(2)

REPORT ON DETAILED AIRBORNE GEOPHYSICAL SURVEYING

ATK-21 Property
Atkinson Twp. – Porcupine Mining Division, ON
Enjarlan Twp. - QC

NTS: 32E-13/14

PROJ #602

FALCONBRIDGE LIMITED
(formerly Noranda Inc.)
October 23rd, 2006

2.33504

SUMMARY AND RECOMMENDATIONS

Detailed airborne electromagnetic and magnetic geophysical surveying was completed over Falconbridge Limited's (formerly Noranda Inc.) ATK-21 Property in Atkinson Lake Twp., ON (Porcupine Mining Division) and Enjarlan Twp., QC. Surveying was completed by Geotech Ltd. between November 8– 20th, 2004 over approximately 31.5 line km of surveying. The work was aimed at defining the location and quality of geophysical conductors previously identified on the property by a regional airborne survey.

The surveying defined several formational responses within the property area, two of which show prominent magnetic associations. Given the formational nature of the conductors, all are interpreted to be caused by conductive sediments within the volcanic stratigraphy, including both sulphide iron formations and graphitic/carbonaceous argillites. Diamond drilling to test the anomalies is not recommended.

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INTRODUCTION, LOCATION & ACCESS

Detailed airborne electromagnetic and magnetic (VTEM®) geophysical surveys were completed over a large area covering portions of Falconbridge Limited's (formerly Noranda Inc.) ATK-21 Property in Atkinson Lake Twp., ON and Enjalran Twp., ON. The work was aimed at defining the location and quality of several geophysical conductors previously identified on the property by a regional airborne survey.

The ATK-21 Property straddles the Ontario-Quebec provincial border and is located in Atkinson Lake Twp. in Ontario and Enjalran Twp. in Quebec within NTS quadrants 32E-13&14. The property is situated approximately 25km SSE of the past-producing Detour Lake Au Mine in northeastern Ontario. The closest population centre is the village of Normetal, QC, approximately 90km to the south. Although numerous logging roads exist in the area, access to the property is restricted due to the presence of several major rivers in the area, notably the Turgeon River in Quebec and the Detour River in Ontario. Ground access to the property is possible from the Detour Lake Mine during winter months however the property is most easily accessed by air.

The property originally consisted of a larger block of ground however a portion of the block in Ontario was allowed to expire in Feb., 2006 due to a lack of available assessment credits. The current property consists of a single 6-unit claim in Atkinson Lake Twp, ON and a contiguous block of four 55ha map-staked claim cells in Enjalran Twp, QC (Fig. 2). Details of the property are provided in Table 1 below. All property is currently registered 100% to Falconbridge Limited.

Claim	Province	Township	Range	Lot	Size	Held	Recording Date	Due Date
P3019079	Ontario	Atkinson Lake	n/a	n/a	6 units	Falconbridge Limited	Nov. 18, 2004	Nov. 18, 2006
0046601	Quebec	Enjalran	7	59	55.57ha	Falconbridge Limited	Nov. 24, 2004	Nov. 23, 2006
0046602	Quebec	Enjalran	7	60	55.57ha	Falconbridge Limited	Nov. 24, 2004	Nov. 23, 2006
0046603	Quebec	Enjalran	8	59	55.56ha	Falconbridge Limited	Nov. 24, 2004	Nov. 23, 2006
0046604	Quebec	Enjalran	8	60	55.56ha	Falconbridge Limited	Nov. 24, 2004	Nov. 23, 2006

Table 1 – ATK-21 Property Description

Approximately 31.5km of airborne surveying was completed over the ATK-21 Property by Geotech Ltd. of Aurora, ON. Interpretation and reporting of the geophysical results were performed by Falconbridge staff.

