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Ontario

Results of Mobile Metal Ions and Traditional B Horizon Soil Geochemical Orientation Surveys, Golden Share Mining's Berens River Project, Ontario

For

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By

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EXECUTIVE SUMMARY

The Mobile Metal Ions and traditional B Horizon soil geochemical orientation survey undertaken on the Berens River property of Golden Share Mining is based on data that is considered to be accurate, reproducible and free of contaminants that would impact or disguise the recognition of bona fide geochemical anomalies and patterns of response in the project area. Internal reference materials, analysis of analytical duplicates and replicate analyses of the analytical blank verify the quality of the data.

Vertical profiling has defined the optimum sampling depth for the detection of elevated concentrations of Au, Ag, Cu, Pb, Zn, Sb, Cd, Tl, Mo and REE as between 30 and 40 cm below the contact between organic and inorganic soil. Reversals in the vertical profiles for these elements likely indicates the presence of anomalous responses at more than one depth in the upper 40 cm of the soil/overburden profile.

Significant anomalous responses in MMI soil samples include Au, Cu, Pb, Zn, Sb, Mo and Ni are present along two sampling transects in the survey area. These anomalies are absent from aqua regia-based analyses and is cause for concern.

Exceptional inter-correlation between the element suite of Au, Ag, Cu, Pb, Zn, Cd, Sb, Mo and Zn in B Horizon soil samples as well as very high outlier and far outlier thresholds as determined by Tukey box plots is strongly suggestive of an external supply of metal to the survey sites. This may be in the form of windblown particulate and hydromorphic dispersion from tailings and ore piles in the survey area. MMI samples may be exempt from these contaminants owing to the depth of collection of the sample.

Based on the results of this orientation survey ongoing exploration using MMI Technology particularly for assessing geophysical responses should be based on a virtual grid draped over the geophysical target using 50 m wide lines with 25 m sample spacing.

Introduction

A Mobile Metal Ions and traditional B horizon soil geochemical orientation survey was undertaken on the Berens River property of Golden Share Mining between October 5 and 10, 2016. The purpose of the orientation survey was to assess Mobile Metal Ions Technology ("MMI") for its ability to define a characteristic geochemical signature to known mineralization and provide guidance for subsequent MMI-based exploration by determining the optimum depth of sample collection, diagnostic indicator elements and spacing for soil samples. In addition pH was determined on all MMI soil samples. A suite of B Horizon soil samples was also collected at each MMI site for direct comparison with MMI results. The Berens River property is situated in the Red Lake mining district of Ontario, Canada (Figure 1).

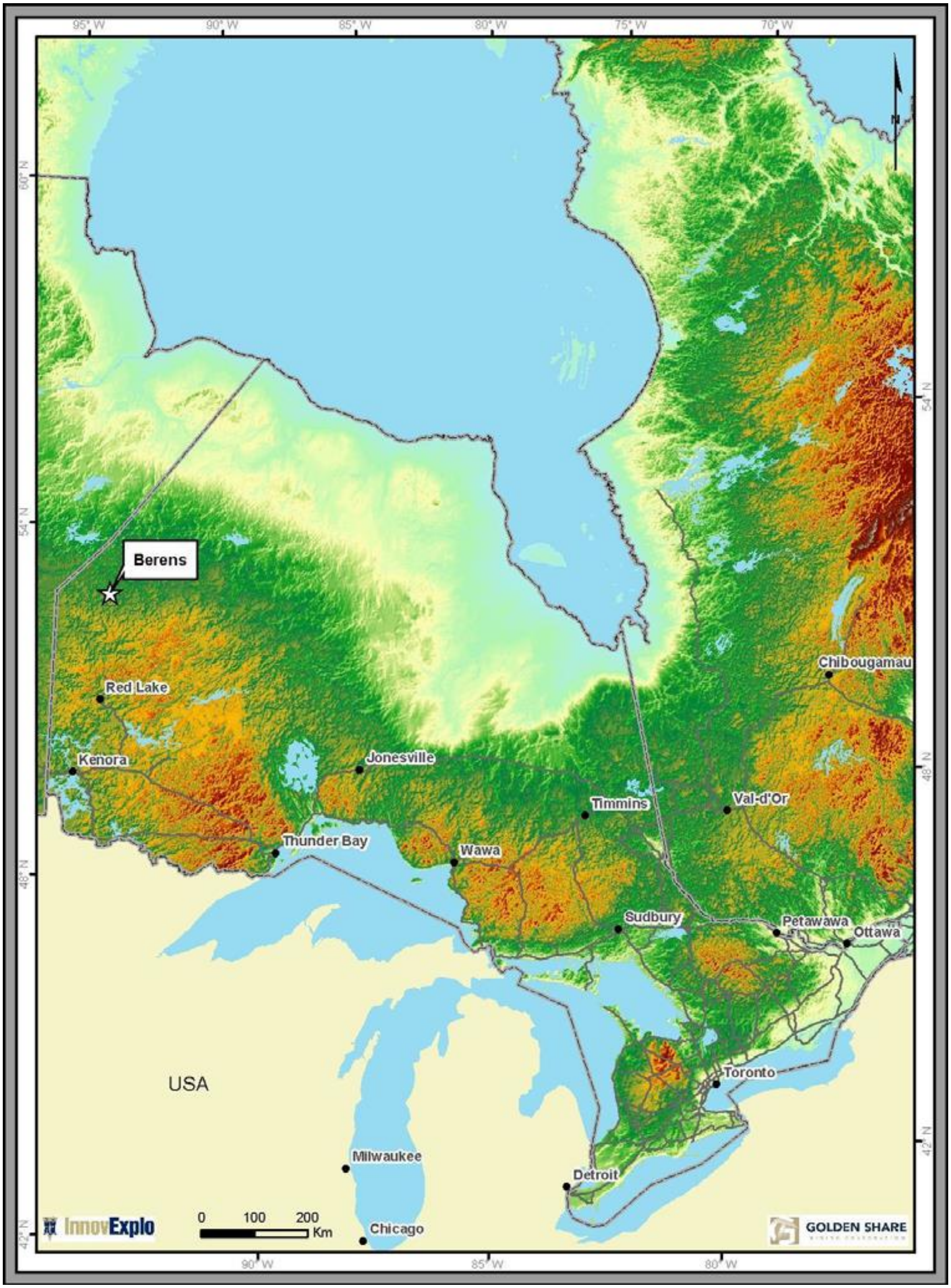


Figure 1. Location map for the Berens River property. Figure from Gomwe and Verschelden (2013)

Geology and Mineralization (after Gomwe and Verschelden, 2013)

The Berens River property is located in the Superior Structural Province of the Canadian Shield and is underlain by the Favourable Lake Greenstone Belt of the newly defined North Caribou Terrane. The geology of the northern property consists of a sequence of folded volcanic and metasedimentary rocks which trend approximately north-south and dip steeply to the east. These supracrustal units have been intruded by gabbro and granitoid masses. Most of the outcrops on the property are calc-alkaline volcanic and sedimentary rocks. The polymetallic veins on the Berens River property are hosted by a sequence of dominantly intermediate to felsic calc-alkaline volcanic rocks. The metavolcanic rocks consist of andesitic flows and tuffs, minor pyroclastic and brecciated units. The metasedimentary rocks are composed of laminated chert, argillites, siltstones, fine-grained tuffs, marble, and banded sulphide and oxide facies iron formation. These sedimentary rocks stratigraphically overlying the felsic volcanic unit.

Two types of precious and base metal mineralization have been identified on the Berens River property and these include:

1. Quartz-actinolite sulphide veins containing gold, silver and base metal sulphides, and;
2. Stratiform pyrrhotite-pyrite bodies with low-grade base and precious metal values.

All mine production has been from the quartz-actinolite-sulphide veins. A series of subparallel veins, dipping 65º to 70º to the south to southeast, occur in east-trending zones within felsic volcanics. Mineralization consists of silicification, pyrite, sphalerite, galena, minor chalcopyrite, gold, and silver minerals. It occurs in shoots within structures offset by faulting.

The veins contain variable sulphide and precious metal contents and vary in width from 15 centimetres to 5 metres, forming characteristic pinch and swell structures. They also vary in length from a few metres to hundreds of metres. Gangue minerals are quartz, actinolite, calcite, chlorite and biotite, plus accessory spessartine and tourmaline. The sulphide minerals, in order of abundance include pyrite, sphalerite, galena, pyrrhotite, chalcopyrite, tetrahedrite, dyscrasite, native silver, ruby silver and gold, plus traces of arsenopyrite, native antimony and bornite.

Various indicators point towards a low-sulphidation epithermal model; however, the presence of iron formations and garnet-chlorite-actinolite and quartz-sericite alteration assemblages indicate hydrothermal alteration associated with a VMS model. It is possible that the Berens River deposit represents a complex ensemble of both VMS and epithermal models due to a possible transition from stratiform volcano to caldera, followed by a period of erosion which may have removed earlier evidence of a VMS deposit. Property geology is depicted in Figure 2.

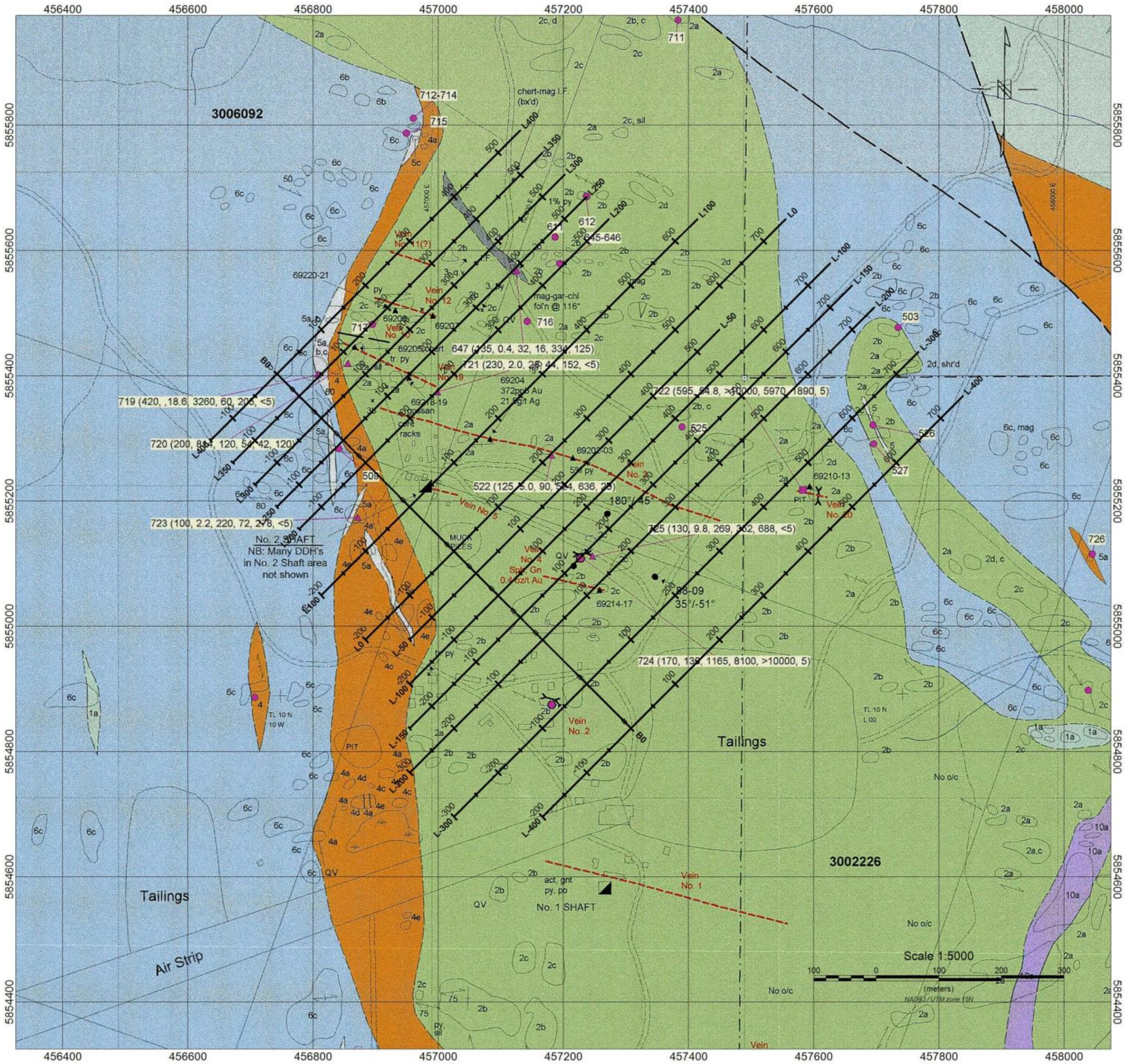


Figure 2. Detailed geology in the area underpinning the MMI and B Horizon soil geochemical surveys. Legend is reproduced below. Soil samples were collected from lines 150E and 200W.

