	58207
-150	57891	58196
-137.5	57899	58172
-125	57890	58147
-112.5	57882	58112
-100	57862	58082
-87.5	57866	58057
-75	57856	57991
-62.5	57838	57952
-50	57839	57908
-37.5	57813	57862
-25	57836	57834
-12.5	57837	57840
0	57836	57836
12.5	57872	57914
25	57898	57952
37.5	57932	57998
50	57950	58034
62.5	57983	58072
75	58020	58099
87.5	58064	58133
100	58099	58164
112.5	58121	58190
125	58161	58206
137.5	58195	58221
150	58230	58227
162.5	58251	58232
175	58283	58235
187.5	58294	58237
200	58336	58233
212.5	58360	
225	58389	
237.5	58405	
250	58428	



M16 Magnetometer Survey

APPENDIX D

DIAMOND DRILL HOLE LOGS

DUM	ONT I	NICKE	L INC	2.								
Diamor	nd Drill	Core Re	cord									
Project:	Hernia			Date Sta	rted: 1 De	c. 2001	UTM: 646	6150 E 565	56000 N		Sheet 1	of 1
Hole Nur	nber: HP	-01-01		Date Con	npleted: 2	Dec. 01	Collar El	evation: 9	9.06 m		Total De	epth:101 m
Claim Nu	umber:			Logged I	By: Jon N	lorth	Azimuth:	n/a In	clination:	-90		
Target: N	M36			Core Size	e: BQ		Survey T	ype: n/a				
Core rec	overy:> 9	5%					m	Az.	Incl.	m	Az.	Incl.
Core sto	rage: Wa	skaganis	n				0		-90			
Drilled b	y: Norex										T	
Notes:												
							[
Metres		Unit Nam) e	Descriptio	n							
From	То								Sample	From	То	Total
0.00	50.00	Casing										
50.00	101.00	Granite a	nd	50% cg g	ranite dike	es with blue	e qtz and d	liss. cg mt				
		Paragneis	s	and 50%	black to d	k brown fg	/mg biotite	e-gnt				
				paragneis	s							
				mt appea	rs at 75.5	m and nar	row interva	ls have 25	% cg mt c	lots	1	
101.00	EOH					1	1				1	

Diama	and David	0 D										
Diamoi		Core Re	cora		ļ		ļ					
Project:	Hernia			Date Star	rted: 4 De	c. 2001	UTM: 637	950 E 5	656750 N		Sheet 1	of 1
Hole Nur	nber: HP	-01-02		Date Con	npleted: 5	Dec. 01	Collar El	evation:	56 m		Total D	epth:101 m
Claim Nu	umber:			Logged B	Bv: Jon N	orth	Azimuth:	n/a	Inclination:	-90		•
Target: N	rget: M33			Core Size: BQ			Survey T	ype: n/a				
Core rec	overy:> 9	95%					m	Az.	Incl.	m	Az.	Incl.
Core sto	rage: Wa	skaganisl	<u>יייי</u> ו	1			0		-90			
Drilled b	y: Norex											
Notes:												
										l	<u> </u>	
											L	
Metres		Unit Name	3	Descriptio	n							
From	То								Sample	From	То	Total
0.00	26.00	Casing						l				
26.00	26.30	Sandstone	2	sandstone	e lag on un	conformit	, poorly so	orted,				
				conglome	ratic							
26.30	101.00	Granite-Pa	aragneiss	70% red	granite and	d 30% gra	nulitic para	gneiss,				
		Complex		black, mir	nor cg mt i	n the gran	ite					
				first mt at	49.6 m							
101.00	EOH											

