

Group

National Instrument 43-101Technical Report

Etamame Lake Ultramafic Complex Property Sachigo Lake Area, Ontario, Canada Red Lake Mining Division, NTS 53 F 15 Geology Technical Report

Prepared For

2238484 Ontario Inc. A 100% subsidiary of Winston Resources Inc.

By

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1. Summary

The Etamame Lake Ultramafic Complex property consists of 10 unpatented mining claims covering an area of approximately 2272 ha. It is located in the Lingman Lake Greenstone belt, part of the Sachigo sub-province of the Precambrian Shield area of northern Ontario, and approximately 328 km north of Red Lake. The property is currently held by 2238484 Ontario Inc., a 100% subsidiary of Winston Resources Inc.

The property is characterized by calc-alkaline to komatiitic volcanism that strikes for over 12km east-west. The volcanic pile is on average 1km to 1.5km thick. The area contains a series of intercalated near vertical dipping komatiites (peridotites/pyroxenites and dunites), biotite rich mafic volcanics, crystal tuffs, felsic volcanic agglomerates, cherts and sulphide iron formation. The age of the Etamame Lake property rocks are 2742 to 2749 billion years old and are metamorphosed to greenschist facies.

The Etamame Lake Ultramafic Complex is a similar geological setting to other areas around the world whereby volcanic peridotites (komatiite) host Ni-Cu-PGE deposits. The geological model applicable has massive sulphide bodies predominantly located at the base of komatiite flows in contact with footwall rocks.

Prior to the acquisition of the property by 2238484 Ontario Inc. there had not been any exploration on record. Since staking of the claims a three day reconnaissance mapping/prospecting program has been carried out over the property. Twenty-seven (27) grab samples were collected and analysed for whole rock and trace elements. One sample reported anomalous nickel of 0.7% and 0.4% copper.

In the spring of 2011 Geotech Limited flew a VTEM AEM survey over the Etamame Lake Ultramafic Complex. A total of 427 line kilometers of data were acquired. The Total Field Intensity magnetic survey shows a number of highly magnetic linear units that appear to correspond with known ultramafic units. Coincident with most of the magnetic anomalies, or on their flanks, are a total of 23 conductive trends with up to 9 of them possibly indicating the presence of magmatic sulphides.

The work to date has confirmed that the property is underlain by rocks that include komatiite bodies. And geophysics has shown that these correlate with magnetic highs with strong AEM anomalies, all agreeing with the target model of komatiite associated nickel bearing magmatic sulphides. It is recommended that diamond drilling be done to confirm the presence of magmatic sulphides. The proposed initial program of 1,250 metres of diamond drilling has a budgeted cost of \$600,000.

2. Introduction

Sibley Basin Group (SBG) was commissioned by 2238484 Ontario Inc., a 100% subsidiary of Winston Resources Inc. (Winston), to prepare a Canadian National Instrument 43-101 compliant report summarising the geology and work done to date on the Etamame Lake property. The property is located 47km west of the First Nation Community of Sachigo in North-western Ontario, Canada. This report was prepared by SBG using publically available documents, and company supplied reports. The objective of this report is to summarise known information, determine an appropriate genetic model to help guide future exploration and to present recommendations for future work.

2.1. Terms of Reference

The scope of work entailed reviewing available information, completing an on-site visit to confirm what was reported in previous work, to comment on the geophysical VTEM AEM survey done March 2011 and comment on the geological setting including identifying an appropriate mineralisation model, and making recommendations for further work.

2.2. Sources of Information

The geotechnical reports and maps supporting the statements made in this report have been verified for accuracy and completeness by the Author. No meaningful errors or omissions were noted.

Vanex Exploration Ltd., on behalf of SBG, carried out a 3 day (September 13 to 17, 2010) reconnaissance property exam over the Etamame Lake Ultramafic Complex. A total of 27 grab samples were taken within the complex for lithogeochemical characterisation.

SBG used various sources of information as references for this report. These include documents available from the Ontario Geological Survey (OGS) and the Geological Survey of Canada (GSC). In addition a search and review was completed of publicly available technical documents. These consisted primarily of work assessment reports filed by mining companies with the Ontario Ministry of Northern Development and Mines ("MNDM"), maps produced by the Ontario MNDM and the Geological Survey of Canada, and information obtained by visiting various mining and geotechnical web-sites.

2.3. Units and Currency

Units of measure are expressed in the International System of Units (metric), unless indicated otherwise. All currency values are in Canadian Dollars.

ha	hectares	AEM	Airborne Electro-Magnetic
km	Kilometres	DFO	Department of Fisheries and Oceans
m	Metres	MNDM	Ministry of Northern Development and Mines
Ν	North	NAD	North American Datum
NE	North east	NTS	National Topographic System
NW	North west	TMI	Total Magnetic Intensity
W	West	UTM	Universal Transverse Mercator

2.4. List of Abbreviations

3. Reliance on Other Experts

This report has been prepared using public documents, documents supplied by 2238484 Ontario Inc. as well as data collected by Wim Vanderklift (Vanex Exploration Inc.) on behalf of SBG. While reasonable care has been taken in preparing this document there is no guarantee as to the accuracy or completeness of the supporting documentation used, all of which are listing in the References section.

4. Property Description and Location

4.1. Property Description

The property consists of 10 unpatented claims consisting of 142 claim units and covering an area of approximately 2272 ha. The property is located in the Lingman Lake Area (G-1808), Red Lake Mining District. Figure 1 is a claim sketch outlining the property.



Figure 1 – Relevant portion of MNDM Claim Map G-1808



Figure 2 – Location Map (MNDM – Simplified Geology Map of Ontario, Wilson and Pelletier, 1981)

A summary of the claims making up the Etamame Lake property is presented in Table 1. Ontario Mining Act regulations require expenditures of \$400 per year per unit, prior to expiry, to keep the claims in good standing for the following year. Assessment reports documenting the expenditures must be submitted by the expiry date. While work has been filed and approved it has yet to be assigned to the claims, thus the due date does not reflect the work filed as of the date of this report. The claims are registered in the name of 2238484 Ontario Inc., a 100% subsidiary of Winston Resources Inc. (Winston). Winston acquired 100% ownership of 2238484 Ontario Inc. on June 28, 2012. At the same time Winston also acquired all rights, title and interest to a geophysical VTEM survey of the Etamame Lake property, the results of which are incorporated into this report. The claims have not been legally surveyed.

Claim Number	Performed	Performed Approved	Applied	Applied Approved	Work Required	Claim Units	Due Date
425419	<u>7</u> 15,600	15,600	15,600	15,600	6,400	16	2012-Jul-16
425420	<u>0</u> 15,881	15,881	15,881	15,881	6,400	16	2012-Jul-16
<u>425419</u>	<u>5</u> 15,600	15,600	15,600	15,600	6,400	16	2012-Jul-16
<u>425419</u>	<mark>6</mark> 15,600	15,600	15,600	15,600	6,400	16	2012-Jul-16
<u>425419</u>	<u>3</u> 15,600	15,600	15,600	15,600	6,400	16	2012-Jul-16
<u>425419</u>	<u>1</u> 15,600	15,600	15,600	15,600	6,400	16	2012-Jul-16
<u>425419</u>	<u>4</u> 15,600	15,600	15,600	15,600	6,400	16	2012-Jul-16
425419	<u>9</u> 15,600	15,600	15,600	15,600	6,400	16	2012-Jul-16
<u>425419</u>	<mark>2</mark> 15,600	15,600	15,600	15,600	6,400	16	2012-Jul-16
<u>425419</u>	<mark>8</mark> 15,600	15,600	15,600	15,600	6,400	16	2012-Jul-16
Totals	\$156,281	\$156,281	\$156,281	\$156,281	\$64,000	160	

Table 1 – Summary of claims and claim status

4.2. Location

The property is located in North-western Ontario, Canada, approximately 328 km north of Red Lake, Ontario and 282 km northwest of Pickle Lake Ontario (see Figure 2). It is located within NTS 53 F 15 in UTM zone 15 (NAD 83), and is centred at approximately 516000E and 5959000N.

5. Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1. Accessibility

The nearest community is Sachigo First Nation which has regular scheduled air service from Sioux Lookout and Red Lake, Ontario. There is no direct all-season road access to the property. In summer time the property is only accessible by air service (helicopter or plane) from the Sachigo First Nation Community.

Sachigo First Nation Community uses winter roads (January to April) from Red Lake and Pickle Lake Ontario to bring in major construction supplies, fuel, groceries and transportation items.

5.2. Climate

The Etamame Lake property is located in a region of subarctic continental climate with a moderating effect. Subzero Celsius temperatures occur from approximately November to April with averages ranging from one to minus 15 degrees with extremes of minus 50 degrees having been historically recorded. Positive Celsius temperatures occur approximately from May to October with averages ranging from plus four to plus 18 degrees and extremes of plus 39 degrees having been historically noted.

Rain occurs mostly from May to October with total rainfall averaging 66 to 107 millimetres during this period. Snowfall and snow cover persists approximately from November to April. Lakes, rivers and swamps will often be frozen during this period and could be safe to walk on from December to March and possibly to position diamond drills on during January to mid-March. Safety precautions for both foot and heavy equipment travel over these frozen surfaces should be exercised.

5.3. Local resources and Infrastructure

The Sachigo First Nation Community is located about 47 kilometres to the east of the property and is serviced by fixed wing aircraft, float plane and helicopter. Sachigo First Nation provides access to supplies such as a motel, groceries, fuel, hardware, lumber and support labour force. The City of Thunder Bay is located 875 kilometres to the southeast and provides access to exploration supplies, geological and geophysical consultants and drill contractors as well as assay laboratories. The Ontario MNDM maintains both a resident geologist and mining lands office in Red Lake

Forest Helicopters operates charter helicopters based in Kenora, Ontario and provides all the helicopter support for the Sachigo First Nation Community. The Sachigo First Nation Community operates a charter fixed wing aircraft service.

5.4. Physiography

The Etamame Lake property has fairly gently rolling topography ranging from about 340 to 460 metres above mean sea level and has one hill that rises to about 125 metres elevation. The low lying areas are covered by bogs or small lakes. The property is mostly covered by a thin veneer of glacial sediments up to 7 metres thick. More than 75% of the land is covered by these glacial deposits, with lakes, creeks and swamps cover the balance. Outcrop comprises less that 5% of the property and can typically be found on most lake shores and the many ridges. The lakes and streams that are present on the property form a network that flows eastward to Sachigo Lake. The well-drained regions of the property are forested with poplar, white spruce, jack pine and birch. Alder, maple and hazel underbrush is common. Low lying areas are forested with black spruce, white cedar and alder.

Bedrock outcrops are abundant in most parts of the map area but are widely scattered or absent between P.S. Lake and Lingman Lake, between Durrel Lake and Pullen Lake, and along the north shores of most of the lakes. Outcrop surfaces are commonly lichencovered but are only rarely moss-covered, providing excellent weathered surfaces for study. Much of the area has, at one time or another in the recent past, been burnt by forest fires. In most places, the result is easier access and better exposures.

6. History

There is no known historical exploration ever done within the Etamame Lake Ultramafic Complex property. OGS MNDM assessment files and GSC databases were searched. Ontario Resident Geology offices in Thunder Bay and Red Lake were contacted and they confirmed there were no donated historical datasets that fall within Etamame Lake Ultramafic Complex property area.

Information from the Red Lake MNDM Resident Geology office indicate that Kennecott and Texasgulf, and maybe Inco Ltd., carried out extensive AEM surveys within the Sachigo Sub Province including the Lingman Lake greenstone belt during the early 1960s. No historical AEM surveys were ever filed for assessment.

2238484 Ontario Inc. staked the property in 2010. Largo Resources Ltd. (Largo) entered into negotiations with 2238484 Ontario Inc. with regard to acquiring an interest in the property, and in anticipation contracted Geotech Ltd. to fly combined aeromagnetic and VTEM surveys over the property in March, 2011. No agreement was reached. In June of 2012 Winston acquired 100% ownership of 2238484 Ontario Inc. as well as all rights, title and interest to the surveys from Largo.



7. Geological Setting and Mineralization

Figure 3 – Ontario Geology Map.

7.1. Regional Geology

The Etamame Lake Ultramafic Complex is within the Lingman Lake Greenstone Belt and lies within the Sachigo sub-province (see Figure 4). The Lingman Lake greenstone belt is

dominated by metavolcanics comprised predominantly of mafic flows and derived clastic rocks interlayered with minor felsic and intermediate to felsic flows and pyroclastic rocks. Interlayered with and, in part, transitional to the metavolcanics are metasediments which consist of arenite, wacke, mudstone, and conglomerate. Very minor volumes of chemical metasediments, including chert, magnetite ironstone, and iron silicate rocks, are interfingered with the metavolcanics throughout the area (Wilson, 1987).

The supracrustal rocks are surrounded by, and close to the edges of the greenstone belt, intruded by tonalite, granodiorite, and granite. Both the supracrustal and granitic rocks are intruded by quartz gabbro and feldspar porphyry. Other intermediate to felsic intrusive rocks which crosscut the supracrustal sequence include quartz-feldspar porphyry, quartz porphyry, and feldspar-quartz-porphyry. Pyroxenite occurring in the southeastern part of the greenstone belt may be intrusive or extrusive in origin (Wilson, 1987).