Figure 2 (continued). Legend to accompany detailed geology map.

Mobile Metal Ions Soil Geochemistry

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 and residual soils 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 and industrial activity such as mining operations and exploration diamond drilling are also complicating factors.

The proprietary Mobile Metal Ions Process (MMI) is a high resolution soil geochemical technique that 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. Increased spatial and amplitude resolution compared to conventional geochemistry is achieved by detaching and analyzing adsorbed ions from the surface of soil particles with specially designed organic and inorganic chemicals known as ligands.

Geochemical data resulting from MMI analysis of improperly collected soils cannot be ameliorated with univariate and/or multivariate statistical and graphical solutions. These recently arrived, surface adsorbed ions better reflect subsurface sources, than bound or incorporated forms of the same elements, which have been mechanically dispersed in soils, and contribute "noise" to the geochemical signal. The MMI extractants have been designed to both detach adsorbed ions reproducibly and provide an analytical medium for reproducible low-level analysis in ICPMS instruments. Typically less than 10% of the total metal content of a soil is adsorbed and used for MMI analysis. However, "backgrounds" for the technique are extremely low. Consequently when signal to noise ratio for MMI is compared to signal to noise ratio for conventional geochemistry, sharper, greater-contrast peaks over mineralization are found. This is particularly advantageous in areas of cover, subdued outcrop, or where metal zonation or "fingerprinting" is used to infer geology from soil geochemistry.

Anomaly Recognition in MMI Geochemistry

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 used to analyze inorganic soils from the Berens River orientation survey provides analyses for 53 elements. This large number of elements consists 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 residual soils, glacial overburden and its derivatives and post-depositional lithologies. 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.

MMI Data Presentation

Data is commonly presented in several ways. Data from the laboratory is supplied as spreadsheets, with individual elements in soils presented in ppb and ppm. For individual elements, contour plots in ppb can be produced in a number of software packages. Stacked bar charts (usually across strike) can provide a very good pictorial presentation of the multi-element data, and the relationships between the soil geochemistry of various elements. To do this it is often convenient to calculate the signal to noise ratio, or **response ratio** for each element at each sampling point. Data for all elements can then be plotted on a common (response ratio) scale. The background for each element is calculated from the lowest quartile (25%) of values for each element. Interpretation consists predominantly of examining the various methods of data presentation, locating anomalous values or patterns, and assessing the significance of these. Experience, and/or orientation surveys over known mineralization are important in this process. For the Berens River project orientation survey MMI data are presented in non-transformed format as well as response ratios. B Horizon soil geochemical data are presented as response ratios for direct comparison with MMI data.

Terms of Reference

Golden Share Mining retained Mount Morgan Resources Ltd. to undertake the MMI and B Horizon soil geochemical orientation survey on the Berens River property located in the Red Lake Mining District of Northwestern Ontario. Analytical data form these two surveys were used to produce an interpretation and report.

Preferred Approach to Mobile Metal Ion Soil Geochemistry

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 (www.sgs.com/geochemistry). 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. Alternatively, in the absence of a known mineralized zone over which to undertake the orientation survey a geophysical anomaly, structure or a lithology with a unique bulk chemical composition can be used. 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. For an orientation survey, vertical profiling based on four 10 cm samples collected incrementally below the zero datum provides the best depth where the highest-contrast and most representative MMI signal resides. This approach permits the assessment of the signature related to known mineralization, structures, geophysical anomalies or variability in landscape environment.

Data Treatment

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 "smooths" analytical variability due to inconsistent dissolution or instrument instability.

Analytical data as received from SGS Mineral Services (Vancouver, B.C.) is presented in Appendix 1. All work sheets including the calculation of response ratios are included in Appendix 2. Figures are given in Appendix 3.

The variation in concentration of MMI-M suite elements from the orientation survey on the Berens River property is discussed in a geochemical narrative based on colored bubble plots and horizontal bar charts produced with IOGAS (V4.5) and SYSTAT (V13) software. The bubble plots and the horizontal bar charts are presented in Appendix 3 and are also inserted in the text of the report. A sample location map is given in Figure 1.

Sample Collection for the Berens River MMI and B Horizon Soil Geochemical Orientation Survey

For MMI geochemistry a total of 214 samples were collected from 59 sites along two sampling lines (Figure 3). Four samples were collected at each site with the exception of sites BR-16-44 through BR-16-49 where only the 1-10 cm and the 10-20 cm samples could be collected; sites BR-16-50, -51 and -54 where only the 0-10 cm sample could be collected and site BR-16-55 where the sample from 30-40 cm was not available. Individual samples were collected as 10 cm vertical plugs starting below the zero datum or the contact between organic soil and inorganic soil. Organic soil was not sampled. All samples were collected with a combination of a Dutch auger and a shovel from a hand dug pit. Samples were placed into medium sized ZIPLOC sample bags for shipment to the Vancouver laboratory of SGS Mineral Services at the following address:

Geochem Client Services
SGS Canada Inc.
Suite E - 3260 Production Way
Burnaby, British Columbia V5A 4W4

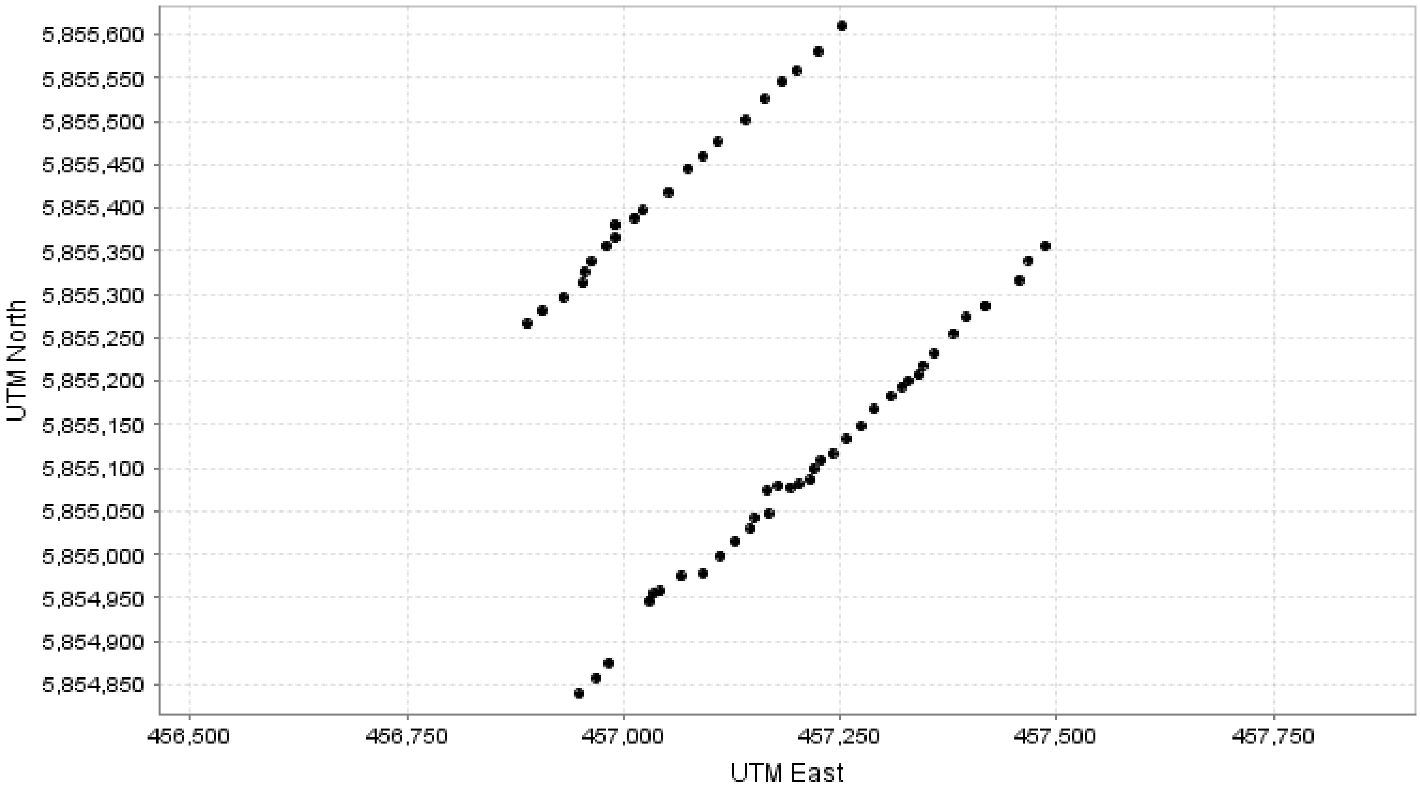


Figure 3. Sample location map for the B Horizon and MMI survey, Berens River property.

Data Analysis

The analytical approach to both MMI and B Horizon traditional analysis is summarized in Table 1 below with a summary of elements determined for each sample type with lower limits of detection given in Tables 2 and 3.

Table 1. Summary of analytical approach for the Berens River soil geochemical survey.

Method	Description and Notes
B Horizon Soils	
GE ARM 133	Au & 49 element package; sample weight 25 grams with aqua regia digest, ICP-MS finish; reporting limits for Au 1-500 ppb.
MMI Geochemistry GE MMI-M	53 element standard package; MMI leach, ICP-MS finish; 50 gram sample, ICP-MS finish.
GE_ISE15V	Determination of pH of Soil or Sediment Samples using pH meter

Table 2. Summary of elements determined in B Horizon soil samples, Berens River project.

Aqua Regia digestion (25g) / ICP-MS package (49 elements)

GE ARM133

Elements and Limit(s)					
Ag	0.02 – 100 ppm	Hg	0.02 – 1000 ppm	Se	0.5 – 2500 ppm
As	0.5 – 2000 ppm	Ho	0.01 – 2000 ppm	Sm	0.02 – 1000 ppm
Au	1 – 500 ppb	In	0.01 – 2000 ppm	Sn	0.05 – 1000 ppm
Ba	0.5 – 5000 ppm	La	0.05 – 2000 ppm	Sr	0.1 – 1000 ppm
Be	0.02 – 1000 ppm	Li	0.01 – 2000 ppm	Ta	0.01 – 1000 ppm
Bi	0.01 – 2000 ppm	Lu	0.02 – 1000 ppm	Tb	0.005 – 1000 ppm
Cd	0.02 – 1000 ppm	Mn	0.5 – 5000 ppm	Te	0.05 – 1000 ppm
Ce	0.05 – 2000 ppm	Mo	0.02 – 2000 ppm	Th	0.01 – 1000 ppm
Co	0.1 – 1000 ppm	Nb	0.02 – 2000 ppm	Tl	0.01 – 1000 ppm
Cs	0.01 – 1000 ppm	Nd	0.05 – 2000 ppm	U	0.01 – 1000 ppm
Cu	1 – 5000 ppm	Ni	0.5 – 5000 ppm	W	1 – 1000 ppm
Dy	0.01 – 2000 ppm	Pb	0.2 – 1000 ppm	Y	0.02 – 1000 ppm
Er	0.01 – 2000 ppm	Pr	0.01 – 1000 ppm	Yb	0.01 – 1000 ppm
Eu	0.01 – 2000 ppm	Rb	0.05 – 1000 ppm	Zn	1 – 5000 ppm
Ga	0.05 – 1000 ppm	Re	0.01 – 100 ppm	Zr	0.1 – 2000 ppm
Gd	0.01 – 2000 ppm	Sb	0.02 – 1000 ppm		
Hf	0.01 – 2000 ppm	Sc	0.1 – 1000 ppm		

Table 3. Summary of elements determined in MMI soil samples with lower limits of detection, Berens River project.

