



**REPORT OF GEOLOGICAL MAPPING, ROCK SAMPLING AND  
GEOPHYSICAL SURVEYS OF THE BEAVER POND PORTION OF  
THE COPPERCORP PROPERTY, SAULT STE. MARIE MINING  
DIVISION, ONTARIO, CANADA.**

**16 November, 2006**

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Prepared for Nikos Explorations Ltd.  
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## 1. Summary

This report on the Coppercorp Property describes the program of line cutting, ground magnetics and induced polarization, geological mapping and sampling carried out on a portion of the property known as the “Beaver Pond” area between November 2004 and March 2005. It describes the geology and mineral potential of the Beaver Pond area, and presents the results of the exploration program.

The Coppercorp property is located approximately 85 kilometres north of Sault Ste. Marie, Ontario. The Trans-Canada Highway (Highway 17) crosses the westernmost part of the property. Nikos Explorations Ltd. (Nikos) has a 100% interest in the claims comprising the property. A portion of the property is subject to a net smelter return royalty. Nikos Explorations Ltd. acquired the property from Amerigo Resources Ltd. in 2004.

The target of exploration on the property is iron oxide copper-gold mineralization of the Olympic Dam style. Previous work outlined copper mineralization with associated gold and silver hosted by altered, hematite-rich basalt of Proterozoic (Keeweenawan) Age.

The copper mineralization consists dominantly of chalcocite with minor malachite and chalcopyrite associated with pyrite and hematite. The dominant alteration type in the basalt is calcite-epidote, with lesser potassic feldspar and rare tremolite. Felsic volcanic and intrusive rocks are variably sericitized.

Historical work on the property included exploration for, and subsequent mining of, vein copper mineralization at the Coppercorp mine. Mining was discontinued in 1972 and little exploration has been performed on the mining lease since that time. More recent work undertaken by Cominco Ltd., on the northern portion of the property, included detailed geology, surface sampling, and magnetic, electromagnetic geophysical surveys.

Mineralization in the Beaver Pond area consists mainly of malachite staining with disseminated chalcocite, chalcopyrite and pyrite. Hematite is commonly associated with the mineralization as veinlets or associated with quartz-carbonate vein breccia. Copper values up to 14.14% were obtained during rock sampling over the area covered by the Beaver Pond grid. Silver and gold values were low.

Several northwest-southeast trending chargeability anomalies are present on the grid, some of which appear to represent extensions of anomalies previously detected on the Silver Creek South grid to the northwest. A 1,500 metre first phase diamond drill program is recommended to test the chargeability anomalies on the two grids. The program is expected to take about six weeks at an expected cost of about \$207,000.

## **2. Introduction and Terms of Reference**

This report describes the results of a work undertaken in the Beaver Pond area of the Coppercorp property between November, 2004 and March 2005. The work included line cutting, geological mapping, sampling and ground geophysics undertaken to follow up positive results of work on the Silver Creek South grid in early 2004. It was written to accompany a declaration of assessment filed in November 2006 with the Ministry of Northern Development and Mines, Ontario, as required under the Ontario Mining Act. Sections three through nine of the report are updated from an earlier technical report on the Coppercorp Property entitled "Geology and Exploration of the Coppercorp Property, Sault Ste. Marie Mining Division, Ontario" dated March 23, 2004 (Tortosa & Moss 2004).

Dr. Moss is currently President of Nikos. He has been involved in exploration on the property since September 2002 and has directly supervised all work on the property. Dr. Moss developed an exploration model for IOCG exploration in the Sault Ste. Marie area and has been active in the investigation of Proterozoic Fe-oxide Copper-Gold deposits for the four years. Mr. Ardian Peshkepia is a consulting geologist, and carried out the geological mapping and sampling on the Coppercorp property under the supervision of Dr. Moss.

## **3. Reliance on other Experts**

Jeremy Brett, M.Sc., P.Geo., Consulting Geophysicist, is responsible for section 10.4 Geophysical Surveys and for the recommendations related to results of the geophysical surveys.

## **4. Disclaimer**

Subsequent to the work reported here, a drilling program was carried out to test a number of anomalies found during the work program. The results of the drilling will be reported separately.

The use of the term 'ore reserve' in this report should be viewed strictly in its historical context and should not be correlated with the categories set out in sections 1.3 and 1.4 of National Instrument 43-101.



The historical pre-production estimated ore reserve figures for the Coppercorp Mine were obtained from Source Mineral Deposit Records (SMDR000852) of the Sault Ste. Marie District Geologist's Office, Ministry of Northern Development and Mines and a Coppercorp Mine report dated November 12, 1965. Although there are a few underground plans and drill holes showing mineralized intersections related to the mineralized zones, no known reports or records indicate official ore reserve calculations for the Coppercorp Mine. As such it is not possible to determine the reliability of the historical estimates or whether they are in accordance with the categories set out in sections 1.3 and 1.4 of National Instrument 43-101. In addition, no records have been found which document any remaining reserves in the mine when it ceased operation in 1972.

For the purposes of this technical report, production figures for the Coppercorp Mine are based on data from Source Mineral Deposit Record 000852 (Sault Ste. Marie District Geologist's Office, Ministry of Northern Development and Mines).

## **5. Property Description and Location**

The property is located in Ryan and Kincaid Townships, Sault Ste. Marie Mining Division, Sault Ste. Marie, Ontario, Canada (Figure 1). It consists of 37 unpatented, contiguous claims consisting of 312 claim units covering an area of approximately 50 square kilometres (Table 1, Figure 2). The original 23 claims were optioned by Amerigo Resources Ltd. in 2002 from a group of prospectors known as the Batchawana Group. Amerigo subsequently staked a further five claims on the western edge of the original claim block.



Figure 1: General Location Map of the Coppercorp Property

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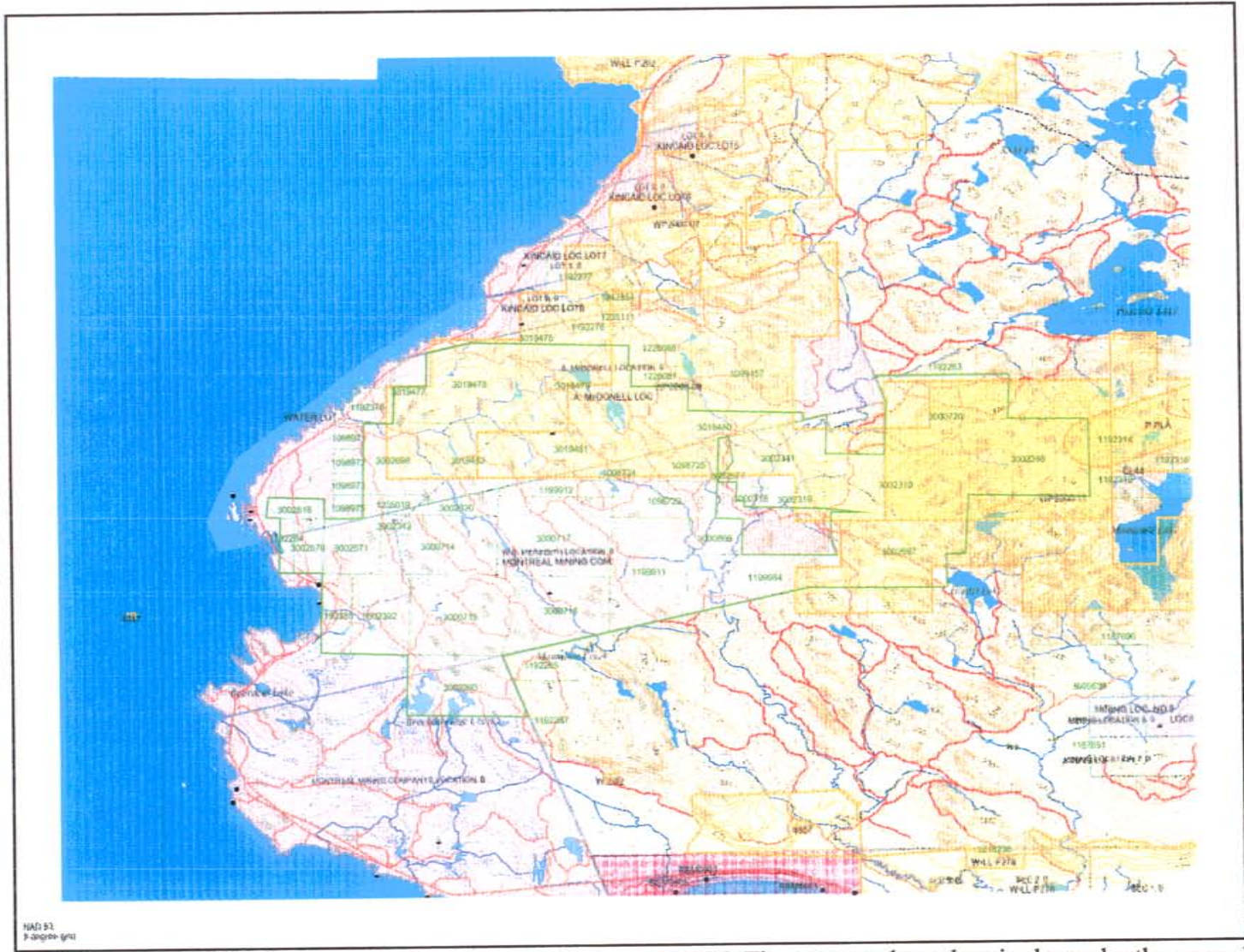


Figure 2. Claim map of the Coppercorp Property as at 14 August, 2006. The property boundary is shown by the green lines.

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Table 1. Claims comprising the Coppercorp Propertyas at August 14, 2006

Claim Number	Number of units	Approximate Area (ha)	Due date	Expenditure Required
3000714	11	176	June 26, 2007	\$4,400
3000715	15	240	June 26, 2007	\$6,000
3000716	13	208	June 26, 2008	\$5,200
3000717	16	256	June 26, 2008	\$6,400
3002392	8	128	June 26, 2007	\$3,200
3002393	11	176	June 26, 2007	\$4,400
3000720	15	240	June 26, 2007	\$6,000
1199911	15	240	June 26, 2008	\$6,000
3000666	4	64	June 26, 2007	\$1,600
1199912	4	64	June 26, 2008	\$1,600
1199984	14	224	June 26, 2007	\$5,600
3002319	2	32	June 26, 2007	\$800
3002697	13	208	June 26, 2007	\$5,200
3000718	1	16	June 26, 2007	\$400
3002341	11	176	June 26, 2007	\$4,400
3002310	15	240	June 26, 2007	\$6,000
3002398	16	256	June 26, 2007	\$6,400
3002698	6	96	June 10, 2008	\$231
1235019	3	48	Feb 26, 2008	\$1,200
3002577	1	16	July 19,2007	\$400
3002320	3	48	June 10, 2008	\$1,200
3002342	1	16	June 10,2008	\$400
3002616*	2	32	December 5, 2008	\$800
3002570*	3	48	December 5, 2007	\$1,200
3002571*	6	96	December 5, 2007	\$2,400
1192284*	3	48	June 25, 2007	\$1,200
1192285*	8	128	June 25, 2007	\$3,200
3019477*	3	48	July 9, 2007	\$1,200
3019478*	15	240	July 9, 2007	\$6,000
3019479*	16	256	July 9, 2007	\$6,400
3019480*	9	144	July 9, 2007	\$3,600
3019481*	10	160	July 9, 2008	\$4,000
3019482*	14	224	July 9, 2007	\$5,600
3019475*	3	48	July 9, 2007	\$1,200
1098722*	8	128	August 5, 2008	\$3,200
1098724*	5	80	August 5, 2007	\$2,000
1098725*	4	64	August 5, 2007	\$1,600
Total	312	4,992		\$124,800

\*Claims staked by Amerigo Resources Ltd. or Nikos Explorations Ltd. and thus not subject to a net smelter return royalty.

During 2004, Nikos acquired the property from Amerigo as part of a three property deal whereby Nikos issued Amerigo 5,000,000 common shares following final acceptance of the agreement by the TSX Venture Exchange. Nikos also issued Amerigo 5,000,000 additional common shares on June 30, 2005 since Nikos retained an interest in the three properties.

Subsequent to the agreement with Amerigo, Nikos renegotiated the Coppercorp option agreement with the Batchewana Group. Under the new option agreement, Nikos may earn a 100% interest in the property by:

1) Issuing 300,000 units of Nikos and making a cash payment of \$24,000 to the vendors on TSX Venture Exchange approval of the transaction. Each unit will be comprised of one Nikos share and one-half share purchase warrant, with each whole warrant entitling the holder to purchase one additional Nikos share for a price of \$0.30 for a period of two years from the date of issuance (completed);

2) Issuing a further 200,000 common shares and paying a further \$24,000 cash on or before May 11, 2005 (completed);

3) issuing a further 200,000 common shares (completed) and paying a further \$24,000 cash on or before May 11, 2006 (completed)

provided that, Nikos may at its option, issue shares of equivalent value in lieu of cash for all but the initial cash payment,

4) Spend \$300,000 on exploration over 3 years (completed), and

5) Provide the prospectors with a net smelter return royalty of 3% from any future production from the property. Nikos retains an option to buy back 1.5% of the royalty for \$1,500,000.00.

Nikos fulfilled all of its obligations under the new option agreement on 18 August 2006, and consequently holds a 100% interest in all claims comprising the Coppercorp property, subject to the NSR to the Batchawana Propsectors for the original claims.

During 2004, Nikos staked an additional seven claims to the north of the original property to cover the northern extension of a coincident magnetic and gravity high. During 2005, following the lapsing of several competitor's claims within the main claim block, Nikos staked an additional three claims to cover a brecciated felsic intrusive.

Several mine hazards dating from mining activities carried out between 1954 and 1972 are present on the property (Figure 3 & 4). A site assessment of the mine hazards in and around the Coppercorp Mine was completed by staff of the Ministry of Northern Development and Mines in June 1998 (Hamblin, 1998) and the report is available for viewing at the Sault Ste. Marie District Geologist's office.

During 2003, under Ontario's abandoned mines rehabilitation program, work at the Coppercorp mine site commenced. Surface buildings were taken down and removed and openings to surface were properly sealed and/or capped.

