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ASSESSMENT REPORT FOR PERMIT 1467, ABLOVIAK FJORD

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Énergie et Ressources naturelles
Québec

NTS 24P11/12

ASSESSMENT REPORT FOR PERMIT 1467 ABLOVIAK FJORD, QUEBEC

Company Name:	**International Tower Hill Mines Ltd.**
Permit:	**P.E.M. 0001467**
Nature of Report:	**Geophysical Surveying**
Work Conducted During:	**June to November 2000**
Location of Permits:	**Abloviak Fjord, Northeastern Quebec NTS 24P11/12**

APEX Geoscience Ltd.

November, 2002

D.J. BESSERER

ASSESSMENT REPORT
FOR PERMIT 1467
ABLOVIAK FJORD, QUEBEC

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EXECUTIVE SUMMARY

Recently, diamond-bearing ultramafic dykes have been discovered within the Abloviak Fjord region prompting much exploration in northeastern Quebec. APEX Geoscience Ltd. conducted exploration within permit 1467 which is held by International Tower Hill Mines Ltd. As a result, one ultramafic dyke was discovered within the permit area (K2). The dyke was sampled for caustic fusion for diamonds, diamond indicator minerals and thin section studies. The sample was submitted to the Saskatchewan Research Council in Saskatoon, Saskatchewan for analyses. Analysis for diamonds by caustic fusion of about 51.4 kg of sample, from the K2 dyke, yielded no microdiamonds. Concurrent to the 2000 exploration conducted by APEX Geoscience Ltd., a high resolution airborne magnetic survey was flown which covered the prospective area for the discovery of kimberlites, kimberlite dykes and/or related intrusions.

Further exploration is recommended at this time, to target sampling of known dykes and to continue exploration for new dykes. The proposed exploration program should consist of three stages premised on the success of the 2000 exploration season. **Stage 1:** a) follow-up exploration program consisting of about 21 days utilizing 4 geologists in the 2003 season. The exploration program should include collecting systematic samples of ultramafic dyke rock discovered in the 2000 season, ground geophysical surveying and mapping the extensions of the known dyke; and c) continue exploration for new dykes within the permit. **Stage 2:** analyse samples from the 2003 exploration season for caustic fusion for diamonds, diamond indicator mineral analyses and thin section study. **Stage 3:** report writing and compilation of data from both the 2000 and 2003 exploration programs. The preliminary budget for the exploration program is approximately **$187, 500**, not including GST or QST.

INTRODUCTION

Terms of Reference

APEX Geoscience Ltd. (APEX), was retained during the summer and fall of 2000 as consultants for International Tower Hill to conduct and manage their exploration program at the Abloviak Fjord region permits. The permit area is located in the Torngat Mountains of northeastern Quebec and comprises permit 1467. The author has personally visited the permits and conducted exploration thereon (Figure 1).

Permit Location and Description

The International Tower Hill (ITH) permit 1467 encompasses 58 km^2. The permit is located in the Torngat Mountains of northeastern Quebec (Figure 1) and a legal description of the permit held by ITH is provided in Table 1. The permit is within the 1:250,000 scale National Topographic System (NTS) map area 24P. The nearest communities are Kuujjuaq and George River, which are approximately 250 km and 125 km, respectively, south west of the Abloviak Fjord region. The location of the permits are shown on Figures 1 and 2.

Topographic relief within the Torngat Mountains range from sea level to approximately 3200 feet. Extensive outcrop, felsenmeer and fracture patterns are all characteristic of the terrain within the permit held by ITH.