The supracrustal rocks have been folded into a major anticiine and 2 flanking synclines. On the limbs of these folds, rock units are deformed by "S" and shaped minor folds and by corresponding axial planar "fracture" cleavages. Rocks at the centre of the belt are of low-temperature, low-grade metamorphic rank whereas those at the edges of the belt are generally of medium-grade. When folding was completed, Proterzoic diabase dikes crosscut all other rock types (Wilson, 1987).

Hydrothermal fluids moving along faults produced alteration dominated by silicification, and resulted in the deposition of sulphide minerals consisting mainly of pyrite but including arsenopyrite, chalcopyrite, galena, and pyrrhotite. Molybdenite, silver, and gold, minerals not necessarily related to faulting are also found in the Lingman Lake area. A gold deposit on which there has been considerable underground development was discovered 1.5 km north of the west end of Lingman Lake in 1942 (Wilson, 1987).

85% of the Lingman Lake Greenstone Belt is covered with till, sand, gravel, silt, and clay. Bedrock outcrops, commonly of low relief are surrounded by poorly sorted tills composed of sand- to boulder-size clasts and somewhat better sorted, intermixed deposits of sand, gravel, silt, and clay. Only rarely are there relatively broad, flat areas of gravel and finer sediments. Most flat areas in the Lingman Lake area are low and swampy and are probably thickly covered by peat. The north shores of lakes are generally mantled by deposits of pebbles, cobbles, and, rarely, boulders, whereas south shores are less extensively covered by unconsolidated sediments (Wilson, 1987).

7.2. Local Geology

The Etamame Lake area is characterized by tholeiitic-komatiitic volcanism that strikes for over 12km east-west. The volcanic pile is on average 1km to 1.5km thick. The area contains a series of intercalated near vertical dipping komatiites (peridotites/pyroxenites and dunites), biotite rich mafic volcanics, crystal tuffs, felsic agglomerates, cherts and sulphide-facies iron formation (Vanderklift, 2010). The age of the Etamame Lake property rocks are 2742 to 2749 billion years old exhibiting greenschist facies (Wilson, 1987).

7.3. Mineralisation

A total of 27 grab samples were collected by Vanex Exploration from September 13 to 17, 2010 in order to characterise the rocks hosting the Etamame Ultramafic Complex. One grab sample has anomalous in Cu and Ni (sample 40464 – 0.4% Cu and 0.7% Ni). All were submitted for whole rock and trace element analysis (see Appendix 1).

Figure 5 is a Rare Earth Element (REE) spider plot for 26 of the 27 samples collected (the sample from the sulphide facies iron formation was removed). Note the generally flat trends indicating a fairly high degree of partial melting, especially for the two peridotite samples (small circles). The rest of the samples show evidence of crustal contamination.

Using a Jensen plot (Figure 6) we see that we have a suite of rocks that follow a trend from komatiite on the right to calc-alkaline on the left.



Figure 4 – Lingman Lake Greenstone Belt Geology Map (Wilson, 1987).

8. Deposit Types

A primary source of nickel is from magmatic systems, commonly associated with high magnesium content (komattitic magmas). Examples include the nickel deposits at Thompson, in northern Manitoba; the Raglan area of northern Quebec; the many deposits in the Kambalda area of Western Australia; the Pechenga area of western Russia; and the Kabanga region of south-central Africa. Other, less mafic associations exist including the norites of Sudbury; the olivine gabbros (troctolite) at Voisey's Bay; and the Noril'sk deposits.



Figure 5 – REE Spider Plot for the Etaname Lake area.

Jensen (1976)



Figure 6 – Jensen Cation Plot for the Etaname Lake area.

All of these magmatic deposits resulted from segregation and concentration of sulphide liquid droplets from the magma and the partitioning of chalcophile elements, including nickel, into the sulphide from the silicate magma.







Figure 8 - Etamame Lake Reconnaissance Map.

A key to the formation of an economic nickel deposit is the concentration of the immiscible sulphides (Naldrett, 2010). This is usually through gravity separation of the

denser sulphides, at times aided by physical features that locally affect the flow of the host magma during emplacement. Changes in velocity can allow the sulphide droplets to collect in physical traps. Figure 7 illustrates the relationship between flows and the accumulation of magmatic sulphides in this type of environment.

Exploration to date has shown that the Etamame Lake property in underlain by ultramafic komattitic flows. The available magnetic data implies that these ultramafic flows are contorted and it is near these changes in geometry that the best nickel grades have been found to date and likely will be host to economic concentrations of Nickel-copper bearing sulphides.

The Etaname Lake area has all of the earmarks of being a favourable area for hosting magmatic flow-hosted nickel mineralisation.

ETAMAM	E LAKE Ni-Cu-P	GE RECON PR	OGRAM SE	PTEMBER 20	10 : 27 Grat	o Samples: Collected by Wim Vanderklift:
Sampless	ent to Cheme	Labs: Work C	Order Num	ber		
Field No.	Tag Book No.	UTEM ZONE	DATUM	Northings	Eastings	Field Sample Descriptions
WV1	40451	Zone 15	NAD 83	5959013	516667	Biotite Rich Mafic volcanic- dips 85 near vertical
WV 2	40452	Zone 15	NAD 83	5959019	516731	Altered mafic volcanic-strong cholrite- diss py
WV 3	40453	Zone 15	NAD 83	5958854	516777	Banded Iron FM-Cherts-magnetite seems-diss py-po-cpy
WV4	40454	Zone 15	NAD 83	5958935	516786	Silicified altered felsic volcanic - trace sulphides
WV 5	40455	Zone 15	NAD 83	5958918	516885	Dark mafic volcanic - amphibolite? Ultramafic? Weakly magnetic
						QFP large angular float 5m X 3m Contains qtz vein systems minor
WV6	40456	Zone 15	NAD 83	5958548	516752	py: Au?
WV7	40457	Zone 15	NAD 83	5958615	516772	Biotite Rich Mafic volcanic- dips 85 near vertical
WV8	40458	Zone 15	NAD 83	5958473	516745	Mafic volcanic? - amphibolite? Ultramafic? magnetic
						Mafic volcanic? - amphibolite? Ultramafic? Weakly magnetic -
WV9	40459	Zone 15	NAD 83	5958470	516612	diss po
WV 10	40460	Zone 15	NAD 83	5958530	516633	Mafic volcanic? - amphibolite? Ultramafic? Weakly magnetic
						Mafic volcanic? - amphibolite? Ultramafic? Weakly magnetic -
WV 11	40461	Zone 15	NAD 83	5958702	516665	diss po
		_				
WV 12	40462	Zone 15	NAD 83	5958283	516693	Dark mafic volcanic - amphibolite ? Ultramafic? Weakly magnetic
WV 13	40463	Zone 15	NAD 83	5958489	516719	Ultramafics - fine grained peridotite - magnetic
		7				Coarse grained amphibolite? - Pyroxenite? 3% po-py streaks -
WV 14	40464	Zone 15	NAD 83	5958572	516584	magnetic
M/V/1E	40465	7000 15		5059547	513947	oltramatic outcrop - peridotite-strong magnetics - strong
WV 15	40465	Zone 15		5958547	513047	Coorce grained Cabbra trace subbides
VV 10	40466	20110 15	NAD 65	5958541	513639	Strong biotite rich volcanic includes gabbroic patches -parrow
W/V 17	40467	70ne 15	NAD 83	5958642	513846	mafic diabase dyking
W/V 18	40468	Zone 15	NAD 83	5958569	513867	Sulphide staining - no/ny within mafic volcanics
*** 10	40400	20110 15	NAD 05	3336363	515007	Brecciated fault zone contains UM? Fragments-mafic volcanics-
WV 19	40469	Zone 15	NAD 83	5958548	513806	granite
WV 20	40470	Zone 15	NAD 83	5858504	513794	Coarse grained amphibolite? - Pyroxenite? Trace sulphides
WV 21	40471	Zone 15	NAD 83	5958649	513947	Pillowed Mafic volcanics - tops north
WV 22	40472	Zone 15	NAD 83	5958699	514033	Strongly altered felsic volcanics - sericite - trace sulphides
						Strongly altered felsic volcanics - sericite - trace sulphides-
WV 23	40473	Zone 15	NAD 83	5958766	514022	chlorite streaks
WV 24	40474	Zone 15	NAD 83	5958758	514044	Strongly altered felsic volcanics
WV 25	40475	Zone 15	NAD 83	5958231	510452	Highly altered peridotite-talc schists
WV 26	40476	Zone 15	NAD 83	5958255	511007	Coarse grained amphibolite? - Pyroxenite? Trace sulphides
WV 27	40477	Zone 15	NAD 83	5958296	511134	Strong serpentinized pyroxenite
vv v Z /	40477	2016 15	INAD 83	5958296	511134	strong serpentinized pyroxenite

 Table 2 – Summary of Etamame Grab Samples

9. Exploration

During the third week of September 2010, three days of reconnaissance work was carried over the Etamame Lake Ultramafic Complex property Vanex Exploration Services. Three traverses were carried over an area of abundant outcrop (40 to 60% outcrop exposure) along with prospecting for mineralization.

Twenty-seven (27) grab samples were collected and sent to Chemex Labs for whole rock, trace element and a mineralized package (see Figure 8 and Table 2). The only sulphide mineralization noted at the time was po-py-magnetite chert layers within an iron formation. The existence of such iron formations would have provided an excellent source of secondary sulphur allowing enhancement of the nickel grades of any magmatic Ni-Cu-PGE deposits present.

Total expenditures for this reconnaissance program were \$20,988.

In March of 2011 Geotech Ltd. (2011) carried out a aeromagnetic (see Figure 9) and VTEM AEM survey (see Figure 10) over the Etamame Lake property for Largo Resources Ltd. over the property (see Appendix 2). The survey consisted of 427 line kilometres and identified a total of 23 conductor trends, many on the flanks or directly associated with magnetic highs. Balch (2012), in an interpretation report (Appendix 3) isolated 9 of these as having excellent potential for nickel mineralisation based on the electromagnetic and associated magnetic signatures. The total cost of the Geotech survey was \$156,281.

10. Drilling

There is no known historical exploration diamond drilling within the Etamame Lake property.

11. Sample Preparation, Analyses and Security

The samples collected by the author of this report were analysed by ALS Chemex in Sudbury, Ontario. ALS Chemex monitor all steps and phases of their operations as part of their Quality System that is accredited to international quality standards through the International Organization for Standardization /International Electrotechnical Commission (ISO/IEC) 17025 (ISO/IEC 17025 includes ISO 9001 and ISO 9002 specifications) with CAN-P-1758 (Forensics), CAN-P-1579 (Mineral Analysis) and CAN-P-1585 (Environmental) for specific registered tests by the SCC. In addition they are routinely audited by four regulatory agencies that focus on continual improvement.

12. Data Verification

ALS Chemex Sudbury inserted sample blanks, and standards within the sample set. All samples were then sent to ALS Chemex Laboratories in Vancouver BC for analysis using an accepted industry standard internal quality control system. No issues were identified by this QA/QC process.

13. Mineral Processing and Metallurgical Testing

There has not yet been any mineral processing or metallurgical testing done.

14. Mineral Resource Estimates

There has not yet been any mineral resource estimation done.

15. Mineral Reserve Estimates

There has not yet been any mineral reserve estimation done.

16. Mining Methods

As no mining study has yet to be done on the property no mining method has been selected.



Figure 9 – The total magnetic intensity (TMI) is shown for the Etamame Lake survey area.



Figure 10 – Conductive trends on top of the total magnetic intensity (TMI) map for the Etamame Lake survey area.

17. Recovery Methods

As no metallurgical studies have been done no recovery method has been selected..

18. **Project Infrastructure**

There is currently no project infrastructure in place.

19. Market Studies and Contracts

There have been no market studies done and no sales contracts signed.

20. Environmental Studies, Permitting and Social or Community Impact

As the project is at its infancy there as yet have been no environmental studies done. A work permit covering planned surface exploration work has been applied for from Ontario Ministry of Natural Resources (MNR) but is still pending. There have been no social or community impact studies done to date.

21. Capital and Operating Costs

As no mining study has yet to be completed there is no estimate of capital and operating costs.

22. Economic Analysis

There has not yet been any economic analysis done.

23. Adjacent Properties

There are no contiguous adjacent properties.

24. Other Relevant Data and Information

There is no other data or information available that can make this report understandable.

25. Interpretation and Conclusions

The work to date has confirmed the presence of komatiitic ultramatics which have closely associated magnetic and electromagnetic anomalies. Many of these anomalies are close to or at the interpreted base of the ultramatic units where one would expect nickel-bearing massive sulphides.

It is concluded that the property is indeed an excellent target for hosting potentially economic nickel mineralisation. Further work consisting of diamond drilling is now required.

26. Recommendations

It is recommended that the most significant electromagnetic targets, with a close magnetic association, be tested by drilling. Balch (2012) recommended a minimum diamond drilling program of 1,250 metres, and identified 10 collar locations, summarized

in Table 3. SBG concurs with his recommendations and presents a budget for this program in Table 4.

HOLEID	EASTING	NORTHING	DIP	AZIUMTH	LENGTH
(#)	(m)	(m)	(o)	(o)	(m)
DH-EL-01	516,800	5,958,490	-55	180	125
DH-EL-02	517,200	5,958,535	-55	180	125
DH-EL-03	506,300	5,960,460	-55	180	125
DH-EL-04	516,800	5,959,925	-55	180	125
DH-EL-05	515,800	5,958,230	-55	180	125
DH-EL-06	507,500	5,960,645	-55	180	125
DH-EL-07	517,600	5,958,510	-55	180	125
DH-EL-08	508,900	5,960,190	-55	180	125
DH-EL-09	517,800	5,958,160	-55	180	125
DH-EL-10	514,700	5,958,760	-55	180	125

 Table 3 – Recommended Drill Program (Balch, 2012).