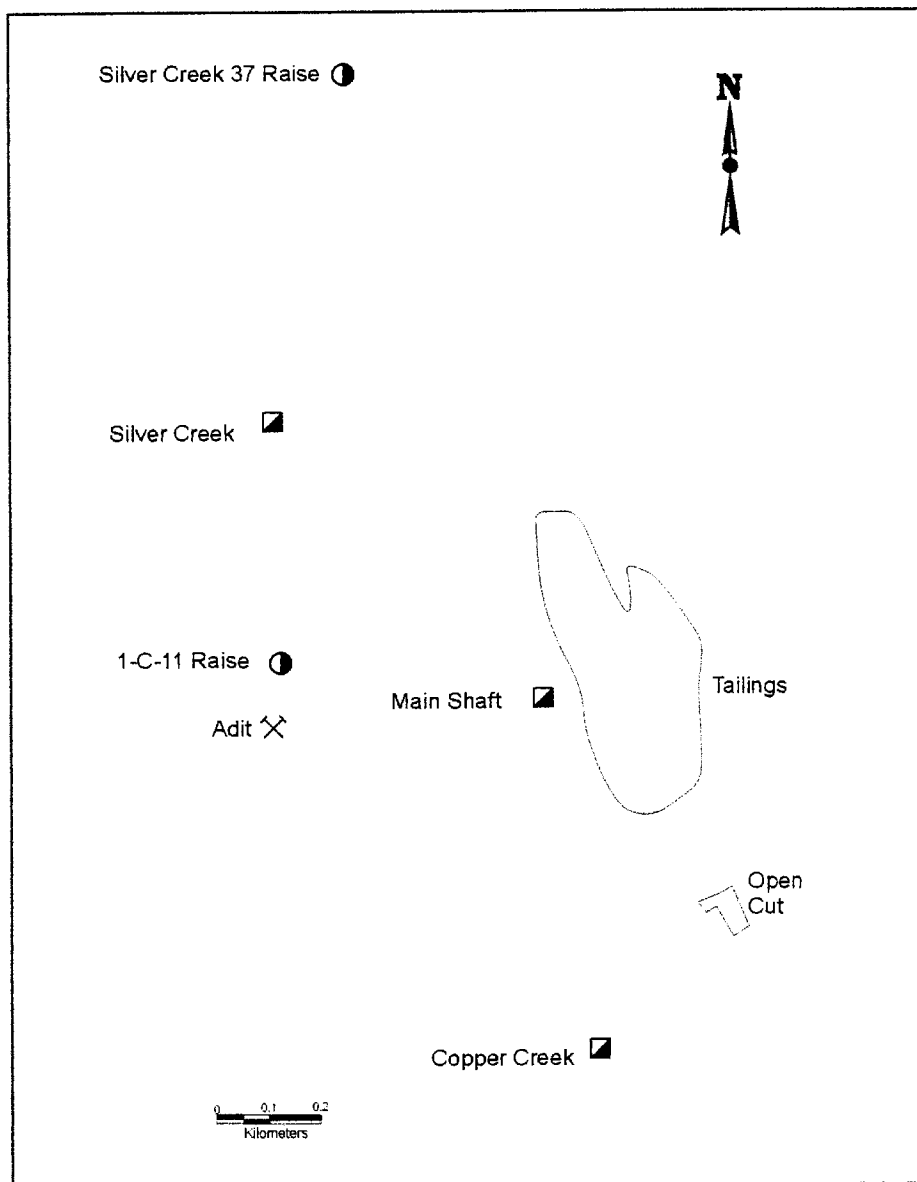


Figure 3. Old mine workings in the vicinity of the Coppercorp Minesite. Source: Hamblin, 1998, with additional data collected during field visits.

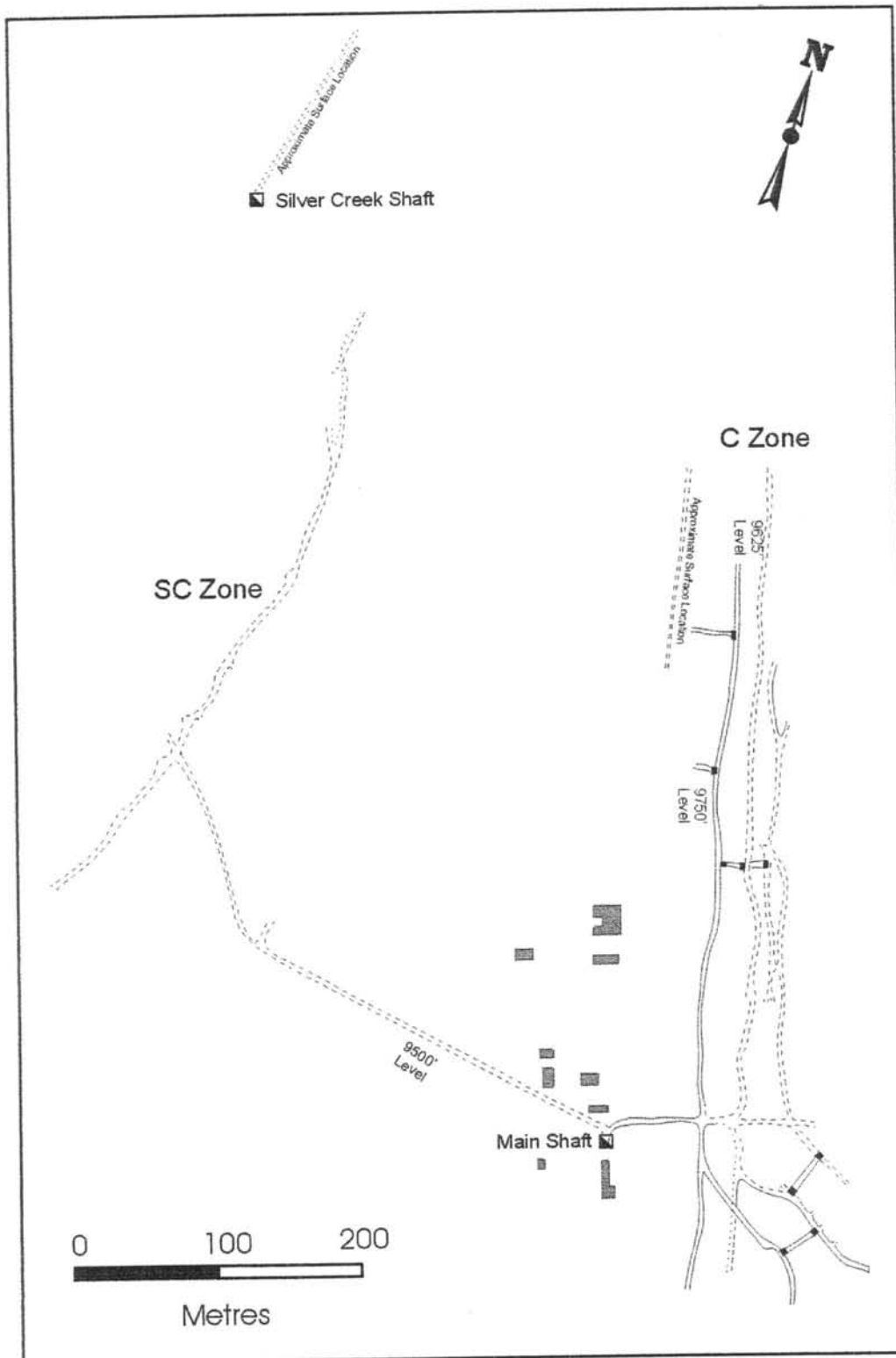


Figure 4. Location of Coppercorp underground development and surface buildings up until October, 1964. Source. Coppercorp Limited Surface Plan and Underground Composite, Unpublished Map, October 25, 1964.

Under the Ontario Mining Act, holders of unpatented claims are not held responsible for hazards created by prior owners, provided that they do not materially disturb the existing hazards. If the owner decides to take the unpatented claims to lease, which would normally only be done if mining was contemplated, then the owner assumes responsibility for all mine hazards, regardless of who created them. Of course, owners are always responsible for any hazards they themselves create, and a process of progressive rehabilitation for such hazards is encouraged.

The western extremities of the Coppercorp Property are within 500 to 1000 metres of the Lake Superior coastline. Any future advanced exploration or claim staking activities should be mindful that much of the Lake Superior coastline has been, and will likely continue to be, incorporated into Ontario's Living Legacy (OLL) land use policy as part of the Great Lakes Heritage Coastline Signature Site (Ontario's Living Legacy, 1999). Any claims staked prior to an area being designated as a new Park or Conservation Reserve will remain in good standing as long as the work requirements are met. If a claim is not kept in good standing and reverts to the Crown, then the land within these designated areas falls under the OLL land use policy that restricts mining and forestry operations. There are no OLL sites on the Coppercorp property.

#### **6. Accessibility, Climate, Local Resources, Infrastructure and Physiography.**

The property is located in the Batchawana Bay area on the east shore of Lake Superior (Figure 5). Access to the property is by paved highway (Highway 17) approximately 80 kilometres north of Sault Ste. Marie, followed by a gravel road. A system of logging roads provides further access to different parts of the property.

The western portion of the Coppercorp Property is characterised by moderate to low relief. Drainage and topography are influenced by the northwest trending strike of the volcanic and sedimentary strata of the Mamainse Point Formation. The eastern part of the property has moderate to high relief and partly overlies the metavolcanic rocks of the Batchawana Greenstone Belt. Separating these physiographic areas is the Pancake River and river valley, which runs southerly through the central part of the property (Figure 5).



Elevation ranges from 700 - 1000 feet a.s.l. in the western portion and 700 to 1700 feet a.s.l. in the eastern section. Vegetation consists of mixed hardwoods and softwoods, and there are several logging companies active in the area.

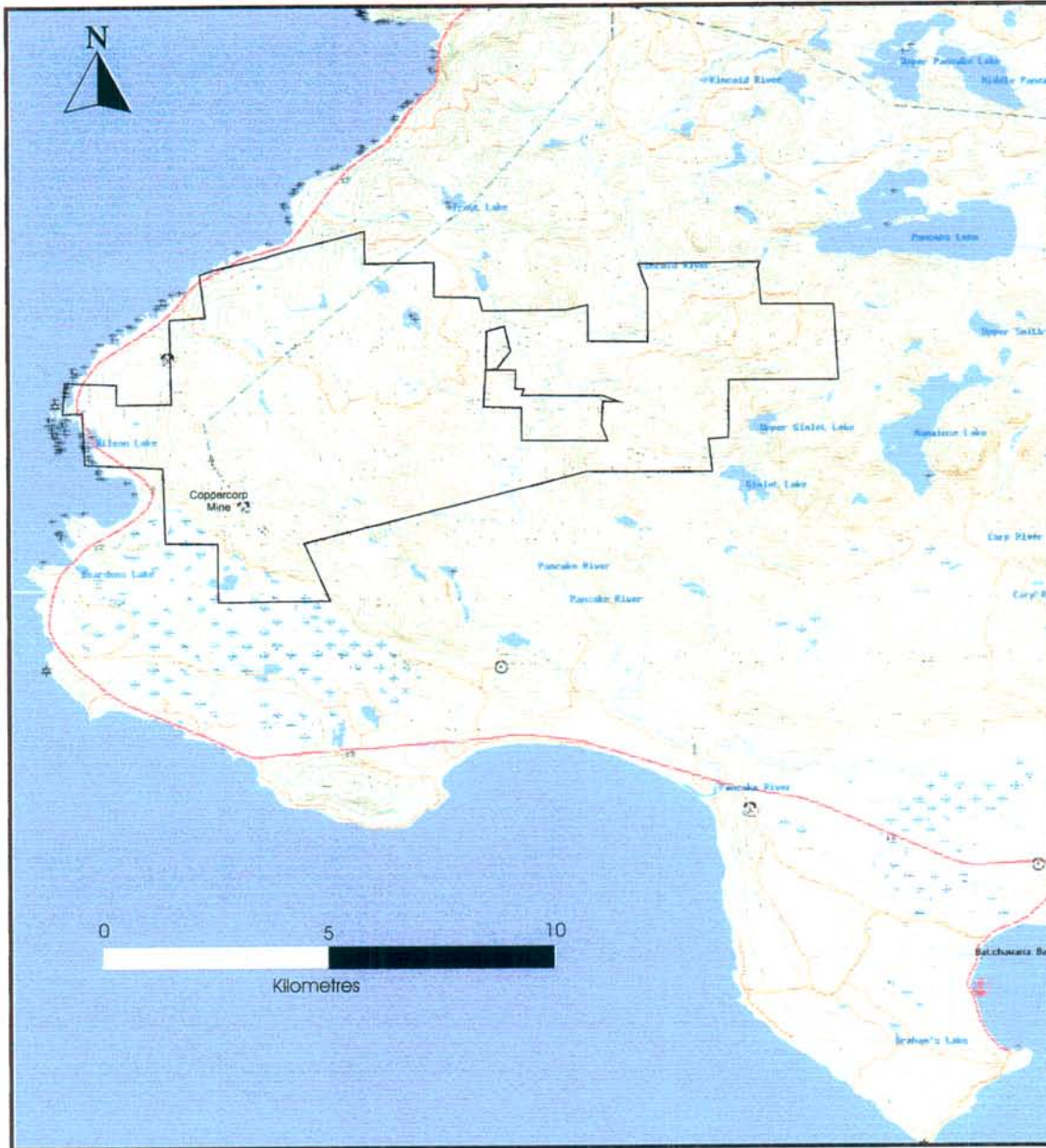


Figure 5: Topographic Map of the Mamainse Point Area

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From 1962 to 1964 Vauze Mines Limited (controlled by Sheridan Geophysics Limited) completed additional drilling along with a surface exploration program which included geophysical surveys and geological and geochemical examinations.

A decision was made in 1965 to bring the Coppercorp deposit into production and the original shaft was de-watered and deepened to 629 feet. Underground development resumed at a production rate of 500 tons per day producing copper concentrate (approximately 50% copper) with a recovery in excess of 90%. Concentrates from the Coppercorp deposit contained copper, silver, and gold (example: 1087 short tons of concentrate contained 50.18% copper, 7.72 oz/ton silver, and .222 oz/ton gold; Heslop, 1970, pg. 63). Some of the available historical statistics on underground development, drilling, pre-production ore reserve estimates and production figures are provided in Tables 3, 4 and 5.

Table 3: Historical statistics on underground development and drilling at the Coppercorp Mine.

<b>Exploration Activity</b>	<b>Type of Activity</b>	<b>Information Source</b>
Underground Development	Drifting : 34,882 feet	SMDR 000852
	Crosscuts: 3,628 feet	SMDR 000852
Drilling	Surface: 16,000 feet	SMDR 000852
	Underground: 20,000 feet	SMDR 000852

Table 4: Historical Pre-Production Ore Reserve Estimates\* at the Coppercorp Mine

<b>Mineralized Zone</b>	<b>Ore Reserve Estimate</b>	<b>Information Source</b>
C Zone and C Zone South**	400,000 tons @ 2.3% Cu	SMDR 000852; Coppercorp Report for 1965
Silver Creek South Zone	490,000 tons @ 1.9% Cu	SMDR 000852; Coppercorp Report for 1965
SB and Silver Creek North Zones	650,000 tons @ 2.1% Cu	SMDR 000852; Coppercorp Report for 1965
Total Ore Reserve Estimate for the Coppercorp Deposit	1,540,000 tons @ 2.1% Cu	SMDR 000852; Coppercorp Report for 1965; Northern Miner 1965

\* Ore reserve estimates were given to the 500 foot level. See Note below on the use of 'ore reserve' terminology.

\*\* C Zone South was also referred to as the C2 Zone.

Table 5: Coppercorp production (Source: SMDR 000852)

Year	Tons Hoisted	Tons Milled	Au (Oz)	Ag (Oz)	Cu (lbs)
1957*	60,000				
1965	14,882	38,919	386	30,069	832,928
1966	118,848	149,691	390	37,296	3,716,325
1967	146,601	146,441	-	35,500	3,557,000
1968	142,986	142,986	268	33,622	3,175,730
1969	161,488	161,488	249	55,761	4,769,452
1970	141,055	140,830	231	1,785	2,447,500
1971	155,811	156,111	440	33,570	3,109,758
1972**	83,519	84,892	?	?	2,173,235
<b>Total***</b>	<b>965,190</b>	<b>1,021,358</b>	<b>1,964</b>	<b>237,603</b>	<b>23,782,028</b>

\* From 1955-1957 development ore was stockpiled by Coppercorp; not included in total.