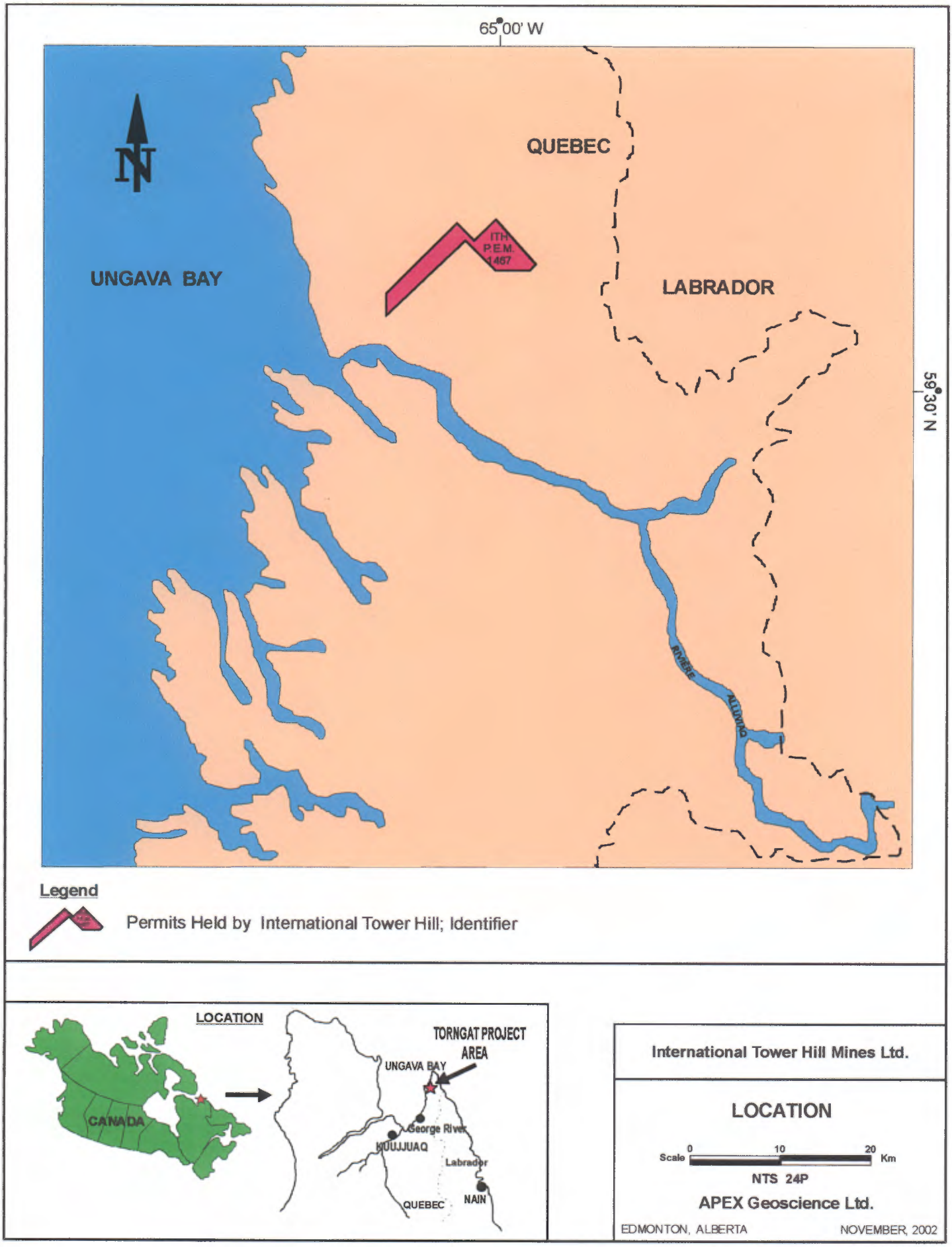
65°00' W
59°30' N
N
QUEBEC
LABRADOR
UNGAVA BAY
ITH
P.E.M.
1467
RIVIÈRE
ALUAIAQ
Legend
Permits Held by International Tower Hill; Identifier
LOCATION
CANADA
TORNGAT PROJECT
AREA
UNGAVA BAY
George River
KUUJJUAQ
Labrador
QUEBEC
NAIN
International Tower Hill Mines Ltd.
LOCATION
Scale 0 10 20 Km
NTS 24P
APEX Geoscience Ltd.
EDMONTON, ALBERTA
NOVEMBER, 2002