Item	Description	Amount
Diamond Drilling	1,250m	\$ 250,000
Helicopter	Logistical support for drilling program	\$ 200,000
Support	Assaying, supplies, accommodation, etc.	\$ 95,000
Contingencies	10%	\$ 55,000
Total		\$ 600,000

 Table 4 – Budget for recommended program.

27. References

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Wilson and Pelltier, 1981. General Geology Map of Ontario; MNDM, scale 1:5,000,000

Certificate of Qualifications

I, Alan James Aubut, do hereby certify the following:

- I am the author of this National Instrument 43-101 technical document titled "National Instrument 43-101Technical Report, Etamame Lake Ultramafic Complex Property, Sachigo Lake Area, Ontario, Canada, Red Lake Mining Division, NTS 53 F 15. Geology Technical Report", dated July 20, 2012.
- I am a graduate of Lakehead University, in Thunder Bay, Ontario with the degree of Honours Bachelor of Science, Geology (1977).
- I am a graduate of the University of Alberta, in Edmonton, Alberta with the degree of Master of Science, Geology (1979).
- I have been actively practicing geology since 1979.
- Since 2009 I am a member in good standing of the Association of Professional Geoscientists of Ontario.
- From 2000 to 2009 I was a member in good standing of the Association of Professional Engineers and Geoscientists of Manitoba.
- I am a member of the Society of Economic Geologists.
- I operate under the business name of Sibley Basin Group Geological Consulting Services Ltd., a business independent of 2238484 Ontario Inc. and do not expect to become an insider, associate or employee of the issuer.
- The business address of Sibley Basin Group Geological Consulting Services Ltd. is:

Sibley Basin Group PO Box 304 300 First St. West Nipigon, ON P0T 2J0

The work described in this report is based in part on a field visit by Wim Vanderklift to the subject property between September 13 and 17, 2010, on behalf of SBG, at which time reconnaissance mapping and prospecting was done. I personally have not visited the property.

Alan Aubut



Appendix 1 – ALS Chemex Results: 27 grab samples from September 2010 Recon

of SAMPLES : 27 DATE RECEIVED : 2010-09-22 DATE FINALIZED : 2010-10-12 PROJECT : ETAMAME LAKE CERTIFICATE COMMENTS : PO NUMBER :

	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS82	1 ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS8	1 ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
SAMPLE	Ag	Ва	Ce	Со	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Hf	Но	La	Lu	Mo	Nb	Nd	Ni
DESCRIPTION	(ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
40451	<1	57.5	5 5	50.1	. 32	0 2.	.7 <5	3.19	2.22	0.44	- 13	3 2.36	5 4	.4 0.72	2 1.9	0.36	5 <2	4.3	4.7	7 192
40452	<1	111.5	5 5.8	56.1	. 60	0 2.4	15 29	1.99) 1.3	B 0.6	15.8	3 1.72	2	1 0.45	5 2.3	8 0.2	2 <2	1.4	4.3	3 223
40453	1	. 8.6	5 11.3	5	5 1	0 2.5	59 1280) 1.78	1.38	3 1.27	2.7	/ 1.54	4 0	0.3 0.46	6.8	0.23	3 2	2 0.6	5 5	5 <5
40454	<1	601	L 34.8	23.9	30	0 1.6	57 7	2.23	1.24	1.09	19	3.34	4 3	.1 0.45	5 15.5	0.17	/ <2	5	i 16.4	l 77
40455	<1	467	7 14.2	34	<10		2 25	5 2.71	. 2.26	0.63	20) 1.98	3 4	.1 0.68	3 6.6	6 0.4	1 <2	6.8	6.7	7 38
40456	<1	1175	5 30.6	i 3	2	0 3.3	36 21	1.2	0.75	0.89	15	5 1.7	73	.1 0.20	5 16.3	0.13	3 <2	4.3	11.4	l <5
40457	<1	549	9 74.2	15.1	. 4	0 3.3	39 11	. 2	1.19) 1.12	23.7	3.64	4 4	.4 0.43	L 40.8	0.15	5 <2	6	5 27.1	L 32
40458	<1	26.3	8 8.4	74.3	228	0 0.3	84 66	5 2.03	1.28	B 0.56	11.6	5 1.70	51	2 0.44	4 3.2	0.19) <2	2	5.3	3 587
40459	<1	39.3	3 11.1	. 72	163	0 0.9	98 15	5 2.16	5 1.4	0.57	10.9	2.02	1 1	3 0.48	3 4.6	6 0.2	2 <2	2.1	. 6.2	2 490
40460	<1	418	3 12.3	64	126	0	2 22	2.35	1.52	0.53	11.8	3 2.24	4 1	6 0.52	16	5 0.22	2 <2	2.9	7.3	3 370
40461	<1	41.4	4 20.5	42.3	24	0 0.	.1 181	. 3.21	. 2.02	. 0.88	17.8	3.04	4 2	.3 0.69	9.8	B 0.3	3 <2	4.4	10) 107
40462	<1	29	9 5.8	60.1	. 118	0 0.1	12 10	2.07	1.41	0.49	11.5	5 1.68	31	.1 0.49	2.3	0.22	2 <2	1.7	4.2	2 321
40463	1	. 161	L 35.4	115.5	5 108	0 0.1	2450) 3	1.43	1.58	13.5	5	51	3 0.5	5 11.8	3 0.17	/ <2	2.9	26	5 3040
40464	2	284	4 16.3	240) 15	0 12.	.7 4150	2.43	1.32	. 0.75	20.7	3.03	3 2	.4 0.46	5 5.5	0.19) <2	6.6	5 12.2	6970
40465	<1	69.3	3 7.1	. 66.9	107	0 2.6	52 102	2.05	1.36	6 0.47	11.8	3 1.70	51	.1 0.48	3 2.9	0.21	<2	1.7	4.6	5 343
40466	<1	1090	56.7	10) 4	0 2.6	52 10) 1.37	0.72	0.89	19	2.6	1 3	.6 0.2	7 31.9	0.1	<2	4.8	3 20.8	36 36
40467	<1	6.1	L 2.7	626	5 117	0 0.1	151	. 0.44	0.31	0.13	2.5	5 0.44	4 <0.2	0.3	L 2.1	0.04	l <2	0.2	. 1.2	3870
40468	<1	213	3 9.7	57.5	152	0 2.8	34 461	2.55	5 1.8	0.58	15.9	2.01	7 1	5 0.63	L 5.5	5 0.28	3 <2	2.1	. 4.7	7 287
40469	<1	60.6	5 11.2	46.6	5 137	0 1.0)7 30) 3.4	2.31	0.73	12	2 2.52	2 1	.4 0.78	3 5.3	8 0.34	l <2	1.7	5.9	9 158
40470	<1	465	5 16.8	23.8	31	0 1.	.7 <5	2.12	1.16	5 0.88	17.9	2.5	3 3	.1 0.4	1 7.5	5 0.17	/ <2	3.8	9.4	l 61
40471	<1	41.3	3 7.7	59) 114	0 0.1	16 32	1.91	. 1.22	0.54	11.2	2 1.4	4	1 0.39	9 3.9	0.19) <2	1.5	3.9	9 297
40472	<1	245	5 9.2	68.9	134	0 0.1	17 <5	2.23	1.54	0.43	12.3	3 1.7	1 1	3 0.52	L 4.6	0.23	3 <2	1.9	5.1	L 224
40473	<1	422	2 18.6	5 1.2	2 3	0 1.1	19 <5	1.46	0.86	5 0.38	17.5	5 1.5	5	2 0.2	7 8.5	5 0.12	2 <2	7.3	6.9	9 5
40474	<1	338	3 14	<0.5	1	0 0.7	7 <5	1.45	0.86	o 0.28	16.5	5 1.24	4 1	9 0.2	7 6.1	0.12	2 <2	6.7	5.5	5 <5
40475	<1	6.7	7 2.1	. 81.6	5 260	0 0.2	21 <5	0.89	0.6	6 0.17	5.7	0.6	7 0	0.4 0.19	9 0.9	0.09) <2	0.5	5 1.4	1015
40476	1	. 81.1	L 28.5	58.6	6 81	0.0	644	2.45	1.27	1.42	9.9	9 4.3	31	1 0.44	1 9.5	0.13	3 <2	1.4	21.5	5 1660
40477	<1	75.9	21.2	67.5	63	0 2.0)7 151	1.59	0.79	0.99	8.2	2 2.63	1 0	0.8 0.2	7 7.1	0.08	3 <2	1.1	. 15.3	935

of SAMPLES : 27 DATE RECEIVED : 2010-09-22 DATE FINALIZED : 2010-10-12 PROJECT : ETAMAME LAKE CERTIFICATE COMMENTS :

PO NUMBER :

	ME-MS81	ME-MS	81 ME-MS81	. ME-MS	81 ME-N	NS81	ME-MS81	ME-MS81	ME-ICP06	ME-ICP06											
SAMPLE	Pb	Pr	Rb	Sm	Sn	Sr	Та	Tb	Th	Tİ	Tm	U	V	W	Y	Yb		Zn	Zr	SiO2	Al2O3
DESCRIPTI	(ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		ppm	ppm	%	%
40451	. <5	0.8	9 11.8	3 1.7	1 <1	132.	5 0.3	3 0.46	5 0.45	5 <0.5	0.34	4 0.0	7	122 <1	1	9.2	2.11	71	156	47.5	15.6
40452	. <5	0.9	1 14.3	3 1.3	2 <1	148.	5 0.3	1 0.32	2 0.19	9 <0.5	0.2	2 0.03	8	125 <1	1	1.8	1.22	61	33	45.3	19.1
40453	<5	1.3	3 2.1	1 1.02	2 2	2 14.	3 <0.1	0.26	5 0.64	l <0.5	0.22	1 0.:	2	19 <1	1	5.1	1.31	213	11	. 49	1.13
40454	L (5 4.2	3 65.9	3.5	7 :	1 40	9 0.4	4 0.43	3 3.64	4 <0.5	0.17	7 1.1	2	120 <1		12	1.08	71	115	59.3	14.65
40455	i (6 1.7	9 90.1	1 1.69	9 2	2 92.	9 0.	7 0.38	8 8.14	l <0.5	0.37	7 2.4	5	331	1 1	7.1	2.42	89	143	63.4	13.9
40456	5 1	1 3.5	1 84.1	1 1.8	3 :	1 188.	5 1.3	3 0.23	3 3.82	2 <0.5	0.12	2 1.02	2	12	2	7.1	0.78	33	110	71.7	13.3
40457	,	7 8.2	9 104	4.08	8 :	1 20	8 0.5	5 0.42	2 12.2	2 < 0.5	0.16	5 2.5	6	78 <1		11	1	80	174	59.7	16.85
40458	\$ <5	1.2	2 2.6	5 1.5	1 :	1 27.	8 0.2	2 0.32	2 1.71	L <0.5	0.19	9 0.4	1	118 <1	1	1.6	1.14	85	42	47.3	8.74
40459	<5	1.5	1 1.7	7 1.6	6 :	1 153.	5 0.2	2 0.35	5 1.77	7 <0.5	0.22	1 0.4	7	135 <1	1	2.4	1.22	79	45	48.8	9.38
40460) <5	1.7	8 22.4	1 1.8	8 :	1 164.	5 0.3	3 0.38	3 2.62	2 <0.5	0.22	2 0.6	5	156 <1	1	3.7	1.39	72	55	51.1	. 10.2
40461	. !	5 2.5	7 1.3	3 2.5	7 :	1 169.	5 0.4	4 0.51	1 4.21	L <0.5	0.3	3 1.	3	217 <1	1	8.9	1.87	63	80	55.6	13.5
40462	. <5	0.9	2 1.2	2 1.3	1 :	1 164.	5 0.:	1 0.31	1 1.13	8 <0.5	0.23	1 0.3	5	170 <1	1	2.7	1.37	88	37	50.1	. 11.4
40463	<5	5.8	1 8	3 5.98	8 :	1 23	9 0.:	1 0.63	3 0.65	5 <0.5	0.19	9 0.5	1	160 <1	1	4.2	1.07	120	42	48.7	6.79
40464	<5	2.7	1 70.5	5 3.3	7 2	2 54.	3 0.4	4 0.45	5 0.73	8 <0.5	0.2	2 0.2	5	152 <1	1	3.7	1.26	164	84	46.6	7.86
40465	<5	1.0	7 12.9	9 1.3	6	1 10	1 0.:	1 0.31	1 1.3	8 <0.5	0.23	1 0.3	9	170 <1	1	2.7	1.38	77	41	. 50.3	11.45
40466	5 1!	56.	4 98	3.1	7 :	1 47	5 0.5	5 0.29	9.73	8 <0.5	0.12	1 1.94	4	51	1	6.9	0.6	75	141	. 67.6	15.25
40467	<5	0.	3 0.8	3 O.	3 <1	4	8 <0.1	0.07	7 0.11	L <0.5	0.04	4 <0.05		9 <1		3	0.26	29	5	32.8	1.88
40468	\$ <5	1.1	9 25.5	5 1.3	7 :	1 65.	1 0.2	2 0.36	5 1.49	9 <0.5	0.28	3 0.4	5	196	1	20	1.7	90	60	44.2	12.6
40469) <5	1.4	8 27.9	9 1.7	5	1 87.	9 0.:	1 0.49	9 1.46	5 <0.5	0.35	5 0.5	3	135	1 2	1.1	2.16	52	48	54.8	11.35
40470)	7 2.1	5 47.7	7 2.7	1 :	1 45	1 0.3	3 0.4	4 2.97	7 <0.5	0.18	B 0.9	5	112	1 1	0.8	1.08	81	117	60.9	14.05
40471	. <5	0.	9 3.2	2 1.	1 :	1 120.	5 0.1	1 0.29	9 1.03	8 <0.5	0.19	9 0.3	5	153	1 1	0.4	1.1	80	36	50.9	10.55
40472	. <5	1.	2 23.5	5 1.4	7 :	1 10	4 0.2	2 0.34	4 1.31	L <0.5	0.24	4 0.4	4	203	1 1	2.6	1.51	94	44	51.6	12.7
40473	1	9 2.1	2 94.6	5 1.	5	1 63.	1 0.8	8 0.25	5 5.16	5 <0.5	0.12	2 2.5	5	12	1	8	0.82	30	43	72.5	14.05
40474	1	0 1.6	2 102.5	5 1.2	1 :	1 29.	2 0.3	7 0.24	4.67	7 <0.5	0.12	2 2.7	6	7	1	8.2	0.87	19	42	75.4	13.15
40475	<5	0.	3 2.3	3 0.4	5 <1	25.	6 <0.1	0.12	2 0.17	7 <0.5	0.1	1 0.0	7	59	1	4.6	0.62	70	15	46.4	5.35
40476	i <5	4.5	1 7.2	2 4.6	8 :	1 172.	5 <0.1	0.54	4 0.54	4 <0.5	0.16	5 0.3	1	164 <1	1	1.4	0.94	80	38	49.4	5.89
40477	, ,	6 3.3	7 18.4	1 3.3	8 :	1 61.	9 <0.1	0.35	5 0.39) <0.5	0.12	2 0.1	1	92 <1		7.4	0.66	103	27	50.2	4.32