\*\* Copper grade was reported to be 1.28%.

\*\*\* From 1969 to 1972 the Coppercorp Mine had disputed accounting for ore production (Northern Miner Handbook, 1972-73, pg.97). For the purposes of this technical report a production figure of 1,021,358 tons milled at 1.16% Cu is used based on data from Source Mineral Deposit Record , Sault Ste. Marie District Geologist's Office, MND&M).

**NOTE: The use of the term 'ore reserve' in this report should be viewed strictly in its historical context and should not be correlated with the categories set out in sections 1.3 and 1.4 of National Instrument 43-101 (See item 2).**

## 7.1 Recent Exploration

### 7.1.1 Coppercorp Limited

Much of the Coppercorp Property was closed to staking up until June 1, 2002, and consequently only those parts of the property outside of the Montreal Mining Company Sand Bay Location have received the recent attention of prospectors and explorationists. Recent exploration activity has focused on the area of the Lutz vein and L zone, situated approximately 3 kilometres north-northwest of the Coppercorp Shaft (Figure 6). An adit was driven into the Lutz vein, but historical records are unavailable. Both mineralized zones are located on the northwestern strike extension of the Coppercorp Mine workings.

In the mid-1960's, Coppercorp Limited completed induced potential, magnetic, electromagnetic and geochemical surveys in this area as part of a surface exploration program on their property holdings. The magnetometer surveys were considered useful in delineating geological contacts and geologic structure. The electromagnetic survey identified several intermediate to poor conductors which appeared to coincide with

superficial clay deposits (altered felsite). The geochemical survey was useful in identifying strong copper anomalies. The IP survey was useful in outlining known copper occurrences and identifying similar anomalies not previously explored.

Results from the surface exploration program (Burns, 1965; Disler, 1967) identified several geochemical and geophysical anomalies in the Lutz vein and L zone area and elsewhere on the Coppercorp property to the south for follow-up drill testing.

#### 7.1.2 J. F. Paquette

More recently, in 1991-92, the property containing the Lutz vein and L zone was explored by J.F. Paquette who completed a self-potential survey along with prospecting, and sampling (Rupert, 1991 and 1993). Results from the self-potential survey identified a number of anomalies. However it was concluded that there was no clear correspondence between known zones of mineralization and the SP anomalies (Rupert, 1993). Assays for gold taken from the mineralized areas of the Lutz vein and L zone returned values ranging from 1 to 7.19 gm/tonne from 8 of the samples. Although gold values occur with copper, there is no apparent correlation between copper and gold concentration (Rupert, 1991).

#### 7.1.3 Cominco Limited

In 1993, Cominco Limited optioned the property containing the Lutz vein and L zone and completed geological mapping, surficial geochemistry, electromagnetic (UTEM) and magnetic surveys (Lum, 1994; Smith, 1995).

The magnetic survey identified several magnetic highs that were interpreted as geological units offset by cross-cutting faults. The UTEM survey, designed to identify deep-seated conductors, showed no significant anomalies. Several narrow zones of low resistivity are associated with magnetic lows and with some known copper showings (Lum, 1994).

Geochemical surveys using soil and humus samples identified copper anomalies over the L zone, but not the Lutz vein. A broad area of above average copper and gold values was identified north and south of an exposed felsic porphyry intrusion which is situated approximately 300 metres west of the mineral occurrences (Smith, 1995).

Chip samples taken by Cominco across a mineralized section of the Lutz vein adit contained up to 6000 ppb gold and 28,000 ppm copper from a chalcocite-bearing, quartz-carbonate breccia. Chip samples taken across a mineralized section of the L zone contained up to 19,500 ppb gold and 50,500 ppm copper in a chalcocite-chalcopyrite vein (Smith, 1995, Assessment File Records, Ryan Township, Sault Ste. Marie District Geologist's Office).

#### 7.1.4 Amerigo Resources Ltd.

Fugro Airborne Surveys (Fugro) completed an airborne magnetic survey covering the Coppercorp property in February 2003. The results of the aeromagnetic survey indicate that the area of the property underlain by Keewenawan-aged rocks is characterized by moderate to high magnetic intensity (Figure 8). Several magnetic highs greater than 59,800 nanoTesla occur on the property. A large (three by three kilometre) magnetic anomaly (referred to as the “regional mag high”) encompasses these smaller highs (Figure 8). Areas underlain by conglomerate are typically characterised by lower magnetic intensity than are those areas underlain by volcanic or intrusive rocks. The unconformity between the Keewenawan rocks and the Archean rocks to the west is characterized by a steep magnetic gradient, with the Archean rocks generally having a much lower magnetic intensity.

A north-northeast trending magnetic lineament passes through the area of the old Coppercorp mine. This “mine trend” lineament approximately encompasses known mineralized occurrences to the north of the mine workings. The lineament appears to be offset by northeast and northwest trending faults at several locations. A sub-parallel, lower intensity magnetic lineament (“western magnetic lineament”) occurs approximately one kilometre to the west of the “mine trend” lineament (figure 8). Several magnetic highs that occur in the Archean rocks in the eastern portion of the property are of interest, since copper-rich breccia pipe/porphyry occurrences, believed to be Proterozoic in age, occur to the east of the Coppercorp property (see Table 6).

Reconnaissance scale mapping and sampling was carried out by Amerigo in four areas (RMH, Ubetuwanit, Coppercorp West and Pancake River road) during 2002 and 2003. In addition, three areas, the Lutz Vein, L Vein and Coppercorp East, were visited

and prospected. Detailed, 1:2,000 scale, geological mapping was undertaken following 16 kilometres of line cutting, on the Silver Creek South grid.

The Regional Mag High area is underlain by variably altered mafic volcanic rocks, conglomerate and flow-banded felsic volcanic rocks. Porphyritic felsic rocks, that form part of the Eastern Felsic Unit, intrude these lithologies. Contacts typically trend northwest-southeast, and measured foliations and layering dip moderately to the northeast. Alteration is dominated by epidote, which occurs as veins and clots, but can be locally pervasive. Red earthy hematite is common in the mafic volcanics and occurs mainly as disseminated grains and more rarely as veins and veinlets. Minor specularite associated with malachite staining was noted in conglomerate close to the contact with overlying felsic volcanic rocks. In addition to epidote and hematite, porphyritic intrusive rocks exhibit potassic alteration in the form of sericite and K-feldspar.

Investigation of pits in the vicinity of the Ubetuwanit showing, located approximately 1.5 kilometres north of the Coppercorp mine site found that the pits occur in variably altered vesicular basalt that host quartz carbonate veins. Alteration consists dominantly of hematite and epidote, with lesser K-feldspar. Mineralization observed in outcrop includes malachite and specularite. Boulders found near these pits contained massive to semi-massive chalcopyrite and chalcocite. Although it is believed that the boulders come from the pits, this has not yet been demonstrated.

Variably altered mafic volcanic rocks with several interlayered conglomerate horizons and minor flow banded felsic volcanic rocks, with occasional quartz phenocrysts are the main rock types in the Western Coppercorp area. Calcite, epidote and chlorite are the typical alteration minerals in the mafic volcanic rocks. The conglomerate is relatively unaltered, except at one location adjacent to an outcrop of felsic volcanic where the conglomerate is intensely sericitized. Copper mineralization in the area is restricted to the mafic volcanic rocks and commonly occurs close to a contact, typically on the eastern (stratigraphic footwall) side. The mineralization consists of chalcopyrite, and malachite with rare bornite and may have associated quartz or quartz-carbonate veins.

Mafic volcanic rocks with intercalated conglomerate horizons underlie the area covered by the silver creek south grid. A thin single band of discontinuous felsic volcanic

rock occurs near the western limit of the outcrop on the grid. The rock is flow-banded, with minor (< 1%) millimeter size quartz phenocrysts,

Hematite, calcite, and epidote are the dominant alteration minerals in the mafic volcanic rocks. Potassium feldspar is an important alteration mineral in places, and tremolite occurs in massive mafic volcanic rock close to the contact with overlying conglomerate on lines 20+00N and 21+00N. The intensity of the alteration is extremely variable, and it is difficult to map out distinct alteration zones. The most intense alteration occurs in the western part of the grid, stratigraphically above the conglomerate units.

Significant mineralization on the grid was found hosted by massive mafic volcanic rocks on line 13+00N. The mineralization consisted of chalcocite, chalcopyrite, malchite, bornite and specularite in two outcrops. Samples from each of these outcrops assayed 0.06% Cu and 1.14% Cu. A sample of malachite stained mafic volcanic rocks next to the creek between lines 17+00N and 18+00N assayed 4.65% Cu and 1.66 g/t Au. Traces of specular hematite occur in altered mafic rocks in some areas.

Samples with copper values greater than 1% occur along the “mine trend” and include samples from the Silver Creek South grid, Coppercorp West, the Coppercorp minesite, and the showings to the north. One sample from the Pancake River Road also contains more than 1% copper. Samples containing greater than 0.1% copper typically occur in the same areas, but also include a sample from the A1 showing in the eastern part of the property. Some of the copper-rich samples are also gold rich, including samples from the Lutz vein, Coppercorp west and Silver Creek South that contain more than 1 ppm (part per million) gold. Several samples along the “mine trend” have gold concentrations greater than 100 ppb (parts per billion) and are possibly anomalous. No gold values greater than 100ppb have been found east of the “mine trend”.

## **8. Geological Setting**

### *8.1 Regional Geology*

The area of interest is situated on the eastern edge of the Mid-Continental Rift (MCR) which underlies what is now Lake Superior and was active during the mid-Proterozoic, Keweenawan period (1100-1200 Ma). The Keweenawan rocks of the MCR

An industrial electric transmission corridor was constructed by Great Lakes Power Company to serve the Coppercorp Mine, and crosses the western part of the property. Water is available from Lake Superior and in limited quantities from small creeks and ponds throughout the property.

### 7. History

The Coppercorp Property has a history of prospecting, mineral exploration and mining activity that dates back to the late 1800's. The history of ownership of the Montreal Mining Company Sand Bay Location is summarized in Table 2.

In 1948-49 old copper showings in the area were examined and drilled by Macassa Mines who later optioned the property to C.C. Houston and Associates. Subsequent drilling of 33,400 feet by the end of 1952 had outlined several mineralized zones in the Coppercorp Mine area, including the C Zone, D Zone, SB Zone and Silver Creek Zone (see Figure 9).

Table 2. History of Ownership of Montreal Mining Sand Bay Location

Years	Ownership
1856-1857	Montreal Mining Co.
1871	Ontario Mineral Lands Co.
1882-1884	Silver Islet Consolidated Mining and Lands Co.
1890	Canada Lands Purchase Synd.
1892	Nipigon Mining Co.
1906-1908	Calumet and Hecla Co.
1948	Macassa Mines Ltd.
1951	C.C. Huston and Associates
1955	Coppercorp Ltd.
1964	Part of Property leased by Vauze Mines Ltd. North Canadian Enterprises Ltd.
2002	Terry Nicholson & William Gibbs Optioned by Amerigo Resources Ltd.
2004	Nikos acquired option from Amerigo

Source: Ontario Division of Mines Source Mineral Deposit Record 000852.

A new company, Coppercorp Limited, was created and in 1954 proceeded to sink a shaft to 550 feet with levels at 250, 375, and 500 feet (Coppercorp Annual Report 1965). During the underground development, 14,000 feet of lateral development were completed and 60,000 tons of ore were stockpiled. Operations ceased in 1957 due to falling copper prices.



are characterized by regionally extensive gravity and magnetic anomalies, and by large-scale crustal structures throughout the Lake Superior region.

The western three-quarters of the Coppercorp Property covers Keweenaw-age (1100-1200 Ma) volcanic and sedimentary rocks of the Mamainse Point Formation. This rock formation unconformably overlies Archean-age metavolcanic rocks of the Batchawana Greenstone Belt which cover the eastern quarter of the property (Figure 6).

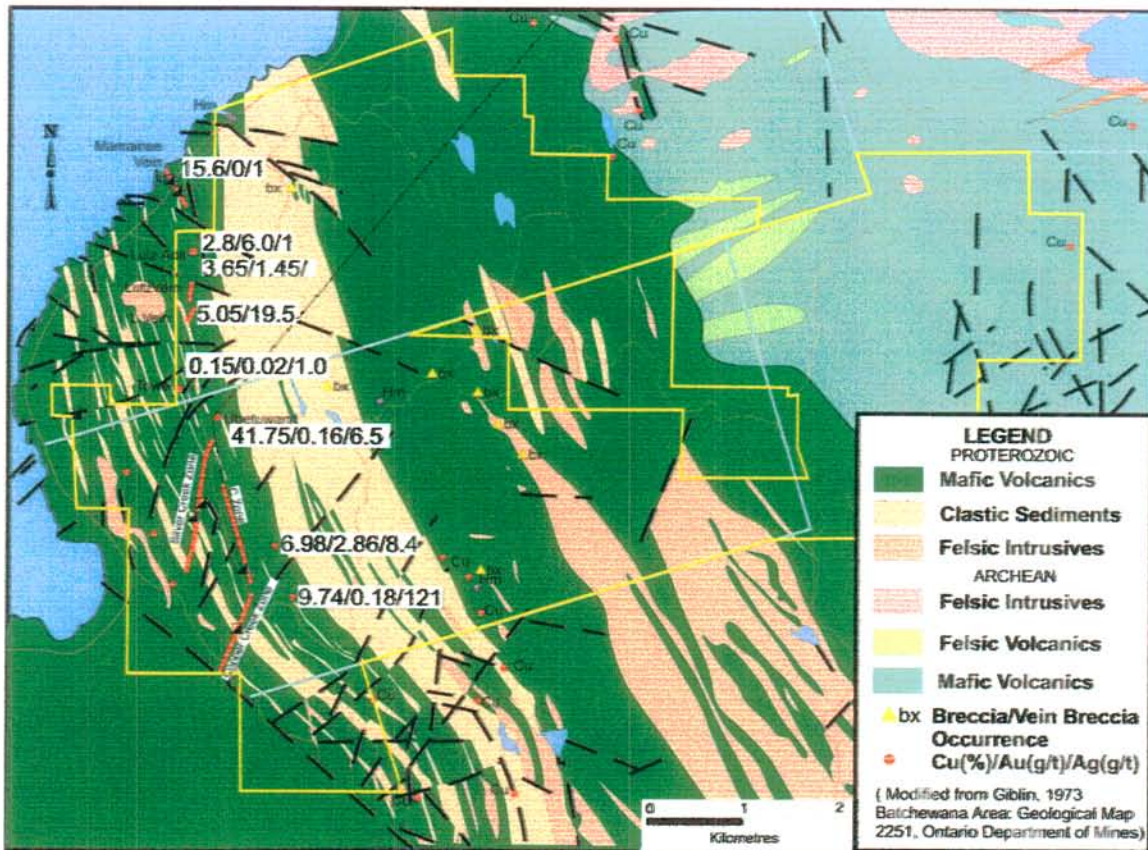


Figure 6. Regional geology of the Batchawana - Mamainse area, showing outline of the Coppercorp Property and significant occurrences.(after Giblin, 1973; Richards, 1995).

