Results of Mobile Metal Ions Process Soil Geochemical Surveys on the Burntbush Property of Lake Shore Gold, Timmins Area, Ontario

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PREAMBLE

The exploitation of mineral commodities in the near-surface geological environment has become increasingly difficult due to the exhaustion of mineralization exposed at surface and the mantling of prospective bedrock by glacially transported till and its derivatives. Thick glaciofluvial and glaciolacustrine sediments topped by organic deposits make mineral exploration in these terrains challenging. For this reason a plethora of innovative exploration geochemical selective and partial digestions, coupled with state-of-the-art instrumentation capable of measuring concentrations in the parts per billion (ppb) and sub-parts per billion ranges, have been developed. These techniques offer the explorationist tools to "see through" overburden and derive useful mineral exploration data for integration with geology and geophysics and ultimately for drill-testing multivariate anomalies. Disrupted overburden, such as that observed with logging practices (scarification), tends to complicate MMI responses although modified sampling practices can be adopted to rectify this disturbed environment. Areas affected by landslide are also complicating factors.

The proprietary Mobile Metal Ions Process (MMI) soil geochemical technique has been utilized on a wide range of commodity types from base and precious metals to diamonds worldwide. The Technology has also been utilized to map bedrock lithologies in overburden covered terrain. The Process is based upon proprietary partial extraction techniques, specific combinations of ligands to keep metals in solution, and relies on strict adherence to sampling protocols usually established during an orientation program. Geochemical data resulting from MMI analysis of improperly collected soils cannot be ameliorated with univariate and/or multivariate statistical and graphical solutions.

The recognition of anomalies in geochemical data has progressed from simple visual inspection in small data sets to multivariate, parametric and non-parametric or robust statistical methods for large datasets usually extracted from regional geochemical surveys. Derived parameters from these statistical exercises, such as factor scores or discriminant functions, have been successfully utilized in reducing a large number of potentially useful variables to a select few variables that identify and localize anomalous geochemical signatures. These statistical approaches have been required to manipulate accurate and precise, low-cost, multi-element geochemical data.

The MMI technology uses a different approach to exploration geochemistry by analyzing soils for a select few commodity elements upon which to base property evaluations. Having stated this, the MMI-M multi-element suite that was utilized to analyze inorganic soils from the Burntbush property survey consists of analyses for a wide range of elements. These consist of a multi-element suite that reports ppb and sub-ppb analyses for base and precious metals, pathfinder elements for these commodities, as well as elements useful for mapping bedrock geology obscured by glacial overburden and its derivatives. A small number of elements in this package report in the ppm concentration range (AI, Ca, Mg, Fe, K, Mn, and P). The large number of elements in the database provides an opportunity to assess an area of interest for a wide range of metallic mineral deposits with only minor drawbacks in terms of lower limits of determination. The specific details of this assessment are described below.

TERMS OF REFERENCE

The author of this report was contracted by Mr. Keith Green of Lake Shore Gold Corporation ("LSG") to undertake the interpretation of Mobile Metal Ions soil geochemical survey data from their Burntbush property in the Timmins, Ontario area. The surveys were undertaken to assess the property for MMI geochemical signatures related to stratigraphically/structurally-controlled base and precious metal mineralization in deep overburden scenarios. The Burntbush property is mantled by overburden that exceeds thicknesses of 25 m or more. Soil samples were collected according to protocols established in previous orientation surveys undertaken in the area by LSG. This report represents a final interpretation of work undertaken in and 2011 and is completed with recommendations for follow-up exploration. The description of MMI element suite responses in this report includes a review of the magnitude and morphology of responses for a suite of elements drawn from 53 reported elements. Samples were collected between 30 cm and 40 cm below the zero datum as indicated by previous orientation survey as the optimum and most representative sample depth. The property location and that of the MMI survey area are given in **Figure 1**.

The soil geochemical survey was undertaken between October 14 and December 6, 2011.

PROPERTY DESCRIPTION AND LOCATION

Burntbush Property Claims

Lake Shore Gold's Burntbush Property consists of a 100% owned land package comprising 75 claims with 974 claim units within the Bradette, Noseworthy and Hoblitzell, townships within the Larder Lake Mining Division, Ontario. The property is contiguous with Lake Shore Gold's 100% owned Blakelock Property, both of which are shown in **Figure 1**. A claim status summary table of the Burntbush claim group is shown below (**Table 1; Figure 2**).

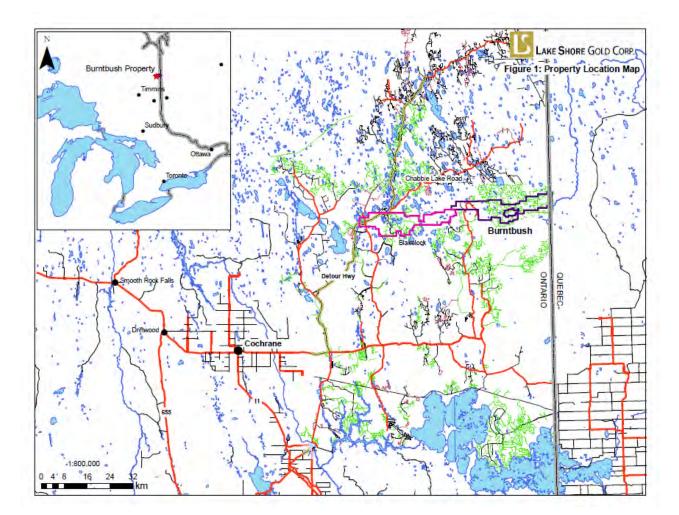


Figure 1. Location map for the location of the Highway 144 property and the 2011 Mobile Metal lons survey.

Claim Number	Township	No. of Units	На	Expiry/ Assessment Due Date	Assessment \$ Due	\$ Claim Bank
4229278	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4229279	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4229280	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4229283	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4229284	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4229285	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4229286	Bradette	9	144	16-May-13	\$3,600.00	\$0.00
4229287	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4229288	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4229292	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4229293	Bradette	15	256	16-May-12	\$6,000.00	\$0.00

Table 1: Burntbush Mining Claims (current as of January 25, 2012).

Lake Shore Gold Burntbush MMI-M Survey: 2011 by Mount Morgan Resources Ltd.

4229295	Bradette	8	240	16-May-13	\$3,200.00	\$0.00
4241931	Bradette	8	128	16-May-13	\$3,200.00	\$0.00
4241947	Noseworthy	12	224	16-May-13	\$4,800.00	\$0.00
4241950	Noseworthy	15	240	16-May-12	\$6,000.00	\$0.00
4243001	Noseworthy	6	80	16-May-13	\$2,400.00	\$0.00
4243005	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243006	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243007	Noseworthy	16	224	16-May-12	\$6,400.00	\$0.00
4243008	Noseworthy	12	192	16-May-13	\$4,800.00	\$0.00
4243009	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243010	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243011	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243012	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243013	Noseworthy	12	192	16-May-13	\$4,800.00	\$0.00
4243014	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4243015	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4243016	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4243017	Noseworthy	5	96	16-May-13	\$2,000.00	\$0.00
4243018	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243019	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243020	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243021	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243024	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4243025	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4243026	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4243027	Bradette	16	256	16-May-12	\$6,400.00	\$0.00
4243029	Bradette	8	128	16-May-13	\$3,200.00	\$0.00
4243030	Bradette	9	144	16-May-13	\$3,600.00	\$0.00
4243031	Noseworthy	15	240	16-May-12	\$6,000.00	\$0.00
4243033	Noseworthy	14	224	16-May-12	\$5,600.00	\$0.00
4243034	Noseworthy	8	128	16-May-13	\$2,800.00	\$0.00
4243035	Noseworthy	6	96	16-May-13	\$2,400.00	\$0.00
4243038	Noseworthy	4	64	16-May-13	\$1,600.00	\$0.00
4243039	Noseworthy	6	96	16-May-13	\$2,400.00	\$0.00
4243040	Noseworthy	9	144	16-May-13	\$3,600.00	\$0.00
4243041	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243042	Noseworthy	14	224	16-May-12	\$5,600.00	\$0.00
4243043	Noseworthy	4	64	16-May-13	\$1,600.00	\$0.00
4243044	Noseworthy	15	240	16-May-12	\$6,000.00	\$0.00
4243045	Noseworthy	14	224	16-May-12	\$5,600.00	\$0.00
4243046	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243047	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
4243048	Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00

Lake Shore Gold Burntbush MMI-M Survey: 2011 by Mount Morgan Resources Ltd.

Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
Noseworthy	15	240	16-May-12	\$6,000.00	\$0.00
Bradette	14	224	16-May-12	\$5,600.00	\$0.00
Bradette	3	48	16-May-13	\$1,200.00	\$0.00
Noseworthy	12	192	16-May-13	\$4,800.00	\$0.00
Noseworthy	12	192	16-May-13	\$4,800.00	\$0.00
Noseworthy	10	160	16-May-13	\$4,000.00	\$0.00
Noseworthy	13	208	16-May-12	\$5,200.00	\$0.00
Noseworthy	4	64	16-May-13	\$1,600.00	\$0.00
Noseworthy	10	160	16-May-12	\$4,000.00	\$0.00
Noseworthy	16	256	16-May-12	\$6,400.00	\$0.00
Hoblitzell	12	192	16-May-13	\$4,800.00	\$0.00
Hoblitzell	12	192	16-May-13	\$4,800.00	\$0.00
Hoblitzell	16	256	16-May-12	\$6,400.00	\$0.00
Hoblitzell	16	256	16-May-12	\$6,400.00	\$0.00
Hoblitzell	12	192	16-May-13	\$4,800.00	\$0.00
Hoblitzell	16	256	16-May-12	\$6,400.00	\$0.00
Hoblitzell	12	192	16-May-13	\$4,800.00	\$0.00
Hoblitzell	12	192	16-May-13	\$4,800.00	\$0.00
Hoblitzell	16	256	16-May-12	\$6,400.00	\$0.00
Noseworthy	1	16	12-Mar-13	\$400.00	\$0.00
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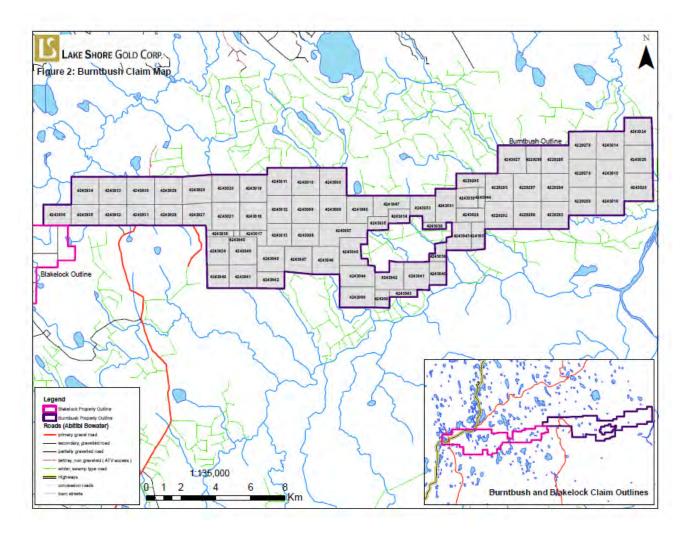


Figure 2. Burntbush property claim map.

ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

Accessibility

Year round access to the western edge of the Blakelock Property is provided along Ontario Highway 652 (the Detour Lake Gold Mine Road) which is a paved highway with snowplow operations in the winter. Limited access to the western interior of the property is provided by well to moderately maintained logging roads- specifically Chabbie Lake Road. All access to the east Burntbush claims are by snow machine in the winter or helicopter. A series of winter logging roads run throughout the property allowing good snow machine access, some of these can also be used by Argos in the summer.

For the purposes of this exploration program Expedition Camp and Logistics was contracted by Lake Shore Gold to put install and maintain a 10 man camp with a cook on the east end of the sampling grid. Expedition Helicopters provided weekly helicopter support to the camp for supplies and crew changes etc.

Climate

Burntbush Property occurs in the northern Subarctic Climate zone which traditionally sees short cool summers, and long cold winters. Daily highs average -10°C and daily lows average -23°C during the winter. During the coldest parts of winter the temperature can drop below -40°C. Average summer highs are 22°C with lows dropping to 8°C. During warm spells the temperature can reach 30° C. Most precipitation is in the form of snow which often covers the ground permanently from late November to early May. Average snowfall for the area is 297cm annually, with a total of 880mm of annual average precipitation

(http://www.climate.weatheroffice.gc.ca/climate_normals/results_e.html?stnID=4142&prov=&lang=e&dCode=4&dispBack =1&StationName=Cochrane&SearchType=Contains&province=ALL&provBut=&month1=0&month2=12).

There are no known environmental or water quality issues known within the zone.

Local Resources and Infrastructure

Supplies and services such as food, fuel, and helicopter services are available in the town of Cochrane, Ontario which is approximately 100 km away. Due to the remoteness of the work area all supplies were purchased in Cochrane and flown into a camp on the work site which was owned and maintained by Expedition Camp Services and Logistics which operates out of Cochrane. For more specialized supplies and personnel the closest larger town would be Timmins, Ontario located approximately 155 km southwest of the property.

Physiography

The area is very flat and swampy with multiple small lakes and rivers running throughout. The flatness is caused by the under-laying "clay belt" which represents the bottom of the late ice age Lake Ojibway (Boissonneau, 1966; Barnett, 1992). It was deposited during the waning phases of the Wisconsin glaciations. Drainage flows northwards into James Bay as part of the Arctic watershed. Outcrops are very rare on the property.

WORK HISTORY

The Burntbush property is 45 kilometres west of the Casa Berardi Gold Mine and approximately 65 kilometres SSW of the Detour Lake Gold Mine. Below is a summary of the historical work completed on and in the area of the Burntbush claims with associated assessment file numbers. A map showing the location of historical diamond drill holes is shown in **Figure 3**.

1958-59: Conwest Exploration Co. Ltd. completes diamond drilling in eleven (11) holes totaling 2987 feet or 910 metres of drilling in holes 8, 9, 1, 2A, 2B, 2C, 7, 3, 4, 5, and 6. No assays are in the drill logs. (<u>32E05NW0018</u>)

1965: Rio Tinto Canadian Exploration Ltd. completes seven (7) holes totaling 2107 feet or 642 metres in holes 1, 1A, 5, 6, 7, B-1 and B-2. No significant gold values were noted in the logs (<u>32E12SE0062</u>)

1966: Rio Tinto Canadian Exploration Ltd. completes a gravity and EM survey over certain areas as a follow up to an airborne electromagnetic survey. (<u>32E12SE0063</u>)

1974: Dome Exploration (Canada) Ltd. completes five (5) diamond drill holes totaling 2561 feet or 780.5 metres in holes 59-6, 59-7, 59-8, 59-12, 59-14A, and 59-5. No significant assays were noted in the drill logs. (<u>32E12SE0093</u>)

1974: Dome Exploration (Canada) Ltd. completes one (1) hole on the northern claims totaling 305 feet or 93 metres in hole 59-4. No significant assays were noted in the log. (<u>32E12SE0964</u>)

1976: Geophysical Engineering completes one (1) diamond drill hole totaling 312 feet or 95 metres of drilling in hole CC-4. No significant assays were noted within the log. (<u>32E12SW0022</u>)

1981-1982: Noranda Exploration Co. Ltd. completes three (3) holes totaling 1401 feet or 427 metres in holes BR81-31, BR82-3A and BR82-2. (32E12SE0051)

1983: Newmont Exploration of Canada Ltd. completes overburden drill on fifteen (15) holes in holes MOV-83-1- to -9, MOV-83-11, and MOV-83-13 to MOV-83-18 (<u>32E12SE0045</u>).