Mobile Metal Ion Leach / ICP-MS standard package (53 elements)

GE MMI-M

Elements and Lower Limits					
Ag	0.5 ppb	Gd	0.5 ppb	Sb	0.5 ppb
Al	1 ppm	Hg	1 ppb	Sc	5 ppb
As	10 ppb	In	0.1 ppb	Sm	1 ppb
Au	0.1 ppb	K	0.5 ppm	Sn	1 ppb
Ba	10 ppb	La	1 ppb	Sr	10 ppb
Bi	0.5 ppb	Li	1 ppb	Ta	1 ppb
Ca	2 ppm	Mg	0.5 ppm	Tb	0.1 ppb
Cd	1 ppb	Mn	100 ppb	Te	10 ppb
Ce	2 ppb	Mo	2 ppb	Th	0.5 ppb
Co	1 ppb	Nb	0.5 ppb	Ti	10 ppb
Cr	100 ppb	Nd	1 ppb	Tl	0.1 ppb
Cs	0.2 ppb	Ni	5 ppb	U	0.5 ppb
Cu	10 ppb	P	0.1 ppm	W	0.5 ppb
Dy	0.5 ppb	Pb	5 ppb	Y	1 ppb
Er	0.2 ppb	Pd	1 ppb	Yb	0.2 ppb
Eu	0.2 ppb	Pr	0.5 ppb	Zn	10 ppb
Fe	1 ppm	Pt	0.1 ppb	Zr	2 ppb
Ga	0.5 ppb	Rb	1 ppb		

Results

For the remainder of this report the elements In, Re, Ta and W in the B-horizon soil geochemical database and Hg, In, Pd, Pt, Sn and Ta are excluded from the MMI database. These elements are ignored due to their low concentrations and/or lack of variability.

Quality Control (Appendix 1)

Analytical Blank

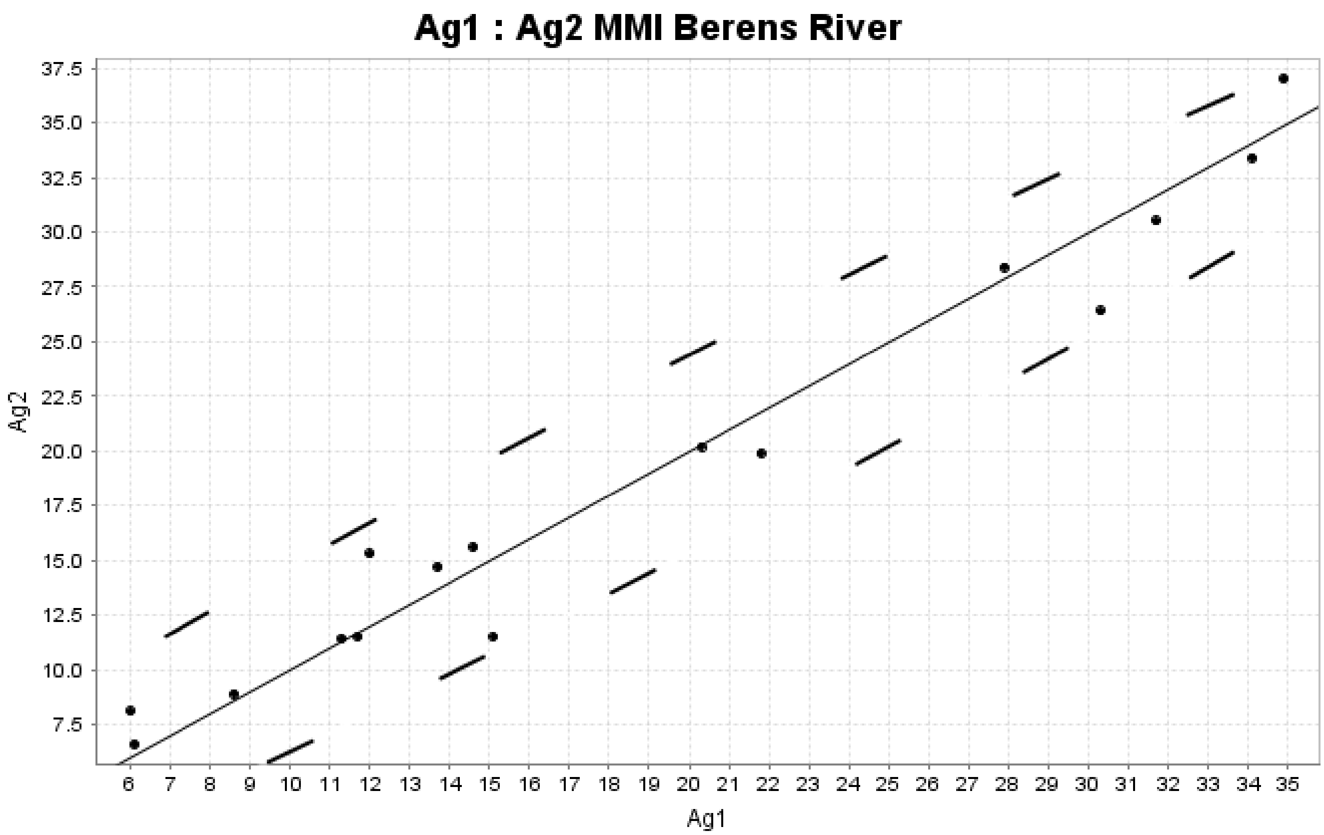
The replicate analyses for the analytical blank tracks laboratory contamination during the processing and analysis of samples. No contaminants were detected in the replicate analysis (n=2) of the analytical blank in the B Horizon analyses. Multiple elements were documented in the blanks analyzed with MMI samples and these are highlighted in red in Table 4 below. The contaminants are at or near the limits of detection in all cases and as such are not considered to be of significance and therefore incapable of disguising an anomalous response in the analytical data.

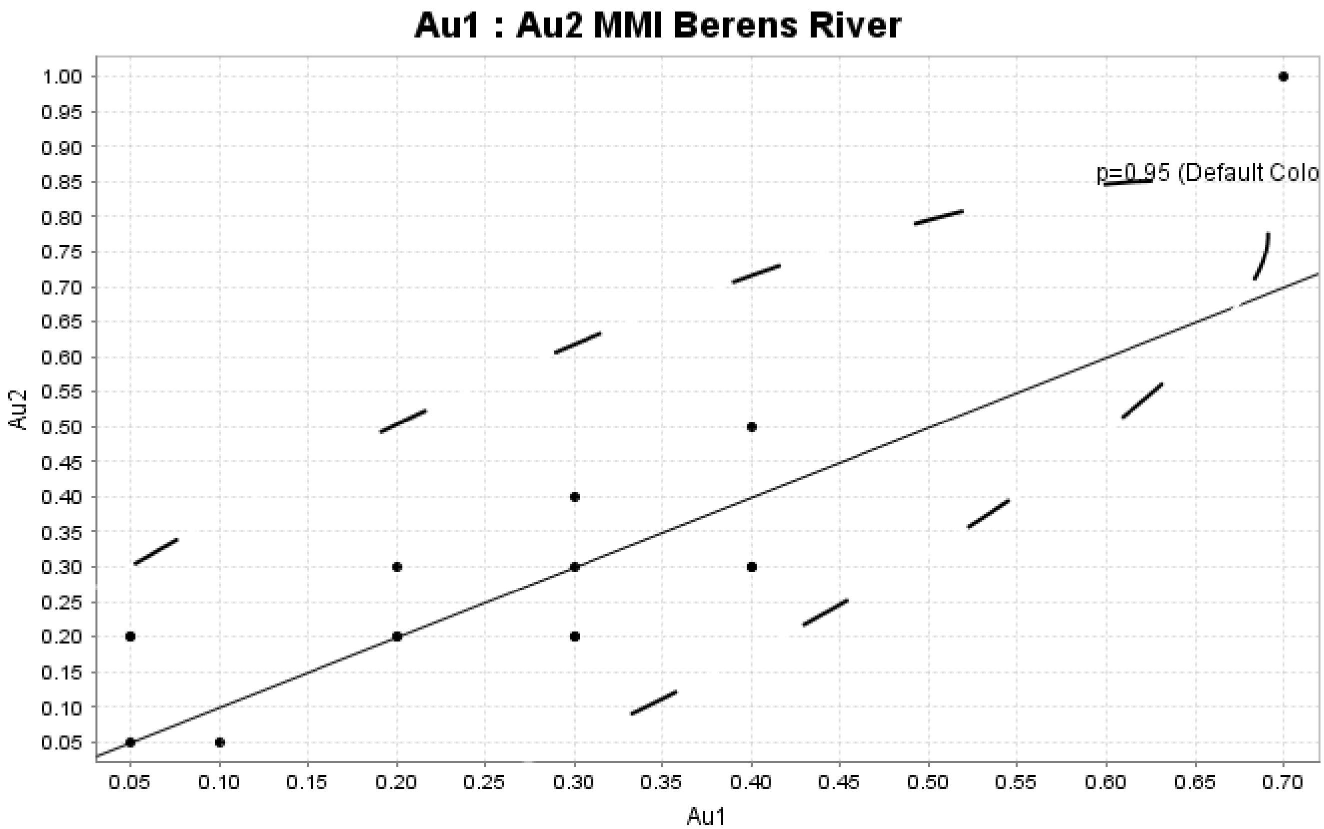
Table 4. Contaminants detected in replicate analyses of the analytical blank, MMI geochemistry.