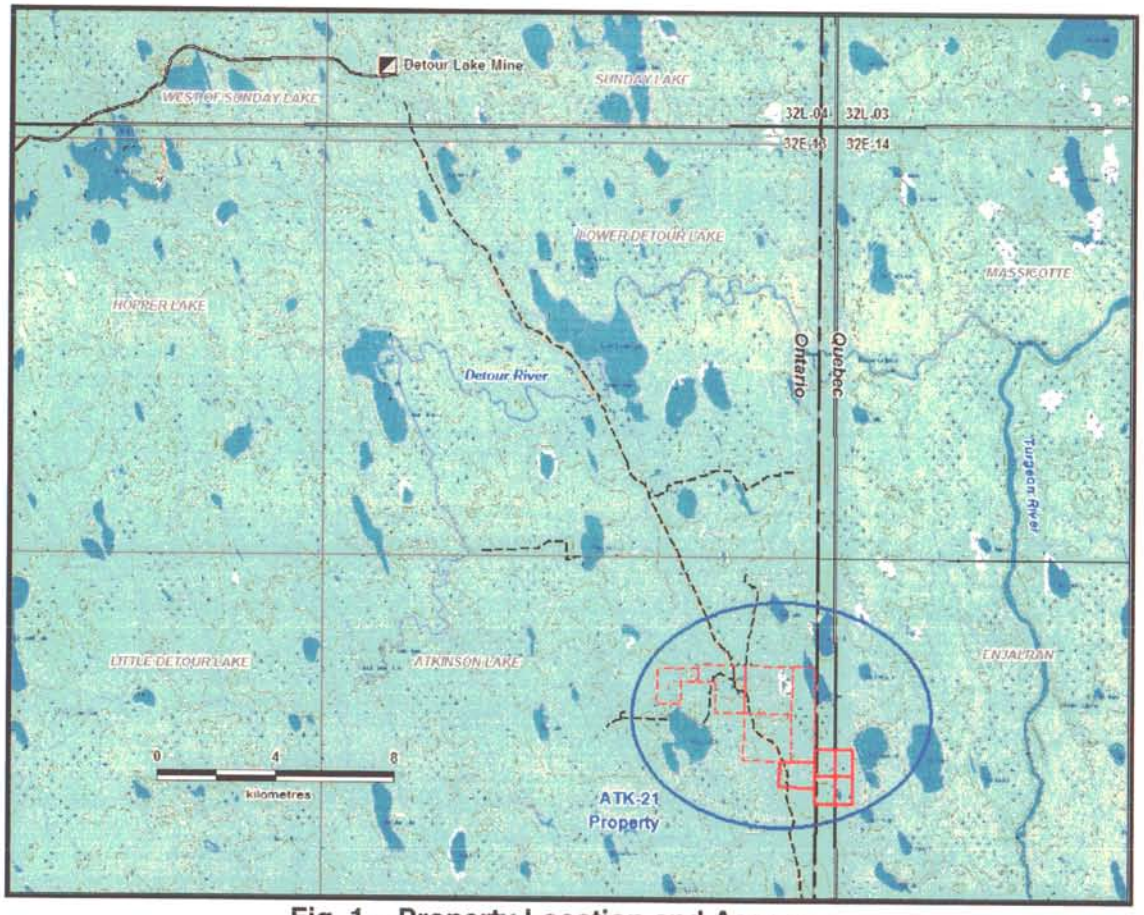


Fig. 1 – Property Location and Access

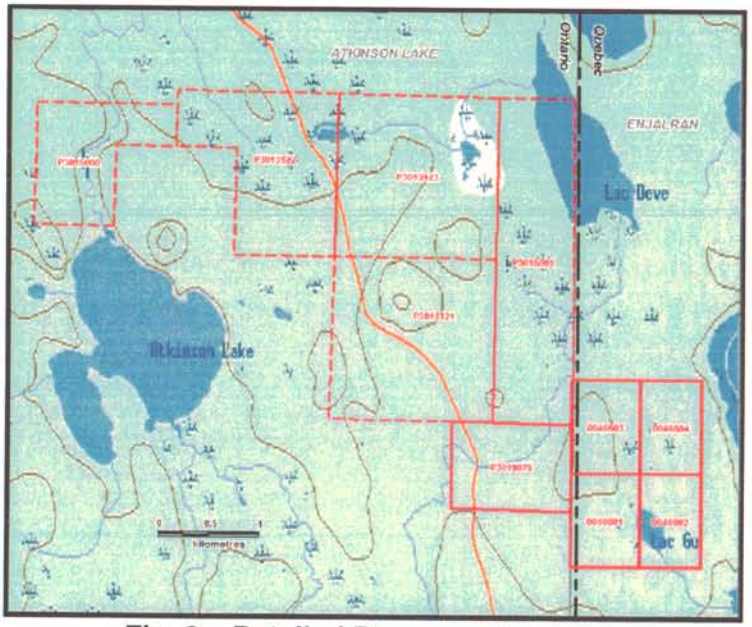


Fig. 2 – Detailed Property Map

GENERAL GEOLOGY

The most thorough and recent examination of the regional geology of the area was completed by G.W. Johns (1982). This portion of the Abitibi Greenstone Belt consists of east-west trending arcuate belts of mafic to felsic volcanic rocks which are intruded by several late granitc plutons. Thick sedimentary belts occur on the margins of the volcanic terraines and the volcanics themselves are intercalated with volumetrically minor amounts of detrital sedimentary rocks and iron formations (Fig. 3). No known outcrop is present within the property boundary although outcrop becomes more abundant to the north towards the Detour Lake Au Mine. The geology of the area is largely interpreted from historical diamond drilling completed on the western portions of the property and extrapolated using regional magnetic data. No current or past-producing base-metal deposits occur in the immediate area although the former Selbaie base-metal deposit is located with the same belt of rocks approximately 42km due east in Brouillan Twp, QC.