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## 8.2 Detailed Geology

### 8.2.1 Archean Rocks

The rocks of the Batchawana Greenstone Belt on the property consist of mafic to intermediate metavolcanics containing minor felsic metavolcanic units. The Pancake Lake Iron Formation which trends roughly east-west occurs just east of the north-easternmost end of the property and consists of Algoma-type iron formation. The

Archean rocks have been deformed and metamorphosed up to amphibolite rank resulting in northeast trending isoclinal folds and a penetrative fabric with steep dips (Figure 6).

The rocks have been intruded by felsic dikes, felsic porphyry, and felsic breccias considered to be Keweenaw in age and related to the Keweenaw felsic volcanic and intrusive rocks occurring more extensively within the Mamainse Point Formation to the west. A Keweenaw-age felsic intrusion, the Jogran Porphyry, intrudes the mafic metavolcanics about 1 kilometre east of the eastern edge of the property. The Jogran Porphyry is notable for having several Cu-Mo prospects associated with it.

### 8.2.2 Keweenaw Rocks

The Mamainse Point Formation consists of a 6 kilometre thick sequence of sub-aerial flood basalts intercalated with conglomerates and felsic volcanic and sub-volcanic units (Figure 7). The sequence generally trends to the northwest with a homoclinal dip of 30-40° southwest.

To the north, the Mamainse Point Formation is unconformably overlain by the Mica Bay Formation, considered to be the equivalent of the Freda Formation on the south side of Lake Superior. (Hamblin, 1961; Annells, 1973, Giblin, 1969). To the south, the Mamainse Point Formation is in fault contact with red sandstone of the Jacobsville Formation. Both the Jacobsville Formation and the Mica Bay Formation (Freda Formation) are considered to be late Keweenaw in age based on paleomagnetic age estimates (Halls and Pesonen, 1982).

Basalt volcanic flows generally range from 1.5 to 30 metres in thickness, with upper vesicular zones and topped by ropy pahoehoe or scoriaceous flow tops, depending on the rock composition (Annells, 1973). In some cases, clastic material occurs as dike-like structures in joints and fissures in the basalt, which are thought to indicate the occurrence of minor earth movements contemporaneous with the accumulation of the lava pile. The clastic sediment in these structures is often highly altered, suggesting that the fissures acted as channelways for hydrothermal fluids (Richards, 1985).

The clastic sediments within the Mamainse Point Formation consist primarily of poorly sorted, clast-supported polymictic conglomerate containing minor lenses and

sheets of cross-bedded, coarse sandstone. Conglomerate clasts are rounded, ranging from pebbles to boulders in size, and are derived predominantly from mafic volcanic (Keweenawan) and granitic (Archean) source areas.

The polymictic conglomerate has been interpreted as forming within an alluvial fan depositional environment in a rifted crustal setting. The conglomerate most likely originated as fault scarp deposits resulting from normal faulting occurring at the edge of the rift. Syn- to slightly post-tectonic sediment transport occurred from the craton towards the down-dropped blocks within the rift (Smith, 1995).

Hypabyssal felsic rocks occur throughout the stratigraphic succession and have been identified as being predominantly intrusive and sub-volcanic in nature. The three main rock types found are: quartz porphyry, felsite, and flow-banded rhyolite (Giblin, 1969c; Annells, 1973). Although many of the felsic rocks have intrusive contact relationships with the mafic volcanics and conglomerates, the presence of agglomerates and felsic tuffs in the sequence indicate that felsic intrusive activity extended to surface and was contemporaneous with the eruption of basaltic lavas (Annells, 1973; Giblin 1969b; Richards, 1985).

In the upper part of the volcanic pile, near the Lake Superior shore, flow-banded felsic units are strongly hematized to the extent that they can be easily confused with the

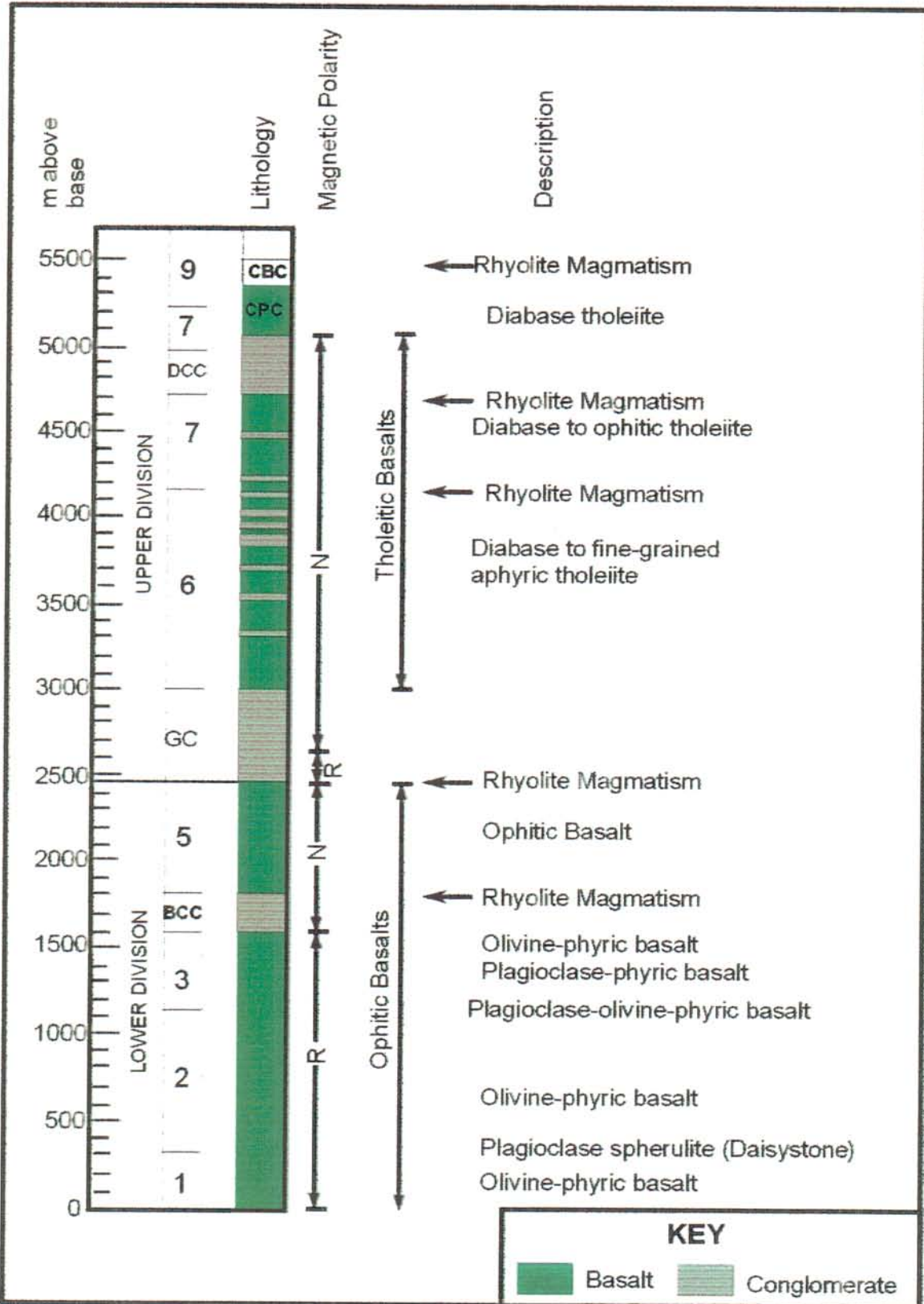


Figure 7: Stratigraphic Section of the Mamainse Point Formation (Smith, 1995)

red Jacobsville sandstone in the area. The hematite alteration is irregularly overprinted by a white, bleaching alteration (kaolinitization). In some felsic units, the extent of this alteration is such that several areas were investigated for their kaolin potential in the 1960's.

### **8.2.3 Geologic Structure**

The Mamainse Point Formation is transected by three major faults that offset or truncate the stratigraphy: the Mamainse Point Fault, the Mamainse Lake Fault, and the Hibbard Bay Fault (Figure 6).

The Mamainse Point Fault trends east-northeast and juxtaposes rocks of the Mamainse Point Formation with the red sandstones of the Jacobsville Formation. The Mamainse Lake Fault trends northeast and displays a variable, left-hand strike displacement of the volcanic and sedimentary units. The fault appears to converge with the Mamainse Point Fault under Pancake Bay. The Hibbard Bay Fault is a northwest trending fault that truncates the stratigraphy at an acute angle. The fault is oriented sub-parallel to the rift axis under what is now Lake Superior.

Many of the north-east trending crustal-scale faults along the Lake Superior shore have been interpreted as having late reverse movement based on geophysical analysis (gravity, magnetic, and paleomagnetic data). Manson and Halls (1993) attribute the reverse movement to the compressional effects of deformation from the southeast related to the Grenville orogenesis in late Keweenawan time.

In addition to the large crustal scale structures in the area, stratigraphic units of the Mamainse Point Formation have been offset by a series of radially distributed faults with a focal point located in the central part of the Coppercorp Property. The radial distribution of faults coincides with a regional convex upwarping of the Mamainse strata towards the west. The focal area is dominated by an area of high magnetic intensity, and many of the faults radiate westward from a large body of felsite about 4 kilometres east of the Coppercorp Mine. These same radially distributed faults form some of the mineralized zones in the Coppercorp Mine.

This regional warping of the Mamainse Point Formation with possible concurrent radial faulting appears to be a late stage feature that may be significant to the mineralization process in the Coppercorp area and elsewhere on the property.

### **8.3 Geophysical Setting**

Regional airborne magnetic and electromagnetic surveys were flown over the Batchewana area at 200 metre line spacing by the Ontario Geological Survey (OGS, 1992). A detailed (100m line spacing) aeromagnetic survey was flown by Fugro Airborne Services in 2003 for Amerigo Resources. In the Mamainse Point area there is a dramatic increase in the regional magnetic intensity of the rocks for the Mamainse Point Formation, primarily due to the mafic volcanic lavas in the sequence (Figure 8). The volcanic stratigraphy is partly outlined by the aeromagnetic survey due to the higher magnetic susceptibility of some of the volcanic flows. Segmentation of the magnetic horizons can be correlated with lateral displacement along faults. In the western part of the property, a magnetic high forms a northwest-southeast trending lineament (the “mine Trend” lineament) that extends for over 5 km sub-parallel to the regional stratigraphy.

An area of high magnetic intensity (“Regional Mag High”) occurs in the north-central part of the Coppercorp Property (Figure 8). The magnetic anomaly has a broad east-west trend and is segmented by regional faults. Mapped geological units in this area follow a northwest trend and do not coincide with the orientation of the magnetic feature.

An east-west trending linear magnetic high occurs at the northeast end of the property and can be attributed to the Pancake Lake Iron Formation. There are a number of circular to elliptical magnetic features in areas near the property that may represent breccia pipe or porphyry type intrusions such as the Jogren Porphyry approximately 1km to the east of the Coppercorp Property.

Airborne electromagnetic anomalies have low conductance, are irregularly distributed and appear to reflect areas of conductive overburden (Pancake River valley).

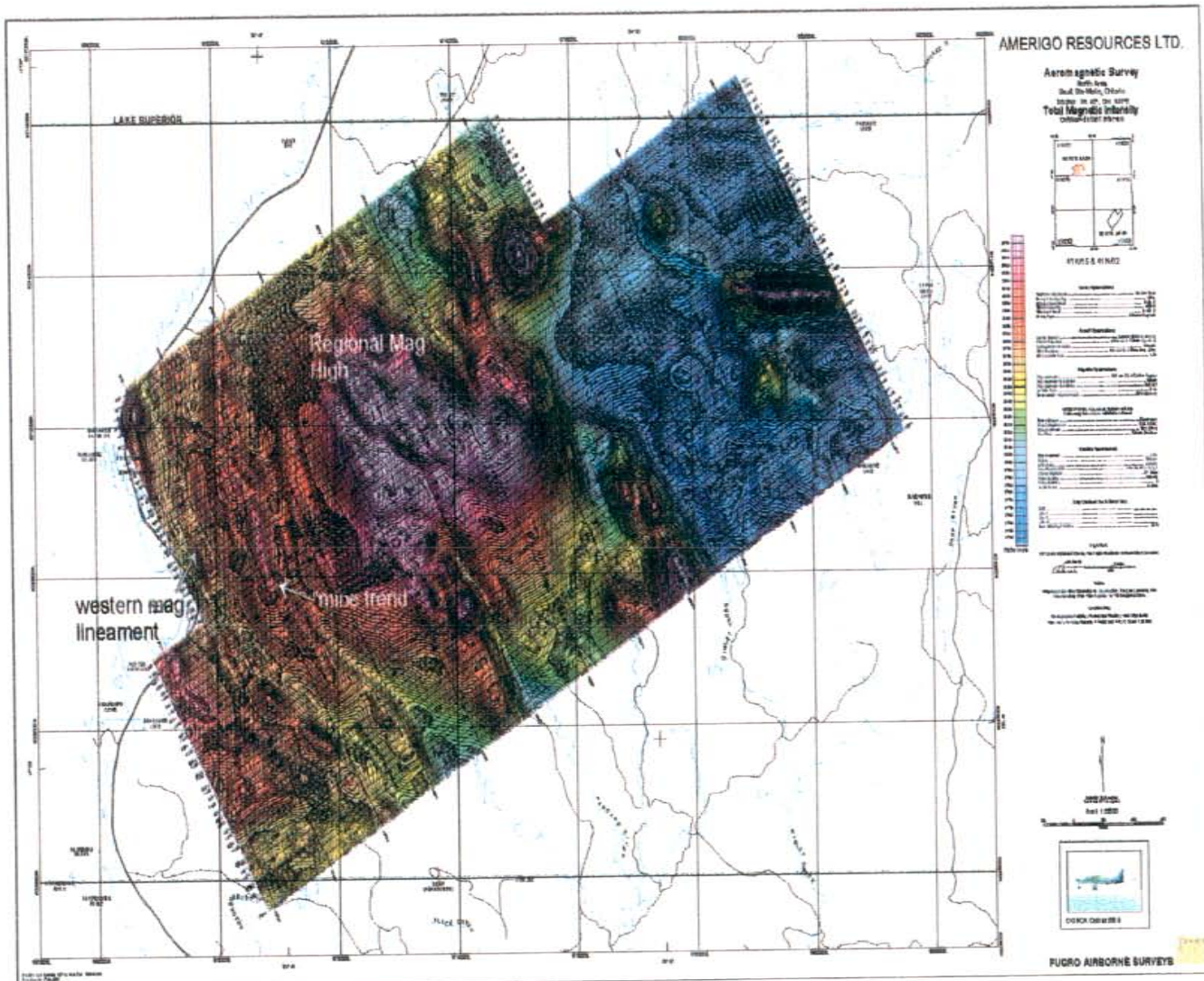


Figure 8. Total Magnetic Field Aeromagnetic Map of the Mamainse Point area.

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## 9. Deposit Type

### 9.1 Introduction

An iron oxide copper-gold (IOCG) deposit of the Olympic Dam-type is the target of exploration on the Coppercorp Property. The tectonic setting, the geology of the region and the presence of several copper deposits with significant associated iron oxide suggest that this area has potential for Olympic Dam-type deposits.