ANALYTE	Al	Ba	Ca	Ce	Cu	Fe	La	Nd	Ni	Pb	
METHOD	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	
DETECTION	1	10	2	2	10	1	1	1	5	5	
UNITS	ppm	ppb	ppm	ppb	ppb	ppm	ppb	ppb	ppb	ppb	
BLANK	<1	<10	<2	<2	<10	<1	<1	<1	<5	<5	
BLANK	<1	<10	<2	**3**	<10	<1	<1	<1	**8**	<5	
BLANK	<1	**20**	**3**	**2**	<10	**1**	<1	<1	<5	<5	
BLANK	<1	**10**	**3**	**2**	<10	<1	<1	<1	<5	<5	
BLANK	<1	<10	<2	<2	<10	<1	<1	<1	<5	<5	
BLANK	<1	<10	<2	<2	<10	<1	<1	<1	<5	<5	
BLANK	**1**	<10	<2	<2	<10	**1**	**1**	**1**	**5**	<5	
BLANK	<1	<10	<2	<2	<10	<1	<1	<1	<5	<5	
BLANK	**1**	<10	<2	<2	<10	<1	1	<1	<5	**8**	
BLANK	<1	**10**	<2	<2	**10**	<1	<1	<1	<5	<5	
ANALYTE	Pr	Sc	Sm	Sn	Ta	Th	Ti	U	Y	Zn	Zr
METHOD	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M	GE_MMI_M
DETECTION	0.5	5	1	1	1	0.5	10	0.5	1	10	2
UNITS	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
BLANK	**0.7**	<5	**2**	<1	<1	**0.6**	<10	**0.6**	**1**	<10	<2
BLANK	**0.7**	<5	<1	<1	<1	**0.6**	<10	<0.5	<1	<10	<2
BLANK	<0.5	<5	<1	<1	<1	**0.7**	**10**	<0.5	<1	<10	**2**
BLANK	<0.5	**7**	<1	<1	<1	**0.7**	<10	<0.5	<1	<10	**2**
BLANK	<0.5	<5	<1	<1	<1	<0.5	<10	<0.5	<1	<10	<2
BLANK	<0.5	<5	<1	<1	<1	<0.5	<10	<0.5	<1	<10	<2
BLANK	<0.5	<5	<1	<1	<1	<0.5	<10	<0.5	<1	**10**	<2
BLANK	<0.5	<5	<1	**1**	**1**	**0.7**	<10	<0.5	<1	<10	<2
BLANK	<0.5	<5	<1	<1	<1	**0.7**	<10	<0.5	<1	<10	<2
BLANK	<0.5	<5	<1	<1	<1	<0.5	<10	<0.5	<1	<10	<2

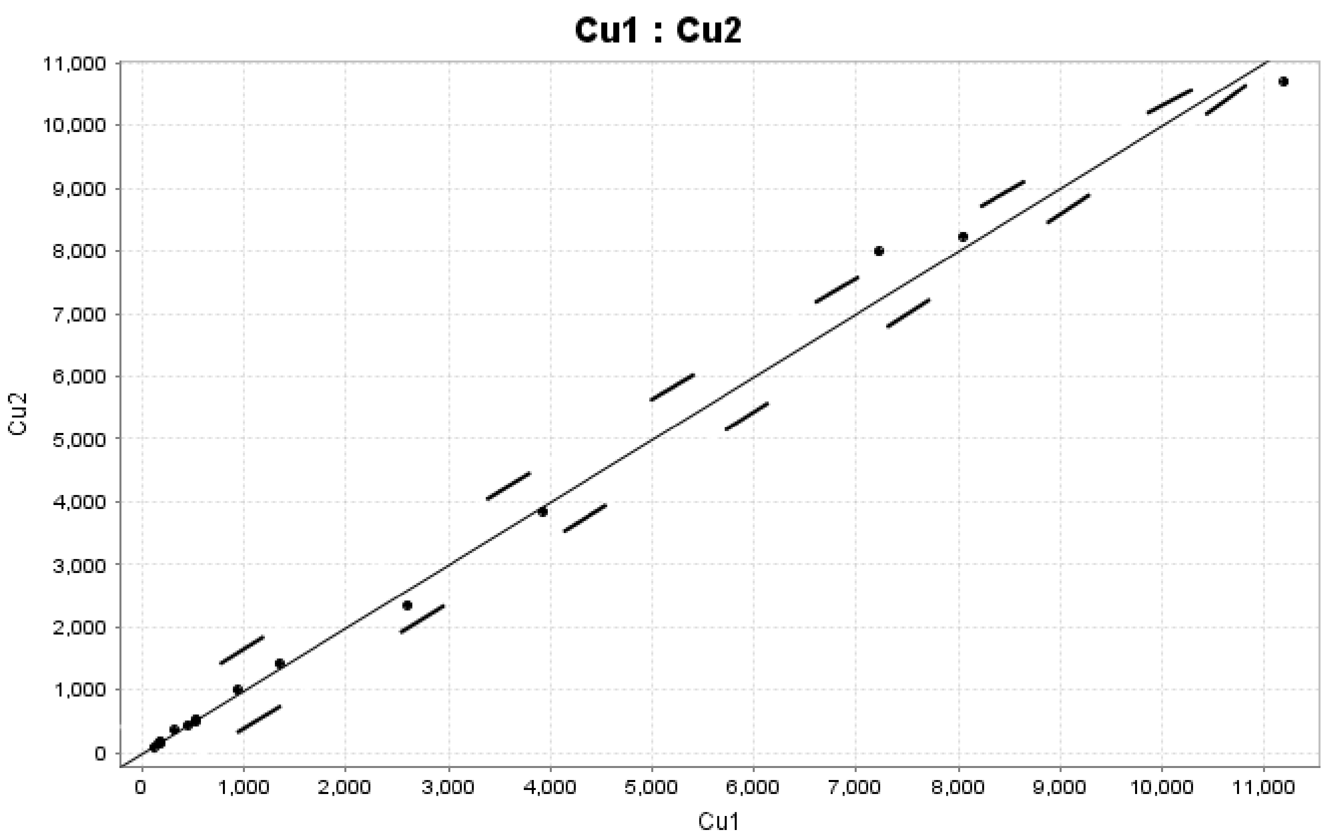
Analytical Duplicates

Samples are selected at random for duplicate analysis during routine sample analysis for the purpose of assessing reproducibility. In the Berens River orientation surveys 16 samples were analyzed in duplicate and the results plotted as X-Y plots with the 95th percentile ellipse and line Y=X. Plots for the highly inter-correlated elements Ag, Au, Cu, Pb, Zn, Cd, Mo and Sb (Figure 4) indicate good reproducibility with somewhat increased variance at higher concentration levels. The MMI analytical data used in this survey are considered to be acceptable in terms of reproducibility. In B Horizon soil data only a single duplicate pair is available to assess reproducibility of analyses. Visual inspection of this single duplicate pair indicates excellent reproducibility for most elements.

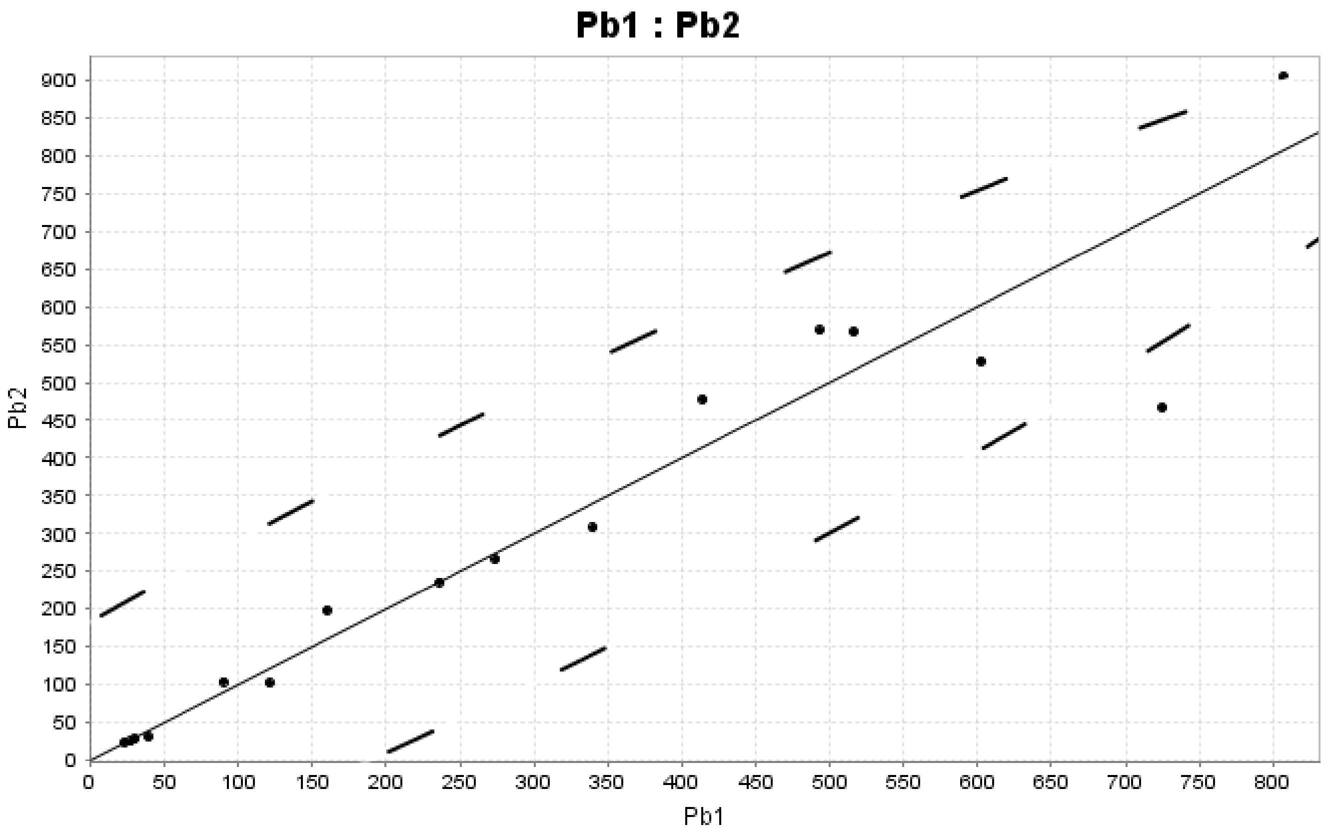


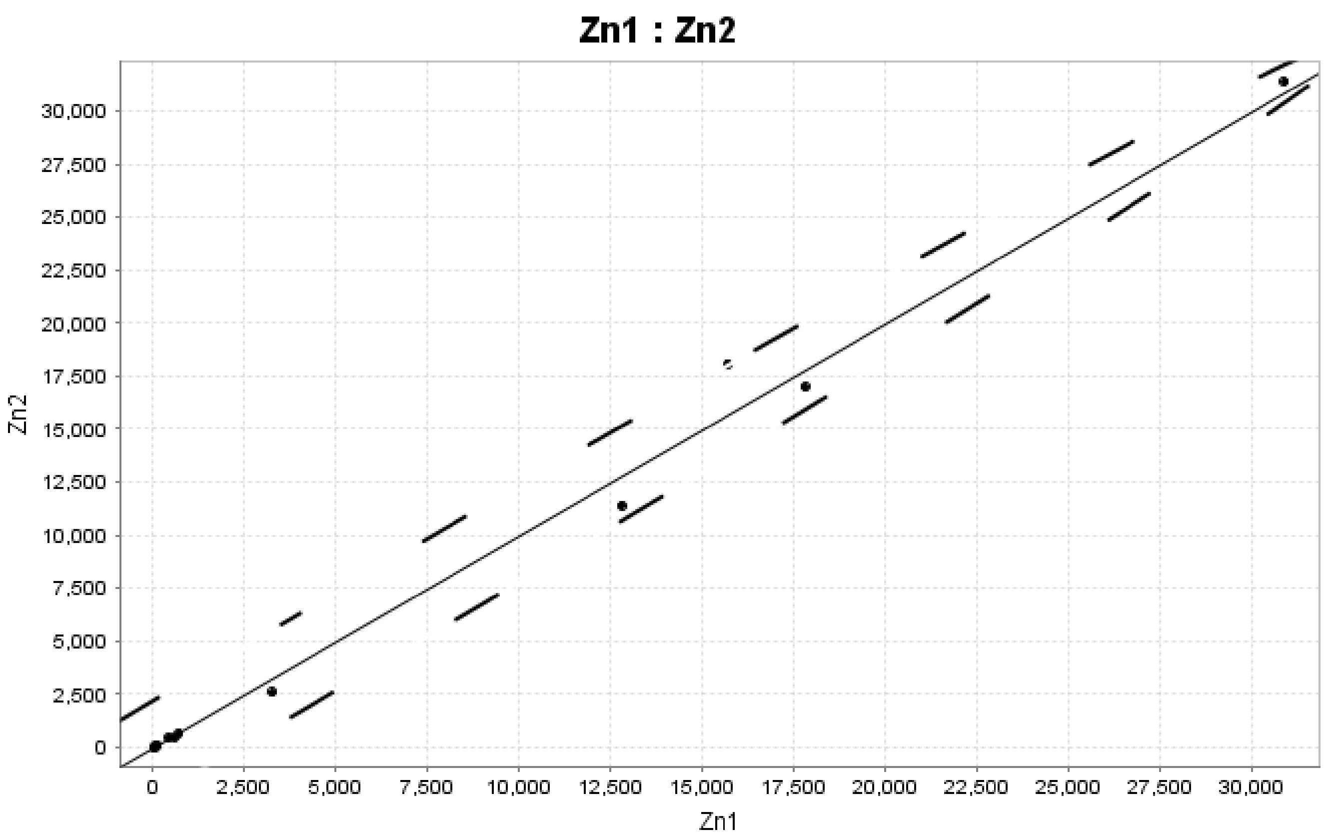


Au1 : Au2 MMI Berens River
p=0.95 (Default Colo
Au2
Au1
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.70