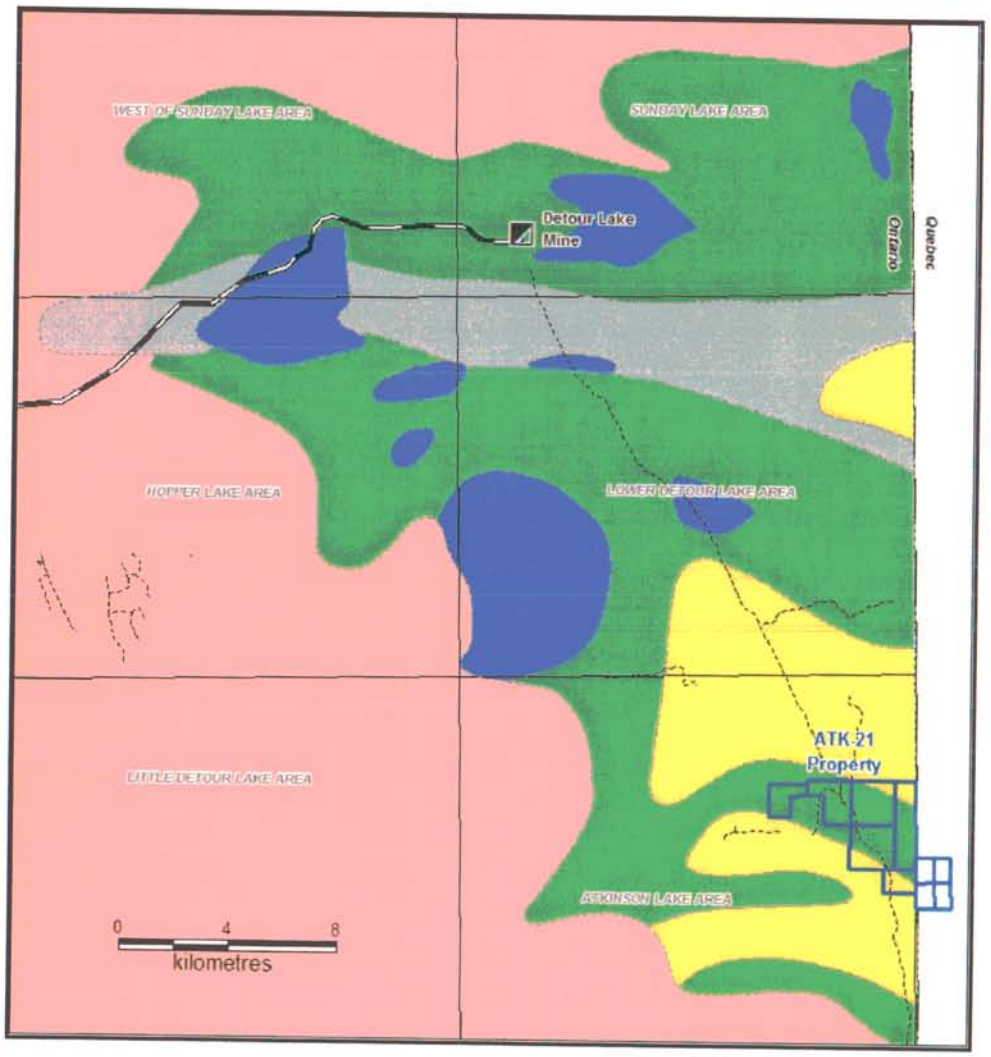


Fig. 3 - Regional Geology and Property Location

PREVIOUS WORK

Due to the presence of the nearby Selbaie and Detour Lake mines in the region historical work in the vicinity of the ATK-21 property has been aimed at both gold and base-metal exploration. A summary of work completed in Ontario and available through the ERMES assessment file database is provided in Table 2. No historical work is known to have been completed on the Quebec portion of the property.

Company	Year	Work 1	Work 2	Work 3	AFRI File	Work Report
Selco Exploration Ltd.	1959	PDRILL			32E13SE0046	n/a
	1968	PDRILL			32E13SE0052	n/a
	1968	PDRILL			32E13SE0053	n/a
Rio Tinto Exploration Ltd.	1966	EM	GRAV	MAG	32E13SE0043	n/a
	1966	PDRILL			32E13SE0045	n/a
Dome Exploration	1970	PDRILL			32E13SE0044	n/a
Amoco Petroleum Ltd.	1974	PDRILL			32E13SE0034	n/a
	1974	PDRILL			32E13SE0035	n/a
	1975	PDRILL			32E13SE0033	n/a
	1975	PDRILL			32E13SE0036	n/a
Hudson Bay Exploration	1975	EM			32E13SE0032	n/a
	1976	PDRILL			32E13SE0029	n/a
	1976	PDRILL			32E13SE0031	n/a
	1976	PDRILL			32E13SE0040	n/a
Noranda Exploration	1976	EM	MAG		32E13SE0041	n/a
	1979	PDRILL			32E13SE0028	n/a
Getty Metals Ltd.	1982	EM	MAG		32E13SE0016	W8206-00207
	1983	GEOL			32E13SE0013	W8306-00118
	1983	PDRILL			32E13SE0018	W8306-00228
	1983	PDRILL			32E13SE0022	W8306-00323
	1983	GCHEM	PDRILL		32E13SE0023	n/a
	1984	PDRILL			32E13SE0011	W8406-00448
	1984	PDRILL			32E13SE0019	W8406-00017
	1985	PDRILL			32E13SE0012	W8506-00125
Craskie Mines Ltd.	1983	MAG	OTHER	VLF	32E13SE9307	n/a
Westmin Mines Ltd.	1990	GEOL			32E13SE0006	W9006-00087
	1991	GEOL	VLF		32E13SE0001	W9106-00113
	1991	VLF			32E13SE0101	W9106-00059
Total Energold Corp.	1991	ASSAY	PDRILL	IP	32E13SE0002	n/a
Better Resources Ltd.	1996	PDRILL	ASSAY		32E13NE0026	W9660-00548

Table 2 – Summary of Historic Work (ERME's)

Numerous diamond drill holes have been completed within the property, largely targeting EM responses related to several major formational conductors which trend through the area. The closest drilling performed to the ATK-21 AEM target was completed by Selco Exploration in 1959. Three holes were drilled however the first two were abandoned before intersecting bedrock due to difficult overburden conditions. The third hole of the program cased into bedrock at 139 feet and was completed to a total depth of 535feet (163m). The hole intersected altered volcanic rocks carrying variable sulphide mineralization. The most significant mineralization occurred between

297-415 feet which cored up to 25% sulphides, predominantly pyrrhotite with up to 2% chalcopyrite however no assays were reported from the drilling. Drilling in the immediate area was also completed by Getty Minerals in 1982. DDH DL-82-01 (151.5m), drilled approximately 500m northwest of the ATK-21 anomaly, cored a sequence of mafic tuffs and epiclastic sedimentary rocks. Multiple conductive horizons were intersected composed of sulphidic, cherty tuff between, the thickest of which occurred between 26.6-31.9m and carried up to 30% sulphides (pyrrhotite + pyrite) with trace chalcopyrite. Assays from the top portion of the interval returned 0.23% Cu / 2.0m but with no significant Zn or Au content.