FIGURE 1

Microfilm

PAGE DE DIMENSION HORS STANDARD MICROFILMÉE SUR 35 MM ET POSITIONNÉE À LA SUITE DES PRÉSENTES PAGES STANDARDS

Numérique

PAGE DE DIMENSION HORS STANDARD NUMÉRISÉE ET POSITIONNÉE À LA SUITE DES PRÉSENTES PAGES STANDARDS

TABLE 1
Legal Permit Description, Abloviak Fjord Permits*

Permit Number	Issue Date	Permit Holder	Map Area	Area in km^2
1467	October 18th, 1999	International Tower Hill	24P/11/12	58.0

*Provided by International Tower Hill

Accessibility and Climate

The Abloviak Fjord region is accessible from both George River and Kuujjuaq by float and wheel equipped fixed-wing aircraft. A natural grass airstrip exists at the Torngat Mountain Outfitter's camp. The area is also accessible by helicopter and by barge from George River. Accessibility by float equipped fixed-wing aircraft and boat are dependent on tide levels within Abloviak Fjord and River. All accommodation and food at the Abloviak Fjord camp was provided by Torngat Mountain Outfitter's Ltd. (Besserer and Noyes, 2000).

The Abloviak Fjord region is north of the projected tree line and is susceptible to rapidly changing weather. Poor weather typically arrives from the coast of Ungava Bay and there is a constant threat of fog. Summer months range from mid-June to September with temperatures sometimes exceeding 20°C. Snow accumulation begins about the end of September and lasts till about May with temperatures during the winter months of about -40°C (Besserer and Noyes, 2000).

GEOLOGY

Regional Geology

The Abloviak Fjord region is located within the southeastern arm of the Rae Structural Province situated between the Superior and Nain Structural Provinces. The eastern side of the Rae Province is bounded by the Torngat Orogen that formed as a result of the subduction of the Rae Province beneath the Nain Province between 1840 and 1825 Ma (Scott, 1998; Digonnet *et al.*, 2000). The Tasiuyak Gneiss, which lies between the Nain and Rae Provinces, formed as an accretionary prism during the Torngat Orogen (Figure 3). It is predominantly a homogenous, Paleoproterozoic, metasedimentary unit which extends >1300 km (Scott, 1998) along strike and is exposed for 450 km (Digonnet *et al.*, 2000). The Tasiuyak Gneiss is amphibolite to granulite facies in composition comprised of garnet-quartz-feldspar-biotite ± sillimanite paragneiss (Van Kranendonk, 1996). Two Paleoproterozoic structures are present within the high-grade Torngat Orogen. The first being the Alboviak shear zone, centered on the Tasiuyak Gneiss, is a 10-15 km wide belt with subvertical mylonitic schistosities (Van Kranendonk, 1996) (Figure 3). The second structure is the Komaktorvik shear zone exhibiting intense deformation and has a north-south strike joining the Abloviak shear zone where it veers south (Scott and Machado, 1995). Figure 3 is the generalized regional geology specific to the project area (Besserer and Noyes, 2000).

Microfilm

PAGE DE DIMENSION HORS STANDARD MICROFILMÉE SUR 35 MM ET POSITIONNÉE À LA SUITE DES PRÉSENTES PAGES STANDARDS

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Abloviak Fjord Geology

The Abloviak Fjord region is host to a swarm of ultramafic dykes and their recent discovery is the cause of much exploration in this area. The dykes are hosted in the amphibolite to granulite facies gneisses and were emplaced within brittle fractures which typically crosscut the direction of gneissosity (Digonet *et al.*, 2000). The dykes generally range in strike from 0° to 60° and are typically discontinuous often containing 'pinch and swell' and horsetail structures. The range in thickness of the ultramafic dykes is from 5 cm up to 2m and can extend from a few meters to several kilometers. Digonnet *et al.* (2000) obtained an $^{40}Ar/^{39}Ar$ phlogopite age of approximately 550 Ma which is significantly younger than the tectonic events surrounding the Torngat Orogen and coincides with the opening of the Iapetus Ocean during the Cambrian. Dr. Larry Heaman from the University of Alberta, Edmonton obtained samples from ITH's K2 dyke and is working on confirming an age date for the emplacement of the dyke (Besserer and Noyes, 2000).