Cu1 : Cu2
Cu2
Cu1
11,000
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0
1,000
2,000
3,000
4,000
5,000
6,000
7,000
8,000
9,000
10,000
11,000


Pb1 : Pb2
Pb2
Pb1
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
850
900


Zn1 : Zn2
Zn2
Zn1
0
2,500
5,000
7,500
10,000
12,500
15,000
17,500
20,000
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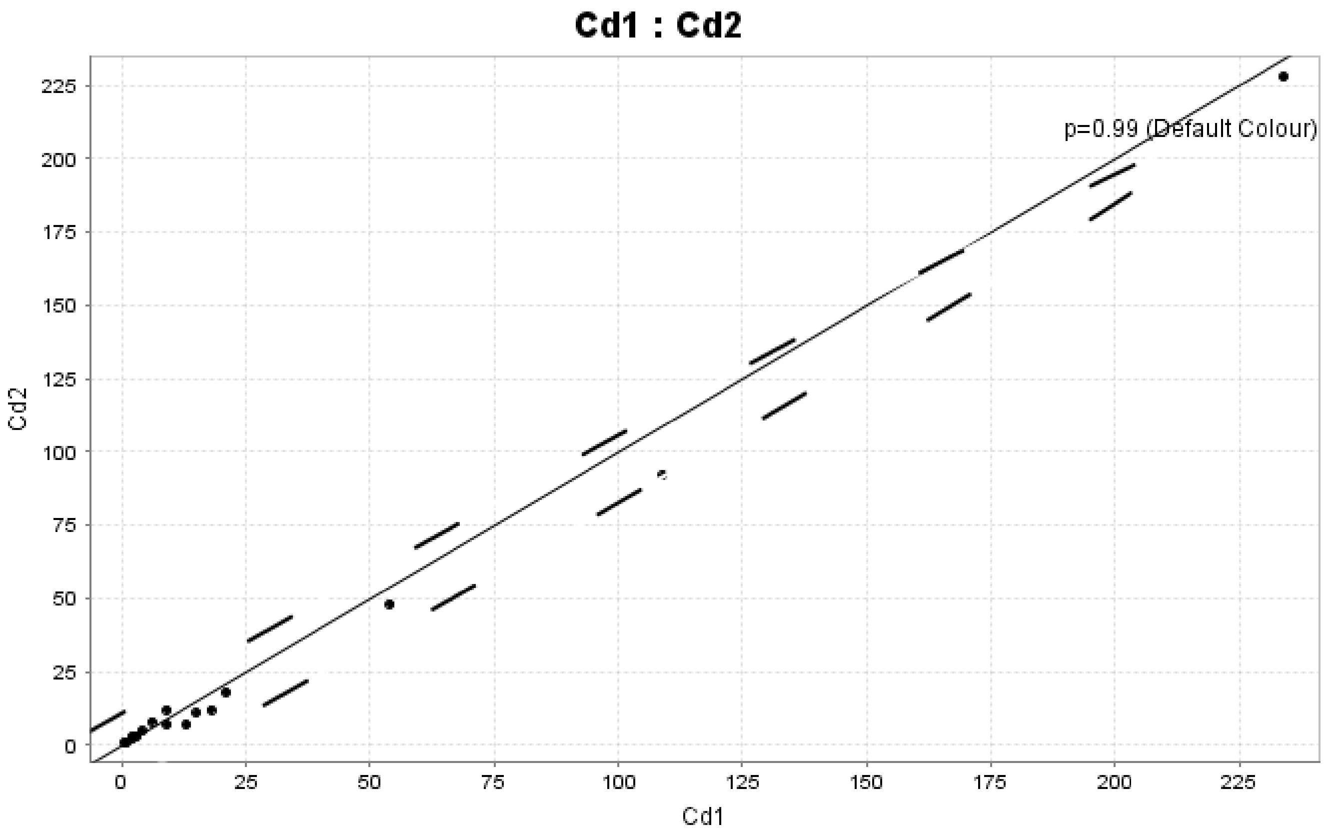
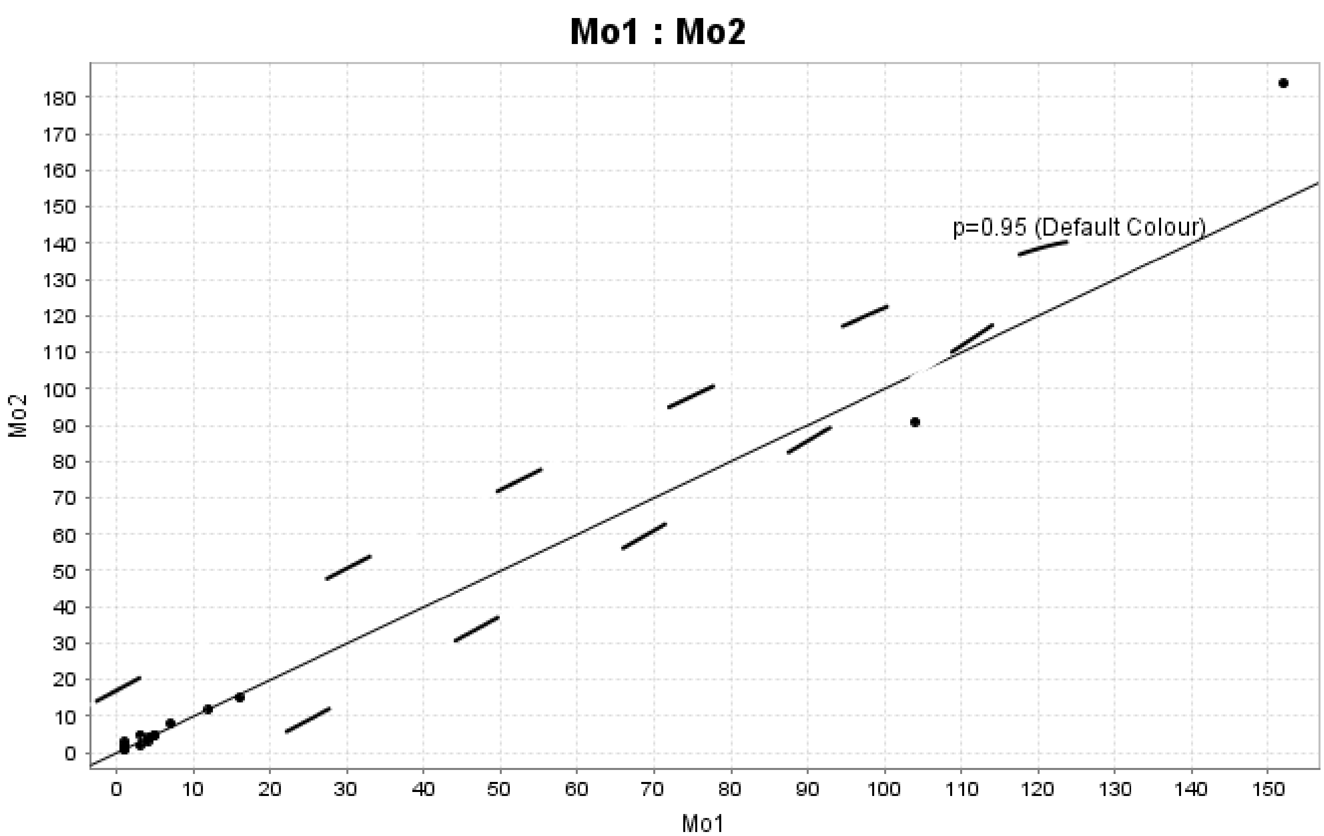
25,000
27,500
30,000


Cd1 : Cd2
p=0.99 (Default Colour)
Cd2
Cd1
0
25
50
75
100
125
150
175
200
225


Mo1 : Mo2
p=0.95 (Default Colour)
Mo2
Mo1
0
10
20
30
40
50
60
70
80
90
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140
150
160
170
180

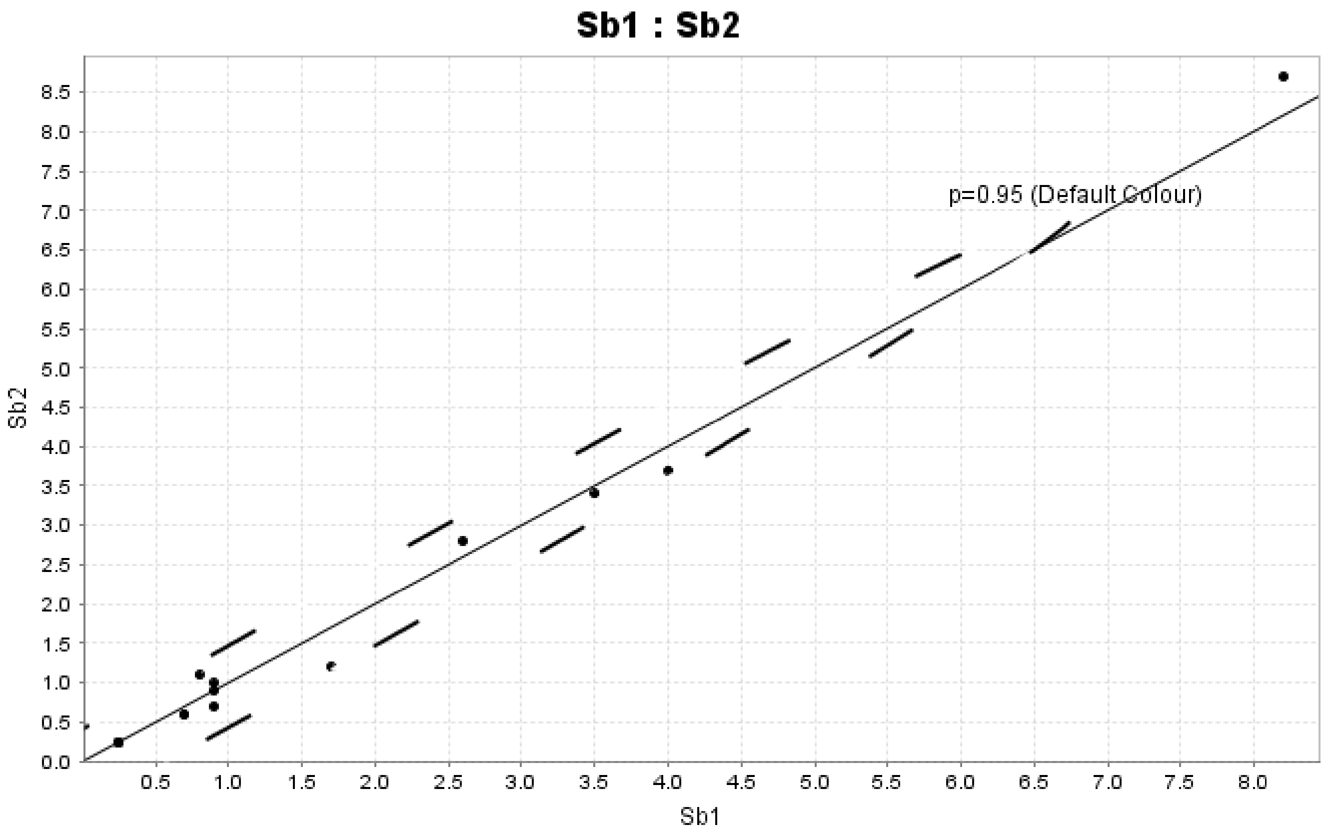


Figure 4. MMI Analytical duplicate plots for Ag, Au, Cu, Pb, Zn, Cd, Mo and Sb. All duplicate samples for Hg were <LLD. Plots shown with 95th percentile ellipse and line Y=X.