DUM	οντ Ι	NICKE	L INC.									
Diamor	nd Drill	Core Rec	ord									
Denis			<u> </u>	D. 4. 01			UTM COT		20450 N		Charte	1.1
Project:	Hemia	01.00		Date Star	ted: 8 Dec	0.01	UTM: 63/	250 E 56	0.450 N		Sneet 10	
Hole Nur	nder: HP	-01-03		Date Con	ipietea: 9	Dec. 01	Collar El	evation: 3			Total De	ptn:100 m
	Imper:			Logged E	SY: JOH N		Azimuth:	n/a in	clination:	-90		
Target: N	125		<u> </u>	Core Size	BU	ļ	Survey I	ype: n/a	- In al			lin al
Core rec	overy:> 9	5%						Az.	inci.	<u> m</u>	AZ.	
Core sto	rage: wa	skaganisn			<u> </u>	<u> </u>	0	<u> </u>	-90		<u> </u>	
Drilled D	y: Norex		<u> </u>						───		┢───	
Notes:	ļ								<u></u>		Ļ	
<u> </u>					 		<u> </u>	<u> </u>	<u> </u>		<u> </u>	
				L					<u></u>			
Metres	<u> </u>	Unit Name	LL	Jescriptio	n						<u> </u>	
From	To							ļ	Sample	From	To	Total
0.00	46.50	Casing			<u> </u>		<u> </u>		<u> </u>			
46.50	57.20	Argillite	Cover seq	uence, thic	kly lamina	ted soft ar	gillite					
			46.5 to 57	2.2 grey-gr	een, with i	ntraformat	ional brecc	ia			ļ	
			50.2-to 57	2.2 red and	ferrugenc	ous		i			···	
57.20	82.84	Limestone	grey-greer	n fossilifero	ous, cm-sc	ale laminat	ed					
			61.8 to 68	.45 arkosid	<u>c with mine</u>	or cg gyps	um in vugs					
82.84	100.00	Gabbro	dk green t	o black, wi	ith regolith	from 82.8	4 to <u>83.4</u>					
			moderatel	y magnetic	, biotite-ri	ch, few cm	-thick frac	tionated g	ranophyre l	bands		
			trace diss.	ру,ро,сру								
100.00	EOH											

DUM	ONT I	NICKEL	NC.									
Diamo	nd Drill	Core Record	d									
Project:	Hernia	L	<u> </u>	Date Sta	rted: 9 Dec	c. 01	UTM: 637	905 E 56	62724 N		Sheet 1	of 1
Hole Nu	mber: HP	-01-04		Date Con	npleted: 1	0 Dec. 01	Collar Ele	evation:	34 m	[Total De	epth:101 m
Claim No	umber:			Logged E	By: Jon N	lorth	Azimuth:	n/a l	nclination:	-90		
Target: I	M40			Core Size	e: BQ		Survey T	ype: n/a				
Core rec	:overy:>9	5%					m	Az.	Incl.	m	Az.	Inci.
Core sto	orage: Wa	skaganish					0		-90			
Drilled b	y: Norex		l					L				
Notes:	n.		L									
	ļ						L	L				
Metres		Unit Name	r	Descriptio	n	i						
From	То								Sample	From	То	Total
0.00	40.45	Casing										
40.45	54.18	Argillite	grey-gree	n from 40.	45 to 47.1	2						
			red and fe	errugenous	s from 47.1	12 to 54.10)					
54.18	88.25	Limestone	beige to w	vhite fossil	iferous lim	estone						
			from 58.9	7 to 65.74	arkosic							
88.25	89.90	Conglomerate	grey-gree	n arkosic c	conglomera	ate on 30 c	m of grani	tic regoli	th			
89.90	101.00	Paragneiss	grey to or	ange gran	ulite grade	e gneiss wit	th minor g	ranitic dil	(es			
			weak to m	noderately	magnetic,	few small	mg to fg r	nt clots			1	
101.00	EOH											

DUM		NICKEL INC.										
Diamo	nd Drill	Core Record			1					ļ	1	
Project:	Hernia			Date Sta	rted: 11 D	ec. 01	UTM: 634	1585 E 56	52774 N		Sheet 1o	f 1
Hole Nu	mber: HP	-01-05		Date Cor	npleted: 1	2 Dec. 01	Collar El	evation: 2	4 m		Total De	pth:107 m
Claim N	umber:			Logged	By: Jon N	lorth	Azimuth:	n/a ir	clination:	-90		
Target:	M27			Core Siz	e: BQ		Survey T	ype: n/a				
Core rec	overy:> 9	15%					m	Az.	Inci.	m	Az.	inci.
Core sto	rage: Wa	skaganish					0		-90			
Drilled b	y: Norex											
Notes:												
						\	<u> </u>		L			L
		<u></u>			<u> </u>							
Metres		Unit Name	I	Descriptio	on					ļ	L	
From	To								Sample	From	To	Total
0.00	34.50	Casing	L			I		<u> </u>		l	ļ	ļ
34.50	40.45	Limestone		buff sand	y to lamina	ated micrit	ic limeston	e				
40.45	47.40	Arkosic Limestone		grey, thic	kly-beddec	limestone	and shell	bed congl	omerate w	ith m-scal	e arkosic la	iminae
47.40	55.70	Argillaceous Arkose		cm-scale	laminated	grey argilli	te and cal	careous ar	kose lamin	ae, fossil (clasts	
55.70	62.76	Ferrugenous Argillite		red, soft,	sandy argi	llite						
62.76	66.73	Limestone		as above		i						
66.73	73.90	Calcareous Arkose		thickly-be	dded with	cm-scale g	ypsum-fill	ed vugs				
73.90	88.70	Limestone		fossilifero	us, buff, in	Itraformati	onal congl	omeratic b	uff limesto	ne		
88.70	94 .67	Arkosic Conglomerate		grey-gree	n, coarsen	s toward u	nconformi	ty				
94.67	107.00	Granitic Paragneiss		75% cg p	egmatoida	l to mg gr	anite dikes	and 25%	grey parag	neiss		
107.00	EOH											