of SAMPLES : 27 DATE RECEIVED : 2010-09-22 DATE FINALIZED : 2010-10-12 PROJECT : ETAMAME LAKE CERTIFICATE COMMENTS : PO NUMBER :

	ME-ICP06	OA-GRA05	TOT-ICP06										
SAMPLE	Fe2O3	CaO	MgO	Na2O	К2О	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI	Total
DESCRIPTIO	٢%	%	%	%	%	%	%	%	%	%	%	%	%
40451	10.35	9.29	11.7	1.89	0.33	0.05	1.21	0.18	0.04	0.01	0.01	2.51	100.5
40452	9.93	10.85	10	1.63	0.41	0.09	0.49	0.13	0.04	0.02	0.01	2	100
40453	43.5	2.18	4.9	0.06	0.03	<0.01	0.04	0.35	0.19	0.01	<0.01	-1.1	100.5
40454	6.81	6.54	5.34	3.25	1.7	0.05	0.77	0.11	. 0.18	0.05	0.07	1.11	99.9
40455	10.15	3.84	1.65	2.37	2.19	<0.01	1.11	0.19	0.13	0.01	0.06	0.8	99.8
40456	2.08	2.06	0.28	3.49	3.09	<0.01	0.16	0.04	0.06	0.02	0.15	1.2	97.6
40457	5.68	0.9	4.26	5.29	3.3	0.01	0.62	0.06	0.11	0.02	0.07	1.8	98.7
40458	12.3	10.55	16.05	0.86	0.1	0.36	0.46	0.21	. 0.04	<0.01	<0.01	3.3	100.5
40459	12.55	10.3	14.5	1.48	0.08	0.26	0.5	0.2	0.05	0.02	<0.01	1.89	100
40460	12.6	10	12.5	1.72	0.68	0.2	0.55	0.24	0.07	0.02	0.05	0.5	100.5
40461	11.6	10.65	6.37	1.32	0.17	0.04	0.62	0.17	0.09	0.02	<0.01	1.1	101.5
40462	11.9	12.6	11.8	1.46	0.14	0.19	0.46	0.22	0.05	0.02	<0.01	1.2	101.5
40463	12.85	12.85	14.55	0.88	0.56	0.18	0.59	0.16	0.16	0.03	0.02	2.59	101
40464	17.4	3.87	13.25	0.51	2.12	0.02	0.41	0.14	0.02	0.01	0.03	5.97	98.2
40465	12.1	9.41	12.4	1.78	0.41	0.17	0.46	0.2	0.04	0.01	0.01	1.88	100.5
40466	3.86	2.36	1.92	3.47	3.97	0.01	0.43	0.06	0.14	0.06	0.13	0.89	100
40467	15.95	3.6	28.8	0.01	0.01	0.18	0.08	0.1	0.02	0.01	<0.01	12.5	95.9
40468	16.5	11.3	7.33	0.7	0.66	0.22	0.51	0.29	0.05	0.01	0.02	2.99	97.4
40469	8.24	13	8.28	0.69	0.92	0.22	0.46	0.25	0.05	0.01	0.01	2.48	101
40470	6.83	5.78	5.01	3.48	1.69	0.05	0.51	0.12	0.11	0.06	0.06	1	99.7
40471	12.15	12.6	10.25	1.24	0.11	0.18	0.44	0.18	0.01	0.02	0.01	1.29	99.9
40472	9.68	13.65	9.19	0.46	1.36	0.2	0.53	0.23	0.04	0.01	0.03	1.7	101.5
40473	1.4	2.52	1.44	2.69	3.19	<0.01	0.05	0.06	0.05	0.01	0.05	1.3	99.3
40474	1.15	0.92	0.95	1.06	3.97	<0.01	0.04	0.03	0.02	<0.01	0.04	2.19	98.9
40475	9.81	7.17	23.3	0.17	0.03	0.39	0.18	0.15	<0.01	<0.01	<0.01	6.72	99.7
40476	9.85	12.15	15.35	0.9	0.42	0.13	0.56	0.15	0.18	0.03	0.01	1.99	97
40477	9.32	9.17	19.4	0.3	0.58	0.09	0.34	0.18	0.02	0.01	0.01	4.19	98.1

Appendix 2 – Geotech VTEM Report

REPORT ON A HELICOPTER-BORN VERSATILE TIME DOMAIN ELECTROMACNE IN VIEW plus) AND AEROMAGNETIC GEOPHYSICAL SURVEY

Etamame Lake project

Sachigo Lake, Ontario

For:

Largo Resources Ltd.

By:

Geotech Ltd. 245 Industrial Parkway North Aurora, ON, CANADA, L4G 4C4 Tel: 1.905.841.5004 Fax: 1.905.841.0611 www.geotech.ca

Email: info@geotech.ca

Survey flown during March 2011

Project 10299

May, 2011

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G. TEM Resitivity Depth Imaging (RDI)



REPORT ON A HELICOPTER-BORNE VERSATILE TIME DOMAIN ELECTROMAGNETIC (VTEM plus) and AEROMAGNETIC SURVEY

Etamame Lake Project Sachigo Lake, Ontario

Executive Summary

During March 28th to March 30th, 2011 Geotech Ltd. carried out a helicopter-borne geophysical survey over Etamame Lake Project situated about 38 kilometres south-west of Sachigo Lake, Ontario, Canada.

Principal geophysical sensors included a versatile time domain electromagnetic (VTEM plus) system, and a caesium magnetometer. Ancillary equipment included a GPS navigation system and a radar altimeter. A total of 427.2 line-kilometres of geophysical data were acquired during the survey.

In-field data quality assurance and preliminary processing were carried out on a daily basis during the acquisition phase. Preliminary and final data processing, including generation of final digital data and map products were undertaken from the office of Geotech Ltd. in Aurora, Ontario.

The processed survey results are presented as the following maps:

- Electromagnetic stacked profiles of the B-field Z Component,
- Electromagnetic stacked profiles of dB/dt Z Components,
- Colour grids of a B-Field Z Component Channel,
- Total Magnetic Intensity (TMI),
- Calculated Vertical gradient of TMI (CVG),
- dB/dt X Component Fraser Filter grid,
- EM Time-constant B-Field Z Component(Tau),
- EM Time-constant dB/dt Z Component(Tau), and
- RDI sections are presented.

Digital data includes all electromagnetic and magnetic products, plus ancillary data including the waveform.

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



1. INTRODUCTION

1.1 General Considerations

Geotech Ltd. performed a helicopter-borne geophysical survey over Etamame Lake Project located about 38 kilometres south-west of Sachigo Lake, Ontario, Canada (Figure 1).

Andy Campbell represented Largo Resources Ltd. during the data acquisition and data processing phases of this project.

The geophysical surveys consisted of helicopter borne EM using the versatile time-domain electromagnetic (VTEM plus) system with Z and X component measurements and aeromagnetics using a caesium magnetometer. A total of 427.2 line-km of geophysical data were acquired during the survey.

The crew was based out of Sachigo Lake (Figure 2) in Ontario for the acquisition phase of the survey. Survey flying started on March 28th and was completed on March 30th, 2011.

Data quality control and quality assurance, and preliminary data processing were carried out on a daily basis during the acquisition phase of the project. Final data processing followed immediately after the end of the survey. Final reporting, data presentation and archiving were completed from the Aurora office of Geotech Ltd. in May, 2011.



Figure 1 - Property Location

1.2 Survey and System Specifications

The survey block is located approximately 38 kilometres south-west of Sachigo Lake, Ontario, Canada (Figure 2).



Figure 2 - Survey areas location on Google Earth

The survey block was flown in a north to south (N 0° E azimuth) direction with traverse line spacing of 100 metres as depicted in Figure 3. Tie lines were flown perpendicular to the traverse lines at a spacing of 1000 metres (N 90° E azimuth) respectively. For more detailed information on the flight spacing and direction see Table 1.



1.3 Topographic Relief and Cultural Features

Topographically, the survey lines exhibit a shallow relief with an elevation ranging from 260 to 296 metres above mean sea level, over an area of 15.00 square kilometres (Figure 3).

The block has various rivers and streams running through the survey area which connect various lakes and wetlands. There are no visible signs of culture such as roads, trails and buildings located throughout the survey area.



Figure 3 - Flight path over a Google Earth Image – Etamame Lake Project

The block is covered by numerous mining claims, which are shown in Appendix A, and are plotted on all maps. The survey area is covered by NTS (National Topographic Survey) of Canada sheets 053F15.



2. DATA ACQUISITION

2.1 Survey Area

The survey lines (see Figure 3 and Appendix A) and general flight specifications are as follows:

Table 1 - Survey Specifications

Survey block	Traverse Line spacing (m)	Area (Km²)	Planned ¹ Line-km	Actual Line- km	Flight direction	Line numbers
Etamame	Traverse: 100			401.9	N 0° E azimuth	L1000-L2280
Lake		15.00	427.2			
Project	Tie: 1000			39.4	N 90° E azimuth	T2900-L2940
	15.00	427.2	441.3			

Survey block boundaries co-ordinates are provided in Appendix B.

2.2 Survey Operations

Survey operations were based out of Sachigo Lake, Ontario from March 28th to March 30th, 2011. The following table shows the timing of the flying.

 Table 2 - Survey schedule

Date	Flight #	Block	Crew location	Comments
28-Mar-11			Sachigo Lake,ON	System assembly
29-Mar-11	1,2,3	Etamame Lake Project	Sachigo Lake, ON	355km flown
30-Mar-11	4	Etamame Lake Project	Sachigo Lake, ON	72km flown – flying is complete

¹ Note: Actual Line kilometres represent the total line kilometres in the final database. These line-km normally exceed the Planned line-km, as indicated in the survey NAV files.



2.3 Flight Specifications

During the survey the helicopter was maintained at a mean altitude of 73 metres above the ground with a nominal survey speed of 80 km/hour. This allowed for a nominal EM bird terrain clearance of 38 metres and a magnetic sensor clearance of 60 metres.

The on board operator was responsible for monitoring 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 features.

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. The data were then uploaded via ftp to the Geotech office in Aurora for daily quality assurance and quality control by qualified personnel.

2.4 Aircraft and Equipment

2.4.1 Survey Aircraft

The survey was flown using a Eurocopter Aerospatiale (Astar) 350 B3 helicopter, registration C-GEOZ. The helicopter is owned and operated by Geotech Aviation. Installation of the geophysical and ancillary equipment was carried out by a Geotech Ltd crew.

2.4.2 Electromagnetic System

The electromagnetic system was a Geotech Time Domain EM (VTEM plus) system. The configuration is as indicated in Figure 4.

The VTEM plus Receiver and transmitter coils were in concentric-coplanar and Z-direction oriented configuration. The receiver system for the project also included a coincident-coaxial X-direction coil to measure the in-line dB/dt and calculate B-Field responses. The EM bird was towed at a mean distance of 35 metres below the aircraft as shown in Figure 4 and Figure 6. The receiver decay recording scheme is shown in Figure 5.


Figure 4 - VTEM plus Configuration, with magnetometer



Figure 5 - VTEM plus Waveform & Sample Times

The VTEM plus decay sampling scheme is shown in Table 3 below. Thirty-two time measurement gates were used for the final data processing in the range from 96 to 7036 μ sec.