PURPOSE AND GEOPHYSICAL SURVEY DESCRIPTION

The geophysical surveying described herein was completed to more closely evaluate several MegaTEM® AEM anomalies defined by airborne surveying in mid-2004 and to determine if drill testing of the targets was warranted. Given the difficult access conditions on the ATK-21 Property, the helicopter-borne VTEM® time-domain EM and magnetics system was utilized to more closely evaluate and locate the EM targets. A survey area covering approximately 1.4km^2 was flown for a total of approximately 31.5 line km of surveying. The grid flown was oriented on a 057° bearing with a flightline spacing of 50m and was completed between November 8–20th, 2004. Details pertaining to the technical specifications of this survey are given in Appendix A.

MAGNETIC SURVEY RESULTS

The magnetic results for the ATK-21 grid is contoured and presented on the maps in the back pocket of this report and summarized on Fig. 4. Two discreet magnetic high anomalies were defined within the survey area, both with coincident EM anomalies. **Anomaly 'A'** (Fig. 4) is a linear, north-northwest trending magnetic high across the central portion of the grid area and coincident with the AEM anomaly targeted by the survey. The anomaly has an intensity of >58,600nT and is associated with formational type EM conductors along it's northeastern margin. The linearity of the magnetic feature suggests that it's source is likely a lithological unit of high magnetic susceptibility such as an Iron Formation or ultramafic volcanic unit.ineralization. A small flexure along the southeastern extent of the anomaly indicates that stratigraphy is tightly folded about northwest trending fold axes in the area.

Anomaly 'B' (Fig. 4) is located in the northeastern corner of the ATK-21 grid and has a total magnetic intensity of >58,900nT. The anomaly is somewhat circular in form but extends weakly to the east and is coincident with a strong but discontinuous EM response. When correlated to the regional AEM and magnetic pattern, the anomaly appears somewhat continuous with a more extensive AEM/Mag feature in the area. The east-west orientation of the trend

however is oblique to the apparent regional trend of stratigraphy in the area suggesting that tight isoclinal folding and/or fault repetition of stratigraphy may be complicating the geology of the area.

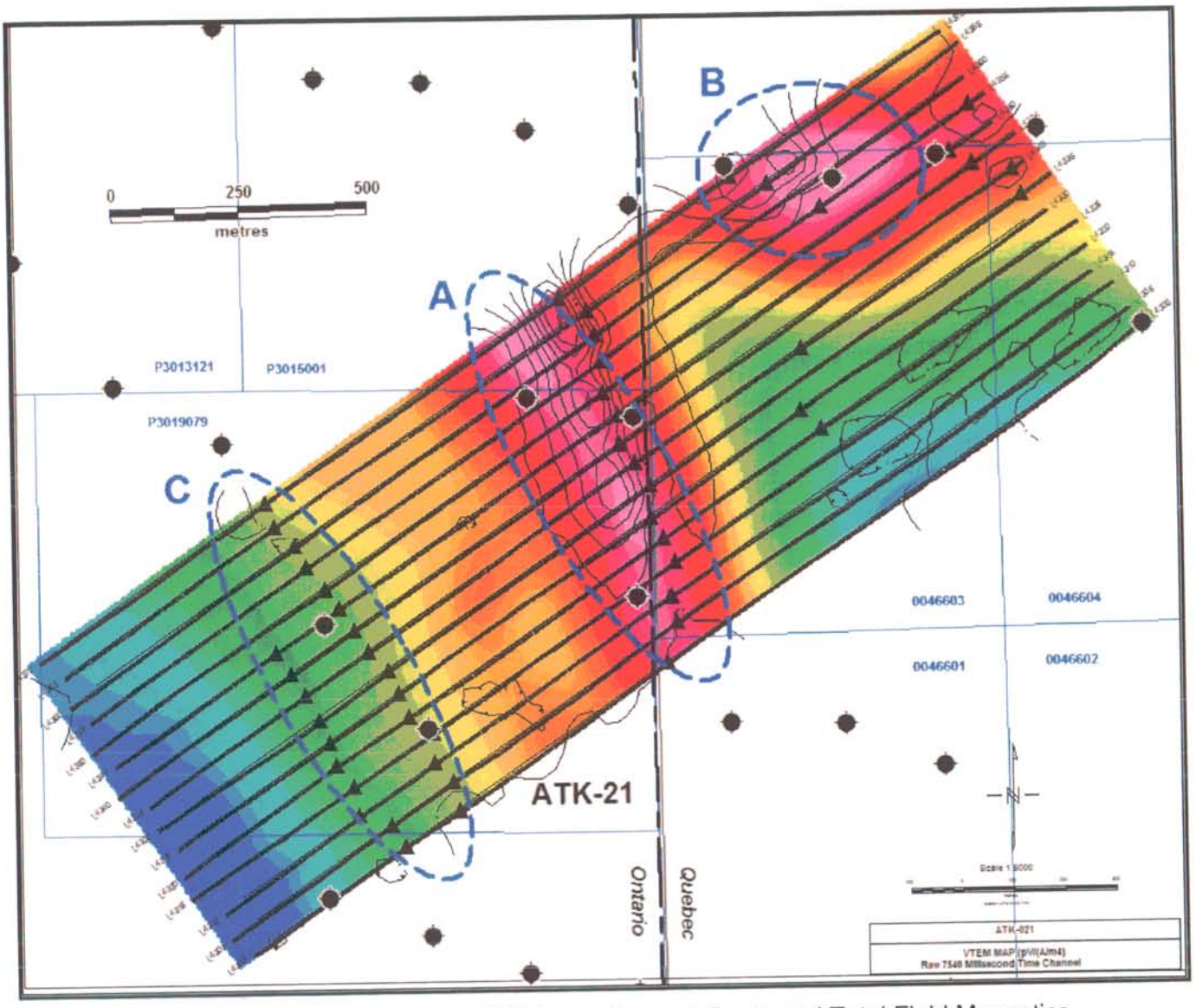


Fig. 4 – ATK-21 Grid - Interpreted EM Anomalies and Contoured Total Field Magnetics