Duм	ONT	NICKEL INC.			[1				
Diamo	nd Drill	Core Record											
Project:	Hernia			Date Star	ted: 13 D	ec. 01	UTM: 63	7060 E 56	69049 N		Sheet 1	of 1	
Hole Nu	mber: HP	-01-06		Date Con	npleted: 1	4 Dec. 01	Collar El	evation: 2	23 m		Total De	pth:93.5 m	
Claim N	e Number: HP-01-06 im Number: get: M22 re recoverv:> 95%			Logged By: Jon North			Azimuth	: n/a li	nclination:	-90			
Target: I	M22			Core Size	e: BQ		Survey T	'ype: n/a					
Core rec	overy:> 9	95%					m	Az.	Incl.	m	Az.	inci.	
Core sto	rage: Wa	skaganish					0		-90				
Drilled b	y: Norex												
Notes:													
Metres		Unit Name	[Descriptio	n								
From	То								Sample	From	To	Total	
0.00	59.30	Casing											
59.30	72.55	Limestone		buff, fossi	liferous, w	ith intrafo	mational o	conglomer	ate				
72.55	77.60	Arkosic Conglomerate		grey-gree	n, argillac	eous at uco	on, conglo	meratic re	golith at lco	n			
77.60	93.50	Granitic Gneiss		red, cg, fe	ew cm-sca	le weak to	moderate	y magneti	ic black, bio	otite-mt ve	eins		
93.50	EOH												

· . . .

DUM	ONT I	NICKEL IN	c.								
Diamo	nd Drill	Core Record									
Project:	Hernia		Date Star	ted: 14 D	ec. 01	UTM: 645	100 E 50	665550 N		Sheet 1	of 1
Hole Nu	mber: HP	-01-07	Date Con	npleted: 1	5 Dec. 01	Collar El	evation:	64 m		Total De	∌pth: 69 m
Claim No	umber:		Logged E	By: Jon N	lorth	Azimuth:	n/a I	nclination:	-90		
Target:	M20		Core Size	: BQ	1	Survey T	ype: n/a				
Core rec	overy:> 9	95%				m	Az.	Incl.	m	Az.	Incl.
Core sto	orage: Wa	skaganish			1	0		-90			
Drilled b	y: Norex										
Notes:			-								
Metres		Unit Name	Descriptio	n							
From	То							Sample	From	То	Total
0.00	69.00	Casing	Large bou	lders and	sand						
69.00	EOH										

DUM	ONT	NICKEL	INC.								
Diamo	nd Drill	Core Recor	ď								
Project:	Hernia		Date Star	ted: 15 D	ec. 01	UTM: 648	3259 E 56	668424 N		Sheet 1	of 1
Hole Nu	mber: HP	-01-08	Date Con	Date Completed: 16 Dec. 01			evation:	30 m		Total D	epth:101 m
Claim N	umber:		Logged E	Logged By: Jon North			n/a l	nclination:	-90		
Target: I	M16		Core Size	e: BQ		Survey T	ype: n/a				
Core rec	overy:> 9	95%				m	Az.	Incl.	m	Az.	Inci.
Core sto	rage: Wa	skaganish				0		-90			
Drilled b	y: Norex									1	
Notes:	[- -					1
Metres		Unit Name	Descriptio	n			·				
From	То							Sample	From	То	Total
0.00	53.00	Casing							1		
53.00	101.00	Granite	mt-series,	slightly h	ematized, i	red, kspar-	phyric gr	anite			
101.00	EOH		probably a	alkaline an	nd late intru	ision into t	he green	stone belt			
	m-scale intervals have gran					hyre textur	e				
			weakly- to	moderate	ely magnet	ic					
			minor epic	dote altera	ation	[1	