Standard MMI Reference Materials

As a measure of accuracy standard reference materials (SRM) are inserted into the sample batch during analysis. The observed analysis for SRM MMISRM19 and AMISO169 (Appendix 2) compare well with the recommended values supplied by SGS Mineral Services. On this basis the accuracy of the MMI data is acceptable for use in MMI data interpretation.

Data Character

Descriptive statistics are given in Tables 5 and 6 for a suite of 8 inter-correlated elements in MMI and aqua regia based data. The significantly stronger partial aqua regia digest extracts much higher concentrations of metals from soil samples than does the much weaker MMI extraction as reflected by the ppb concentrations in

Table 5 versus the ppm concentrations in Table 6. This difference will be reflected for all elements in each of the two datasets and is the basis for observing higher contrast in partial extraction data versus strong digests.

Table 5. Summary statistics (ppb) for MMI orientation survey data, inter-correlatable elements.

286 rows - Univariate	Ag	Au	Cd	Cu	Mo	Pb	Sb	Zn
[Visible] : Count Numeric	255	209	246	258	188	257	166	254
[Visible] : Minimum	0.5	0.1	1	10	2	5	0.5	10
[Visible] : Maximum	428	15.7	267	19000	375	35300	15.2	31400
[Visible] : Mean	26.578824	0.60622	27.430894	1941.034884	19.457447	646.077821	2.036145	3583.043307
[Visible] : Median	14	0.3	10	520	5	234	1.4	405

Table 6. Summary statistics for B Horizon orientation survey data, inter-correlatable elements.

61 rows - Univariate	Ag	Au	Cd	Cu	Mo	Pb	Sb	Zn
[Visible] : Count Numeric	59	59	59	59	59	59	59	59
[Visible] : Minimum	0.01	0.5	0.01	2	0.2	3.2	0.03	14
[Visible] : Maximum	21.5	187	4.44	716	5.6	1000	14.1	5000
[Visible] : Mean	0.637119	7.262712	0.316271	36.305085	0.626102	30.981356	0.425763	167.423729
[Visible] : Median	0.14	0.5	0.14	15	0.43	10.5	0.16	72

Histograms

Histograms for each of the 8 commodity and related elements of particular interest in this survey (Figures 5 and 6) indicate a typical data distribution for trace element geochemistry whether determined by MMI geochemistry or by a strong acid partial digest like aqua regia. The data are positively skewed due to the majority of analyses for any particular element falling in the lower concentration ranges. It is noteworthy however that most of the elements have a small number of samples reporting at high concentration levels (regardless of digestion type) which is suggestive of a separate data population that is distinctly anomalous. It is this skewed data character with a tail of elevated concentrations which is suggestive of an anomalous data population potentially indicative of a mineralization-related signature.

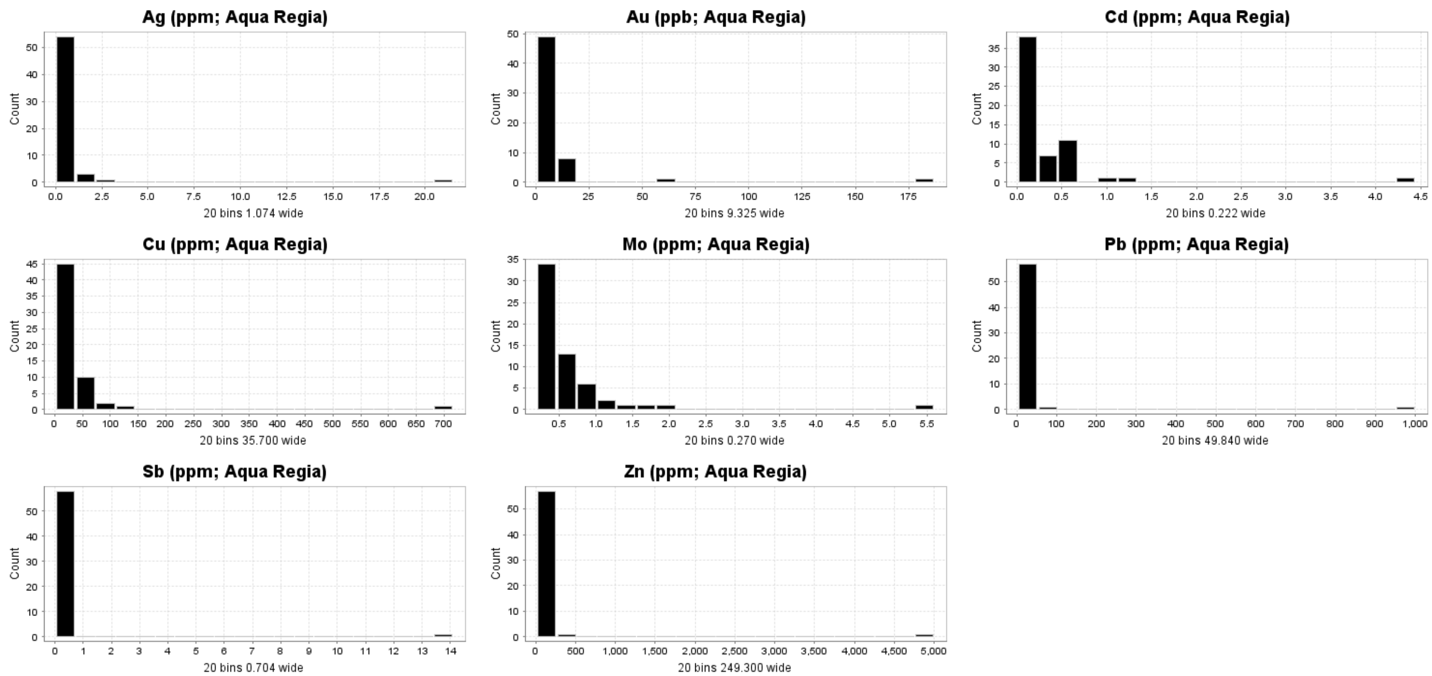


Figure 5. Histograms for Ag, Au, Cd, Cu, Mo, Pb, Sb and Zn in B Horizon aqua regia geochemical data.

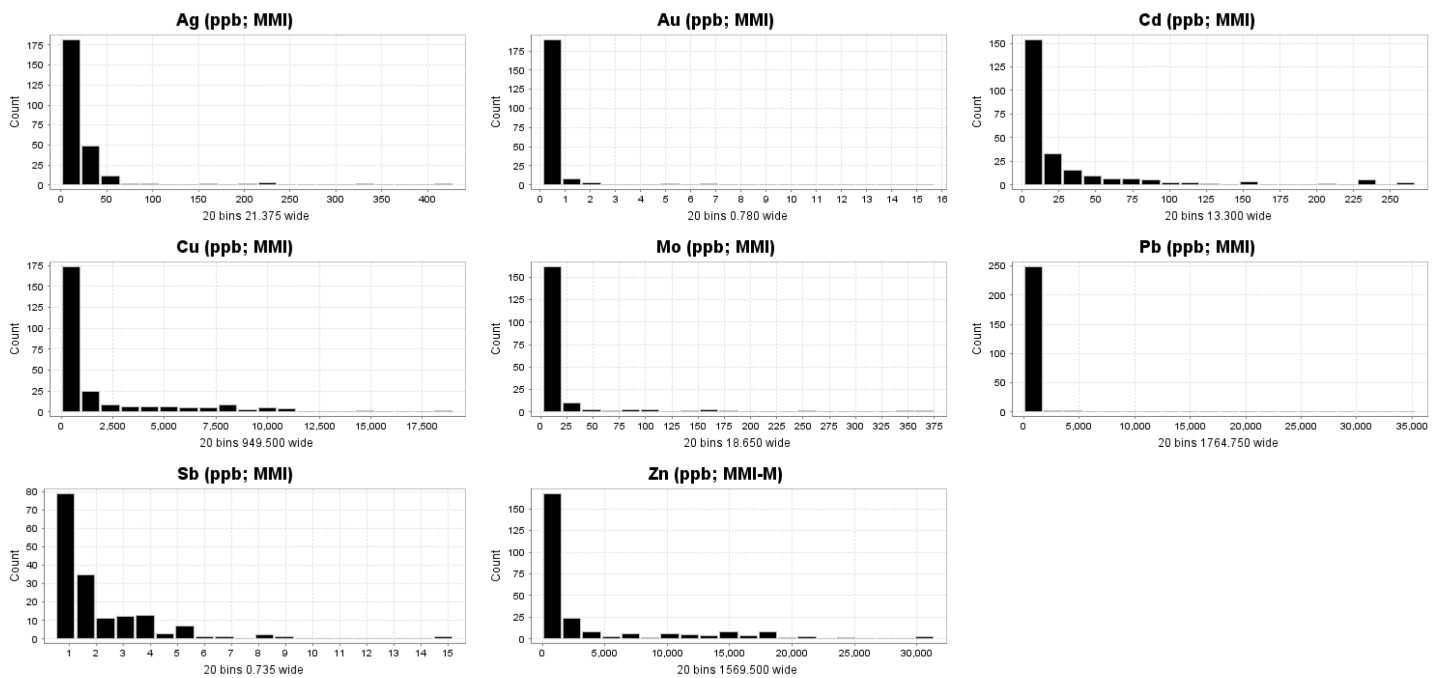


Figure 6. Histograms for Ag, Au, Cd, Cu, Mo, Pb, Sb and Zn in MMI geochemical data.

Spearman-Rank Correlation Coefficient Matrix

This matrix identifies inter-correlated elements for both aqua regia B Horizon geochemistry (Table 7) and MMI geochemistry (Table 8). The strong association of Au and Ag with base metals is evident in the B Horizon data. It is noted however that during sample collection the area of the survey was disturbed and with debris and "ore" piles visible in the general area. There is also an historic tailings area that is reclaimed but present nevertheless on the property and in close proximity to the soil geochemical survey area. The aqua regia sample analyses could reflect contamination from these sources. Very high correlation coefficients such as these are unusual particularly for all elements. The absence of strong inter-correlations between the same elements in the MMI data with the exception of Au-Pb and Au-Sb may be more realistic but the possibility of contamination cannot be ruled out. It is also possible that the maximum concentrations of Au-Pb-Sb occur in the same level of the overburden and as such are strongly correlated whereas elements such as Zn occur either higher or lower in the 40 cm sampling section and results in a low correlation. It is noted there are very few inter-correlated elements with Au or Ag in the MMI data.

Table 7. Spearman-Rank Correlation Coefficient Matrix-B Horizon Soil Geochemistry

Summary of inter-correlated elements, B Horizon soil geochemistry.		
	Ag	**Au**
Ag	0.92	0.92
Cd	0.91	0.84
Cu	0.96	0.91
Pb	0.99	0.94
Sb	0.99	0.93
Zn	0.99	0.93
Mo	0.92	0.84

Table 8. Spearman-Rank Correlation Coefficient Matrix, MMI Geochemistry

Summary of inter-correlated elements, MMI geochemistry.		
	Ag	**Au**
Ag	1	0.31
Cd	0.001	0.063
Cu	-0.081	0.064
Mo	-0.07	0.012
Pb	0.21	0.66
Sb	0.13	0.5
Zn	-0.043	-0.083

Tukey Box Plots

Tukey Box plots are a way to establish outliers and far outliers in geochemical data. For the Berens River B Horizon and MMI geochemical databases the approach was applied to a suite of highly inter-correlated elements based on the results of a Spearman-Rank correlation coefficient matrix (Tables 7 and 8) for B Horizon geochemical data. Graphical depiction of these plots for both datasets are included in Appendix 3-2 and relevant data summarized in Tables 9 and 10.

Examination of these tables indicates the much higher concentration of metals that are being extracted by the aqua regia digest versus the MMI extraction as expected. Threshold values for upper and far outliers for each element in both datasets are presented and can be used in future soil geochemical surveys based on either analytical technique.