Mineralogy of the ultramafic dykes as described by Digonnet *et al.* (2000) is as follows: anhedral macrocrysts of olivine, garnet, phlogopite, chromite, magnetite and rare ilmenite set in fine grained matrix of olivine, phlogopite, serpentine and calcite. Olivine and phlogopite are occasionally fresh however most often they are heavily altered by serpentine and chlorite, respectively (Besserer and Noyes, 2000).

SUMMARY OF PREVIOUS EXPLORATION

Numerous ultramafic dykes have been discovered in northeastern North America and Greenland which are documented in literature as early as 1968 (Digonnet *et al.*, 2000). Exploration for ultramafic dykes in northeastern Quebec was initiated by the discovery of several diamond-bearing dykes in 1994. As partial fulfillment of a Masters degree at the Université du Québec à Montréal in 1997, Digonnet *et al.* (2000) characterized the mineralogy, geochemistry and geochronology of these dykes (Besserer and Noyes, 2000).

Twin Mining Corporation began exploration in the Ungava Bay area during the summer of 1999 where they found G10 indicator minerals and gem quality diamonds in outcrop. As of February 2000 (Twin Mining press release) 475 gem quality diamonds were extracted from kimberlite dykes of which 80 were macrodiamonds some exceeding 3 mm in one dimension. To date they currently hold a total claim area of 507 km^2 (Twin Mining press release October 2000) (Besserer and Noyes, 2000).

Tandem Resources Ltd. have announced in their October 2000 press release that macrodiamonds were discovered in ultramafic dykes within their permits held along the Abloviak Fjord. A total of 10 diamonds were recovered from a dyke that could be traced for over 3.5 miles; six of the diamonds are microdiamonds and the remaining four are macrodiamonds. (Besserer and Noyes, 2000).

During August and September 2000, APEX conducted exploration throughout the area on behalf of numerous companies including Dumont Nickel Inc., Marum Resources Ltd., 737142 Alberta Ltd., CaribGold Resources Inc., and International Tower Hill Mines Ltd. A total of 14.6 man-days of exploration were conducted within the permits held by International Tower Hill. One ultramafic dyke, K2, was discovered within permit 1467. The K2 dyke extends from within Twin Mining's permit 1464, which is immediately south of ITH permit 1467. Diamond indicator

mineral results from ultramafic dyke K2 are summarized in Table 3. Microprobe results are reported by Besserer and Noyes, 2000.

Table 2
Results for Diamond Indicator Minerals from The K2 Dyke

Sample Name	Pyrope Garnet		Cr-Diopside		Eclogite	Olivine	Picroilmenite		Chromite	
	DEF	POS	DEF	POS	POS	POS	DEF	POS	DEF	POS
K2	6	0	50	0	0	50	0	11	0	0

DEF=definite; POS=possible

CAUSTIC FUSION RESULTS

A security sealed sample sent to the Saskatchewan Research Council in Saskatoon, SK was analyzed by caustic fusion of 51.4 kg of sample and yielded no microdiamonds. A 106 micron screen size was used as the lower screen size when pouring the sample.

AIRBORNE GEOPHYSICAL SURVEY

Concurrent to the 2000 exploration conducted by APEX Geoscience Ltd., a high resolution airborne magnetic survey (HRAM) was flown which covered the prospective area for the discovery of kimberlites, kimberlite dykes and/or related intrusions.

The airborne geophysical survey specifications and procedures for the airborne geophysical survey are shown in Appendix 1. In total, 11,326.30 line kilometers were flown in and around ITH permit 1467, of which about 6957 line kilometers are considered as part of the expenditures to be applied to ITH permit 1467. The survey was completed with 150 meter spaced lines and 750 meter spaced tie lines. The entire airborne geophysical survey is being filed, although only about 61% of the cost is applicable to advancing permit 1467. A compact disc is enclosed at the back of the report which contains the raw geophysical data.

EXPLORATION EXPENDITURES

The total expenditures to be applied for this period to permit 1467 from the airborne geophysical survey are **$132,322.03**. A summary of the expenditures are in Appendix 2.