VTEM plus Decay Sampling Scheme				
Index	Middle	Start	End	Window
		Microseconds		
14	96	90	103	13
15	110	103	118	15
16	126	118	136	18
17	145	136	156	20
18	167	156	179	23
19	192	179	206	27
20	220	206	236	30
21	253	236	271	35
22	290	271	312	40
23	333	312	358	46
24	383	358	411	53
25	440	411	472	61
26	505	472	543	70
27	580	543	623	81
28	667	623	716	93
29	766	716	823	107
30	880	823	945	122
31	1,010	945	1,086	141
32	1,161	1,086	1,247	161
33	1,333	1,247	1,432	185
34	1,531	1,432	1,646	214
35	1,760	1,646	1,891	245
36	2,021	1,891	2,172	281
37	2,323	2,172	2,495	323
38	2,667	2,495	2,865	370
39	3,063	2,865	3,292	427
40	3,521	3,292	3,781	490
41	4,042	3,781	4,341	560
42	4,641	4,341	4,987	646
43	5,333	4,987	5,729	742
44	6,125	5,729	6,581	852
45	7,036	6,581	7,560	979

 Table 3 - Decay Sampling Scheme

VTEM plus system parameters:

Transmitter Section

- Transmitter coil diameter: 26.1 m
- Number of turns: 4
- Transmitter base frequency: 30 Hz
- Peak current: 176.72 A
- Pulse width: 7.145 ms
- Duty cycle: 43 %
- Wave form shape: trapezoid
- Peak dipole moment: 378,794.93 nIA
- Nominal EM Bird terrain clearance: 38 metres above the ground
- Effective coil area: 2123 m^2

Receiver Section

X-Coil

- X Coil diameter: 0.32 m
- Number of turns: 245
- Effective coil area: 19.69 m² Z-Coil
- Z-Coil coil diameter: 1.2 m
- Number of turns: 100
- Effective coil area: 113.04 m²



Figure 6 - VTEM plus System Configuration

2.4.3 Airborne magnetometer

The magnetic sensor utilized for the survey was Geometrics optically pumped caesium vapour magnetic field sensor mounted 13 metres below the helicopter, as shown in Figure 6. The sensitivity of the magnetic sensor is 0.02 nanoTesla (nT) at a sampling interval of 0.1 seconds.

2.4.4 Radar Altimeter

A Terra TRA 3000/TRI 40 radar altimeter was used to record terrain clearance. The antenna was mounted beneath the bubble of the helicopter cockpit (Figure 6).

2.4.5 GPS Navigation System

The navigation system used was a Geotech PC104 based navigation system utilizing a NovAtel's CDGPS (Canada-Wide Differential Global Positioning System Correction Service) 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 (Figure 6). As many as 11 GPS and two CDGPS satellites may be monitored at any one time. The positional accuracy or circular error probability (CEP) is 1.8 m, with CDGPS active, it is 1.0 m. The co-ordinates of the block were set-up prior to the survey and the information was fed into the airborne navigation system.

2.4.6 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. The data type and sampling interval as provided in Table 4.

DATA TYPE	SAMPLING
TDEM	0.1 sec
Magnetometer	0.1 sec
GPS Position	0.2 sec
Radar Altimeter	0.2 sec



2.5 Base Station

A combined magnetometer/GPS base station was utilized on this project. A Geometrics Caesium 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 behind the Ministry of Transportation hanger at the airport (53°53'24.06"N, 92°11'46.00"W); away from electric transmission lines and moving ferrous objects such as motor vehicles. The base station data were 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.

<u>Field:</u> Project Manager: Data QC:

Data QC:Neil Fiset (Office)Crew chief:Robert RusOperator:Sam Mc Neil

The survey pilot and the mechanical engineer were employed directly by the helicopter operator – Geotech Aviation.

Darren Tuck (Office)

Pilot:	Brad MacRae
Mechanical Engineer:	Tyler McLellan
Office:	
Preliminary Data Processing:	Neil Fiset
Final Data Processing:	Neil Fiset
Final Data QA/QC:	Carlos Izarra
Reporting/Mapping:	Liz Johnson

Data acquisition phase was carried out under the supervision of Andrei Bagrianski, P. Geo, Chief Operating Officer. The processing and interpretation phase was under the supervision of Alex Prikhodko, P. Geo. The customer relations were looked after by Paolo Berardelli.

4. DATA PROCESSING AND PRESENTATION

Data compilation and processing were carried out by the application of Geosoft OASIS Montaj and programs proprietary to Geotech Ltd.

4.1 Flight Path

The flight path, recorded by the acquisition program as WGS 84 latitude/longitude, was converted into the NAD83 Datum, UTM Zone 15 North coordinate 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 easting's (x) and UTM northing's (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 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 15 metres. This filter is a symmetrical 1 sec linear filter.

The results are presented as stacked profiles of EM voltages for the time gates, in linear logarithmic scale for the B-field Z component and dB/dt responses in the Z and X components. B-field Z component time channel recorded at 2.021 milliseconds after the termination of the impulse is also presented as contour colour images. Fraser Filter X component is also presented as a colour image. Calculated Time Constant (TAU) with anomaly contours of Calculated Vertical Derivative of TMI is presented in Appendix D and F. Resistivity Depth Image (RDI) is also presented in Appendix D and G.

VTEM plus has two receiver coil orientations. Z-axis coil is oriented parallel to the transmitter coil axis and both are horizontal to the ground. The X-axis coil is oriented parallel to the ground and along the line-of-flight. This combined two coil configuration provides information on the position, depth, dip and thickness of a conductor. Generalized modeling results of VTEM plus data are shown in Appendix E.



In general X-component data produce cross-over type anomalies: from "+ to - "in flight direction of flight for "thin" sub vertical targets and from "- to +" in direction of flight for "thick" targets. Z component data produce double peak type anomalies for "thin" sub vertical targets and single peak for "thick" targets.

The limits and change-over of "thin-thick" depends on dimensions of a TEM system.

Because of X component polarity is under line-of-flight, convolution Fraser filter (FF, Figure 7) is applied to X component data to represent axes of conductors in the form of grid map. In this case positive FF anomalies always correspond to "plus-to-minus" X data crossovers independently of direction of flight.



Figure 7 - Z, X and Fraser filtered X (FFx) components for "thin" target

Graphical representations of the VTEM plus transmitter input current and the output voltage of the receiver coil are shown in Appendix C.

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 aeromagnetic data was corrected for diurnal variations by subtracting the observed magnetic base station deviations. Tie line levelling was carried out by adjusting intersection points along traverse lines. A micro-levelling procedure was applied to remove persistent low-amplitude components of flight-line noise remaining in the data.

The corrected magnetic data 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 25 metres at the mapping scale. The Minimum Curvature algorithm was used to interpolate values onto a rectangular regular spaced grid.



5. DELIVERABLES

5.1 Survey Report

The survey report describes the data acquisition, processing, and final presentation of the survey results. The survey report is provided in two paper copies and digitally in PDF format.

5.2 Maps

Final maps were produced at scale of 1:10,000 for best representation of the survey size and line spacing. The coordinate/projection system used was NAD83 Datum, UTM Zone 15 North. All maps show the mining claims, flight path trace and topographic data; latitude and longitude are also noted on maps.

The preliminary and final results of the survey are presented as EM profiles, a late-time gate gridded EM channel, and a color magnetic TMI contour map. The following maps are presented on paper;

- VTEM dB/dt profiles Z Component, Time Gates 0.220 7.036 ms in linear logarithmic scale.
- VTEM B-Field profiles Z Component, Time Gates 0.220 7.036 ms in linear logarithmic scale.
- VTEM B-field late time Z Component Channel 36, Time Gate 2.021ms colour image.
- VTEM dB/dt Calculated Time Constant (TAU) with contours of anomaly areas of the Calculated Vertical Derivative of TMI
- Total Magnetic Intensity (TMI) colour image and contours.

5.3 Digital Data

- Two copies of the data and maps on DVD were prepared to accompany the report. Each DVD contains a digital file of the line data in GDB Geosoft Montaj format as well as the maps in Geosoft Montaj Map and PDF format.
- DVD structure.

Data	contains databases, grids and maps, as described below.
Report	contains a copy of the report and appendices in PDF format.

Databases in Geosoft GDB format, containing the channels listed in Table 5.



Channel name	Units	Description
X:	metres	UTM Easting NAD83 Zone 15 North
Y:	metres	UTM Northing NAD83 Zone 15 North
Z:	metres	GPS antenna elevation (above Geoid)
Longitude:	Decimal Degrees	WGS 84 Longitude data
Latitude:	Decimal Degrees	WGS 84 Latitude data
Radar:	metres	helicopter terrain clearance from radar altimeter
Radarb:	metres	Calculated EM bird terrain clearance from radar altimeter
DEM:	metres	Digital Elevation Model
Gtime:	Seconds of the day	GPS time
Mag1:	nT	Raw Total Magnetic field data
Basemag:	nT	Magnetic diurnal variation data
Mag2:	nT	Diurnal corrected Total Magnetic field data
Mag3:	nT	Levelled Total Magnetic field data
SFz[14]:	pV/(A*m ⁴)	Z dB/dt 96 microsecond time channel
SFz[15]:	$pV/(A*m^4)$	Z dB/dt 110 microsecond time channel
SFz[16]:	$pV/(A*m^4)$	Z dB/dt 126 microsecond time channel
SFz[17]:	$pV/(A*m^4)$	Z dB/dt 145 microsecond time channel
SFz[18]:	$pV/(A*m^4)$	Z dB/dt 167 microsecond time channel
SFz[19]:	$pV/(A*m^4)$	Z dB/dt 192 microsecond time channel
SFz[20]:	$pV/(A*m^4)$	Z dB/dt 220 microsecond time channel
SFz[21]:	$pV/(A*m^4)$	Z dB/dt 253 microsecond time channel
SFz[22]:	$pV/(A*m^4)$	Z dB/dt 290 microsecond time channel
SFz[23]:	$pV/(A*m^4)$	Z dB/dt 333 microsecond time channel
SFz[24]:	$pV/(A*m^4)$	Z dB/dt 383 microsecond time channel
SFz[25]:	$pV/(A*m^4)$	Z dB/dt 440 microsecond time channel
SFz[26]:	$pV/(A*m^4)$	Z dB/dt 505 microsecond time channel
SFz[27]:	$pV/(A*m^4)$	Z dB/dt 580 microsecond time channel
SFz[28]:	$pV/(A*m^4)$	Z dB/dt 667 microsecond time channel
SFz[29]:	$pV/(A*m^4)$	Z dB/dt 766 microsecond time channel
SFz[30]:	$pV/(A*m^4)$	Z dB/dt 880 microsecond time channel
SFz[31]:	$pV/(A*m^4)$	Z dB/dt 1010 microsecond time channel
SFz[32]:	$pV/(A*m^4)$	Z dB/dt 1161 microsecond time channel
SFz[33]:	$pV/(A*m^4)$	Z dB/dt 1333 microsecond time channel
SFz[34]:	$pV/(A*m^4)$	Z dB/dt 1531 microsecond time channel
SFz[35]:	$pV/(A*m^4)$	Z dB/dt 1760 microsecond time channel
SFz[36]:	$pV/(A*m^4)$	Z dB/dt 2021 microsecond time channel
SFz[37]:	$pV/(A*m^4)$	Z dB/dt 2323 microsecond time channel
SFz[38]:	$pV/(A*m^4)$	Z dB/dt 2667 microsecond time channel
SFz[39]:	$pV/(A*m^4)$	Z dB/dt 3063 microsecond time channel
SFz[40]:	$pV/(A*m^4)$	Z dB/dt 3521 microsecond time channel
SFz[41]:	$pV/(A*m^4)$	Z dB/dt 4042 microsecond time channel
SFz[42]:	$pV/(A*m^4)$	Z dB/dt 4641 microsecond time channel
SFz[43]:	$pV/(A*m^4)$	Z dB/dt 5333 microsecond time channel
SFz[44]:	$pV/(A*m^4)$	Z dB/dt 6125 microsecond time channel
SFz[45]:	pV/(A*m ⁴)	Z dB/dt 7036 microsecond time channel
SFx[20]:	pV/(A*m ⁴)	X dB/dt 220 microsecond time channel
SFx[21]:	pV/(A*m ⁴)	X dB/dt 253 microsecond time channel
SFx[22]:	pV/(A*m ⁴)	X dB/dt 290 microsecond time channel
SFx[23]:	pV/(A*m ⁴)	X dB/dt 333 microsecond time channel
SFx[24]:	$pV/(A*m^4)$	X dB/dt 383 microsecond time channel

 Table 5 - Geosoft GDB Data Format



Channel name	Units	Description
SFx[25]:	pV/(A*m ⁴)	X dB/dt 440 microsecond time channel
SFx[26]:	pV/(A*m ⁴)	X dB/dt 505 microsecond time channel
SFx[27]:	pV/(A*m ⁴)	X dB/dt 580 microsecond time channel
SFx[28]:	pV/(A*m ⁴)	X dB/dt 667 microsecond time channel
SFx[29]:	pV/(A*m ⁴)	X dB/dt 766 microsecond time channel
SFx[30]:	pV/(A*m ⁴)	X dB/dt 880 microsecond time channel
SFx[31]:	pV/(A*m ⁴)	X dB/dt 1010 microsecond time channel
SFx[32]:	pV/(A*m ⁴)	X dB/dt 1161 microsecond time channel
SFx[33]:	pV/(A*m ⁴)	X dB/dt 1333 microsecond time channel
SFx[34]:	pV/(A*m ⁴)	X dB/dt 1531 microsecond time channel
SFx[35]:	pV/(A*m ⁴)	X dB/dt 1760 microsecond time channel
SFx[36]:	pV/(A*m ⁴)	X dB/dt 2021 microsecond time channel
SFx[37]:	pV/(A*m ⁴)	X dB/dt 2323 microsecond time channel
SFx[38]:	pV/(A*m ⁴)	X dB/dt 2667 microsecond time channel
SFx[39]:	pV/(A*m ⁴)	X dB/dt 3063 microsecond time channel
SFx[40]:	pV/(A*m ⁴)	X dB/dt 3521 microsecond time channel
SFx[41]:	pV/(A*m ⁴)	X dB/dt 4042 microsecond time channel
SFx[42]:	pV/(A*m ⁴)	X dB/dt 4641 microsecond time channel
SFx[43]:	pV/(A*m ⁴)	X dB/dt 5333 microsecond time channel
SFx[44]:	pV/(A*m ⁴)	X dB/dt 6125 microsecond time channel
SFx[45]:	pV/(A*m ⁴)	X dB/dt 7036 microsecond time channel
BFz	$(pV*ms)/(A*m^4)$	Z B-Field data for time channels 14 to 45
BFx	$(pV*ms)/(A*m^4)$	X B-Field data for time channels 20 to 45
SFxFF	pV/(A*m ⁴)	Fraser filtered X dB/dt
PLM:		60 Hz power line monitor
CVG	nT/m	Calculated Magnetic Vertical Gradient
TauSF	milliseconds	Time Constant (Tau) calculated from dB/dt data
TauBF	milliseconds	Time Constant (Tau) calculated from B-Field data
NchanBF:		Last channel where the Tau algorithm stops calculation, B-Field
NchanSF:		Last channel where the Tau algorithm stops calculation, dB/dt

Electromagnetic B-field and dB/dt Z component data is found in array channel format between indexes 14 - 45, and X component data from 20 - 45, as described above.