Table 9. Tukey Box plot values for outliers and far outliers in B Horizon soil geochemical data for the ore and ore-related elements. Values in ppm except for Au which is in ppb.

Summary of Tukey Box plot outlier and threshold values for inter-correlatable elements determined by MMI geochemistry, Berens River project. All values in ppb.		
Element	**Upper Outlier**	**Far Outlier or Threshold**
Ag	0.405	0.6
Au	9.25	14.5
Cu	78	120
Pb	32.65	47.5
Zn	182.5	259
Cd	0.945	1.47
Mo	1.14	1.62
Sb	0.395	0.56

Table 10. Tukey Box plot values for outliers and far outliers in MMI geochemical data for the ore and ore-related elements. Values in ppm except for Au which is in ppb.

Summary of Tukey Box plot outlier and threshold values for inter-correlatable elements determined by aqua regia B Horizon geochemistry, Berens River project. Au in ppb; others ppm.		
Element	**Upper Outlier**	**Far Outlier or Threshold**
Ag	51.1	76.9
Au	0.95	1.4
Cu	3405	5288
Pb	1085	1677
Zn	7486	11930
Cd	60	93
Mo	19	28
Sb	5.4	8.2

Partitioning of MMI Elements-Vertical Profiling

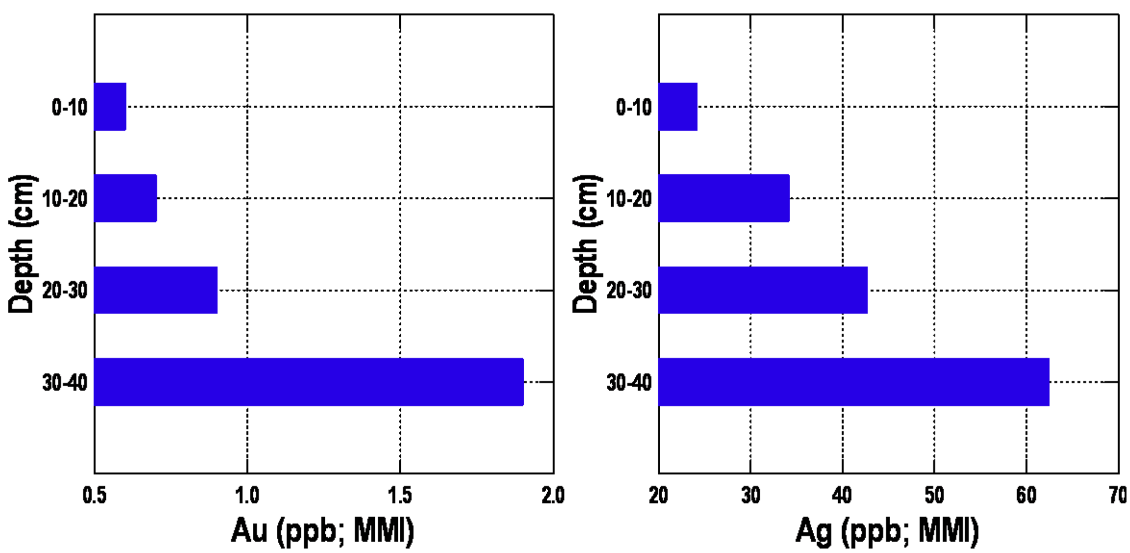
The process of vertical profiling is a graphical method used to determine the optimum depth of sampling for phase 2 or the exploration phase of the project where MMI is applied to the larger areas of interest. The procedure has many benefits in an MMI soil geochemical survey. Firstly, by determining the depth at which the sample must be collected the optimum geochemical signature can be acquired. This permits the recognition of a bona fide anomalous response and the elements characteristic of the source region responsible for the anomaly. Secondly, ranking of anomalies across the exploration area being can therefore be undertaken with confidence. It is noted that B Horizon soils were only sampled from a single depth roughly equivalent to 10-20 cm below the organic-inorganic contact and no vertical profiling was undertaken.

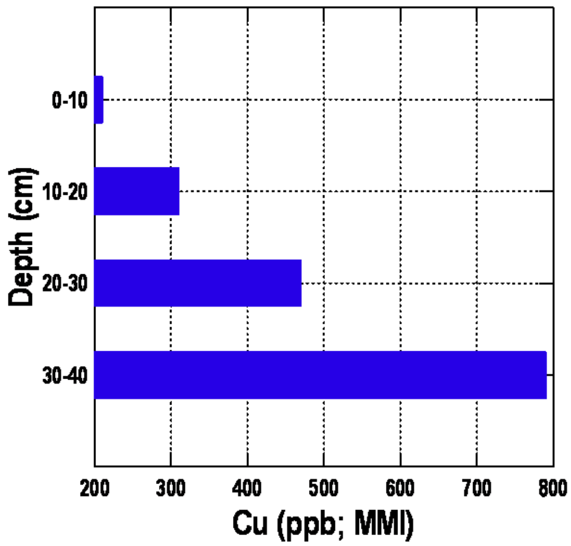
Figures 7, 8 and 9 are horizontal bar charts for elements analyzed in samples from site BR-16-28. At this site there is measureable and elevated Au in each of the 4 sample intervals (0-10 cm, 10-20 cm, 20-30 cm and 30-40 cm). This presents a good opportunity to examine element variability with respect to that of Au. It becomes apparent that there is a suite of elements that appear covariant with Au (Ag, Cu, Ni, Ca, Mg, Li, Sr, Y and the REE Dy, Er, Eu, Gd, Sm, Tb and Yb) whereas there is another group of elements that behave opposite to these elements decreasing in concentration with depth (Al, Cs, Rb, U, Th, Zr, Zn and some REE Ce, La, Nd and Pr). When the results for pH measurements are examined against these two groups of elements it appears that pH increases with depth signaling a more basic environment where enhanced Au and related elements are maximized. Additionally the suite of elements that react opposite to those appear to be maximized in a less basic or more acidic environment. This includes Zn and suggests a possible explanation for poor correlation between Au and Zn in this environment as was hypothesized earlier in this report.

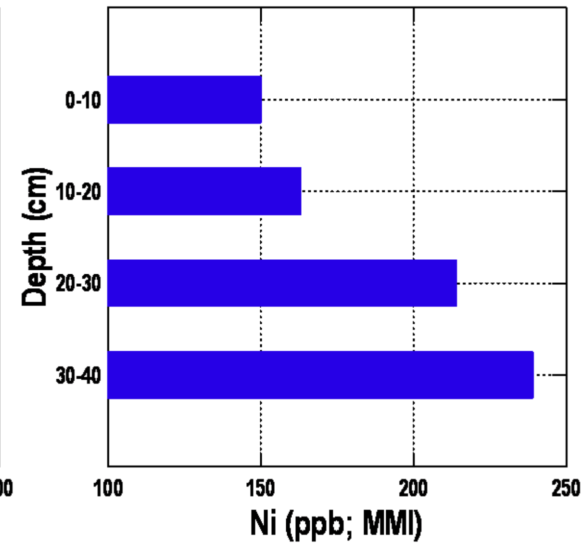
The variable results in the vertical profiling is likely controlled by the variation in the pH of the environment and could be the result of many factors including the presence or absence of oxidation versus non-oxidized sediment. The observed variability between the depths of maximum concentration for some elements between sample sites in this survey suggests the presence or absence of a base and/or precious metal anomaly in the Berens River survey at more than one depth. This is generally an indication of a robust anomaly-forming mechanism and associated geochemical signature. In fact there are sample sites in this survey where Au is maximized at many sample depths (see sites BR-16-24, -28 through -33, -36, -39, -40, -45 and -46). It is noted that Au at site BR-16-24 behaves opposite to site BR-16-28 in that Au is maximized at surface and slowly decreases to 40 cm and is accompanied in this pattern by numerous elements including Ag. Notwithstanding the possibility of reversing the order of the sample bags in the field this pattern makes a universal explanation for all observed patterns difficult.

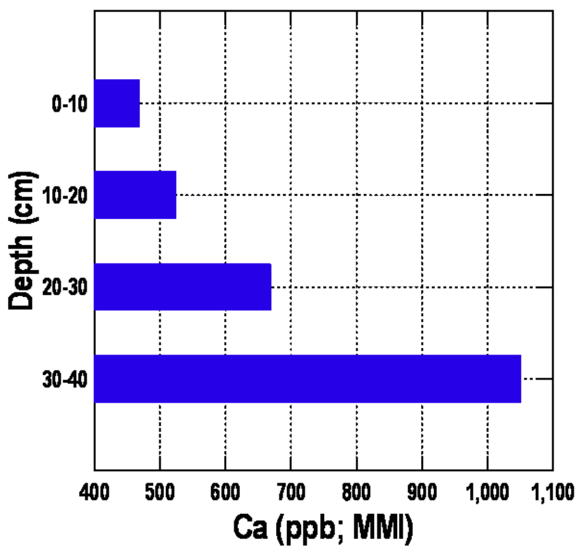
Based on the consistency of elevated Au in samples collected from deeper parts of the vertical sampling profile it is suggested that the optimum sampling depth to detect a significant Au anomaly is 30-40 cm or possibly 20-30 cm. This sample depth will also help to offset potential windblown and hydrogeologic contamination originating from historic mining activities.

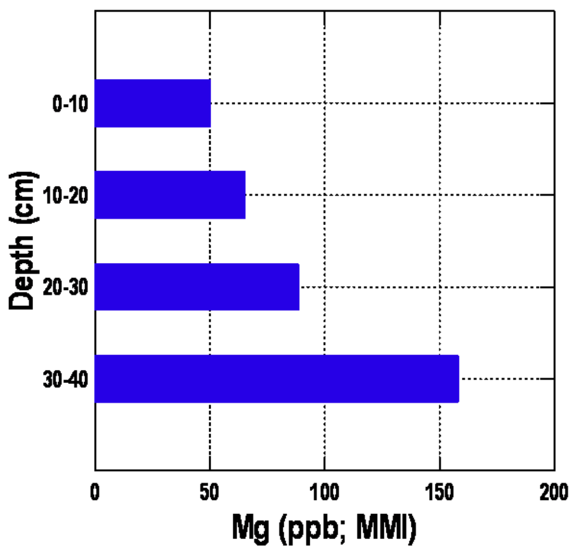
In the next section individual bubble plots will be prepared for all elements covariant with Au in the 30-40 cm sample. These results will be compared and contrasted with the same elements determined by aqua regia digestion.