EM SURVEY RESULTS

Electromagnetic anomalies are picked along line profiles of the data collected using the VTEM® system. Electromagnetic anomalies defined from mid (3.18 ms) to high (>7.54 ms) time-gates are typically associated with bedrock conductors as opposed to overburden responses. All anomalies shown on the ATK-21 Property in Fig. 4 (triangular symbols) are interpreted as bedrock conductors. Related anomalies are grouped and described collectively.

Anomaly 'A' (Fig. 4) trends north-northwest across the central portion of the grid area and coincides with the AEM anomaly targeted by the survey. The conductivity of the anomaly is

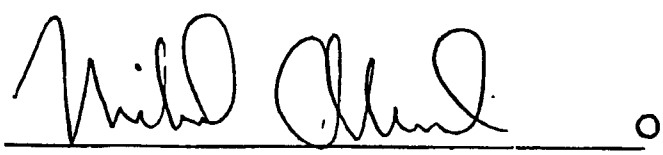
relatively high being well defined in the data to the latest 7.54ms time channel. The response occurs along the northeastern margin of a strong magnetic anomaly with parallels the conductor across the entire grid and dips steeply to the southwest. The conductor is very formational in nature however and given the strong magnetic association is interpreted to be caused by a sulphide-rich iron formation.

Anomaly 'B' (Fig. 4) is located in the northeastern corner of the ATK-21 grid and displays a coincident high magnetic association. The conductivity of the source of the anomaly is relatively strong, with good responses in the later, 7.54ms time channel, Although the magnetic feature associated with the conductor trends east-west across the grid in this area, the EM response appears to be somewhat discontinuous suggesting multiple conductors or structural repetition due to isoclinal folding and/or faulting. The oblique angle of the flight-lines to the trend of the anomaly may also contribute to the apparent discontinuity of the feature. Given the magnetic association as well as the continuity of the feature with other formational features in the area it is likely that the cause of the anomaly is a sulphidic iron formation similar to that interpreted for **Anomaly 'A"**

Anomaly 'C' (Fig. 4) consists of two parallel EM conductors trending north-nothwest across the southwestern portion of the grid, paralleling the orientation of **Anomaly 'A"**. The conductor is of relatively weak strength, being apparent only on the early 0.48ms time channel although the more southwestern of the two horizons displays a weak response on the 3.18ms time channel. The conductor shows no magnetic association and is likely sourced by conductive, argillaceous sedimentary rocks.

RECOMMENDATIONS

The surveying defined several formational responses within the property area, two of which show prominent magnetic associations. Given the formational nature of the conductors, all are interpreted to be caused by conductive sediments within the volcanic stratigraphy, including both sulphide iron formations and graphitic/carbonaceous argillites. Diamond drilling to test the anomalies is not recommended.


OIQ : 36042

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Senior Geophysicist
Xstrata Zinc (formerly Falconbridge Limited)

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1982: Geology of the Burntbush-Detour Lakes Area, District of Cochrane; Ontario Geological Survey Report 199, 82p. Accompanied by Map 2453, scale 1:100,000

Ontario Geological Survey

2003: Geological Compilation of the Abitibi Greenstone Belt – Digital Data, Ontario Geological Survey MRD 143, scale 1:250,000

ERMES MNDM Website

Ontario Ministry of Northern Development and Mines; Various assessment files

Gestmin & Sigeom Website

Quebec Resource Natural et Faune: Various assessment files

REPORT ON A HELICOPTER-BORNE TIME DOMAIN ELECTROMAGNETIC GEOPHYSICAL SURVEY

La Sarre Blocks,

Quebec, Canada

for

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Survey flown in November, 2004

Project 490

December, 2004

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REPORT ON A HELICOPTER-BORNE
TIME DOMAIN ELECTROMAGNETIC SURVEY

La Sarre Blocks, Quebec, Canada

Executive Summary

During the period of November 8th to 20th, 2004, Geotech Limited carried out a helicopter-borne geophysical survey for Noranda Inc. over twenty one (21) blocks near La Sarre, Quebec.

Principal geophysical sensors included a time domain electromagnetic system (VTEM) and a cesium magnetometer. Ancillary equipment included a GPS navigation system and a radar altimeter. A total of 790.4 line-km were flown.

In-field data processing involved quality control and compilation of data collected during the acquisition stage, using the in-field processing centre established at La Sarre. Preliminary and final data processing, including generation of final digital data products were done at the office of Geotech Limited in Aurora, Ontario.

The processed survey results are presented as two (2) grids and digital profile data for each block. The grids are:

- Total Field Magnetics.
- Time Gate 3.18 miliseconds.

Profile data includes all electromagnetic and magnetic products plus positional, altitude and raw data.