• Database of the VTEM Waveform "10299_waveform_final.gdb" in Geosoft GDB format, containing the following channels:

Time:	Sampling rate interval, 5.2197 microseconds
Rx_Volt:	Output voltage of the receiver coil (Volt)
Tx_Current:	Output current of the transmitter (Amp)

• Grids in Geosoft GRD format, as follows:

BFz36:	B-Field Z Component Channel 36 (Time Gate 2.021 ms)
TMI:	Total magnetic intensity (nT)
CVG:	Calculated Vertical Derivative of TMI (nT/m)
TauBF:	B-Field Calculated Time Constant (ms)
TauSF:	dB/dt Calculated Time Constant (ms)
SFxFF20:	Fraser Filter dB/dt channel 20 (Time Gate 0.220 ms)

DEM: Digital Elevation Model (metres)

A Geosoft .GRD file has a .GI metadata file associated with it, containing grid projection information. A grid cell size of 25 metres was used.

• Maps at 1:10,000 in Geosoft MAP format, as follows:

10299_10k _ dBdtz:	dB/dt profiles Z Component, Time Gates 0.220 – 7.036 ms in linear – logarithmic scale.
10299_10k _ Bfield:	B-field profiles Z Component, Time Gates $0.220 - 7.036$ ms in linear – logarithmic scale over total magnetic intensity.
10299_10k _ BFz36:	B-field late time Z Component Channel 36, Time Gate 2.021 ms color image.
10299_10k _ SFxFF20:	dB/dt early time X Component Fraser Filter Channel 20, Time Gate 0.220 ms color image.
10299_10k _ TMI:	Total magnetic intensity (TMI) color image and contours.
10299_10k _ CVG:	Calculated Vertical Gradient of Total magnetic intensity (TMI) color image.
10299_10k _ TauSF:	dB/dt Calculated Time Constant (TAU) with contours of anomaly areas of the Calculated Vertical Derivative of TMI
10299_10k _ TauBF:	B-field Calculated Time Constant (TAU) with contours of anomaly areas of the Calculated Vertical Derivative of TMI
10299_RDI _Line:	2D Resistivity Depth Image sections.

where *Line* indicates the line number.

Maps are also presented in PDF format.

1:50,000 topographic vectors were taken from the NRCAN Geogratis database at; <u>http://geogratis.gc.ca/geogratis/en/index.html</u>.

• A Google Earth file *10299_Flight Path.kml* showing the flight path of the block is included. Free versions of Google Earth software from: http://earth.google.com/download-earth.html

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

A helicopter-borne versatile time domain electromagnetic (VTEM plus) geophysical survey has been completed over Etamame Lake Project near Sachigo Lake, Ontario.

The total area coverage is 15.00 km^2 . Total survey line coverage is 441.3 line kilometres. The principal sensors included a Time Domain EM system and a magnetometer. Results have been presented as stacked profiles, and contour color images at a scale of 1:10,000.

6.2 Recommendations

Based on the geophysical results obtained, a number of interesting EM anomalies that were identified across the property. The magnetic results may also contain worthwhile information in support of exploration targets of interest. We therefore recommend a detailed interpretation of the available geophysical data, in conjunction with the geology. It should include 2D - 3D inversion modeling analyses and magnetic derivative analysis prior to ground follow up and drill testing.

Respectfully submitted⁶,

Neil Fiset Geotech Ltd. Alexander Prikhodko, P.Geo. Geotech Ltd.

May 2011

⁶Final data processing of the EM and magnetic data were carried out by Neil Fiset, from the office of Geotech Ltd. in Aurora, Ontario, under the supervision of Alexander Prikhodko, P.Geo., PhD, Senior Geophysicist, VTEM Interpretation Supervisor.



APPENDIX A

SURVEY BLOCK LOCATION MAP



Survey Overview of the Blocks





Mining Claims for Etamame Lake Project



APPENDIX B

SURVEY BLOCK COORDINATES

(WGS 84, UTM Zone 15 North)

Etamame Lake Project

Х	Y
509300	5957500
518900	5957500
518900	5960500
509300	5960500
509300	5962100
506100	5962100
506100	5959100
509300	5959100



APPENDIX C







APPENDIX D

GEOPHYSICAL MAPS¹



VTEM B-Field Z Component Profiles, Time Gates 0.220 to 7.036 ms

¹Full size geophysical maps are also available in PDF format on the final DVD



VTEM dB/dt Z Component Profiles, Time Gates 0.220 to 7.036 ms



VTEM B-Field Z Component Channel 36, Time Gate 2.021 ms



dB/dt Calculated Time Constant (Tau) with contours of anomaly areas of the Calculated Vertical Derivative of TMI



Total Magnetic Intensity (TMI)



Resistivity Depth Image (RDI) MAPS

3D Resistivity-Depth Images (RDI)

















APPENDIX E

GENERALIZED MODELING RESULTS OF THE VTEM SYSTEM

Introduction

The VTEM system is based on a concentric or central loop design, whereby, the receiver is positioned at the centre of a transmitter loop that produces a primary field. The wave form is a bipolar, modified square wave with a turn-on and turn-off at each end.

During turn-on and turn-off, a time varying field is produced (dB/dt) and an electro-motive force (emf) is created as a finite impulse response. A current ring around the transmitter loop moves outward and downward as time progresses. When conductive rocks and mineralization are encountered, a secondary field is created by mutual induction and measured by the receiver at the centre of the transmitter loop.

Efficient modeling of the results can be carried out on regularly shaped geometries, thus yielding close approximations to the parameters of the measured targets. The following is a description of a series of common models made for the purpose of promoting a general understanding of the measured results.

A set of models has been produced for the Geotech VTEM® system dB/dT Z and X components (see models E1 to E15). The Maxwell TM modeling program (EMIT Technology Pty. Ltd. Midland, WA, AU) used to generate the following responses assumes a resistive half-space. The reader is encouraged to review these models, so as to get a general understanding of the responses as they apply to survey results. While these models do not begin to cover all possibilities, they give a general perspective on the simple and most commonly encountered anomalies.

As the plate dips and departs from the vertical position, the peaks become asymmetrical.

As the dip increases, the aspect ratio (Min/Max) decreases and this aspect ratio can be used as an empirical guide to dip angles from near 90° to about 30°. The method is not sensitive enough where dips are less than about 30°.













The same type of target but with different thickness, for example, creates different form of the response:



Fig.E-16 Conductive vertical plate, depth 50 m, strike length 200 m, depth extend 150 m.

Alexander Prikhodko, PhD, P.Geo Geotech Ltd.

September 2010



APPENDIX F

EM TIME CONSTANT (TAU) ANALYSIS

Estimation of time constant parameter¹ in transient electromagnetic method is one of the steps toward the extraction of the information about conductance's beneath the surface from TEM measurements.

The most reliable method to discriminate or rank conductors from overburden, background or one and other is by calculating the EM field decay time constant (TAU parameter), which directly depends on conductance despite their depth and accordingly amplitude of the response.

Theory

As established in electromagnetic theory, the magnitude of the electro-motive force (emf) induced is proportional to the time rate of change of primary magnetic field at the conductor. This emf causes eddy currents to flow in the conductor with a characteristic transient decay, whose Time Constant (Tau) is a function of the conductance of the survey target or conductivity and geometry (including dimensions) of the target. The decaying currents generate a proportional secondary magnetic field, the time rate of change of which is measured by the receiver coil as induced voltage during the Off time.

The receiver coil output voltage (e_0) is proportional to the time rate of change of the secondary magnetic field and has the form,

$$e_0 \, \alpha \, (1 \, / \, \tau) \, e^{- \, (t \, / \, \tau)}$$

Where,

- $\tau = L/R$ is the characteristic time constant of the target (TAU)
- R = resistance

L = inductance

From the expression, conductive targets that have small value of resistance and hence large value of τ yield signals with small initial amplitude that decays relatively slowly with progress of time. Conversely, signals from poorly conducting targets that have large resistance value and small τ , have high initial amplitude but decay rapidly with time¹ (Fig. F1).



Figure F1 Left – presence of good conductor, right – poor conductor.

¹ McNeill, JD, 1980, "Applications of Transient Electromagnetic Techniques", Technical Note TN-7 page 5, Geonics Limited, Mississauga, Ontario.

EM Time Constant (Tau) Calculation

The EM Time-Constant (TAU) is a general measure of the speed of decay of the electromagnetic response and indicates the presence of eddy currents in conductive sources as well as reflecting the "conductance quality" of a source. Although TAU can be calculated using either the measured dB/dt decay or the calculated B-field decay, dB/dt is commonly preferred due to better stability (S/N) relating to signal noise. Generally, TAU calculated on base of early time response reflects both near surface overburden and poor conductors whereas, in the late ranges of time, deep and more conductive sources, respectively. For example early time TAU distribution in an area that indicates conductive overburden is shown in Figure 2.



Figure F2 – Map of early time TAU. Area with overburden conductive layer and local sources.



Figure F3 – Map of full time range TAU with EM anomaly due to deep highly conductive target.

There are many advantages of TAU maps:

- TAU depends only on one parameter (conductance) in contrast to response magnitude;
- TAU is integral parameter, which covers time range and all conductive zones and targets are displayed independently of their depth and conductivity on a single map.
- Very good differential resolution in complex conductive places with many sources with different conductivity.
- Signs of the presence of good conductive targets are amplified and emphasized independently of their depth and level of response accordingly.

In the example shown in Figure 4 and 5, three local targets are defined, each of them with a different depth of burial, as indicated on the resistivity depth image (RDI). All are very good conductors but the deeper target (number 2) has a relatively weak dB/dt signal yet also features the strongest total TAU (Figure 4). This example highlights the benefit of TAU analysis in terms of an additional target discrimination tool.



Figure F4 – dB/dt profile and RDI with different depths of targets.



Figure F5 – Map of total TAU and dB/dt profile.



The EM Time Constants for dB/dt and B-field were calculated using the "sliding Tau" in-house program developed at Geotech2. The principle of the calculation is based on using of time window (4 time channels) which is sliding along the curve decay and looking for latest time channels which have a response above the level of noise and decay. The EM decays are obtained from all available decay channels, starting at the latest channel. Time constants are taken from a least square fit of a straight-line (log/linear space) over the last 4 gates above a pre-set signal threshold level (Figure F6). Threshold settings are pointed in the "label" property of TAU database channels. The sliding Tau method determines that, as the amplitudes increase, the time-constant is taken at progressively later times in the EM decay. If the maximum signal amplitude falls below the threshold, or becomes negative for any of the 4 time gates, then Tau is not calculated and is assigned a value of "dummy" by default.



Figure F6 - Typical dB/dt decays of Vtem data

Alexander Prikhodko, PhD, P.Geo Geotech Ltd.

September 2010

² by A.Prikhodko


APPENDIX G

TEM Resistivity Depth Imaging (RDI)

Resistivity depth imaging (RDI) is technique used to rapidly convert EM profile decay data into an equivalent resistivity versus depth cross-section, by deconvolving the measured TEM data. The used RDI algorithm of Resistivity-Depth transformation is based on scheme of the apparent resistivity transform of Maxwell A.Meju (1998)¹ and TEM response from conductive half-space. The program is developed by Alexander Prikhodko and depth calibrated based on forward plate modeling for VTEM system configuration (Fig. 1-10).

RDIs provide reasonable indications of conductor relative depth and vertical extent, as well as accurate 1D layered-earth apparent conductivity/resistivity structure across VTEM flight lines. Approximate depth of investigation of a TEM system, image of secondary field distribution in half space, effective resistivity, initial geometry and position of conductive targets is the information obtained on base of the RDIs.



Maxwell forward modeling with RDI sections from the synthetic responses (VTEM system)

Fig. 1 Maxwell plate model and RDI from the calculated response for conductive "thin" plate (depth 50 m, dip 65 degree, depth extend 100 m).

¹ Maxwell A.Meju, 1998, Short Note: A simple method of transient electromagnetic data analysis, Geophysics, **63**, 405–410.