CONCLUSIONS AND RECCOMENDATIONS

The results to date are favorable. The ultramafic dyke discussed in this study is mineralogically and chemically similar to dykes found by Twin Mining Corp. and as discussed by Digonnet *et al.* (2000). As well, diamond-bearing dykes are known to exist within the Abloviak Fjord region in close proximity to permits discussed in this report (Besserer and Noyes, 2000).

Further exploration is recommended at this time, to target sampling of known dykes and to continue exploration for new dykes. The proposed exploration program should consist of three stages premised on the success of the 2000 exploration season. **Stage 1:** a) follow-up exploration program consisting of about 21 days utilizing 4 geologists in the 2003 season. The exploration program should include collecting systematic samples of ultramafic dyke rock discovered in the 2000 season, ground geophysical surveying and mapping the extensions of the known dyke; and c) continue exploration for new dykes within the permit. **Stage 2:** analyse samples from the 2003 exploration season for caustic fusion for diamonds, diamond indicator mineral analyses and thin section study. **Stage 3:** report writing and compilation of data from both the 2000 and 2003 exploration programs. The preliminary budget for the exploration program is approximately **$187, 500**, not including GST or QST. A detailed breakdown of the proposed exploration budget is in Appendix 3.

PERMIT TO PRACTICE
APEX Geoscience Ltd.
Signature Dean Besserer
Date November 15, 2002
PERMIT NUMBER: P-5924
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

APEX Geoscience Ltd.

PROFESSIONAL GEOLOGIST OF ALBERTA
DEAN J. BESSERER

Dean J. Besserer, B.Sc., P.Geol.

November 2002
Edmonton, Alberta

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CERTIFICATION

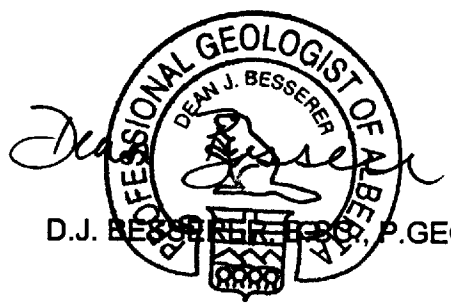
I, D.J. BESSERER OF 131 FOXBORO LANDING, EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I AM A GRADUATE OF THE UNIVERSITY OF WESTERN ONTARIO, LONDON WITH A B.SC. DEGREE IN GEOLOGY (1994). I AM REGISTERED AS A PROFESSIONAL GEOLOGIST WITH THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS AND GEOPHYSICISTS OF ALBERTA.

MY EXPERIENCE INCLUDES SERVICE AS A CONTRACT GEOLOGICAL ASSISTANT WITH THE MINISTRY OF NORTHERN DEVELOPMENT AND MINES, ONTARIO, FROM 1991 TO 1992 AND THE GEOLOGICAL SURVEY OF CANADA, OTTAWA IN 1993. FROM 1994 TO 1999, I HAVE CONDUCTED AND DIRECTED PERMIT EXAMINATIONS AND EXPLORATION PROGRAMS ON BEHALF OF COMPANIES AS A GEOLOGIST IN THE EMPLOY OF APEX GEOSCIENCE LTD. SINCE JANUARY 2000, I HAVE BEEN A PRINCIPAL OF APEX GEOSCIENCE LTD.

I HAVE NO INTEREST, DIRECT OR INDIRECT, IN THE PERMITS THAT ARE THE SUBJECT OF THIS REPORT OR SECURITIES OF INTERNATIONAL TOWER HILL NOR DO I EXPECT TO RECEIVE SUCH INTEREST. AS WELL, APEX GEOSCIENCE LTD. HAS NO INTEREST, DIRECT OR INDIRECT, IN THE PERMITS, OR SECURITIES OF INTERNATIONAL TOWER HILL, NOR DOES IT EXPECT TO RECEIVE SUCH INTEREST.

MY REPORT ENTITLED " ASSESSMENT REPORT FOR PERMIT 1467, ABLOVIAK FJORD, QUEBEC " IS BASED UPON THE STUDY OF PUBLISHED AND UNPUBLISHED DATA AND FIELD EXAMINATIONS CONDUCTED THEREON. I HAVE PERSONALLY VISITED THE PERMITS THAT ARE THE SUBJECT OF THIS REPORT.