Iron oxide copper-gold deposits are attractive exploration targets due to their common large size and multi-metal nature. Exploration for these deposit types, especially among junior explorers, has suffered from the lack of rigorously defined models, both empirical and genetic, and well documented case histories. Several recent publications (Vancouver Mining Exploration Group, 2000; Porter, 2000; 2002) have however provided a broad framework of models and case histories that may be used in targeting areas for IOCG potential, and for designing follow-up exploration programs. However, as pointed out by Pollard (2000), IOCG deposits are part of a broad spectrum of copper-gold deposits that include both porphyry and skarn-type deposits and rigid application of deposit specific characteristics to exploration should be avoided.

### 9.2 Characteristics of IOCG deposits

While IOCG deposits range in age from the Archean to the Neogene, many of the deposits, including most Australian examples such as Olympic Dam and Ernest Henry, are Proterozoic in age. There are many inferred tectonic settings for the deposits, with an anorogenic or rift-related setting being most widely postulated (Barton and Johnson, 1996). However, it appears that regardless of the specific setting, an extensional environment is of fundamental importance (Gandhi and Bell, 1995). A strong structural control is noted in most deposits, with mineralization emplaced along major regional faults or fracture systems, at intersections of faults or in axes of major fold systems (Oreskes & Hitzman, 1993).

Typically IOCG deposits show spatial and temporal links with igneous rocks, including alkalic granitoids and volcanic rocks, calc-alkalic mafic, intermediate and felsic suites, continental flood basalts and rift-related basalts (Barton & Johnson, 1996). Many deposits are directly associated with the emplacement of high level felsic plutons (Ghandi & Bell, 1995; Wall, 2000), typically occurring in the roof zones of the pluton (Ethridge & Bartsch, 2000).



Mineralization is commonly hosted by hydrothermal intrusive breccias or diatreme breccias (Reeve et al., 1990; Pollard, 2000).

IOCG mineralization consists of Ti-poor iron oxide, with lesser phosphates, Cu- and Cu-Fe sulphides, and variable Au, U, Ag and Co (Barton & Johnson, 1996). To some degree it is the low Ti nature of the iron oxide that ties otherwise disparate mineral deposits of the IOCG class together. The most common iron oxides are hematite and magnetite. Magnetite is typically early and occurs in the deeper or more proximal parts of the hydrothermal system, whereas hematite is later, more distal and may overprint the earlier magnetite (Barton & Johnson, 1996; Oreskes & Hitzman, 1993). The magnetite may be accompanied by apatite (e.g. Kiruna) and Cu-Fe-Sulfides (e.g. Ernest Henry, Candelaria) and widespread sodic alteration. Gold and Cu-Fe sulphides are associated with hematite-stage mineralization at Olympic Dam (Reeves et al., 1990; Barton & Johnson, 1996).

A broad range of elements may be associated with the mineralization. Apart from the Fe, Cu and in some cases Au and Ag, comprising the mineralization, deposits may be anomalous in Ba, P, F, Cl, Mn, B, K, REE, U and Na and have elevated Co, Ni, Te, As, Mo and Nb abundances, whereas Ti and Cr tend to be depleted (Foose & Grauch, 1995).

Exploration for IOCG deposits relies heavily on gravity and magnetic surveys, with coincident gravity and magnetic anomalies being the preferred target (Gow et al., 1994). Detailed aeromagnetic surveys are recommended to map structure in the area of interest with likely dilational sites targeted for further follow up using alteration and geochemistry to site drillholes (Etheridge & Bartsch, 2000).

### *9.3 Application to the Coppercorp Property*

The following features, considered to be key exploration criteria for IOCG deposits, are relevant to the Mamainse-Batchewana area:

1. A continental rift-related tectonic setting on the eastern margin of the Mid Continent Rift system.
2. The Keweenawan basalts represent a significant volume of potential copper source rocks. A thickness of 14,300 to 19,900 feet (4.3 to 6 kilometres) has been estimated for the flows (Giblin, 1974).

3. The presence of a massive magnetite vein grading 3.9% copper over 1.05 metres at Jogran (Rupert, 1997) and fluorite associated with the Breton Breccia at Tribag (Blecha, 1974) and with Coppercorp ore (Rupert, 1997).
4. The presence of numerous faults some of which are splays off major crustal faults such as the Mamainse Point Fault to the south of the property.
5. The apparent high level emplacement of the felsic intrusives (Richards, 1985)
6. The presence of dilational sites along active structures (Heslop, 1970).
7. The presence of a high temperature saline brine (350°C to 450°C), 15-20 eq. wt. % CaCl<sub>2</sub> believed to be magmatic in origin and a lower temperature fluid (<100°C to 350°C, 0 to 15 eq. wt. %) believed to be a mixture of magmatic and meteoric fluid (Richards, 1985).
8. The occurrence of widespread Cu mineralization in the area as both low tonnage medium grade deposits (e.g. Coppercorp) and high tonnage low grade deposits (e.g. East Breccia zone of Tribag mines).
9. The presence of a broad, regional aeromagnetic anomaly over the property (Figure 9) and the presence of several gravity anomalies (Mackie, 2003)
10. The production of limited amounts of gold and silver along with the copper at the Coppercorp Mine and the anomalous concentrations of gold and silver found in the outlying copper occurrences.

## **10. Mineralization**

### *10.1 Introduction*

Copper mineralization on the property occurs in two forms:

- Disseminated sub-economic native copper in amydules and veins
- Vein-hosted copper sulphide deposits

While it was the first of these that apparently brought the initial explorers to the area, only the second type of mineralization has been mined. The Coppercorp mine produced 1,021,358 tons grading 1.16% Cu plus approximately 237,603 ounces of silver and 1,964 ounces of gold from such veins between 1965 and 1972 (Source Mineral Deposit Record 000852).

Mineralized veins occur in fault-related breccia zones typically with a gradation from high grade sulphide veins to barren oxide cemented breccias. The wallrock to the veins are commonly

chloritized and sericitized and may contain epidote. The copper sulphides, dominantly chalcocite with lesser chalcopyrite and bornite, are usually accompanied by specular hematite.

Several other copper-dominant systems occur in the Mamainse Point - Batchawana area and are summarized in Table 6.

Table 6: Copper deposits in the Mamainse Point – Batchawana Area

Deposit	Deposit Type	Production Years	Production	Reserves	Source
Coppercorp	Copper-quartz vein	1965 to 1972	1.02 M tons @ 1.16% Cu	?	4
Mamainse	Copper-quartz vein	1882 to 1884	?	?	2
Tribag	Breccia Pipes	1967 to 1973	1.1 M tons @ 1.65 % Cu	?	1
<i>Breton Breccia</i>				40M tons @0.2% Cu above 300m	1
<i>East Breccia</i>				125M tons @0.13% Cu and 0.04% MoS <sub>2</sub>	3
<i>West Breccia</i>				0.1M tons @ 0.6 to 1.0% WO <sub>3</sub>	1
Jogran	porphyry	N/A		18M tonnes @ 0.19% Cu and 0.05% MoS <sub>2</sub>	1

Sources: 1 Rupert, 1997; 2 Moore, 1926; 3. EM&R, 1989; 4. SMDR 000852

### 10.2 Coppercorp Deposit

Mineralization at the Coppercorp Mine is structurally controlled, occurring within fault-related breccia zones and veins that transect the Keweenawan basalt flows and conglomerates. The width of the structural zones varies along strike from tight shears less than 1 metre to broad disrupted lenses up to 12 metres across (Richards, 1985). The veins and breccias consist of quartz and carbonate with subordinate laumontite and fluorite. The principal ore mineral is chalcocite with lesser amounts of bornite, chalcopyrite, and rarely, native copper. Massive chalcocite veins, 20-25 cm wide, were found at numerous localities within the deposit. Large vugs of varying size are lined with quartz, calcite, and sulphides and were commonly found throughout the deposit, suggesting a shallow 'open space filling' type of mineralizing process (Heslop, 1970).

The fault system at Coppercorp consists of two sets of structures (Figure 10). A north-northeast trending set dips 50-65° east and comprises the Copper Creek Zone, Silver Creek Zone, and the 'G', 'H', and 'F' Zones. A north-northwest trending set dips 50-70 east and consists of the C Zone, SB Zone, D Zone and B Zone. The north-northwest trending set represents the most

productive structures and strikes almost parallel, but with normal dips, to the volcanic and sedimentary strata. Where a north-northwest trending fault zone like the C Zone intersects the Great Conglomerate (at about 150 metre depth), the fracture zone narrows and there is a corresponding decrease in the sulphide mineral content. The narrower fracture system in the conglomerate was attributed to the lower competency of the rock compared to the mafic volcanics (Heslop, 1970).

Some of the mineralized structures such as the C Zone, SB Zone and further to the north-northwest along strike, the L zone, Lutz Vein and Mamainse Vein, display an apparent stratigraphic control. The mineralization occurs primarily within basalts of the upper section of the Mamainse Point Formation, 75-150 metres above the Great Conglomerate (Figure 7 & 8).

Heslop (1970) defined four major stages of fault development in the Coppercorp Deposit (Table 7, Figure 10). Based on the crosscutting relationships of these structures there is an apparent younging in the development of fault zones from south to north in the deposit. Mineralogical changes in the ore or other characteristics associated with this relative structural timing have not been documented.

Richards (1985) recognised four stages of mineralization: 1. pyrite-chalcopyrite 2. chalcopyrite-bornite 3. chalcocite-hematite 4. native copper, native silver, copper arsenides, malachite and hematite. The third stage was the most important source of copper, producing rich veins of chalcocite and replacing earlier sulphides.

Mineralized structures cut across and are cut by felsite dikes within the mine. In addition, diabase dikes follow major fault zones, are brecciated in places, and also cut felsic intrusives. Both the diabase and felsite intrusions are considered to have been emplaced contemporaneously with fault movement, brecciation and sulphide deposition (Heslop, 1970).

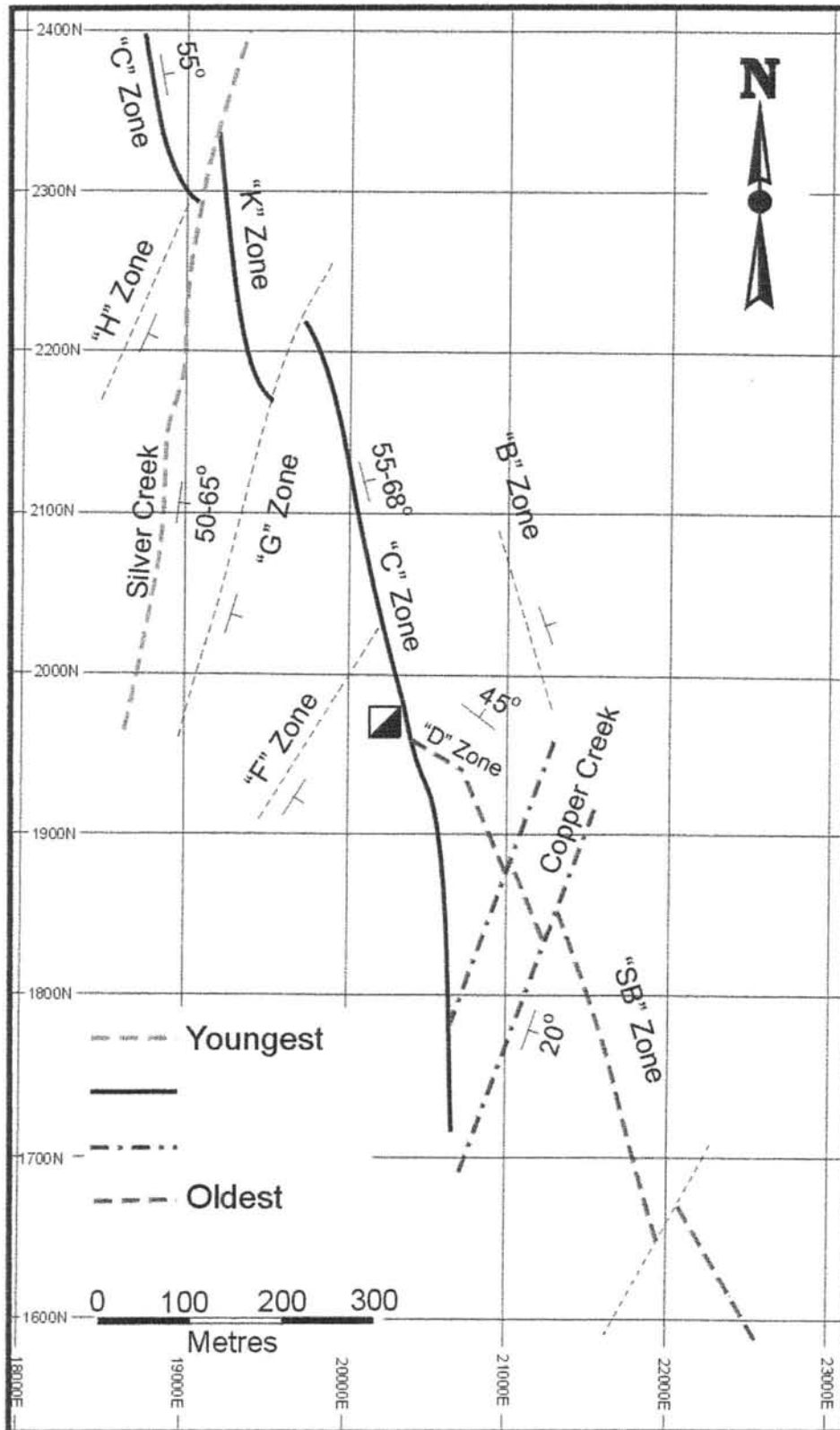


Figure 9: Mineralized structures in the Coppercorp deposit (after Heslop, 1970)

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Table 7: Relative age of fault zones based on cross-cutting relationships (Heslop, 1970)

Mineralized (Fault) Zone	Strike	Dip	Relative Age 1 - oldest, 4 - youngest
SB Zone	N18-25W	East	1
Copper Creek Zone	N20E	55-60 E	2
C Zone	N15W	55-68 E	3
Silver Creek Zone	N10E	50-65 E	4
D Zone	N60W	45 NE	4
B Zone	N15W	East	4*
F Zone	N30E	Southeast	4*
G Zone	N20E	East	4*
H Zone	N20E	East	4*

\* age relationships uncertain

## 11. Exploration

### 11.1 Line Cutting

A total of 14 line kilometres of line cutting was undertaken by Vision Exploration during November 2004 in order to extend the Silver Creek South Grid to the southeast and follow up on the chargeability anomalies that appeared to continue to the southeast. Lines were spaced at 100 metres between lines 0+00N and 10+00N with stations spaced at 20 metres along each line between 15+00E and 25+00E (Figure 10).

### 11.2. Geological Mapping

#### 11.2.1 Lithology

Nikos Explorations Ltd. carried out geological mapping and sampling over the cut lines comprising the Beaver Pond grid. Outcrop in the area is generally poor, and is best developed along roadcuts, streams and northwest-southeast trending ridges.

The largest portion of the area mapped is covered by Keewenawan mafic volcanic rocks that are variably altered. Northwest – southeast trending conglomerate horizons occur within the mafic volcanic rocks.