Fig. 2 Maxwell plate model and RDI from the calculated response for "thick" plate 18 m thickness, depth 50 m, depth extend 200 m).





Fig. 4 Maxwell plate model and RDI from the calculated response for "thick" vertical target (depth 100 m, depth extend 100 m). 19-44 chan.



Fig. 5 Maxwell plate model and RDI from the calculated response for horizontal thin plate (depth 50 m, dim 50x100 m). 15-44 chan.









Fig.8 Maxwell plate model and RDI from the calculated response for the long, wide and deep subhorizontal plate (depth 140 m, dim 25x500x800 m) with conductive overburden.



Fig.9 Maxwell plate models and RDIs from the calculated response for "thick" dipping plates (35, 50, 75 m thickness), depth 50 m, conductivity 2.5 S/m.



Fig.10 Maxwell plate models and RDIs from the calculated response for "thick" (35 m thickness) dipping plate on different depth (50, 100, 150 m),, conductivity 2.5 S/m.



Fig.11 RDI section for the real horizontal and slightly dipping conductive layers



Forms of RDI presentation

3d presentation of RDIs





Apparent Resistivity Depth Slices plans



3d views of apparent resistivity depth slices



Real base metal targets in comparison with RDIs:

RDI section of the line over Caber deposit ("thin" subvertical plate target and conductive overburden.



3d RDI voxels with base metals ore bodies (Middle East):







Alexander Prikhodko, PhD, P.Geo Geotech Ltd. April 2011



Appendix 3 –VTEM Interpretation Report



Geophysical VTEM Technical Report

On the

Etamame Lake Ultramafic Complex Property Sachigo Lake Area, Ontario, Canada Red Lake Mining Division, NTS 53 F 15

Prepared For

Winston Resources Inc.

By

Balch Exploration Consulting Inc.

July 16th 2012



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1.0 Introduction

Geotech Limited has flown a 441 line kilometer (I-km) helicopter time domain electromagnetic and magnetic (VTEM) survey over a prospective area of the Etamame Lake Ultramafic Complex in the search for nickel (Ni), copper (Cu) and platinum group elements (PGE). The survey resulted in the identification of approximately 187 conductor picks located along 23 distinct conductive trends. Some of these trends are known to be coincident with anomalous Ni-Cu-PGE as determined by a previous sampling program conducted by Vanex Exploration Limited (Vanex) in 2010.

The purpose of this interpretation report is to review the VTEM trends, identify which trends may be associated with Ni-Cu-PGE mineralization, integrate the Ni-Cu-PGE-bearing samples and rank the trends from 1 to 10. Each of the top ten trends will be given an associated drillhole to test for mineralization within the upper 200 m and will include the collar position in easting and northing, dip and azimuth and length of hole.

The proposed drillholes can be drilled without a ground follow-up geophysical program because the GPS used in the helicopter has an average accuracy of 3-5 m. However, it is necessary to ground-proof the drill locations prior to drilling in case the hole cannot be spotted within a few meters of the proposed location. In the event that any of the proposed collars are moved, the author of this report should be notified of the proposed change in collar location and should approve such a change prior to drilling to ensure that the target can still be intersected from the new drill location.

All references to positions are in easting and northing in meters using the North American Datum NAD83 and UTM Zone 15 North Projection.

2.0 Background

The VTEM system measures electromagnetic fields from sub-surface conductors that have been energized by a large transmitter carrying a pulsing current that peaks at 200 A. The primary field from the VTEM transmitter can penetrate up to 1 km into the Earth. Depending upon the size of the buried conductor and its orientation, responses from the VTEM system can originate several hundred meters below surface.

Interpretation of VTEM data is a complex process involving many steps. The system can measure the change in the magnetic field or *dB/dt* when the transmitter is turned off as well as estimate the magnetic field (or *B-field*) directly. Interpretation of the *B-field* profiles results in a more accurate estimate of target conductance (a product of the conductivity times the thickness). This is especially important for high conductance targets such as Ni-Cu-PGE deposits which contain significant amounts of pyrrhotite (a highly conductive iron-sulphide).

The VTEM also offers two orientations of receiver coils. The primary orientation or "z"-axis coil measures magnetic fields that are perpendicular to the transmitter (also at right angles to the ground). This geometry provides important information such as conductance, depth below surface, size of conductor and gives some indication of orientation of the target. The secondary orientation or "x"-axis coil measures magnetic fields that are parallel to the transmitter (parallel to the ground) and provides important additional information about the orientation and exact location of conductors, especially where multiple conductors are closely spaced to one another.

This report uses the *B-field* profiles for both the "x"-axis and "z"-axis coils to determine the position, orientation and conductance of the targets. Depth and size are estimated but not modeled.



3.0 Survey Description

The survey was flown with flight lines oriented north-south and spaced 100 m apart. Tie lines were flown east-west with 1-km spaced lines. This resulted in a 441.4 l-km total covering an area of just over 4,000 Ha.

Measurements for the EM system were acquired at a processed sample rate of 10 Hz (one reading every 3-5 m). Measurements of the earth's magnetic field were also acquired from a high sensitivity magnetometer located approximately half-way up the tow cable. Within the helicopter, ancillary readings such as GPS navigation for position and height above sea level and radar altimeter for height above ground were also acquired and stored. From the GPS and radar altimeter readings a digital elevation model (DEM) was also acquired.

4.0 Survey Results

The total magnetic intensity (TMI) is shown in Figure 1. The conductor picks and labeled trends are shown in Figure 2. The trends are shown over the TMI in Figure 3. There are a total of twenty-three (23) conductive trends (a trend consists of one or more conductor picks on a continuous strike direction). The trends were derived from the conductor picks which total approximately 300 and which were picked by hand.

Not all of the trends are prospective for Ni-Cu-PGE mineralization. Table One summarizes the trend response characteristics. Those trends that are characteristic of Ni-Cu-PGE are further discussed in Section 5.0 – Prospective Trends.





Figure 1 - The total magnetic intensity (TMI) is shown for the Etamame Lake survey area.





Figure 2 - There are twenty-three (23) conductor trends (one or more conductors along strike).





Figure 3 - Total magnetic intensity (TMI) with conductor trends at Etamame Lake.



Tren d #	Rank #	Description
01	7 th	15 line trend continuous for 1.5 km. Sub-vertical to north dipping. Of variable conductance but sufficient to be pyrrhotite (and Ni-Cu-PGE) related.
02	5 th	29 line trend continuous for 2.9 km. Dipping steeply to the north. Variable to high conductance. A regional conductor (likely pyrrhotite) that could carry Ni-Cu-PGE.
03	-	3 line trend of low conductance. Not consistent with high conductance Ni-Cu- PGE sulphide.
04	9 th	8 line trend coincident with magnetic contact. Generally moderate conductance. Could be a sulphide at the UM contact. Best line is 1110.
05	-	4 line trend having low conductance. Not recommended for follow-up.
06	1 st 2 nd	17 line trend continuous for 1.7 km. Conductance varies from low to high. Best line is 1170. This trend is associated with up to 0.6% Ni assays from surface sampling.
07	ord	
07	3.4	3 line trend with magnetic association and good conductance. Conductor is thin and sub-vertical.
08	-	9 line trend having moderate conductance. Orientation is steep and north dipping. Should be considered a secondary target. Best line is 1370.
09	10 th	9 line trend continuous for 0.9 km and having low conductance. Should be considered a secondary target.
10	-	5 line trend (500 m strike extent) having low conductance. Secondary target.
11	-	10 line trend (1 km extent) having low conductance and strong magnetic association. Could represent low-grade sulphide in serpentinized ultra-mafic.
12	-	6 line trend (0.6 km extent) very weakly developed and having low conductance.
13	-	5 line trend (0.5 km extent) with moderate conductance from sub-vertical and thin conductor. Secondary target.
14	8 th	16 line trend (1.6 km extent) generally having moderate conductance but with two lines having high conductance. Orientation is sub-vertical.
4 5	oth	
15	6"	26 line trend (2.6 km extent) of variable conductance. Some lines have high conductance. Best line is 2150. Good magnetic association. Likely a formational conductor but possibly with Ni-Cu-PGE potential. Orientation is sub-vertical.



16	-	7 line trend (0.7 km extent) of variable (mostly low) conductance. Secondary target.
17	-	4 line trend (0.4 km extent) of variable (low to moderate). Sub-vertical and thin.
18	3 rd	5 line trend (0.5 km extent) of variable (moderate to high) conductance and magnetic association. Best line is 2260. Worth drilling.
19	-	1 line conductor of low conductance. No further interest.
20	-	1 line conductor of low conductance on edge of magnetic anomaly. No further interest.
21	-	1 line conductor of low conductance. No further interest.
22	-	2 line trend of low conductance, low amplitude (deeper). No further interest.
23	-	1 line conductor having low conductance. No further interest.
	Table	1 - Descriptions of the conductive trends within the Etamame Lake Intrusive Complex.

5.0 **Prospective Trends**

Of the 14 conductive trends identified from the VTEM survey, 9 trends are recommended for follow-up. Of the 9 trends recommended for follow-up, 5 are likely to be formational conductors, but with the potential for Ni-Cu-PGE mineralization do to the variation in conductance (suggesting an increase in thickness to the conductor). Trends 02 and 15 are more than 2.0 km in length and have good magnetic association. One hole is recommended for testing each of these trends but it should be noted that Ni-Cu-PGE sulphide could appear anywhere along a trend so additional holes would be necessary to confidently explain these trends as noneconomic sulphide (i.e. barren pyrrhotite).

5.1 Trend 06: Rank #1 and #2

Trend 06 is located along the northern contact of a magnetic feature that is mapped as a fine grained peridotite with anomalous Cu-Ni. Sample number 40463 assayed 0.25% Cu and 0.30% Ni and is located coincident with trend 06 closest to flight line 1220. The VTEM response at this point is not well developed. However, 100 m further to the east flight line 1210 does have a well-developed VTEM target and this is recommended as the first drill target DH-EL-01 (see Figure 4).





Figure 4 - VTEM response for trend 06 on flight line 1210 to be tested by drillhole DH-EL-01.

Further to the east along trend 06 there are two well-developed VTEM responses that have the conductance consistent with Ni-Cu-PGE (and barren) sulphide. Flight lines 1160 and 1170 are of particular interest. The conductive trend dips steeply to the north and is located on the northern flank of the east-west striking magnetic trend. Flight line 1170 is recommended as the second drill target DH-EL-02 (see Figure 5).



02.



5.2 Trend 18: Rank #3

While trend 18 has a short strike length it shows two well-developed VTEM anomalies, on flight lines 2250 and 2260 with the 2260 response suggesting a thicker conductor. There is a magnetic association on flight line 2260 as well. The conductor could be related to Ni-Cu-PGE but it could also be VMS-related (volcanogenic massive sulphide). This response is recommended as the third proposed drillhole DH-EL-03 (see Figure 6).



Figure 6 - VTEM response for trend 18 on flight line 2260 to be tested by drillhole DH-EL-03.

5.3 Trend 07: Rank #4

Trend 07 is described as a discrete three-line response located close to surface and having a magnetic association. The conductor is thin and is sub-vertical. The best line is 1210. This response could be Ni-Cu-PGE or VMS and is recommended as the fourth proposed drillhole DH-EL-04 (see Figure 7).





Figure 7 - VTEM response on trend 07 for flight line 1210 to be tested by drillhole DH-EL-04.

5.4 Trend 02: Rank #5

Trend 02 is a formational conductor having a continuous 2.9 km strike length and oriented in an east-west direction. It is coincident with a major magnetic feature (e.g. suggesting iron-sulphide). Along strike, however, the time constant (and hence) conductance of the trend varies greatly from a low of 2.5 milliseconds (ms) on line 1250 to over 12.0 ms on line 1310. On flight line 1310 the VTEM response suggests a thicker zone of sulphide within a fairly shallow conductor that dips steeply to the north. This response is recommended as the fifth proposed drillhole DH-EL-05 (see Figure 8). Depending on what is intersected in DH-EL-05, several additional holes could be recommended along this significant trend.





Figure 8 - VTEM response on trend 02 for flight line 1310 to be tested by drillhole DH-EL-05.

5.5 Trend 15: Rank #6

Trend 15 is without doubt a formational conductor. At its eastern margin it has low conductance and is steeply dipping. At its western margin the conductance is also low and the characteristic thin dipping conductor response is dominant. For much of the 2.6 km strike length the response remains that of a thin, steeply dipping conductor extending close to surface.

There are two variations within trend 15 which make the zone of exploration interest. First, on flight line 2110 the associated magnetic trend disappears but the conductor response remains continuous. Second, from flight lines 2130 to 2150 the appearance of the VTEM response changes from a thin steeply dipping conductor to one that is thick in the early time and thinner in late time. This in turn suggests the presence of an increase in lower percent sulphide (or greater alteration of the sulphide system) as a halo around the main core or trend. For this reason a single drillhole is recommended to test trend 15 for the presence of economic metals (Ni-Cu-PGE). If any are intersected (even if the amounts are not themselves to be considered economic) then the entire 2.6 km trend must be given higher exploration priority. Conversely, if no economic minerals are intersected in the proposed drillhole, it would be difficult to recommend further work due to the continuous nature of the responses for most of the trend. Drillhole DH-EL-06 (see Figure 9) is recommended to test trend 15 on flight line 2140 where the VTEM response early time changes to that of a thick conductor.





Figure 9 - VTEM response on trend 15 for flight line 2140 to be tested by drillhole DH-EL-06.