1. INTRODUCTION

1.1 General Considerations

These services are the result of the Agreement made between Noranda Inc. and Geotech Limited, to perform a helicopter-borne geophysical survey over twenty one (21) blocks near La Sarre, Quebec. 790.4 line-km of geophysical data were acquired during the survey.

Mr. Michel Allard acted on behalf of Noranda Inc. during data acquisition and processing phases of this project.

The survey blocks are as shown in the Location map in Appendix A.

The crew was based in Mot Villa Repos Motel at La Sarre for the acquisition phase of the survey, as shown in Section 2 of this report.

The helicopter was based at the Abitibi Helicopters base located in La Sarre. Survey flying was completed on November 20th, 2004. Preliminary data processing was carried out daily during the acquisition phase of the project. Final data presentation and data archiving was completed in the Aurora office of Geotech Limited by December, 2004.

1.2. Survey and System Specifications

The survey blocks were flown with a nominal traverse line spacing of 50 metres.

Where possible, the helicopter maintained a mean terrain clearance of 75 metres, which translated into an average height of 30 meters above ground for the bird-mounted VTEM system and 60 meters above ground for the magnetic sensor.

The survey was flown using an Astar BA+ helicopter, registration C-GHSM, operated by Abitibi Helicopters Ltd. Details of the survey specifications may be found in Section 2 of this report.

1.3. Data Processing and Final Products

Data compilation and processing were carried out by the application of Geosoft OASIS Montaj and programs proprietary to Geotech Limited. Maps, profile data and fourty two (42) grids of final products were presented to Noranda Inc.

The survey report describes the procedures for data acquisition, processing, final image presentation and the specifications for the digital data set.

1.4. *Topographic Relief*

The twenty one (21) blocks are located approximately 32 - 110 kilometers NW of La Sarre.

Topographically, elevation range from 250 metres to 350 metres above sea level.

The blocks intersect lakes and rivers.

Some blocks have road access.

2. DATA ACQUISITION

2.1. Survey Areas

The survey blocks (see location map, Appendix A) and general flight specifications are as follows:

Block	Line spacing (m)	Area (Km²)	Line-km	Flight direction	Line number
ADR-08	50	1.6	32.3	N0°E	L1000 - 1070
ABB-09a	50	1.7	32.3	N33.3°E	L1100 - 1170
BRA-09	50	5.4	105.0	N40.28°E	L1200 - 1315
Block 14	50	1.7	32.8	N1.97°E	L1400 - 1470
BLA-13	50	1.7	32.5	N13.36°W	L1500 - 1570
BLA-10	50	1.7	33.1	N13.35°W	L1600 - 1670
BLA-06	50	1.7	32.8	N8.4°W	L1700 - 1770
BLA-03	50	1.7	33.4	N17.83°E	L1800 - 1870
HOB-0304	50	2.2	44.4	N10.64°E	L1900 - 1995
BLA-18	50	1.5	30.8	N17.76°E	L2105 - 2170
HUR-02	50	1.7	32.3	N26.1°W	L3000 - 3070
HUR-03a	50	2.3	43.8	N26.12°E	L3100 - 3195
NOS-09	50	2.1	41.5	N0°E	L3300 - 3390
HUR-10	50	1.9	37.0	N1.46°W	L3500 - 3580
NOS-02	50	1.7	32.3	N9.42°W	L3700 - 3770
ENJ-03	50	1.7	32.5	N19.75°E	L3900 - 3970
ATK-22	50	1.7	32.2	N25.94°E	L4100 - 4170
ATK-21	50	1.7	32.3	N55.81°E	L4300 - 4370
MSS-04	50	1.7	32.1	N0°E	L4500 - 4570
LDL-01	50	1.7	32.4	N11.76°E	L4700 - 4770
LDL-13	50	1.7	32.4	N28.7°W	L4900 - 4970

Table 1 – Survey blocks

2.2. Survey Operations

Survey operations were based in Mot Villa Repos Motel, in La Sarre from November 8 to 20, 2004 for the acquisition phase of the survey.

The following table shows the timing of the flying.

Date	Crew Location	Flight #	Km flown	Comments
8-Nov	Mot Villa Repos Motel, La Sarre			Crew mobilization.
9-Nov	Mot Villa Repos Motel, La Sarre			System installation.
10-Nov	Mot Villa Repos Motel, La Sarre			System installation.
11-Nov	Mot Villa Repos Motel, La Sarre			Test flights.
12-Nov	Mot Villa Repos Motel, La Sarre	1, 2	118.4	
13-Nov	Mot Villa Repos Motel, La Sarre	3, 4	120.2	
14-Nov	Mot Villa Repos Motel, La Sarre	6, 7	194.3	
15-Nov	Mot Villa Repos Motel, La Sarre	8	83.7	
16-Nov	Mot Villa Repos Motel, La Sarre	9, 10, 11	78.1	
17-Nov	Mot Villa Repos Motel, La Sarre			Rain, low ceiling. Stand by.
18-Nov	Mot Villa Repos Motel, La Sarre			Rain, low ceiling. Stand by
19-Nov	Mot Villa Repos Motel, La Sarre	12	4.4	
20-Nov	Mot Villa Repos Motel, La Sarre	13, 14, 15	191.4	
Total			**790.4**	

Table 2 – Survey schedule

2.3. *Flight Specifications*

The nominal EM sensor terrain clearance was 30 m (EM bird height above ground, i.e. helicopter is maintained 75 m above ground). Nominal survey speed was 80 km/hour. The data recording rates of the data acquisition was 0.1 second for electromagnetics and magnetometer, 0.2 second for altimeter and GPS. This translates to a geophysical reading about every 2 metres along flight track. Navigation was assisted by a GPS receiver and data acquisition system, which reports GPS co-ordinates as latitude/longitude and directs the pilot over a pre-programmed survey grid.