I HEREBY GRANT INTERNATIONAL TOWER HILL MINES LTD. OF VANCOUVER, BRITISH COLUMBIA, CANADA PERMISSION TO USE THIS REPORT.



D.J. BESSERER, B.SC., P.GEOL.

NOVEMBER 2002
EDMONTON, ALBERTA

APPENDIX 1

AIRBORNE GEOPHYSICAL SURVEY SPECIFICATIONS AND PROCEDURES

SURVEY SPECIFICATIONS AND PROCEDURES

SURVEY EQUIPMENT

Airborne Systems:

Spectra Aviation Services Corp., a wholly owned subsidiary of Spectra Exploration Geoscience Corp.

Survey Aircraft: Piper Navajo(s) C-FZHG or C-FYTT; both fully modified for high-resolution aeromagnetic work. Both aircraft are owned and operated by Spectra. Fitted with the following equipment:

- Scintrex CS-2 non-oriented cesium vapour magnetometer; mounted in a permanently attached tail stinger.
- Aircraft system "Figure of merit" for entire system is approximately 1.60nT (to be field verified);
- Airborne digital acquisition system – PICODAS Heli-Mag; (Sensitivity 0.001nT, Digital, Sampling rate 10/second, range 20,000 - 100,000 nT);
- Fluxgate tri-axial real-time compensation magnetometer, model MAG-03 by Bartington Instruments Ltd., mounted in a tail stinger;
- NOVATEL 10 channel Differential GPS navigation system (or equivalent); NOVATEL 4200D GPS base station, complimented with Racal Landstar RT-GPS.
- Sanyo (or equivalent) Video tracking camera, with intervalometer and fudicial marking system by PICODAS GROUP INC.;
- TRT, Honeywell or King Radar Altimeter (Resolution/Accuracy 0.5m calibrated to 1%)
- Sensym recording barometric altimeters (Resolution/Accuracy 2m calibrated to +/- 4m);
- Aircraft and base stations equipped with VHF and HF radios for communications.

Ground Equipment:

Base station magnetometer sensors will be established at the base station, in a magnetically quiet area, away from power lines, roads, electrical equipment, and other metal objects. Locations will be approved during the preliminary QC field visit, and by an independent QC body, if available.

- Magnetometer Sensor (Scintrex CS2; base stations are identical to the airborne sensors);
- Base station is synchronized to the GPS time standard, the same accurate signal used for the airborne system;
- NOVATEL (or equivalent) GPS Receiver. Base station is synchronised to the GPS time standard, the same accurate signal used for the airborne system; and
- Various computers (Laptops/Pentium / 486's, chart record print-out, printer; networked)

DATA TO BE RECORDED

- High resolution magnetic data
- Differential GPS positioning data
- Compensation data
- Radar altimeter, barometric altimeter
- Video positioning data

TECHNICAL SPECIFICATIONS

- Magnetometer Resolution - 0.001 nT
- Magnetometer Sensitivity - 0.005 nT
- Magnetometer Bandwidth - 2 hz
- Magnetometer Sampling - 10 per second
- Sensor noise level (total) - <0.02 nT

PARAMETERS

Survey area in Quebec as per attached Schedule "B" ..

Block 1484 = 475 line km

- Traverse-line spacing – 150m, flown 315°;
- Tie-line spacing – 750m, flown 45°;

Block 1480 = 853.4 line km

- Traverse-line spacing – 150m, flown 315°;
- Tie-line spacing – 750m, flown 0°;

- Sample interval - less than 10 m;
- Survey height - "modified-drape", 330 foot (100m) (+/- 10m optimum) above ground level, depending on terrain for safety factors; in rougher terrain's (in proximity to any challenging topography, the drape survey will be best fit for topography and aircraft performance, while maintaining a smooth and consistent flying surface);
- Navigation - differential GPS navigation system, less than 10m accuracy.
- Considerable care has been taken by Spectra in the preparation of the Survey aircraft in regards to the elimination of magnetic, electro- magnetic and electric field noise sources and static compensation.
- Spectra will carry out fully verified FOM tests before survey commencement, after survey completion and at any time during the data acquisition period after a repair or maintenance procedure may have impacted the FOM.
- The FOM test will be carried out as per manufacturers specifications in the cardinal survey line directions over a magnetically quiet area within or in the vicinity of the actual survey area. The 30-term compensator solution will be optimized to minimize the true magnetic signal deviation caused by aircraft manoeuvres of +/-10 degree rolls, +/-5 degree pitches and yaws. Given the location of the survey in the geomagnetic field (56,000 +/- nT) an FOM of approximately 1.6 nT will be assured, with a reciprocal heading error of 1 nT. Corrective action will be taken if the 12 component, cumulative FOM result exceeds 1.70 nT.
- Reflights:

  1) if any of the following channels are not recorded digitally: Time, TMF, X, Y and/or LONG/LAT, RA or Z, and time synchronised

  2) If the high frequency noise envelope (as determined by a 32 point high pass filter [Equivalent to 800 foot distance at the surface]) of the compensated mag channel exceeds 0.25 nT for a period of three minutes or more, or if the high frequency noise envelope as determined by a 4th difference filter on the compensated mag channel exceeds 0.04 nT for a continuous period of one minute.

  3) If the deviation from the specified survey grid exceeds 15% of the nominal spacing for any production flight line portion for a distance of more than 12 line locations;

  4) If the specified diurnal variation tolerance of +/-3.50 nT from a curvilinear mean within the time span required to acquire 10 line kilometers of aeromagnetic data at the specified minimum sampling interval is exceeded;

  5) Given the relatively difficult terrain adjacent to the coast-line and the relatively flat to rolling topography of the overall on-land portion of the survey area, the following shall apply for

misties. All data must meet the requirement for the true flight altitude level:

i) Be within +\- 10m for 80% of the entire survey area(s) of the norm drape level of the survey

ii) Be within +\- 20m for 90% of the entire survey area(s) of the norm drape levels of the survey

iii) Be within +/- 30m for 100% of the entire survey area(s) of the norm drape levels of the survey.

6) If the absolute accuracy of the (post-processed) data positioning exceeds +/- 7 meters (two-dimensional) RMS for more than 7 kilometers. Repeated location verification tests, supported by video will be carried out on clearly identifiable objects to ensure that the absolute positioning accuracy is being maintained.

7) If any data recorded does not have video data recorded (clearly enough to be viewed and recognised) those line(s) will be reflown at Spectra's expense.

- Mobilize to the survey area (operations base will be established at Kujjuaq, Quebec).
- Field tests to be performed prior to commencing data acquisition include:

1) Lag Test - Tests the lag on the geophysical instruments. The program uses a statistical comparison of high-pass filtered data from the same line flown in opposite directions;

2) Radar and Barometric Altimeter Tests;

3) Verification of Base Stations - Base station magnetometer versus aircraft magnetometer comparison and calibration; and Verification of Navigation System - GPS tests.

Figure of merit verification test

PROCESSING PROCEDURES

- Spike and gap editing
- Altimeter corrections
- Diurnal corrections
- GPS data corrections (WGS-84 datum)
- IGRF corrected
- Diurnal minimization levelling
- Micro-levelling and Gridding
- Contouring
- Reduction to the pole

APPENDIX 2

EXPENDITURES

APPENDIX 3

PROPOSED BUDGET

APPENDIX 3

PROPOSED BUDGET

BUDGET ITEM	ESTIMATED COST
Salaries Four geologists for 21 field days.	$29, 500
FIELD-RELATED COSTS **Stage 1: Exploration Program 2003** Includes accommodation for four geologists and pilot at Torngat Mountain Outfitters camp, 50 hours of helicopter time (Bell Long Ranger) and fuel, mobilization and demobilization costs and fixed-wing transportation to and from the camp. Also includes provision for sample bags and pails, field gear, rental charges and satellite phone usage. **Stage 2: Processing Costs** Includes diamond indicator, caustic fusion and mineral chemistry analyses for both newly found dykes and follow-up work on dykes. **Stage 3: Reporting Costs** Includes office time for two geologists, ACAD usage and map making.	$107, 000 $41, 000 $10, 000
Total Estimated Project Costs	**$187, 500**