5.6 Trend 01: Rank #7

Trend 01 is a west-southwest trending formational conductor 1.5 km in strike length. The conductor dips steeply to the north and is, for the most part, thin. On flight line 1120 the amplitude of the conductor is high suggesting a target located very close to surface. Conductance is high enough to suggest pyrrhotite-related sulphide. There is also a discrete magnetic association in addition to the main magnetic trend suggesting that a second feature is present. For this reason DH-EL-07 is recommended to test the VTEM conductor in the presence of a discrete magnetic feature that is strike-limited. This drillhole will also test trend 01 for economic sulphide.





Figure 10 - VTEM response on trend 01 for flight line 1130 to be tested by drillhole DH-EL-07.

5.7 Trend 14: Rank #8

Trend 14 is a west-northwest trending formational conductor having a strike length of 1.6 km. The conductive trend dips steeply to the north. The VTEM response extends from line 1910 to 2060 inclusive. The eastern 3-4 lines have low amplitude suggesting the conductor either plunges to the east or is reduced in depth extent.

Conductance is variable with time constants reaching approximately 5 ms in the *B-field*.





Figure 11 - VTEM response on trend 14 for flight line 2000 to be tested by drillhole DH-EL-08.

5.8 Trend 04: Rank #9

Trend 04 is an 8 line (0.8 km strike extent) VTEM trend with magnetic association. The trend is oriented east-west and the dip is steeply to the north. The best VTEM response is located on flight line 1110 where the amplitude reaches 13 pV/m⁴ (e.g. very close to surface). Drillhole DH-EL-09 is recommended to test the VTEM response on flight line 1110 (see Figure 12).





Figure 12 - VTEM response on trend 04 for flight line 1110 to be tested by drillhole DH-EL-09.

5.9 Trend 09: Rank #10

Trend 09 is described as a 9 line VTEM conductor striking east-west and dipping steeply to the north. The strike length is 900 m. The conductor is located close to surface but appears to plunge near its eastern margin. The conductance of the zone is low to moderate making it doubtful that significant pyrrhotite sulphide (and Ni-Cu-PGE) is the source. However, flight line 1420 does have the best developed VTEM response of the trend and is associated with a discrete magnetic response. Drillhole DH-EL-10 is recommended to test this feature (see Figure 13).





6.0 Discussion

Trend 06 is regarded as the highest ranking trend based on the geological sampling that returned approximately 0.70% Ni and 0.42% Cu (the highest grade sample within the survey area) 150 m to the north of the conductor. One note of caution concerns the lack of direct magnetic association. While the VTEM conductor is located parallel to a major magnetic source, the VTEM conductor and magnetic response do not exactly coincide. There are examples of nickel deposits without a strong magnetic signature, such as the Western Extension at Voisey's Bay. If the first hole drilled on trend 06 does not intersect economic metals, then the second drillhole on trend 06 should be reconsidered.

A number of the conductor trends (specifically 01, 02, 06, 14 and 15) appear to be formational conductors, which are often composed of barren sulphide. It could be further argued that some of the trends are just continuations of other formational trends (03, 06 and 08 for example). Thus a case could be made that many of the smaller trends are just continuations of larger formational conductors. While this is possible, it is important to note that conductance can vary considerably along these trends and this suggests a high variability in sulphide extent (including thickness). Therefore the possibility that some trends are formational cannot be used to justify not testing them for economic sulphide by drilling. There are many cases where economic nickel deposits are located within formational conductors containing barren sulphide (i.e. pyrrhotite).



7.0 Drilling Recommendations

A total of ten exploration drillholes have been recommended, all to explore at relatively shallow depths. The conductive targets are all north-dipping, generally trend east-west and are therefore best tested from drillholes oriented due south. In all cases the targets are steeply dipping and a -55° dip is suggested. At this angle, a drillhole pulled back 50 m from its target will intersect a vertical plane approximately 70 m vertically downward and 88 m along the hole. For this reason drillholes should be at least 100 m in length and 125 m are suggested. Table 2 summarizes the proposed drillholes for an initial exploration program and would test all favorable conductive trends.

HOLEID	EASTING	NORTHING	DIP	AZIUMTH	LENGTH
(#)	(m)	(m)	(o)	(o)	(m)
DH-EL-01	516,800	5,958,490	-55	180	125
DH-EL-02	517,200	5,958,535	-55	180	125
DH-EL-03	506,300	5,960,460	-55	180	125
DH-EL-04	516,800	5,959,925	-55	180	125
DH-EL-05	515,800	5,958,230	-55	180	125
DH-EL-06	507,500	5,960,645	-55	180	125
DH-EL-07	517,600	5,958,510	-55	180	125
DH-EL-08	508,900	5,960,190	-55	180	125
DH-EL-09	517,800	5,958,160	-55	180	125
DH-EL-10	514,700	5,958,760	-55	180	125

 Table 2 - Summary of drillhole positions and geometry for Etamame Lake.



8.0 Statement of Qualifications

I, Stephen James Balch do hereby certify that:

- I reside at 11500 Fifth Line, Rockwood, Ontario, Canada, NOB 2K0;
- I am a graduate of the University of Western Ontario and hold a B.Sc in Honours Geophysics granted to me in 1985;
- I have practiced as an Applied Geophysicist continuously for 27 years;
- I worked for Inco Limited from 1995 to 2001 initially as Area Geophysicist for the Sudbury Basin and later as Senior Geophysicist for Voisey's Bay;
- I have consulted to major mining companies and junior exploration companies for over 11 years;
- I was President of Aeroquest International Limited from 2003 to 2007;
- I am currently President and CEO of Hudson River Minerals Ltd (since 2008) (TSXV:HRM);
- I do not hold any shares directly or indirectly in 2238484 Ontario Inc. (e.g. Winston Resources Inc.);
- I have reviewed the geophysical database collected by Geotech Limited using the VTEM system and found the data to be of acceptable quality;
- I was responsible for the interpretation of the VTEM survey at Etamame Lake and have authored this report;

Dated at Rockwood, Ontario this 15th day of July 2012.

Stephen Balch, Consulting Geophysicist



Appendix "A" – List of Conductors

Line	Easting	Northing	Trend
L1000	518,899	5,958,749	1
L1010	518,798	5,958,721	1
L1020	518,701	5,958,686	1
L1030	518,600	5,958,687	1
L1040	518,499	5,958,669	1
L1050	518,403	5,958,647	1
L1060	518,300	5,958,636	1
L1070	518,200	5,958,596	1
L1080	518,099	5,958,578	1
L1090	518,001	5,958,553	1
L1100	517,902	5,958,534	1
L1110	517,799	5,958,523	1
L1120	517,701	5,958,493	1
L1130	517,601	5,958,457	1
L1140	517,498	5,958,433	1
L1130	517,600	5,958,331	2
L1140	517,501	5,958,299	2
L1150	517,399	5,958,284	2
L1160	517,300	5,958,277	2
L1170	517,198	5,958,271	2
L1180	517,100	5,958,254	2
L1190	516,999	5,958,247	2
L1200	516,901	5,958,237	2
L1210	516,800	5,958,243	2
L1220	516,699	5,958,230	2
L1230	516,601	5,958,222	2
L1240	516,501	5,958,203	2
L1250	516,400	5,958,192	2
L1260	516,299	5,958,181	2



L1280	516,100	5,958,178	2
L1290	516,000	5,958,169	2
L1300	515,900	5,958,156	2
L1310	515,800	5,958,181	2
L1320	515,701	5,958,143	2
L1330	515,598	5,958,159	2
L1340	515,500	5,958,134	2
L1350	515,401	5,958,150	2
L1360	515,300	5,958,152	2
L1370	515,199	5,958,153	2
L1380	515,100	5,958,150	2
L1390	514,999	5,958,133	2
L1400	514,901	5,958,130	2
L1410	514,799	5,958,111	2
L1070	518,201	5,958,781	3
L1080	518,101	5,958,736	3
L1090	518,002	5,958,725	3
L1090	518,000	5,958,099	4
L1100	517,896	5,958,100	4
L1110	517,800	5,958,104	4
L1120	517,699	5,958,110	4
L1130	517,599	5,958,108	4
L1140	517,500	5,958,106	4
L1150	517,396	5,958,118	4
L1160	517,301	5,958,132	4
L1340	515,500	5,957,829	5
L1350	515,399	5,957,899	5
L1360	515,297	5,957,905	5
L1370	515.200	5.957.915	5

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516,202

L1270

2

5,958,185
L1160	517,300	5,958,503	6
L1170	517,198	5,958,483	6
L1180	517,097	5,958,486	6
L1190	517,000	5,958,468	6
L1200	516,901	5,958,451	6
L1210	516,800	5,958,438	6
L1220	516,699	5,958,430	6
L1230	516,602	5,958,411	6
L1240	516,502	5,958,430	6
L1250	516,402	5,958,420	6
L1260	516,300	5,958,405	6
L1270	516,202	5,958,395	6
L1280	516,102	5,958,373	6
L1290	515,999	5,958,388	6
L1300	515,901	5,958,374	6
L1310	515,800	5,958,341	6
L1200	516,901	5,959,878	7
L1210	516,801	5,959,874	7
L1220	516,700	5,959,874	7
L1350	515,400	5,958,379	8
L1360	515,300	5,958,371	8
L1370	515,197	5,958,342	8
L1380	515,100	5,958,339	8
L1390	515,000	5,958,339	8
L1400	514,902	5,958,339	8
L1410	514,801	5,958,349	8
L1430	514,599	5,958,307	8
L1440	514,499	5,958,264	8
L1350			9



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L1150 517,401

5,958,553 6



	515,399	5,958,823	
L1360	515,301	5,958,801	9
L1370	515,198	5,958,776	9
L1380	515,100	5,958,765	9
L1390	515,000	5,958,759	9
L1400	514,902	5,958,744	9
L1410	514,801	5,958,734	9
L1420	514,700	5,958,712	9
L1430	514,598	5,958,715	9
L1430	514,599	5,958,847	10
L1440	514,500	5,958,860	10
L1450	514,400	5,958,862	10
L1460	514,299	5,958,895	10
L1470	514,198	5,958,925	10
L1480	514,102	5,958,808	11
L1490	514,001	5,958,810	11
L1500	513,902	5,958,793	11
L1510	513,797	5,958,771	11
L1520	513,699	5,958,767	11
L1530	513,601	5,958,774	11
L1540	513,501	5,958,800	11
L1550	513,400	5,958,852	11
L1560	513,299	5,958,873	11
L1570	513,199	5,958,861	11
L1620	512,702	5,959,844	12
L1630	512,599	5,959,832	12
L1640	512,499	5,959,821	12
L1650	512,400	5,959,858	12
L1660	512,300	5,959,856	12
L1670	512,200	5,959,841	12

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L1690	511,999	5,959,943	13
L1700	511,904	5,959,961	13
L1710	511,799	5,960,015	13
L1720	511,701	5,960,035	13
L1910	509,798	5,959,892	14
L1920	509,700	5,959,914	14
L1930	509,601	5,959,982	14
L1940	509,500	5,960,013	14
L1950	509,399	5,960,041	14
L1960	509,300	5,960,062	14
L1970	509,198	5,960,071	14
L1980	509,102	5,960,090	14
L1990	508,997	5,960,125	14
L2000	508,900	5,960,137	14
L2010	508,801	5,960,133	14
L2020	508,700	5,960,141	14
L2030	508,600	5,960,157	14
L2040	508,499	5,960,169	14
L2050	508,401	5,960,185	14
L2060	508,299	5,960,188	14
L1980	509,103	5,960,317	15
L1990	508,997	5,960,347	15
L2000	508,900	5,960,351	15
L2010	508,802	5,960,323	15
L2020	508,699	5,960,342	15
L2030	508,599	5,960,360	15
L2040	508,499	5,960,420	15
L2050	508,401	5,960,421	15
L2060			15

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512,101

5,959,959

13

L1680

ETAMAME LAKE GEOPHYSICAL REPORT

	508,300	5,960,423	
L2070	508,199	5,960,450	15
L2080	508,100	5,960,479	15
L2090	507,999	5,960,509	15
L2100	507,900	5,960,515	15
L2110	507,799	5,960,530	15
L2120	507,700	5,960,545	15
L2130	507,600	5,960,556	15
L2140	507,500	5,960,597	15
L2150	507,398	5,960,573	15
L2160	507,300	5,960,577	15
L2170	507,199	5,960,574	15
L2180	507,100	5,960,569	15
L2190	506,999	5,960,546	15
L2200	506,903	5,960,557	15
L2210	506,798	5,960,543	15
L2220	506,701	5,960,526	15
L2230	506,600	5,960,523	15
L2100	507,900	5,960,326	16
L2110	507,802	5,960,342	16
L2120	507,700	5,960,341	16
L2130	507,600	5,960,360	16
L2140	507,498	5,960,369	16
L2150	507,400	5,960,348	16
L2160	507,300	5,960,390	16
L2190	506,999	5,960,059	17
L2200	506,898	5,960,015	17
L2210	506,801	5,959,959	17
L2220	506,700	5,959,908	17
L2240	506,498	5,960,429	18

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L2250	506,400	5,960,401	18
L2260	506,298	5,960,407	18
L2270	506,200	5,960,368	18
L2280	506,097	5,960,334	18
L2260	506,298	5,960,580	19
L1030	518,602	5,959,325	20
L1190	517,000	5,957,747	21
L1730	511,602	5,959,948	22
L1740	511,500	5,959,968	22
L1490	514,000	5,958,091	23