1982-1983: Noranda Exploration Ltd. conducts ground magnetic survey on the claims near the Quebec-Ontario border. (32E12SE0048). They also conducted a H.E.M survey in the same area (32E12SE0050).

1984: Golden Shield Resources Ltd. completes a combined helicopter borne magnetic and electromagnetic survey over the western claims (<u>32E05NW0017</u>)

1984: Newmont Exploration Ltd. completes nine (9) holes during winter/spring totaling 8035 feet or 2449 metres in holes MK-84-2 to MK-84-10. (<u>32E12SE0042</u>)

1984: Canadian Nickel Company Ltd completes geological mapping during the summer

1984: Noranda Exploration Co. Ltd. completes four (4) holes totaling 1907 feet or 581 metres of drilling in holes 84-1, 84-1A, 84-2, and 84-2A. No significant gold values were noted in the logs.

1985: Noranda Exploration Company Ltd. completes overburden drilling in eleven (11) holes totaling 1370 feet or 417.6 metres in holes BR-85-01 to BR-85-10 including BR-85-02B. (<u>32E12SE0036</u>)

1985: Canadian Nickel Company ltd. completes a ground magnetometer and induced polarization survey over claims that border the Quebec-Ontario border. (<u>32E12SE0037</u>).

1986: Newmont Exploration of Canada Ltd. completes four (4) holes during February/March totaling 688 metres of drilling in holes 262-86-1, 262-86-2, 262-83-3, and 262-86-12 on the east side of the property (<u>32E12SE0038</u>).

1986: Canadian Nickel Company Ltd. completes reverse circulation drilling on the east side of the property totaling 160 overburden samples (<u>32E12SE0033</u>).

1986: Newmont Exploration of Canada Ltd. completes three (3) holes totaling 514 metres in holes 262-86-10, 262-86-11, 262-86-17 on the centre non-Lake Shore claims. (<u>32E12SE0075</u>)

1986: Dome Exploration (Canada) Ltd. completes an airborne magnetic and VLF survey that covers some of the northern claims. (<u>32E12SE9999</u>)

1986: Cogema Canada Ltd. completes physical trenching, on the western claims (32E12SW0019).

1987: Newmont Exploration completes two (2) holes in March totaling 560.83 metres in holes 262-87-4 and 262-87-7. Assays are available, but only anomalous gold values are noted. <u>(32E12SE0022)</u>.

1987: Noranda Exploration completes a small ground magnetometer and electromagnetic survey on the eastern claims (<u>32E12SE0920</u>) and an aeromagnetic survey (<u>32E12SE0065</u>) which outlined the iron formation in the area.

1987: Inco Limited drills four (4) holes during February/March on the eastern part of the property totaling 992.6 metres of drilling in holes 76250-0, 76252-0, 76255-0, and 76262-0 as part of a JV with Canadian Nickel Company Ltd. (32E12SE0025)

1987: Glencannon Resources Inc. completes a diamond drill program totaling 3003 feet or 915.3 metres in three (3) holes labeled GL-1-87, GL-2-87 and GL-3-87 on the northern part of the property. No significant assays were observed. They also completed an EM-16 VLF Survey over the area. (32E12SE0074/76)

1987: Canadian Nickel Company Ltd. completes 1038m of drilling in five (5) holes on the northeast side of the property in holes 76239-0, 762242-0, 76246-0, 76247-0, and 76249-0. No significant gold values were noted within the logs. (<u>32E12SE0034</u>)

1987: Newmont Exploration of Canada Ltd. completes diamond drilling in eight (8) holes totaling 1824.92 metres in holes 261-87-1 to 261-87-8 inclusive. Few anomalous gold values were noted within the drill logs. (<u>32E05NW0031</u>)

1987-1988: Cogema Canada Ltd. completes two reverse circulation drilling programs including 133 holes in 1987 totaling 2034.5 metres and forty (40) holes totaling 757.6m in 1988. Also in 1988 a ground geophysical survey was completed. (<u>32E12SW0017</u>).

1988: Noranda Exploration Co. Ltd. completes one (1) diamond drill hole totaling 606 feet or 184.7 metres in hole BR-88-1A. Assays were not provided. (<u>32E12SE0021</u>)

1988: Cogema Canada Ltd. completes a diamond drilling program with five (5) drill holes totaling 1258.5 metres of drilling in holes BUR-02 and BUR-05 to BUR-08. Weakly anomalous values only were noted. (32E12SW0013).

1990: Pamorex Minerals Inc. completes eight (8) drill holes totaling 2326.3 metres in holes MK-90-1 to MK-90-8. Only very weakly anomalous gold values were observed. A ground I.P survey was also completed (32E12SE0014)

1992: Aurizon Mines Ltd. completes a 1325.8 metre diamond drilling program totaling six (6) drill holes labeled HA-92-01 to HA-92-06 inclusive. No significant results were obtained. (32E12SW0001).

1993: Les Mines Casa Berardi drills three (3) holes totaling 665.5 metres in holes BH84796, BH844797, BH8798, as well as ground I.P in the east of the property as part of a JV with TVX Gold. (32E12SE0001)

GEOLOGICAL SETTING

Regional Geology

The Burntbush Property is located along the Casa Berardi Deformation Zone ("CBDZ") in the western part of the Northern Abitibi Greenstone Belt ("Northern Abitibi"). The Northern Abitibi is an Archean supracrustal complex composed of moderate to highly deformed rocks (of meta-volcanic rocks and meta-sedimentary assemblages), usually of the greenstone facies. The meta-volcanic rocks are predominantly massive or pillowed flows with minor feldspar porphyry interflow. The meta-sedimentary rocks tend to occur as interbedded greywacke, siltstone, argillite and conglomerates. Banded iron formations are interbedded between volcanic flows. The metavolcanic and metasedimentary rocks are bounded by granitic rocks to the north, west and south and intruded by several large granitic batholiths.

Property Geology

Geological mapping of the property is made difficult because of the lack of outcrop so most of the geological interpretation has been based on drill core. Volcanic rocks vary from mafic to intermediate and massive to pillowed metavolcanic rocks with minor amounts of intermediate to felsic metavolcanic rocks. The volcanic rocks are often intruded by quartz-feldspar porphyry dykes. The metasedimentary rocks are predominantly biotite rich meta-sediments, greywacke, conglomerate and magnetite bearing iron formation. Several mafic to intermediate dykes have been observed intruding both the volcanic and sedimentary rocks. All of the above assemblages have been cut by late intruding diabase dykes.

Mineralization

Regional Gold Mineralization

Approximately 45 km east of Burntbush, the Casa Berardi Gold Mine is located on the Casa Berardi Deformation Zone ("CBDZ"). The Casa Berardi gold deposits can be classified as an Archean sedimentary hosted lode gold deposit. The gold mineralization is occurs mainly south of the Casa Berardi fault and occasionally on both sides of the fault. Since the start of production in 1986 the mine has produced over 1.3 million recovered ounces of gold including 636,400 recovered ounces since recommencement of production in December of 2006. ESO Uranium Corp's Mikwam Project, which is a claim group within the Lake Shore ground, reports a "geologically inferred resource' of 1,504,300 tonnes grading 3.21 g/t totaling 155,827 oz (Non NI 43-101 compliant).