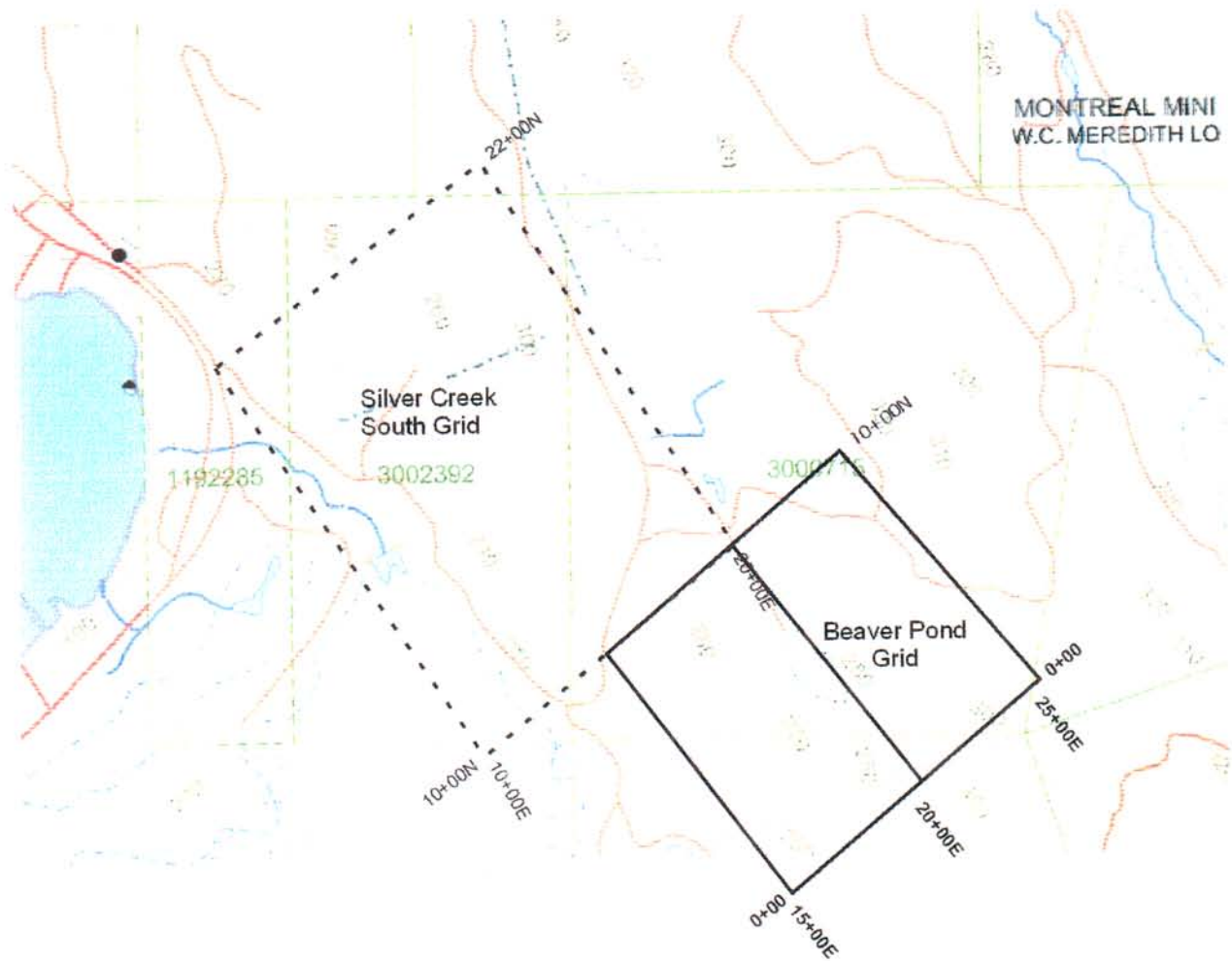


Figure 10. Location of the Beaver Pond and adjacent Silver Creek South grids on the Coppercorp Property.

Mafic volcanic rocks are typically dark green to grey, fine grained and massive to amygdaloidal. Calcite is the most common amygdule, but chlorite and K feldspar may also occur. The mafic volcanic rocks are also variably magnetic, possibly reflecting the presence of magnetite in the fine grained groundmass. Coarser grained mafic rocks, referred to as ophitic basalt in previous work, are also present in some locations.

The conglomerate is polymictic, and contains subangular to rounded clasts of granite, gneiss and mafic volcanic rock. Clast size is variable, ranging from fine pebbles 1 to 2 cm in diameter up to cobbles of 10 to 20 cm in diameter.

### 11.2.2 Alteration

All rocks in the Beaver Pond area are altered to some degree. Epidote is the most widespread alteration and affects both the mafic volcanic rocks and the conglomerate. It occurs most commonly as patches and blebs. Red earthy hematite is a common alteration mineral in all rock types and typically occurs as disseminated grains and blebs or as veins along fractures and associated with vein breccias. The matrix of conglomerate in the immediate vicinity of mineralization in the Beaver Pond area appears to be pervasively hematized and has a rusty appearance on the weathered surface. Calcite is common in the mafic volcanic rocks and occurs throughout the rock and as discrete mm-cm scale veins and vein breccia.

### 11.2.3. Mineralization

Mineralization in the mapped area includes specular hematite, malachite, chalcopyrite, chalcocite and pyrite. Specular hematite occurs as disseminated grains typically 2-5mm in size, as larger blebs and as veins and veinlets of various sizes. Malachite occurs predominantly as surface staining and as coating along mm-scale fractures. Chalcopyrite, chalcocite and pyrite occur as disseminated grains 2 to 3 mm in diameter in mafic volcanic rocks, commonly associated with quartz-calcite vein breccia. There appears to be a preferential development of mineralization at, or close to, the contact between the basalt and overlying conglomerate. This suggests that the conglomerate units may have acted as a cap to ascending fluids, causing them to pool near the contact.



### 11.3 Rock Sampling

A total of 22 rock samples were taken over the area during the course of mapping and prospecting (Map 2). Samples were predominantly grab samples and a description of the samples is given in Appendix 1.

All samples were submitted to Actlabs for multi-element analysis by neutron activation analysis and inductively coupled plasma- optical emission spectroscopy (see section 12 below). Assay certificates are given in Appendix 2, and a summary for selected elements is given in Table 8.

Table 8. Results of gold, silver, copper and iron analyses for rock samples.

Sample No.	Easting	Northing	Au (ppb)	Ag (ppm)	Cu (ppm)	Fe (%)
33754	670544	5208711	<2	0.3	74	6.16
33755	671353	5209175	2	0.5	30	6.75
33756	671064	5208851	<2	1.1	6740	9.98
33757	671643	5209024	8	1.1	5740	8.33
33758	670979	5208574	6	0.5	171	6.66
33759	670932	5208536	<2	1.3	632	5.13
33760	671630	5208526	25	1.7	1480	3.27
33761	671630	5208526	<2	3.2	64	4.7
33762	671546	5208486	<2	0.8	77	9.93
33763	672028	5208654	<2	0.7	44	2.45
33764	671730	5211313	<2	0.4	4	6.62
33765	671771	5211293	<2	0.5	102	5.96
33766	672348	5211394	5	0.4	4	7.25
33767	670859	5208961	<2	0.6	12	6.14
33768	670859	5208961	<2	0.4	515	6.46
33769	670859	5208961	<2	10.4	416	6.8
33770	670859	5208961	<2	1.3	379	5.35
33771	670854	5208986	<2	1.4	261	3.52
33772	670850	5208982	<2	3.6	3130	2.45
33773	670850	5208982	<2	12.9	141400	1.38
33774	670849	5208987	8	0.7	999	9.79
33775	670847	5208994	5	0.7	94	8.03

Copper content varies from a low of 4 ppm to a high of 14.14%. Of the 22 samples collected, three fall above the 90<sup>th</sup> percentile considered to be probably anomalous, and only the highest value falls above the 97.5 percentile considered to be anomalous (Map 3). All of these anomalous and probably anomalous samples occur within the mafic volcanic rocks. Two other samples, while less than the 90<sup>th</sup> percentile, show values greater than 0.1 % copper. The highest copper value coincides with the highest silver value in sample number 33773 from the vicinity of

the Copper Creek shaft. Gold and silver values are typically low, with highs of 25ppb and 12.9 ppm, respectively.

## *11.4 Geophysical Surveys*

### 11.4.1 Regional Aeromagnetic Interpretation

A regional aeromagnetic survey was flown over the Coppercorp property of Nikos Explorations Ltd in 2003 and consisted of 825 line kilometres of aeromagnetic data, at a line spacing of 100m, flown in a NW-SE direction.

The Total Magnetic Intensity (TMI) data was shaded and filtered for interpretation purposes. A first vertical derivative (1VD) was produced to enhance short wavelength features and characterize the domains. Inferred structural boundaries have been identified at the points of maximum gradient in the data and indicated with thin dashed lines at the flanks of the 1VD responses. These have also been transcribed back onto the TMI. Please refer to the provided maps of the “Total Magnetic Intensity with Interpretation” and “First Vertical Derivative” in the back pocket.

The property is dominated by two domains, labelled C1 and C2, which lie on the western and central thirds of the data, respectively. The eastern third of the data has a relatively magnetically ‘flat’ base level, punctuated with discrete magnetically intense anomalies.

The C1 domain is dominated by highly magnetic NW-trending lithological units (probable mafic rocks) with E-SE deflections, which offset these units. The 25 to 100m wide linear bodies extend entirely across the domain from the south to the northwest, with a convex-to-west deflection around the C2 domain which lies contiguously to the east. Bands of magnetic highs appear to run sub-parallel with zones of magnetic quiescence which are probably sedimentary units.

The C2 domain is characterized by closely spaced N-NW trending lithological units, which amass together in the central portion of the C2 domain and the survey block. This convolution of these discrete magnetic anomalies produces an area of increased magnetic base-level response which mimics a large magnetic anomaly. It is interpreted here as an artefact of the relatively

near-surface linear magnetic features and not a large 2-4km diameter magnetic body, though this impression is certainly evident at first pass. The linear magnetic features are concentrated in the centre of this domain, with magnetically quiet areas (sediments?) present at the western and southeastern boundaries of the domain. Coherent linear trends/offsets are apparent in the data and could represent bedding between mafic and sedimentary units or faulting.

The eastern third of the data has a relatively magnetically 'flat' base level, punctuated with discrete magnetically intense anomalies. Several of these discrete positive magnetic anomalies have been labelled with an "Fe" symbol, indicating a probable presence of iron formation. These anomalies are present in both linear elongate and discrete sub-circular forms, with trends evident at E-W deflecting to NW directions.

Specific areas have been identified in all three domains for follow-up. Areas marked on the maps with rectangular symbols have been highlighted for the identification of lithologies. These areas in domains C1 and C2 represent probable mafic unit, whose relationship with mineralization is cited as important in understanding the relationship of IOCG mineralization on the property with the mafic and sedimentary units. Other discrete areas have been marked with circular symbols and represent areas where structures intersect and offset linear (mafic?) bodies. These areas are identified as possibly being related to mineralization emplacement and are recommended for structural and lithological mapping.

#### 11.4.2 Induced Polarization and Ground Magnetic Surveys

Two survey groups have conducted induced polarization surveys. The first was conducted by Vision Exploration in December of 2004, and consisted of seven line kilometres of Induced Polarization (IP) and magnetic data over the southeastern portion of the Nikos Beaver Pond survey area. The second survey was conducted by Dan Patrie and consisted of five line kilometres of IP and magnetic data over the same area, with lines extended to cover gaps in the first survey.

The survey area has been covered by both the Vision Exploration and Patrie surveys. The coverage of the Vision survey is from lines 0 through 1000, from stations 2000 through 2500, with the exceptions of lines 500 and 800 which cover stations 1500 through 2500. This survey lies between UTM coordinates 670925 and 672135 mE and 5208210 and 5209355 mN (NAD27). The grid traverse lines are oriented at approximately E 30°N. A magnetic survey was conducted by Vision covering the same grid, but extending from stations 1500 through 2500 for all lines except for line 100 which had coverage from stations 1750 through 2500. The Patrie survey extends over the same lines but from stations 1600 through 2040, in order to cover the data gap left by the Vision grid. Magnetic data was collected by Patrie Exploration, again on the same grid, but over stations 1500 through 2000. At the time of writing this report, plan IP data had not been provided by Dan Patrie Exploration and only pseudo sections are provided.

The area is dominated by NNW-SSE trending chargeable zones which exhibit anomalies in the range of 30 to 40 mV/V above a background is in the range of 30 to 40 mV/V. The non-zero background is interpreted as being due to appreciable concentrations of disseminated chargeable material in the country rock, away from mineralized zones.

Chargeable features discerned with the Vision and Patrie surveys are consistent with the extension of known chargeable zones identified from a previous IP survey conducted by Abitibi Geophysics (Abitibi Geophysics, 2004). The trend of the new chargeable zones deflects slightly to the east, resulting in a NW-SE trend for these zones.

On the Vision survey, a main linear chargeable feature exists between line 1000 station 2040 and line 0 station 2420. The feature exhibits a chargeability of 35 mV/V above background, which is approximately 40 mV/V.

A second principal chargeable feature is present from line 500, station 2020 through line 0, station 2220. This linear anomaly has an amplitude of 20 to 25 mV/V above background and is sub-parallel to the main chargeable zone. Additional thin linear chargeable anomalies exist between these two zones, with lesser amplitudes, and there are indications of more similar parallel zones to the SW.

These chargeable features are consistent with the characteristic 'pant-leg' anomaly patterns, visible in the various plan maps for n=1, 2, 3 and 5 as a spreading of the anomaly signature laterally from the n=1 signature. The strong presence of a signature in the n=1 plan map is interpreted as being indicative of a sub-cropping chargeable causative body. The

amplitude of these anomalies is interpreted as representing moderately to moderately high chargeable mineralization present in discrete linear zones, or collections of thin parallel zones, coincident with the anomalies.

An examination of the Patrie pseudo sections confirms the presence of sub-parallel chargeable zones to the SW, with similar NW-SE trends. A significant third chargeable zone is present from line 1000, station 1740 through line 500, station 1880 and then a deflection through to line 200, station 2000. This feature is moderately chargeable with amplitudes of 55 to 70 mV/V and a background of 20 to 30 mV/V.

Other lesser thin sub-parallel chargeable features are present to the east and west of this third feature, extending to the western margin of the grid at station 1600. These features have amplitudes of 30 to 50 mV/V over background values of 15 to 25 mV/V.

## **12. Sampling Method and Approach**

Twenty two samples (22) were collected during the sampling program. Most of the samples were grab samples taken from a part of the outcrop believed to be representative of the rock being sampled. All samples were described before being bagged in individual plastic sample bags marked with the sample number, and securely closed with single use ties.

## **13. Sample Preparation, Analyses and Security**

Individually bagged samples were packed into rice bags and shipped via Grayhound Express from Sault Ste Marie to Activation Laboratories, 1336 Sandhill Drive, Ancaster, Ontario, Canada, L9G 4V5, for analysis. Activation Laboratories is an analytical laboratory that is accredited to international quality standards (ISO Guide 25 accreditation). All samples were analyzed for Ag, Cd, Cu, Mn, Mo, Ni, Pb, Zn, Al, Be, Bi, Ca, K, Mg, P, Sr, Ti, V, Y, and S by inductively coupled plasma-optical emission spectroscopy (ICP-OES) following a four acid digestion (HF, HClO<sub>4</sub>, HNO<sub>3</sub>, and HCl) and for Au, Ag, As, Ba, Br, Ce, Co, Cr, Cs, Eu, Fe, Hf, Hg, Ir, La, Lu, Na, Nd, Rb, Sb, Sc, Se, Sm, Sn, Ta, Th, Tb, U, W, Y, and Yb by instrumental neutron activation analysis. Samples containing more than 5000 ppm Cu were re-assayed by atomic absorption (AA). Those containing more than 1,000 ppb Au were re-assayed by fire assay followed by a gravimetric finish.