The operator was responsible for monitoring of the system integrity. He also maintained a detailed flight log during the survey, tracking the times of the flight as well as any unusual geophysical or topographic feature.

On return of the aircrew to the base camp the survey data was transferred from a compact flash card (PCMCIA) to the data processing computer.

2.4. *Aircraft and Equipment*

2.4.1. Survey Aircraft

An Astar BA+ helicopter, registration C-GHSM - owned and operated by Abitibi Helicopters Ltd. was used for the survey. Installation of the geophysical and ancillary equipment was carried out by Geotech Ltd.

2.4.2. Electromagnetic System

The electromagnetic system was a Geotech Time Domain EM (VTEM) system. The layout is as indicated in Figures 1 below.

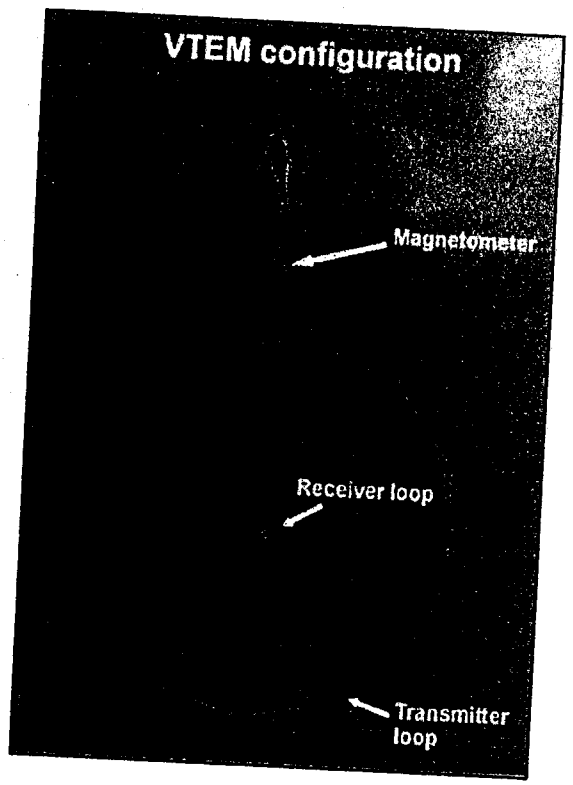

Figure 2

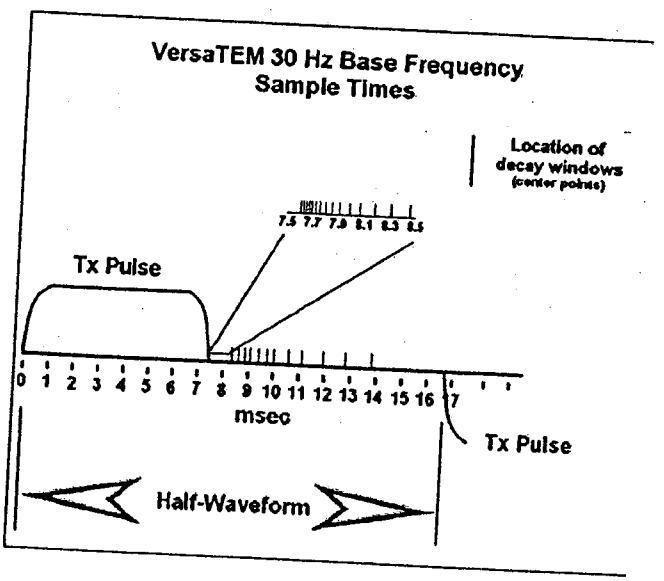

Figure 1

Receiver and transmitter coils were concentric and Z-direction oriented.
Transmitter coil diameter was 26 metres, the number of turns was 4.
Receiver coil diameter was 1.1 metre, the number of turns was 60.
Transmitter pulse repetition rate was 30 Hz.
Peak current was 200 A.
Duty cycle was 40%.
Peak dipole moment was 425000 NIA.
Wave form – trapezoid.
Twenty-five measurement gates were used in the range from 130 μs to 6340 μs.
The transmitter waveform and the receiver decay recording scheme is shown diagrammatically in Figure 2.
Recording sampling rate was 10 samples per second.
The EM bird was towed 45 m below the helicopter.

2.4.3. Airborne magnetometer

The magnetic sensor utilized for the survey was a Geometrics optically pumped cesium vapor magnetic field sensor, mounted in a separate bird towed 15 m below the helicopter. The sensitivity of the magnetic sensor is 0.02 nanoTesla (nT) at a sampling interval of 0.1 seconds. The magnetometer sends the measured magnetic field strength as nanoTeslas to the data acquisition system via the RS-232 port.

2.4.4. Ancillary Systems

2.4.4.1. Radar Altimeter

A Terra TRA 3000/TRI 30 radar altimeter was used to record terrain clearance. The antenna was mounted beneath the bubble of the helicopter cockpit.

2.4.4.2. GPS Navigation System

The navigation system used was a Geotech PC based navigation system utilizing a NovAtel's WAAS enable OEM4-G2-3151W GPS receiver, Geotech navigate software, a full screen display with controls in front of the pilot to direct the flight and an NovAtel GPS antenna mounted on the helicopter tail.
The co-ordinates of the block were set-up prior to the survey and the information was fed into the airborne navigation system.