Regional VMS Mineralization

Historical reconnaissance exploration efforts in the Burntbush/Blakelock region have been focused on volcanogenic massive sulphide ("VMS") deposits. About 40 km directly east in Quebec, several VMS discoveries have been found around the margin of the Mistaouac batholith, a synvolcanic intrusion. In particular, properties held by Cambior Inc. cover a mixed volcanic-sedimentary package on the NW margin of the batholiths. Approximately 15 km due east of the Casa Berardi Mine, the Estrades Mine has Total Production + Reserves of 884,118 tonnes at 0.9% Cu, 10.4% Zn, 5.3 g/t Au and 165 g/t Ag (from Cogitore website: <u>http://www.cogitore.com/estrades.htm</u>).

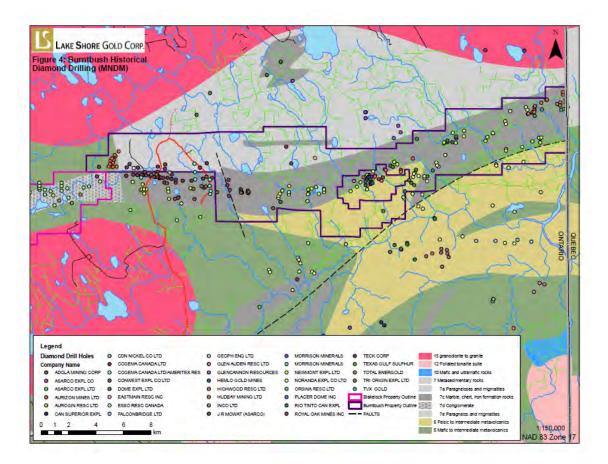


Figure 3. Regional geology and compilation of historic diamond drilling.

PURPOSE OF THE MMI SURVEY

The Burntbush MMI exploration survey undertaken by LSG was designed to assess the survey area for the discovery of geochemical signatures related to base metal massive sulphide-type mineralization and precious metal mineralization. The overburden cover has hindered exploration, with the potential for modifying geophysical responses in some areas and accordingly the MMI survey is an attempt to provide a tool for focused exploration. The depth of high-contrast residence sites of base and precious metals in the soil profile was determined by earlier orientation surveys in this terrain/landscape environment.

Sampling on the Burntbush project took place from October 10th until December 6th, 2012. Crew sizes varied from 4 to 8 men (two men per team) and were led in the field by contractors from Mount Morgan Resources and employees from Lake Shore Gold Corp. Kara Byrnes, P.Geo and Bruce Raine, employees of Lake Shore Gold Corp., oversaw the field work and made weekly visits into the camp. Daily personnel logs are provided in Appendix 4.

Sample Collection and Analysis

Sample collection techniques for this survey were determined during earlier orientation surveys undertaken by Mount Morgan Resources Ltd. Samples were collected according to protocols developed for the landscape environment that exists at Burntbush. Sample locations and sample descriptions based on UTM coordinates are presented in **Figure 4**. A total of 3233 samples were collected including field duplicates totaling approximately 80.0 grid kilometers. The digital version of this figure can be found in **Appendix 3**.

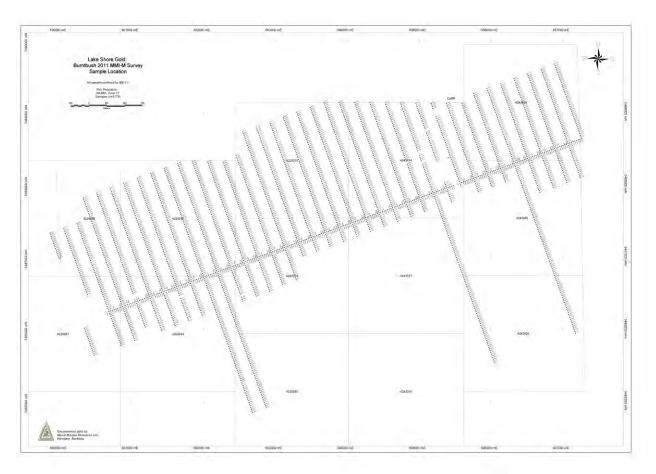


Figure 4. Detailed sample location map, Burntbush MMI-M survey.

In MMI surveys there are some general approaches that are used to guide sample collection including preferred depths of sampling and these are described briefly here. Additional information is also available from the SGS Mineral Services website (<u>www.sgs.com/geochemistry</u>). The intellectual property that is MMI Technology was recently purchased by SGS and as such SGS Mineral Services is the sole provider of this service.

Soil samples, each weighing approximately 250 grams, are usually collected at variable sample spacing along single transects over known mineralized zones or extrapolated trends of these zones. Generally, 25-m stations in precious metal exploration and up to 50 m in the case of base metals are the routine spacing. Sample spacing should be established on the basis of a "best-estimate" of the likely target being sought with estimates from historical data or exploration results from nearby programs. Initially, samples are often collected at a closer spacing until it is determined that a larger spacing is appropriate to the target being sought. At the Burntbush property the soil samples were collected from both hand-dug pits and with the use of a Dutch auger, in many cases with multiple extensions. Using this approach near 100% sample recovery was achieved on the property. The target depth was 30-40 cm below the "zero datum" or the point at which soil formation is initiated in this environment. The sample collected at this depth is a continuous 15 cm long plug of sediment or a continuous vertical channel of sediment. Samples are bagged on site without preparation and shipped to SGS Laboratories (Toronto, Ont.) for MMI-M analysis. The MMI-M is a pH-neutral extraction with analytical finish by inductively coupled plasma-mass spectrometry (ICP-MS).

Data Treatment and Presentation

In exploration surveys where sampling and analytical protocols have been determined by an orientation survey, analytical data is examined visually for analyses less than the lower limit of detection (<LLD) for ICP-MS. Data <LLD are replaced with a value ½ of the LLD for statistical calculations and graphical representation. For most exploration surveys, MMI data is plotted as response ratios. For the calculation of response ratios the 25th percentile is determined using the software program SYSTAT (V10) and the arithmetic mean of the lower quartile used to normalize all analyses. The normalized data represent "response ratios" which are then utilized in subsequent plots. Zeros resulting from this calculation are replaced with "1". Response ratios are a simple way to compare MMI data collected from different grids, areas and environments from year to year. This normalized approach also significantly removes or "smoothes" analytical variability due to inconsistent dissolution or instrument instability. For the 2011 Burntbush survey the interpretation is based on response ratios.

Analytical data as received from SGS Mineral Services is presented in Appendix 1. Analytical data from analytical duplicates, replicate analyses of standard MMI reference materials and analytical blanks are given in Appendix 2. The 25th percentiles and backgrounds used to calculate response ratios are included in Appendix 2 with the edited analytical data. The variation in concentration of MMI-M suite elements on the Burntbush property is discussed in a geochemical narrative based on bubble plots produced with Vertical Mapper, a module within MAPINFO.

The bubble plots presented in Appendix 3 are based upon all data and presented as non-truncated as well as truncated plots that permit the assessment of the lower contrast geochemical flux in the dataset. This is accomplished by truncating all response ratios >100RR, re-setting these responses to 100RR and re-plotting. Simple linear regression plots assessing quality assurance are also presented in Appendix 3 for both analytical and field duplicates.