All samples were collected, packed and shipped by Mr. Ardian Peshkepia. The values given here are as reported by Activation Laboratories, and assay certificates are included in Appendix 2.

It is the author's opinion that the sampling was undertaken in a manner consistent with industry practice, and that the samples collected were representative of the rock sampled. Every effort was made to keep contamination to a minimum during sampling. The samples were properly bagged and packed and securely stored prior to shipping and were shipped directly to the laboratory.

A review of the accuracy of the analytical results using the laboratory standards indicates an accuracy (based on the percentage difference between measured and recommended values) of typically between 3% and 19% for analysis of copper by ICP-OES. The accuracy is best for samples containing more than 1,000 ppm copper. Analysis of copper in standards containing more than 1% copper by AA shows an accuracy of 1%. Analysis of gold by INAA shows an accuracy of 1% and a relative precision (based on the ratio of the standard deviation and the mean of duplicate samples) of 10%. Accuracy of silver analyses by ICP-OES varies from 0% to 28% .

#### **14. Conclusions**

A detailed mapping and sampling program together with ground geophysics was undertaken over a portion of the south - central part of the Coppercorp property known as the Beaver Pond Area. The rocks in the area are dominated by mafic volcanic rocks of the Mamainse Point Formation. The mafic volcanic rocks are typically amygdaloidal and variably altered, with calcite and epidote being the most common alteration minerals.

Copper mineralization is dominated by malachite present as staining on surface and on fractures, with minor chalcocite and pyrite. Specular hematite is widespread and typically occurs as disseminated grains, but also as mm-scale veinlets and in vein breccia. All of the observed mineralization occurs in the mafic volcanic rocks, commonly close to the contact with overlying conglomerate units.

The copper content of the 22 samples collected varies from 4 ppm to 14.14%. Based on calculation of percentiles, three samples are considered to be anomalous in copper. All of the anomalous samples occur within the mafic volcanic rocks. Silver and gold values are typically low, ranging up to 12.9 ppm and 25 ppb, respectively.

Three main chargeability anomalies are apparent from the results of the induced polarization survey. All three anomalies trend southeast-northwest across the Beaver Pond Grid, and two of them likely represent southeast-ward continuations of similar trending anomalies present on the Silver Creek South Grid to the northwest. As discerned on the previously filed Abitibi geophysics grid, there appear to be sulfides or other chargeable minerals present in the country rock on both geophysical blocks. There is a background of ~10-15 mV/V.

## 15. Recommendations

The Beaver Pond area and adjacent Silver Creek South Area cover the area of the past producing Coppercorp Mine. Recent mapping, sampling and geophysical surveys have demonstrated the prospectivity of the areas and further work is warranted to follow up on positive results to date. In particular, drilling of the chargeability anomalies resulting from the IP surveys is recommended as outlined below:

Drilling is recommended on the main linear NW-trending chargeable feature on the Vision IP grid. With an amplitude in the range of 70 mV/V, this target has the highest probability in this data set for being caused by disseminated sulfides and magnetite, though graphite is also a possibility. Lines 300 through 800 are recommended for this chargeable anomaly. Drilling angled holes, perpendicular to the strike of the anomaly and down-line is advised, not between lines where there is no data. No dip information can be gleaned from this pole-dipole data, so the choice of azimuth should be based on known or mapped geology. Otherwise, the dips of the causative chargeable bodies should be assumed to be sub-vertical.

Drilling should also be considered on the lower amplitude anomalies lying to the SW on the Patrie grid, especially if geochemistry results are favourable. A restricted portion of the strike-length of the anomaly is recommended for drilling, specifically from lines 800, 900 and 300.

The angled drillholes should be collared at least one station (50m), to the NE or SW, from the n=1 plan image trace of the chargeable anomalies or n=1 position of the pseudo section chargeable anomalies. Both the pseudo sections and plan maps indicate that the chargeable causative bodies sub-crop, given the continuity of response as high as the n=1 response in the data. Given the coherence of the anomalies through the n=1 to n=6 spacings, the depth extents of these bodies can be crudely estimated to be at least 50 to 100 metres.

A first stage drill program consisting of 1,500 metres of core drilling in six to eight holes should be sufficient to test the chargeability anomalies on the Beaver Pond and Silver Creek South Grids. The work program is expected to take six weeks at a cost of \$207,431. The proposed budget is summarized in Table 10.



Table 9. Budget for recommended work program

<b>Item</b>	<b>Units</b>	<b>Cost/Unit</b>	<b># Units</b>	<b>Total Cost</b>
Geologist	days	\$400	42	\$16,800
Assistant	days	\$250	42	\$10,500
Accomodation	weeks	\$700	6	\$4,200
Food	days	\$50	42	\$2,100
Truck Rental	weeks	\$700	6	\$4,200
Gas	weeks	\$350	6	\$2,100
Drilling				
Mob and Demob				\$6,000
Drilling Cost	metre	\$75	1500	\$112,500
Assays	samples	\$35	500	\$17,500
Field Supplies				\$2,000
Contingency (~10%)				\$17,790
SubTotal				\$195,690
GST				\$11,741
<b>Total</b>				<b>\$207,431</b>

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**Certificate of Author**  
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Moss Exploration Services  
326 Rusholme Rd., Toronto, ON. M6H 2Z5  
Tel: 416-516-6050 Fax: 416-516-7036  
Email: roger.moss@symaptico.ca

I, Roger Moss, P.Geol. do hereby certify that:

1. I am President of Moss Exploration Services, 326 Rusholme Rd., Toronto, ON. M6H 2Z5
2. I graduated with a Ph.D. degree in Geology from the University of Toronto in 2000. In addition, I have obtained a M.Sc. degree in Geology from the University of Toronto in 1995 and a B.Sc. in Geology from the University of the Witwatersrand in 1988.
3. I am a member in good standing of the Association of Professional Geoscientists of Ontario (Registration Number 0192), the Canadian Institute of Mining, Metallurgy and Petroleum, and of the Society of Economic Geologists.
4. I have worked as a geologist for a total of six years since my graduation from university.
5. I have read the definition of “qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
6. I am responsible for the preparation of the technical report titled “Report of geological mapping, rock sampling and geophysical surveys of the Beaver Pond portion of the Coppercorp Property, Sault Ste. Marie Mining Division, Ontario, Canada.” and dated 16 November, 2006 (the “Technical Report”) relating to the Coppercorp Property of Nikos Explorations Ltd. I last visited the Coppercorp Property on 22 November, 2005 for 5 days.
7. I have had prior involvement with the property that is the subject of the technical report. The nature of my prior involvement is managing the exploration programs for Amerigo Resources Ltd and Nikos Explorations Ltd.
8. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
9. I am not independent of Nikos Explorations Ltd. applying all of the tests in section 1.5 of National Instrument 43-101, since I am an insider of the Company and hold securities of the Company.
10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication of the Technical Report by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public.

Dated this 16th day of November, 2006.

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Roger Moss, Ph.D., P.Geol.

**APPENDIX 1.**  
**ROCK SAMPLE DESCRIPTIONS**

<b>Sample No.</b>	<b>Easting (UTM)</b>	<b>Northing (UTM)</b>	<b>Description</b>
33754	670544	5208711	ophitic basalt
33755	671353	5209175	Quartz, epidote vein in a vesicular basalt
33756	671064	5208851	2-5cm vein of malachite in a coarse flow
33757	671643	5209024	1cm malachite, epidote vein in a massive basalt
33758	670979	5208574	strongly epidotized coarse flow
33759	670932	5208536	float, breccia, specks of malachite, cherty, weak hematite
33760	671630	5208526	float, vein breccia, silica, carb., hematite, epidote, specks of chalcocite
33761	671630	5208526	epidote, quartz, hematite, specularite vein
33762	671546	5208486	strongly epidotized coarse flow
33763	672028	5208654	reddish hematite altered felsic unit.
33764	671730	5211313	epidote rich matrix conglomerate
33765	671771	5211293	breccia?, strong epidote matrix
33766	672348	5211394	quartz, epidote veinlets in a vesicular basalt
33767	670859	5208961	conglomerate, hematite, calcite in the matrix
33768	670859	5208961	conglomerate, hematite, calcite in the matrix 1.5m from the vein breccia
33769	670859	5208961	hanging wall vein breccia, basaltic clasts in a calcite, hematite matrix
33770	670859	5208961	footwall vein breccia, basaltic clasts in a calcite, hematite matrix
33771	670854	5208986	vein breccia, calcite, hematite, no visible mineralization
33772	670850	5208982	vein breccia, calcite, hematite, specks of malachite
33773	670850	5208982	vein breccia, calcite, hematite, malachite stains, silicification
33774	670849	5208987	Medium grained basalt. Disseminated specularite, weakly chloritic footwall
33775	670847	5208994	Medium grained massive basalt, 5mm calcite vein in the footwall of the vein breccia

**APPENDIX 2**  
**ASSAY CERTIFICATES**



Quality Analysis ...



Innovative Technologies

Date Submitted: 6/22/2005  
Invoice No.: A05-1884  
Invoice Date: 7/26/2005  
Your Reference: Copper Corp

Nikos Exploration Ltd.  
326 Rusholme Rd.  
Toronto Ontario M6H 2Z5  
Canada

ATTN: Roger Moss

## CERTIFICATE OF ANALYSIS

22 Rock samples were submitted for analysis.

The following analytical packages were requested. 1H: INAA(INAAGEO.REV1)/Total Digestion ICP(TOTAL.REV2)  
8: Code 8-Assays

REPORT      **A05-1884**

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

### Notes:

Elements which exceed the upper limits should be analyzed by assay techniques. Some elements are reported by multiple techniques. These are indicated by MULT.

CERTIFIED BY :

A handwritten signature in black ink, appearing to read "C. Douglas Read". The signature is written in a cursive, flowing style.

C. Douglas Read, B.Sc.  
Laboratory Manager

ACTIVATION LABORATORIES LTD.

Activation Laboratories Ltd. Report: A05-1884 rev 1

Analyte Symbol	Au	Ag	Cu	Cd	Mo	Pb	Ni	Zn	S	Al	As	Ba	Be	Bi	Br	Ca	Co	Cr	Cs	Eu	Fe	Hf	Hg	Ir
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb
Detection Limit	2	0.3	1	0.3	1	3	1	1	0.01	0.01	0.5	50	1	2	0.5	0.01	1	2	1	0.2	0.01	1	1	5
Analysis Method	INAA	MULT INAA / TD-ICP	TD-ICP	TD-ICP	MULT INAA / TD-ICP	TD-ICP	MULT INAA / TD-ICP	MULT INAA / TD-ICP	TD-ICP	TD-ICP	INAA	INAA	TD-ICP	TD-ICP	INAA	TD-ICP	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
33754	<2	0.3	74	0.7	<1	3	251	53	0.01	3.81	<0.5	230	<1	<2	<0.5	8.14	43	311	<1	0.8	6.16	2	<1	<5
33755	2	0.5	30	1.1	<1	12	30	4	0.02	2.81	9.5	<50	<1	<2	<0.5	9.89	4	222	<1	1.3	6.75	2	<1	<5
33758	<2	1.1	8740	1.5	<1	15	104	400	0.03	2.68	4.3	150	<1	<2	<0.5	3.72	50	108	4	1.3	9.98	3	<1	<5
33757	8	1.1	5740	1.1	2	13	23	167	0.10	2.55	2.1	200	<1	<2	<0.5	5.05	25	85	<1	2.0	8.33	3	<1	<5
33758	6	0.5	171	1.0	<1	15	58	46	0.01	3.28	6.5	<50	<1	<2	<0.5	8.84	23	199	<1	1.0	6.66	2	<1	<5
33759	<2	1.3	632	0.5	<1	4	50	325	<0.01	1.91	7.7	240	<1	<2	<0.5	2.15	29	103	8	0.7	5.13	1	<1	<5
33760	25	1.7	1480	1.0	<1	7	15	<1	0.07	1.81	2.6	<50	<1	<2	<0.5	12.2	<1	91	<1	0.6	3.27	1	<1	<5
33761	<2	3.2	64	0.8	<1	8	16	<1	0.01	1.80	2.6	120	<1	<2	<0.5	8.66	2	127	<1	0.8	4.70	1	<1	<5
33762	<2	0.8	77	0.9	<1	13	57	117	<0.01	2.47	3.6	<50	<1	<2	1.3	8.16	36	138	<1	1.5	9.93	3	<1	<5
33763	<2	0.7	44	<0.3	2	17	3	77	<0.01	2.17	29.7	330	7	<2	<0.5	0.16	2	74	25	<0.2	2.45	9	<1	<5
33764	<2	0.4	4	<0.3	3	20	74	148	0.16	2.83	10.3	<50	<1	<2	<0.5	7.08	22	239	<1	1.1	6.62	2	<1	<5
33765	<2	0.5	102	0.4	<1	38	83	90	<0.01	2.65	9.8	<50	<1	<2	<0.5	7.05	18	398	4	0.7	5.96	1	<1	<5
33766	5	0.4	4	0.7	<1	17	99	85	0.01	3.04	5.0	130	<1	<2	<0.5	7.87	30	203	<1	0.8	7.25	1	<1	<5
33767	<2	0.6	12	0.5	<1	13	92	150	<0.01	2.96	3.4	200	<1	<2	<0.5	4.84	30	223	8	0.8	8.14	2	<1	<5
33768	<2	0.4	515	0.7	<1	18	89	124	<0.01	2.68	2.2	200	<1	<2	<0.5	5.63	32	204	11	0.7	8.46	<1	<1	<5
33769	<2	10.4	416	2.8	<1	16	41	197	<0.01	1.66	5.8	380	1	<2	<0.5	1.43	28	162	7	1.1	6.80	2	<1	<5
33770	<2	1.3	379	2.0	2	17	49	125	<0.01	1.41	3.8	140	1	<2	<0.5	0.88	26	200	5	0.7	5.35	2	<1	<5
33771	<2	1.4	261	2.0	1	7	28	75	<0.01	1.24	4.1	200	1	<2	1.0	5.47	12	138	10	0.5	3.52	<1	<1	<5
33772	<2	3.8	3130	32.6	<1	10	12	34	<0.01	0.73	5.5	320	<1	<2	<0.5	6.58	2	167	7	0.7	2.45	1	<1	5
33773	<2	12.9	> 10000	13.7	4	<3	<1	30	0.02	0.70	16.9	220	<1	2	1.3	3.83	2	179	4	<0.2	1.38	<1	<1	<5
33774	8	0.7	999	1.1	<1	30	61	185	0.08	2.54	3.4	410	<1	<2	<0.5	7.25	37	139	7	1.8	9.79	2	<1	<5
33775	5	0.7	94	1.1	<1	30	72	105	0.01	2.54	<0.5	480	<1	<2	<0.5	6.31	29	168	10	1.2	8.03	2	<1	<5