2.4.4.3. Digital Acquisition System

A Geotech data acquisition system recorded the digital survey data on an internal compact flash card. Data is displayed on an LCD screen as traces to allow the operator to monitor the integrity of the system. Contents and update rates were as follows:

DATA TYPE	SAMPLING
TDEM	0.1 sec
Magnetometer	0.1 sec
GPS Position	0.2 sec
RadarAltimeter	0.2 sec

Table 3 - Sampling Rates

2.4.5. Base Station

A combine magnetometer/GPS base station was utilized on this project. A Geometrics Cesium vapour magnetometer was used as a magnetic sensor with a sensitivity of 0.001 nT. The base station was recording the magnetic field together with the GPS time at 1 Hz on a base station computer. The base station magnetometer sensor was installed near the Abitibi Helicopters base, away from electric transmission lines and moving ferrous objects such as motor vehicles. The magnetometer base station's data was backed-up to the data processing computer at the end of each survey day.

3. PERSONNEL

The following Geotech Ltd. personnel were involved in the project.

Field

Geophysicist/Crew Chief:	Shawn Grant
Operator:	Claude Berthelot

The survey pilot and the mechanic were employed directly by the helicopter operator – Abitibi Helicopters Ltd.

Pilot:	Joel Breton

Office

Data Processing:	Andrei Bagrianski
Data Processing/Reporting:	Marta Orta

Final data processing at the office of Geotech Limited in Aurora, Ontario was carried out under the supervision of Andrei Bagrianski, Data Processing Manager.

Overall management of the survey was carried out from the Aurora offices of Geotech Ltd. by Edward Morrison, President.

4. DATA PROCESSING AND PRESENTATION

4.1. *Flight Path*

The flight path, recorded by the acquisition program as WGS 84 latitude/longitude, was converted into the UTM co-ordinate system in Oasis Montaj.

The flight path was drawn using linear interpolation between x,y positions from the navigation system. Positions are updated every second and expressed as UTM eastings (x) and UTM northings (y).

4.2. *Electromagnetic Data*

A three stage digital filtering process was used to reject major sferic events and to reduce system noise. Local sferic activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major sferic events. The filter used was a 16 point non-linear filter.

The signal to noise ratio was further improved by the application of a low pass linear digital filter. This filter has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 1 second or 20 metres. This filter is a symmetrical 1 sec linear filter.

The results are presented as EM Time Gate 3.18 milisecond grid, from the channel located 3 miliseconds after the termination of the impulse.

4.3. *Magnetic Data*

The processing of the magnetic data involved the correction for diurnal variations by using the digitally recorded ground base station magnetic values. The base station magnetometer data was edited and merged into the Geosoft GDB database on a daily basis. The aero magnetic data was corrected for diurnal variations by subtracting the observed magnetic base station deviations. The corrected magnetic line data from the survey was interpolated between survey lines using a random point gridding method to yield x-y grid values for a standard grid cell size of approximately 0.2 cm at the mapping scale. The Minimum Curvature algorithm was used to interpolate values onto a rectangular regular spaced grid.

605400 605600 605800 606000 606200 606400 606600 606800 607000 607200 607400 607600

5519600 5519400 5519200 5519000 5518800 5518600 5518400 5518200 5518000 5517800

0 250 500
metres

L4370 L4365 L4360 L4355 L4350 L4345 L4340 L4335 L4330 L4325 L4320 L4315 L4310 L4305 L4300

P3013121 P3018001 P3019079 0046603 0046604 0046601 0046602

Ontario Quebec

0 100 200 300
metres
NAD83 / UTM zone 17N

ATK-021

VTEM MAP (pV/(A/m4)
Raw 7540 Milisecond Time Channel

605400 605600 605800 606000 606200 606400 606600 606800 607000 607200 607400 607600

5519600 5519400 5519200 5519000 5518800 5518600 5518400 5518200 5518000 5517800

0 250 500

metres

L4370 L4365 L4360 L4355 L4350 L4345 L4340 L4335 L4330 L4325 L4320 L4315 L4310 L4305 L4300

57700 57600 57500 57400 57300 57200 57100 57000 56900 56800 56700 56600 56500 56400 56300

P3013121 P3019001 P3019079 0046603 0046604 0046601 0046602

Ontario

Quebec

100 0 100 200 300

metres

NAD83 / UTM zone 17N

ATK-021

Total Magnetic Field MAP (nT)
Base Value 57 000 nT

605400 605600 605800 606000 606200 606400 606600 606800 607000 607200 607400 607600

5519600 5519400 5519200 5519000 5518800 5518600 5518400 5518200 5518000 5517800

0 250 500

metres

L4370 L4365 L4360 L4355 L4350 L4345 L4340 L4335 L4330 L4325 L4320 L4315 L4310 L4305 L4300

P3013121 P3019001 P3019079 0046603 0046604 0046601 0046602

Ontario

Quebec

100 0 100 200 300

metres

NAD83 / UTM zone 17N

ATK-021

VTEM MAP (pV/(A/m4)
Raw 480 Milisecond Time Channel

605400 605600 605800 606000 606200 606400 606600 606800 607000 607200 607400 607600

5519600 5519400 5519200 5519000 5518800 5518600 5518400 5518200 5518000 5517800

0 250 500

metres

L4370 L4365 L4360 L4355 L4350 L4345 L4340 L4335 L4330 L4325 L4320 L4315 L4310 L4305 L4300

P3013121 P3015001 P3019079 0046603 0046604 0046601 0046602

Ontario Quebec

0 100 200 300

metres

NAD83 / UTM zone 17N

ATK-021

VTEM MAP (pV/(A/m4))
Raw 3180 Milisecond Time Channel

2.88554