RESULTS

Quality Control

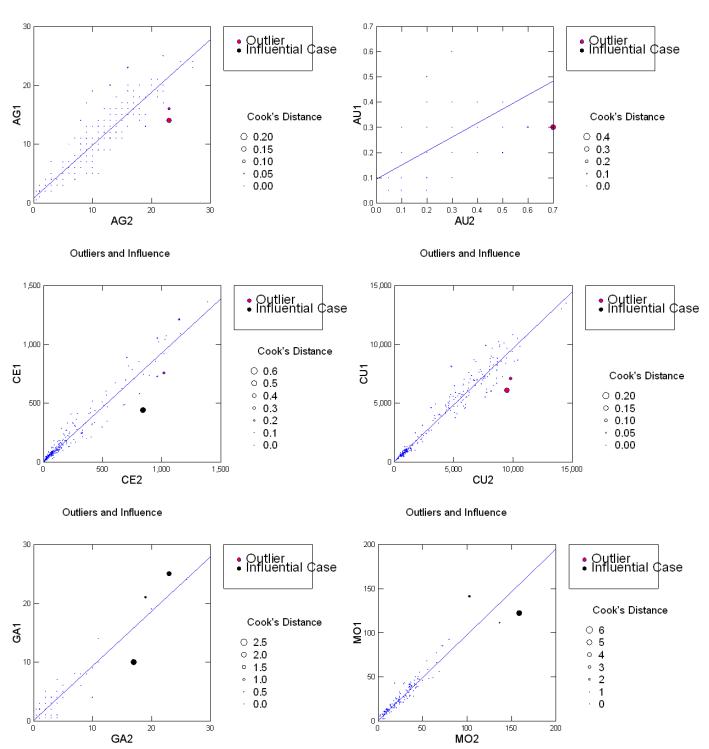
Data Reproducibility-Analytical Duplicates

The ability to reproduce analytical duplicates in this dataset is reviewed with the use of simple linear regression and the calculation of Cook's Distances (**Figure 5**). This approach identifies outliers in the dataset. Only plots for important commodity, pathfinder and lithologically-sensitive elements are given below.

Analytical duplicate sample analyses are presented in Appendix 2 with plots in Appendix 3. These data permit an assessment of the ability to reproduce analyses at a wide range in concentration. In the 2011 analytical data it is observed that the duplicate pairs exhibit a very high degree of reproducibility across a wide range in concentration for most MMI-M elements including the base and precious metal commodity elements Ag, Au, Cu, Ga, Mo, Pb and Zn, important commodity elements in this study, and for the lithologically-sensitive elements Ce, Nb, P and Ti. Any variability that exists between duplicates is generally within +/- 25% and as such is interpreted not to be a hindrance to interpretation and the recognition of **bona fide** trends and anomalies in the dataset. Most variability occurs at or near the lower limit of determination. Some analytical duplicate pairs exhibit significant variance at lower concentration levels near the analytical limits of determination. It is noted that this variability is not uniform for all duplicate pairs and for most pairs the reproducibility for these elements is excellent. The use of simple linear regression for duplicate pairs and analyses for important commodity and lithologically-sensitive elements in this study indicate the excellent linear relationship that exists between these duplicate pair analyses. Although some outliers are identified in these plots the overall quality of the data is considered as excellent based on the very low Cook's Distances that accompany the plots. The results for Au are difficult to assess as the concentration of Au is at or near the LLD for all duplicate pairs.

Outliers and Influence

Outliers and Influence



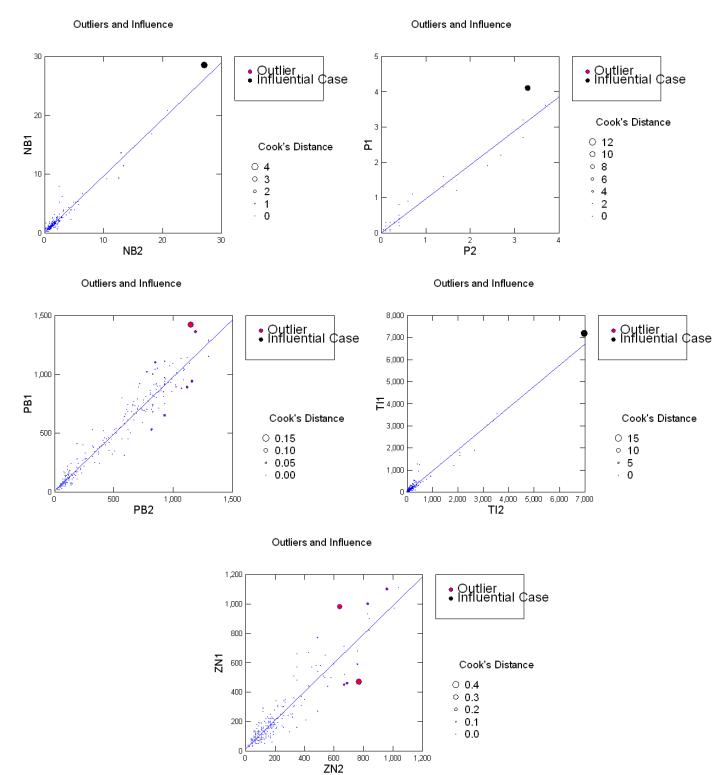
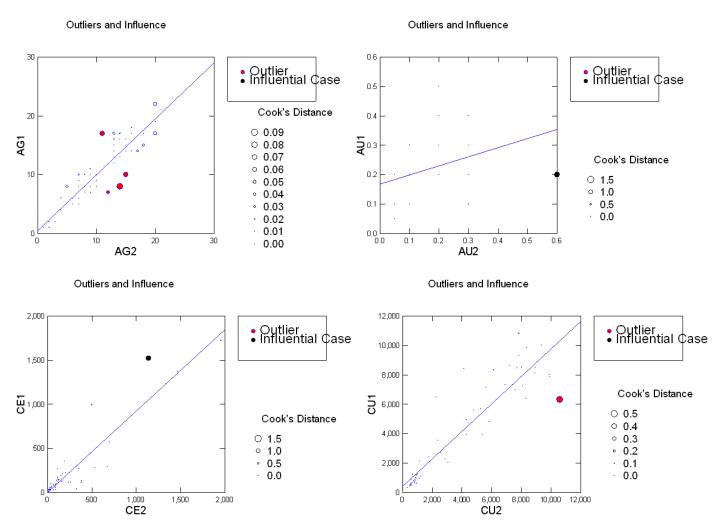


Figure 5. Simple linear regression plots with calculated Cook's Distances for analytical duplicates for selected commodity and lithologically sensitive elements.

Data Reproducibility-Field Duplicates

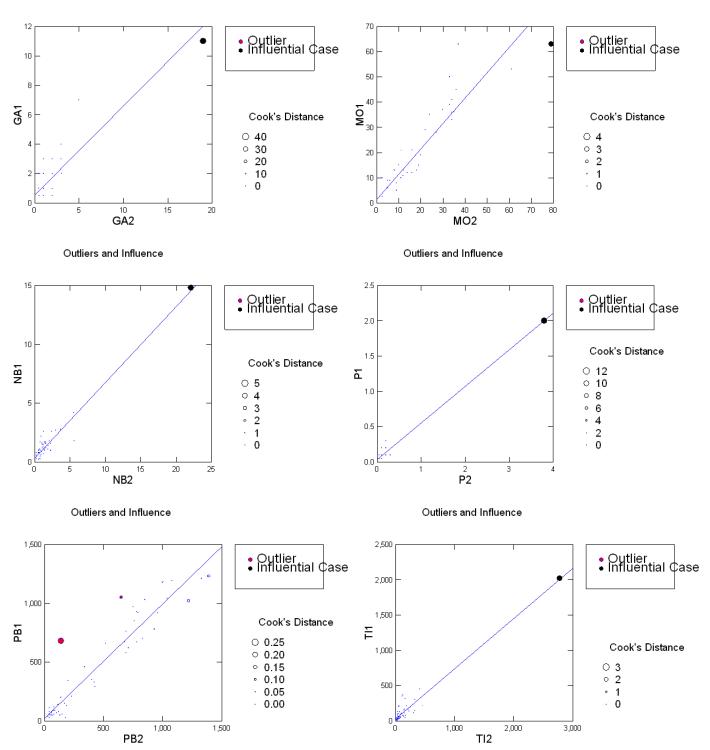
Duplicate samples collected in the field are usually sampled either from the same hand-dug pit as the original sample, from a second pit within a metre or so of the initial pit or in the case of an auger sample as close to the original auger site as possible. This provides an initial check on whether the analytical results of the first sample can be reproduced. The Simple Linear Regression plots given in **Figure 6** illustrate the results of duplicate sample analyses. These samples are "disguised" with individual and distinct sample numbers when submitted to the analyst such that they are invisible. The results for the same suite of elements that were plotted for analytical duplicates are given below. Results indicate some outlier duplicate sample pairs are present but generally the Cook's Distances are very small suggesting the aberrant duplicate pair does not extend far from the remainder of the rest of the sample population. This applies to the elements Ag, Cu, Pb and Zn. Despite some variability in duplicate sample analyses the Cook's Distances are quite small. The results are interpreted as indicating a lack of significant variability in field duplicate sample analyses. Moreover, if the analyses are converted to response ratios there would be no significant difference between plots for any of these elements whether they were the initial sample or the duplicate sample.