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Analyte Symbol	K	Mg	Mn	Na	P	Rb	Sb	Sc	Se	Sr	Ta	Ti	Th	U	V	W	Y	La	Ce	Nd	Sm	Sn	Tb	Yb
Unit Symbol	%	%	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
Detection Limit	0.01	0.01	1	0.01	0.001	15	0.1	0.1	3	1	0.5	0.01	0.2	0.5	2	1	1	0.5	3	5	0.1	0.01	0.5	0.2
Analysis Method	TD-ICP	TD-ICP	TD-ICP	INAA	TD-ICP	INAA	INAA	INAA	INAA	TD-ICP	INAA	TD-ICP	INAA	INAA	TD-ICP	INAA	TD-ICP	INAA	INAA	INAA	INAA	INAA	INAA	INAA
33754	0.26	3.52	1050	1.38	0.030	< 15	< 0.1	26.1	< 3	173	< 0.5	0.54	< 0.2	< 0.5	205	2	11	4.8	13	< 5	1.9	< 0.01	< 0.5	1.4
33755	0.03	0.18	1000	0.02	0.039	< 15	0.2	23.3	< 3	883	< 0.5	0.69	1.1	< 0.5	187	< 1	12	11.8	25	11	2.9	< 0.01	< 0.5	2.0
33756	1.40	2.39	2180	0.77	0.101	88	0.6	29.9	< 3	46	< 0.5	1.09	1.4	1.5	310	< 1	21	13.0	31	17	4.1	< 0.01	0.7	2.9
33757	0.45	1.48	1670	0.56	0.101	< 15	0.3	33.4	< 3	334	0.9	1.08	1.2	< 0.5	334	< 1	24	14.2	32	20	4.5	< 0.01	< 0.5	3.3
33758	0.02	1.45	1240	0.09	0.050	< 15	0.3	28.7	< 3	597	< 0.5	0.84	< 0.2	< 0.5	284	< 1	15	7.6	20	10	2.8	< 0.01	< 0.5	2.3
33759	0.97	1.44	1850	0.03	0.035	66	1.4	13.5	< 3	23	< 0.5	0.42	0.6	< 0.5	196	< 1	6	5.5	13	7	1.5	< 0.01	< 0.5	1.1
33760	0.02	0.02	781	0.02	0.037	< 15	< 0.1	11.0	< 3	442	< 0.5	0.44	0.6	< 0.5	144	< 1	9	4.7	10	8	1.4	< 0.01	< 0.5	1.1
33761	0.02	0.01	788	0.02	0.036	< 15	< 0.1	15.2	< 3	430	< 0.5	0.49	0.9	< 0.5	188	< 1	12	5.7	12	< 5	1.9	< 0.01	< 0.5	1.4
33762	0.07	1.36	1670	0.74	0.074	< 15	< 0.1	31.6	< 3	645	1.4	0.77	1.1	< 0.5	221	< 1	21	14.5	31	14	4.1	< 0.01	< 0.5	3.1
33763	3.33	0.26	229	0.57	0.002	240	1.0	0.8	< 3	21	10.8	0.04	31.6	6.5	11	< 1	59	6.3	37	8	4.1	< 0.01	1.6	10.2
33764	0.17	1.88	2270	0.03	0.036	< 15	0.3	27.7	< 3	534	< 0.5	0.56	1.8	< 0.5	236	< 1	15	13.8	26	12	2.8	< 0.01	< 0.5	2.2
33765	0.29	1.23	1350	0.02	0.027	< 15	1.1	27.5	< 3	225	< 0.5	0.38	0.7	1.8	177	< 1	12	9.5	18	11	1.9	< 0.01	< 0.5	1.9
33766	0.02	2.08	1810	0.07	0.019	< 15	0.4	35.5	< 3	615	< 0.5	0.38	1.8	1.6	259	< 1	13	8.8	17	7	1.7	< 0.01	< 0.5	2.4
33767	1.42	1.85	1300	1.51	0.038	110	0.5	26.6	< 3	74	< 0.5	0.58	2.3	< 0.5	208	< 1	14	10.4	23	8	2.6	< 0.01	< 0.5	2.3
33768	1.22	1.74	1490	1.10	0.031	97	0.8	26.4	< 3	53	< 0.5	0.50	< 0.2	< 0.5	196	< 1	13	8.8	22	10	2.4	< 0.01	< 0.5	2.0
33769	1.53	0.56	1040	0.05	0.059	104	9.2	21.2	< 3	17	< 0.5	0.59	1.3	< 0.5	153	< 1	11	14.8	29	14	3.1	< 0.01	< 0.5	2.2
33770	0.82	0.84	652	0.04	0.049	48	2.4	18.6	< 3	17	0.8	0.49	1.0	< 0.5	138	5	12	9.8	24	10	2.6	< 0.01	< 0.5	1.6
33771	0.93	0.37	730	0.04	0.027	66	1.4	10.4	< 3	21	< 0.5	0.25	< 0.2	< 0.5	73	1	8	7.6	14	< 5	1.6	< 0.01	< 0.5	1.2
33772	0.64	0.08	557	0.04	0.049	26	1.1	11.4	< 3	24	< 0.5	0.34	< 0.2	1.4	85	2	9	9.6	20	8	2.0	< 0.01	< 0.5	1.2
33773	0.54	0.07	406	0.05	0.532	19	0.7	7.0	< 3	22	< 0.5	0.25	0.8	< 0.5	63	< 1	5	4.3	8	< 5	1.1	< 0.01	< 0.5	0.8
33774	1.73	1.34	1540	0.05	0.063	101	0.5	28.7	< 3	65	< 0.5	0.92	1.2	< 0.5	252	< 1	18	14.3	28	18	4.0	< 0.01	< 0.5	2.8
33775	2.29	0.76	1710	0.12	0.063	109	0.6	27.4	< 3	59	< 0.5	0.80	1.0	< 0.5	283	< 1	19	11.8	28	19	3.6	< 0.01	< 0.5	2.8

Analyte Symbol	Lu	Mass	Cu
Unit Symbol	ppm	g	%
Detection Limit	0.05		0.001
Analysis Method	INAA	INAA	ICP-OES
33754	0.25	27.6	--
33755	0.34	29.5	--
33758	0.46	25.8	--
33757	0.48	30.4	--
33758	0.37	31.1	--
33759	0.22	22.7	--
33760	0.18	34.3	--
33761	0.23	27.6	--
33762	0.50	31.5	--
33763	1.61	19.3	--
33764	0.33	26.9	--
33765	0.31	24.1	--
33766	0.38	27.7	--
33767	0.38	22.3	--
33768	0.41	23.2	--
33769	0.38	19.4	--
33770	0.31	20.7	--
33771	0.17	19.5	--
33772	0.22	22.8	--
33773	0.13	26.3	14.14
33774	0.42	20.1	--
33775	0.47	18.9	--

Quality Control

Analyte Symbol	Au	Ag	Ag	Cu	Cd	Mo	Mo	Pb	Ni	Ni	Zn	Zn	S	Al	As	Ba	Be	Bi	Br	Ca	Co	Cr	Cs	Eu
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Detection Limit	2	0.3	5	1	0.3	1	2	3	1	20	1	50	0.01	0.01	0.5	50	1	2	0.5	0.01	1	2	1	0.2
Analysis Method	INAA	TD-ICP	INAA	TD-ICP	TD-ICP	TD-ICP	INAA	TD-ICP	TD-ICP	INAA	TD-ICP	INAA	TD-ICP	TD-ICP	INAA	INAA	TD-ICP	TD-ICP	INAA	TD-ICP	INAA	INAA	INAA	INAA
DMMAS-10 Meas	471		< 5				< 2			< 20		200			2460	610			2.1		64	136	< 1	0.9
DMMAS-10 Cert	540											220			2240	300			1.9		67	149		0.8
DMMAS-10 Meas	522		< 5				< 2			< 20		130			2170	540			2.5		61	156	< 1	1.2
DMMAS-10 Cert	540											220			2240	300			1.9		67	149		0.80
DMMAS-10 Meas	573		< 5				< 2			< 20		290			2350	440			< 0.5		67	142	< 1	1.1
DMMAS-10 Cert	540											220			2240	300			2		67	149		0.80
33775 Rep Dup	< 2		< 5				< 2			70		110			5.4	570			< 0.5		33	148	5	1.2
33775 Rep Orig	5		< 5				< 2			70		110			< 0.5	480			< 0.5		29	166	10	1.2
SDC-1 Meas		< 0.3		772	0.5	< 1		13	37		99		0.05	1.95				3	< 2					0.98
SDC-1 Cert		0.04		30.0	0.08	0.3		25	38		100		0.06	8.34				3	3					1.0
DNC-1 Meas		0.3		119	0.3	< 1		3	259		54		0.06	3.91				< 1	< 2					6.48
DNC-1 Cert		0.03		98.0		0.7		6	247		66		0.04	9.69				1	0.02					8.06
SCO-1 Meas		< 0.3		36	< 0.3	3		29	31		104		0.07	2.78				2	< 2					2.15
SCO-1 Cert		0.1		29	0.1	1		31	27		103		0.06	7.24				2	0.4					1.87
GXR-6 Meas		0.9		75	0.4	2		94	28		128		0.01	3.37				1	< 2					0.17
GXR-6 Cert		1		66	1	2		100	27		118		0.02	17.7				1	0.3					0.18
GXR-2 Meas		18.6		89	3.8	2		723	22		575		0.03	2.79				2	< 2					0.75
GXR-2 Cert		17.0		76	4.1	2		690	21		530		0.03	16.5				2	0.7					0.93
GXR-1 Meas		31.1		1150	3.6	13		744	40		719		0.25	0.97				1	1380					0.96
GXR-1 Cert		31.0		1110	3.3	18		730	41		760		0.26	3.5				1	1380					0.98
GXR-4 Meas		2.9		6280	0.9	310		43	42		73		1.79	2.28				2	2					1.12
GXR-4 Cert		4.0		6520	0.9	310		52	42		73		1.77	7.20				2	20					1.01
33773 Rep Orig		12.7		> 10000	13.5	4		< 3	< 1		31		0.02	0.73				< 1	2					3.89
33773 Rep Dup		13.0		> 10000	13.9	3		< 3	< 1		29		0.02	0.67				< 1	2					3.58
Method Blank																								
CCU-1C Meas																								
CCU-1C Cert																								
MP-1a Meas																								
MP-1a Cert																								
33773 Rep Orig																								
33773 Rep Dup																								

Quality Control

Analyte Symbol	Fe	Hf	Hg	Ir	K	Mg	Mn	Na	P	Rb	Sb	Sc	Se	Sr	Ta	Ti	Th	U	V	W	Y	La	Ce	Nd
Unit Symbol	%	ppm	ppm	ppb	%	%	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	1	1	5	0.01	0.01	1	0.01	0.001	15	0.1	0.1	3	1	0.5	0.01	0.2	0.5	2	1	1	0.5	3	5
Analysis Method	INAA	INAA	INAA	INAA	TD-ICP	TD-ICP	TD-ICP	INAA	TD-ICP	INAA	INAA	INAA	INAA	TD-ICP	INAA	TD-ICP	INAA	INAA	TD-ICP	INAA	TD-ICP	INAA	INAA	INAA
DMMAS-10 Meas	7.49	2	< 1	< 5				0.73		< 15	14.8	18.8	< 3		< 0.5		1.6	< 0.5		18		11.3	22	< 5
DMMAS-10 Cert	7.64	1						0.74		5.0	15.7	19.1					0.60			15		12.4	21	
DMMAS-10 Meas	7.22	2	< 1	< 5				0.70		< 15	15.2	18.1	< 3		0.5		< 0.2	< 0.5		18		10.7	22	< 5
DMMAS-10 Cert	7.64	1						0.74		5.0	15.7	19.1					0.6			15		12.4	21	
DMMAS-10 Meas	8.16	2	< 1	< 5				0.75		81	16.7	20.1	< 3		< 0.5		1.4	< 0.5		15		12.4	25	< 5
DMMAS-10 Cert	7.64	1						0.74		5.0	15.7	19.1					0.60			15		12.4	21	
33775 Rep Dup	8.05	2	< 1	< 5				0.12		119	0.7	28.6	< 3		< 0.5		1.3	< 0.5		< 1		13.5	28	12
33775 Rep Orig	8.03	2	< 1	< 5				0.12		109	0.6	27.4	< 3		< 0.5		1.0	< 0.5		< 1		11.8	28	19
SDC-1 Meas					2.28	0.78	907		0.048					166		0.57			98			12		
SDC-1 Cert					2.72	1.0	883		0.069					183		0.61			100			40		
DNC-1 Meas					0.18	4.91	1090		0.021					144		0.27			146			12		
DNC-1 Cert					0.19	6.06	1150		0.037					145		0.29			148			18		
SCO-1 Meas					2.14	1.66	430		0.072					182		0.34			140			14		
SCO-1 Cert					2.30	1.64	410		0.090					174		0.36			131			26		
GXR-6 Meas					1.31	0.28	1010		0.055					34		0.48			203			2		
GXR-6 Cert					1.87	0.61	1010		0.035					35					186			10		
GXR-2 Meas					1.06	0.61	954		0.055					144		0.30			58			6		
GXR-2 Cert					1.37	0.85	1010		0.10					160					52			20		
GXR-1 Meas					0.05	0.18	904		0.051					315		0.03			77			25		
GXR-1 Cert					0.05	0.22	852		0.065					275					80			32		
GXR-4 Meas					3.66	1.69	157		0.129					231		0.27			88			9		
GXR-4 Cert					4.01	1.66	155		0.120					221					87			10		
33773 Rep Orig					0.55	0.07	413		0.529					25		0.25			63			6		
33773 Rep Dup					0.54	0.06	400		0.535					19		0.25			62			5		
Method Blank																								
CCU-1C Meas																								
CCU-1C Cert																								
MP-1a Meas																								
MP-1a Cert																								
33773 Rep Orig																								
33773 Rep Dup																								

Quality Control							
Analyte Symbol	Sm	Sn	Tb	Yb	Lu	Mass	Cu
Unit Symbol	ppm	%	ppm	ppm	ppm	g	%
Detection Limit	0.1	0.01	0.5	0.2	0.05		0.001
Analysis Method	INAA	INAA	INAA	INAA	INAA	INAA	ICP-OES
DMMAS-10 Meas	3.4	< 0.01	< 0.5	3.7	0.68	20.1	
DMMAS-10 Cert	3.8			3.2	0.51		
DMMAS-10 Meas	3.5	< 0.01	< 0.5	3.6	0.85	20.1	
DMMAS-10 Cert	3.8			3.2	0.51		
DMMAS-10 Meas	3.9	< 0.01	< 0.5	3.6	0.60	19.9	
DMMAS-10 Cert	3.8			3.2	0.51		
33775 Rep Dup	4.1	< 0.01	< 0.5	2.7	0.46	18.1	
33775 Rep Orig	3.6	< 0.01	< 0.5	2.8	0.47	18.9	
SDC-1 Meas							
SDC-1 Cert							
DNC-1 Meas							
DNC-1 Cert							
SCO-1 Meas							
SCO-1 Cert							
GXR-6 Meas							
GXR-6 Cert							
GXR-2 Meas							
GXR-2 Cert							
GXR-1 Meas							
GXR-1 Cert							
GXR-4 Meas							
GXR-4 Cert							
33773 Rep Orig							
33773 Rep Dup							< 0.001
Method Blank							25.35
CCU-1C Meas							25.62
CCU-1C Cert							1.455
MP-1a Meas							1.440
MP-1a Cert							14.08
33773 Rep Orig							14.21
33773 Rep Dup							