Lake Shore Gold Burntbush MMI-M Survey: 2011 by Mount Morgan Resources Ltd.

Outliers and Influence

Outliers and Influence



Outliers and Influence

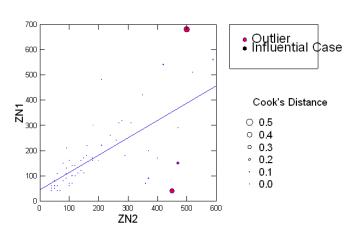


Figure 6. Simple linear regression plots with calculated Cook's Distances for field sample duplicates for selected commodity and lithologically sensitive elements.

The larger Cook's Distances for the elements Mo, Nb, P and Ti are the result of a single duplicate pair with significantly higher concentrations than the remainder of the samples.

Standard Reference Materials

Three standards (MMISRM16, MMISRM18 and AMIS0169) were used to bracket MMI-M analyses of the Burntbush samples. Results for each are discussed briefly below. All data is presented in the QAQC file in **Appendix 2**. No significant variability in the replicate analyses of these standards is noted. There is no indication that any of the observed variability is capable of disguising an MMI anomaly in the Burntbush MMI database.

Standard Reference Material MMISRM16 (n=5)

Results from replicate analyses for this standard indicate accurate and reproducible analyses have been obtained from this standard. Some variability is noticed for Gd with a range of analyses of 3-6 ppb versus a recommended value of <1 ppb. On the basis of 5 replicate analyses this result is considered to be insignificant.

Standard Reference Material MMISRM18 (n=48)

Results from replicate analyses for this standard indicate accurate and reproducible analyses have been obtained from this standard for almost all elements. The only elements that do not report to recommended values are as follows: Ti which has a range in response from <3 ppb to 17 ppb against a recommended value of 3 ppb, Pb which ranges from 150 ppb to 390 ppb against a recommended value of 178 ppb, and Hg with an observed range of 4 ppb to 8 ppb and a recommended value of <1 ppb.

Standard Reference Material AMIS0169 (n=49)

Results from replicate analyses for this standard indicate accurate and reproducible analyses have been obtained from this standard for almost all elements. The only elements that do not report to recommended values are: Mn which has a range in response from 3390 ppb to 5120 ppb against a recommended value of 2506 ppb.

Analytical Blank Replicates

A review of the replicate analyses of the analytical blanks (**Appendix 2**) indicates minimal contamination in the blanks. Results for duplicate analyses are summarized in **Appendix 2** in the "QAQC" file and below in **Table 2**. Examination of the Table indicates there is no significant laboratory-based contamination that is being introduced into the sample and that this contamination is incapable of obscuring **bona fide** MMI anomalies.

Table 2. Summary of contaminants in replicate analyses of the analytical blank.

	Burntbush MMI-M survey, 2011.						
Element	No. of Samples Reporting/Concentration						
AI	3@1 ppm; 1@2 ppm						
Ва	7@10 ppb; 2@20 ppb						
Ce	1@5 ppb; 2@6 ppb; 1@7 ppb						
Cs	1@0.7 ppb						
Cu	5@10 ppb; 27@20 ppb; 1@60 ppb						
Dy	2@1 ppb						
Er	1@0.5 ppb;1@1 ppb						
Eu	1@0.7 ppb						
Fe	4@1 ppm						
Ga	1@1 ppb						
Gd	1@1 ppb; 1@2 ppb						
К	11@0.1 ppm						
La	4@1 ppb; 9@2 ppb						
Mg	1@1 ppb						
Mn	11@10 ppb; 9@20 ppb; 1@30 ppb; 2@40 ppb; 1@60 ppb						
Nd	9@1 ppb; 3@2 ppb;1@3 ppb						
Ni	3@5 ppb; 1@6 ppb; 1@7 ppb; 2@8 ppb						
Sm	2@2 ppb						
Sr	16@10 ppb; 1@20 ppb						
Th	3@0.5 ppb; 6@0.6; 5@0.7 ppb; 2@1 ppb; 1@3.1 ppb						
Ti	5@3 ppb; 7@4 ppb; 6@ 5ppb; 1@ 38 ppb						
U	4@1 ppb; 2@2 ppb						

Y	1@5 ppb
Yb	1@1 ppb

Data Description

The Burntbush MMI-M 2011 dataset is marked by only a small number of elements that are at or below the LLD or have a significant number of samples that are <LLD. These include As, Bi, Cr (<100 ppb), Hg, In, Mo, Pd, Pt, Sb, Sn, Ta, Te, TI and W. Many of these elements are typically less mobile than Cu or Zn and their presence in measurable quantities in a small number of samples is testament to this. The high percentage of samples with <LLD for many of these metals is not surprising given their very low mobility in the surficial/secondary environment. However, any MMI-M analysis for Pd or Pt that is >LLD should be reviewed with care for its overall significance in the survey. An MMI-M analysis for Pd and Pt above the LLD should be field checked for possible association with platinum group metal geological environments. It is worth noting that the diagnostic signal of a significantly mineralized zone will generally produce moderate- to high-contrast apical responses over the target; however, away from the mineralization at "background" locations there may be no trace of the presence of a specific metal in the analysis. This is another consideration when viewing MMI data-the presence of significant numbers of elements < the LLD is not necessarily cause for concern or that the MMI extraction is not working or has been "buffered" by soil composition. The MMI process is designed to only extract metals that are moving from source to surface and characteristically report metal contents in low ppb concentrations.

In terms of base and precious metal responses in the Burntbush survey the ternary plot for Cu, Pb and Zn is given below in **Figure 7** and suggests the MMI responses in the Burntbush survey will be Cu-rich relative to Pb and Zn however there appears to be two distinctive groups of analyses. The first is Cu rich but with more Pb than Zn and the second is Cu-rich but with more Zn than Pb. This is strongly suggestive of metal deposition and zonation from a hydrothermal system.

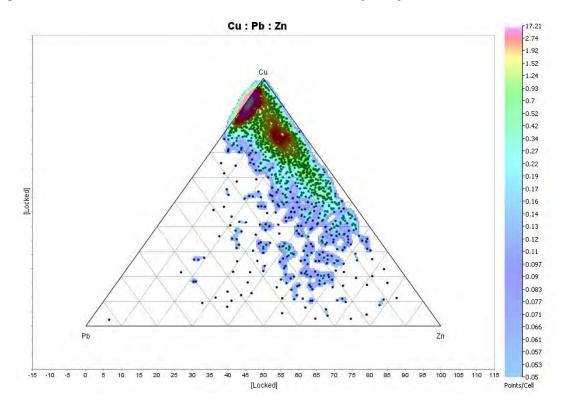
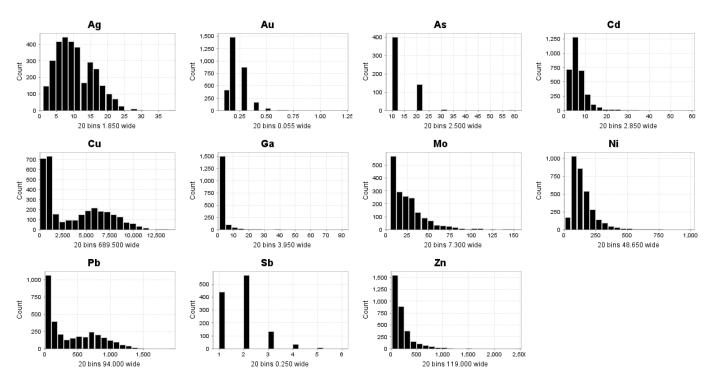


Figure 7. Ternary plot for Cu, Pb and Zn based on MMI-M analyses from the Burntbush 2011 survey.

Distribution of the MMI-M Suite of Elements (Figure 8)

The distribution/histograms for the MMI-M suite of elements are presented below. The commonality amongst this group is the positively skewed nature of each element presented. For these elements, this characteristic is due to the large number of samples that report in the very low parts per billion concentration range. A review of these histograms also indicates that for the commodity elements each has a long positively skewed distribution with a "tail" of high concentration. This is particularly true for the elements Cu, Pb and Zn and this is strongly suggestive of an anomalous or elevated data population and that this population can be related to mineralization. This style or pattern is not uncommon and it is not unusual to have multiple populations within a single dataset. The results for lithologically-sensitive elements shows evidence for normal distributions particularly for major elements K, Ca and Mg but also for Ba and Sr. The lithologically-sensitive trace elements tend to be positively skewed.

Histograms-Commodity and Related Elements:



Histograms: Lithologically-Sensitive Elements:

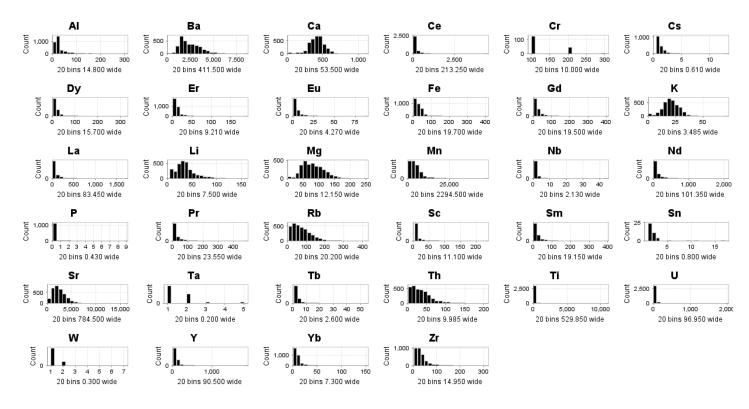
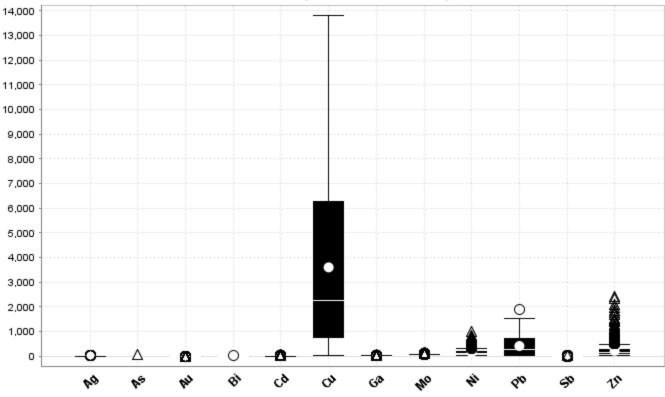


Figure 8. Histograms for commodity and lithologically sensitive elements, 2011 Burntbush MMI-M survey.

Another method of displaying that MMI-M suite of elements characterized by a wide range in concentration suggesting the possibility of an anomalous sub-population is a Tukey box plot produced with a common Y axis for all elements. The Box plot in **Figure 9** illustrates the range in concentration for the same suite of elements in the histograms and suggests that the elements Cu, Pb, Zn and Ni have very strongly skewed distributions with some samples characterized by very high concentrations. The wide variability for the element Ni is likely indicating the lithologic variability in the survey area. The wide range in concentration for Cu, Pb and Zn suggests the survey area will have elevated signatures for the base metals and that the likely commodities of interest on the property will be related to a base metal zone of mineralization.

Tukey Box Plots-Commodity and Related Elements



Box Plots (common Y axis)

Figure 9. Tukey Box plots (common Y axis) for commodity elements.

If the elements Cu, Pb, Zn and Ni are removed from the database and the remaining elements plotted then the elements Mo, Ga, Cd, and Ag have significant variability albeit at lower concentration levels that Cu, Pb, Zn and Ni (**Figure 10**).

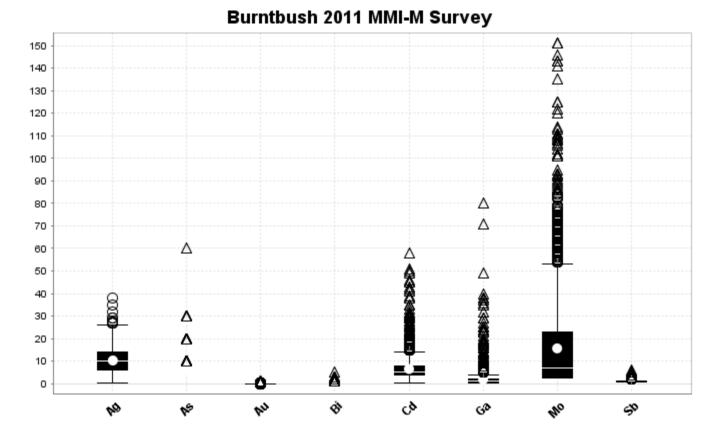


Figure 10. Tukey Box plot (Common Y axis) for lower abundance commodity and associated elements, 2011 Burntbush MMI-M survey.

Method of Interpretation-Areal Distribution of MMI-M Responses

Multivariate statistical and graphical techniques were not utilized for the interpretation of MMI-M data in the 2011 Burntbush MMI-M survey interpretation. A simple visual approach based on bubble plots was used. The MMI-M data was examined for anomalous spikes or groups of elevated responses for single and/or coincident elements. Element groupings such as Au-Ag, Au-Ag-Pd, Zn-Cd, Ni-Co, Ni-Co-Ag and Ni-Cu all have relevance to underlying geological conditions and their contained mineralization and are used to assist the rankings of any particular MMI response in terms of followup.

When concentration-only data is reviewed unique "spikes" or anomalous responses are assessed. When response ratios are used there are general guidelines brought to bear on the interpretation. Generally, a response ratio of 1RR-10RR is generally interpreted as little more than "background", 11RR-20RR is of limited interest, >20RR or 20 times background is an initial indication of a lowcontrast anomalous response although this "threshold" is not universal. A response of between 20RR and 50RR is used as a moderate response with RR>50 being referred to as high-contrast. Often, pattern recognition in the interpretation of geochemical data is paramount.

Spearman-Rank Correlation Coefficient Matrix

The MMI-M multi-element geochemical data derived from the 2011 Burntbush 2011 survey were assessed with a Spearman-Rank correlation coefficient matrix. This assessment permits the determination of significantly correlated element pairs and allows the recognition of element associations and anomalous geochemical responses related to mineralization/pathfinder and/or lithology. In addition, the approach is an indirect method of assessing analytical quality. The entire Spearman-Rank correlation coefficient matrix is presented in **Appendix 2**. In the matrix, many of the relevant significant correlations are highlighted in red. Examination of the Spearman Rank matrix indicates the 2011 Burntbush dataset is characterized by significant base metal sulphide mineral-related inter-correlations as well as associated pathfinder elements and lithologically sensitive elements. A summary of these correlations is presented in **Table 3**.

The highly correlated elements summarized in table form below include the base metal assemblages Cu-Pb-Sb-Mo; Ag-Cu-Pb-Cd; Ga-Pb; and As-Pb-Sb. Each of these assemblages is indicative of the geochemical signature of a base metal massive sulphide-type of mineralization. A wide range of affiliated or associated elements is also highly correlated to certain lithologically-sensitive elements and these include the following: 1. Fe-Ga-Pb-Nb-Ti; 2. Ba-Cu-Mo-Pb-Sb; and 3. K-Mo-Pb-Sb. Modest associations are noted for Al:Ga (0.470) and Al-Zn (0.512). Gallium is often associated with aluminous lithologies and also sphalerite-dominated mineralized zones. The Fe-Ti correlation reflects the presence of magnetite, possibly as an alteration halo and the It is noted that there are no correlated elements with Au including Ag. Of particular interest is the association between K and Cu-Mo-Pb-Sb-Ag indicates a K-enriched lithologic host for these metals which could be an altered lithology (sericite?).

The rare earth elements are significantly inter-correlated (r>0.800) and this confirms the geochemical coherence expected for these elements in quality analytical data. The REE should be highly inter-correlated if the quality of the analytical work is good. The highly inter-correlated nature of the rare earth elements is an indirect measure of analytical quality, a point already demonstrated by the accuracy and reproducibility of analytical duplicates and standards and the lack of significant contamination monitored by analytical blanks. Hence, the Burntbush dataset is considered to be excellent for purposes of anomaly definition. It is therefore interpreted to be accurate and precise.

Doublet	"r"	Doublet	"r"	Doublet	"r"
Ag With:		As With:		Cs With:	
Ва	0.554	Pb	0.401	Fe	0.737
Cd	0.417	Sb	0.449	Ga	0.741
Cu	0.719			Pb	0.593
Pb	0.471	Ba With:		Sb	0.505
К	0.502	Cu	0.798		

Table 3. Summary of significant inter-element associations, 2011 Burntbush MMI-M survey.

Sr	0.566	Мо	0.541	Pb With:	
U	0.431	Pb	0.74	Sb	0.789
		Sb	0.635	Rb	0.574
Cu With:		Fe	0.434		
Fe	0.445			Mo With	
Мо	0.685	Fe With:		Pb	0.713
К	0.646	Ga	0.7		
Pb	0.782	Pb	0.675	Al With:	
Sb	0.711	Nb	0.838	Zn	0.512
U	0.52	Ti	0.834	Ga	0.470
				P With:	
Ga With:		K With:		Sc	0.677
Pb	0.47	Мо	0.685	Ti	0.513
Nb	0.76	Pb	0.607	Zr	0.591
Р	0.529	Sb	0.596		
Ti	0.834			*REE>0.800	
Zr	0.692				

Sampling Depths

A previously undertaken orientation survey examined the upper 40 cm of the soil profile to determine the most representative and highest contrast element responses over known zones of Au mineralization. The optimum sampling depth was determined to be between 30 and 40 cm. Adherence to this sampling protocol has resulted in the definition of multi-metal, multi-sample, focused and diffuse geochemical anomalies on the grid. These anomalies are now follow-up exploration targets.

Analytical Data Quality

Based on three MMI standard reference materials and replicate analyses of analytical blanks the data quality used for this report is considered to be excellent. The variability in analytical and field duplicates often occurs when the majority of duplicate sample pairs have element contents at or near the lower limit of determination for the MMI partial extraction. Such an element is Au. The approach of simple linear regression with calculated Cook's Distances illustrates this point. Some variability in field duplicates is noted for several elements suggesting that collecting a duplicate sample with an auger may be problematic in this regard.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are evident from MMI-M exploration surveys undertaken on Lake Shore Gold's Burntbush property:

The survey has successfully demonstrated that MMI-M partial extractions on soil samples collected from deep organic cover on inorganic soils can isolate MMI-M precious and base metal anomalies and lithologically-sensitive anomalies. Sampling with a Dutch auger in this type of terrain is viable.

Some variability in MMI geochemical response is apparent in the QA data however this variability is insignificant and not a barrier to the recognition of *bona fide* base and precious metal anomalies. The assessment of Au in the quality control samples is fraught with duplicate pairs reporting at or very near the LLD where variability is expected.

Field duplicate pairs, as assessed by simple linear regression suggest anomalous responses in the field can be repeated and are real.

Sampling materials collected for MMI analysis are effective and appropriate sample media for an MMI survey.

The analyses generated by the MMI-M extraction are accurate and precise and are effective for the detection of low- to high-contrast anomalies.

The recommendations that flow from this survey are as follows:

The MMI process does not indicate the grade of mineralization responsible for the production of an MMI anomaly nor does it indicate the depth of the source region for the anomaly. Accordingly, it is strongly recommended that an attempt at modeling the geological setting of the target mineralization based on their geophysical responses with emphasis on depth to source be undertaken prior to a diamond drill program. This exercise can greatly assist the drilling when attempting to provide explanations for the geological context of geophysical and MMI anomalies. The attitude of the target can be effectively delineated in this manner.

Prior to diamond drill testing the MMI dataset should be integrated with all available geophysical and geological survey data so that multivariate drill targets can be determined.

Additional MMI surveys are recommended on the south portion of the grid. Indications from the 2011 MMI-M survey at Burntbush are that anomalies for base metals and lithologically-sensitive elements can be expected to occur in this area.

February 27, 2012 Mark Fedikow Mount Morgan Resources Ltd. Lac du Bonnet, Manitoba

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CERTIFICATE of AUTHOR

I, Mark A.F. Fedikow, HB.Sc., M.Sc., Ph.D., P.Eng., P.Geo., and C.P.G. do hereby certify that:

I am currently a self-employed Consulting Geologist/Geochemist with a field office at:

50 Dobals Road North P.O. Box 629 Lac du Bonnet, Manitoba R0E 1A0

I graduated with a degree in Honors Geology (B.Sc.) from the University of Windsor (Windsor, Ont.) in 1975. In addition, I earned an M.Sc. in geophysics and geochemistry from the University of Windsor and a Doctor of Philosophy (Ph.D.) in exploration geochemistry from the School of Applied Geology, University of New South Wales (Sydney) in 1982.

I am a Member of the Association of Professional Engineers and Geoscientists of Manitoba. I am also a Fellow of the Association of Applied Geochemists, and a Member of the Prospectors and Developers Association of Canada. I hold valid Prospectors licenses in Manitoba and Ontario. I am registered as a Certified Professional Geologist with the American Institute of Professional Geologists (Colorado, U.S.A.).

I have worked as a geologist for a total of thirty-five years since my graduation from university; as a graduate student, as an employee of major and junior mining companies, the Manitoba Geological Survey and as an independent consultant.

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.

I am responsible for the preparation of the technical report titled "Results of Mobile Metal Ions Process Soil Geochemical Surveys on the Burntbush Property of Lake Shore Gold, Timmins Area, Ontario".

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.

I am independent of the issuer applying all of the tests in National Instrument 43-101.

I consent to the filing of the Technical Report with any stock exchanges or other regulatory authority and any publication by them, including electronic publication in the public company files on the web sites accessible by the public, of the Technical Report.

Dated this 27th Day of February, 2012

m

Signature of Qualified Person

"M.A.F. Fedikow"

Print name of Qualified Person



Original Signed by Mark Fedikow

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