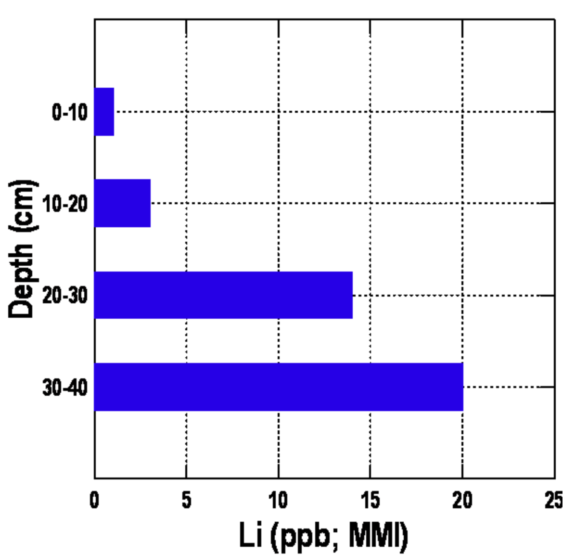


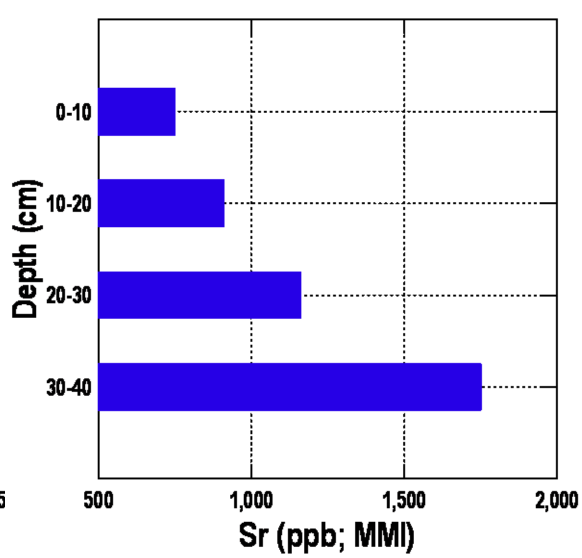

0-10
10-20
20-30
30-40
Depth (cm)
200
300
400
500
600
700
800
Cu (ppb; MMI)


0-10
10-20
20-30
30-40
Depth (cm)
100
150
200
250
Ni (ppb; MMI)


0-10
10-20
20-30
30-40
Depth (cm)
400
500
600
700
800
900
1,000
1,100
Ca (ppb; MMI)


0-10
10-20
20-30
30-40
Depth (cm)
0
50
100
150
200
Mg (ppb; MMI)


0-10
10-20
20-30
30-40
Depth (cm)
0
5
10
15
20
25
Li (ppb; MMI)


0-10
10-20
20-30
30-40
Depth (cm)
500
1,000
1,500
2,000
Sr (ppb; MMI)

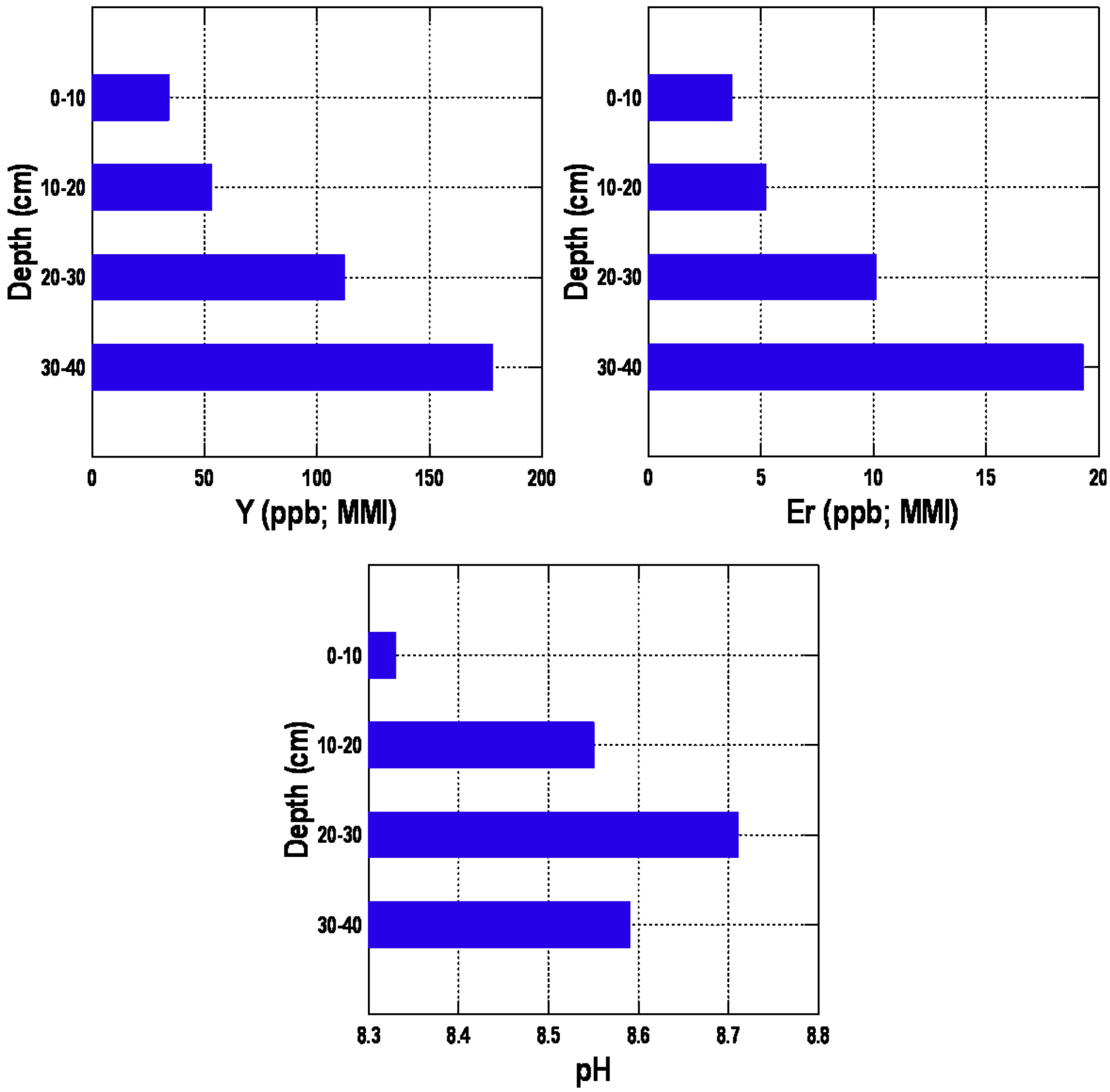
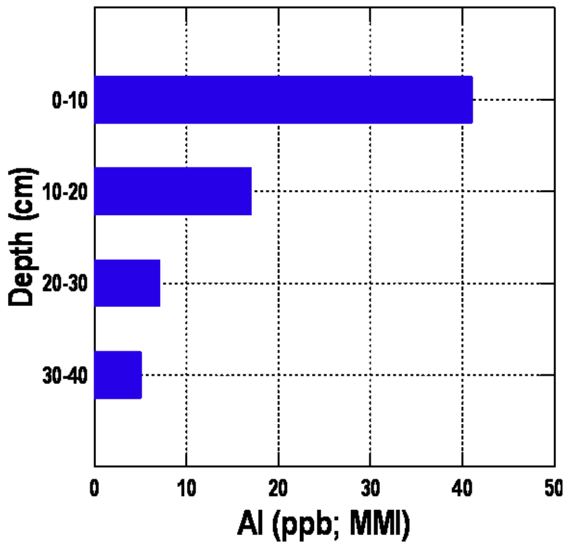
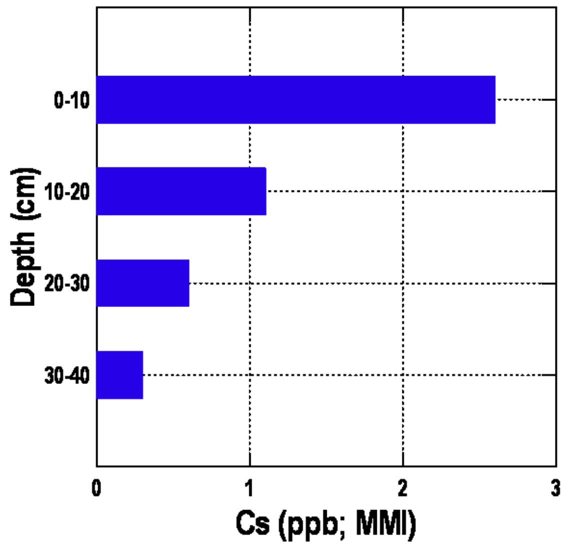
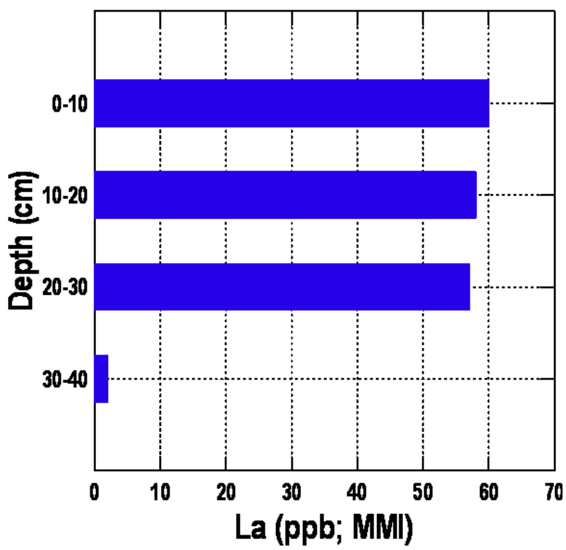
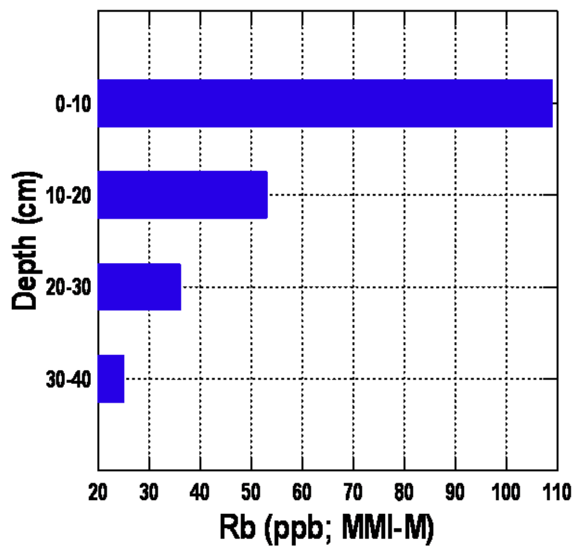


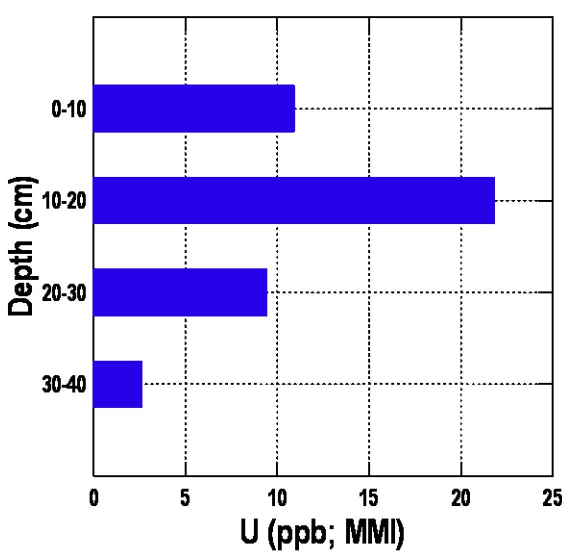
Figure 7. Vertical profiles at Site BR-16-28 for MMI Au, Ag, Cu, Ni, Ca, Mg, Li, Sr, Y and pH.

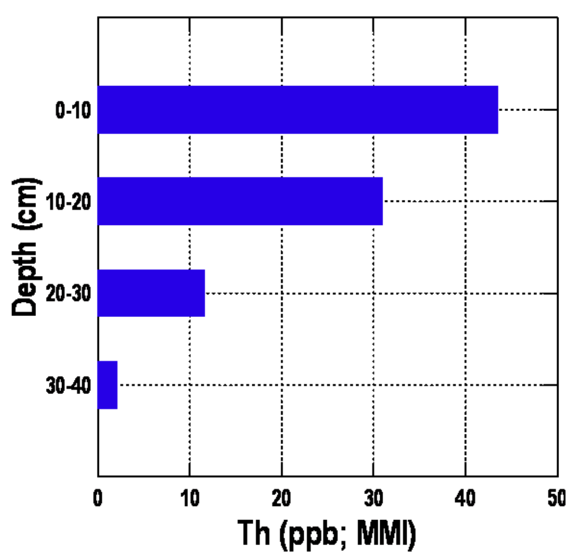

Depth (cm)
0-10
10-20
20-30
30-40
0 10 20 30 40 50
Al (ppb; MMI)


Depth (cm)
0-10
10-20
20-30
30-40
0 1 2 3
Cs (ppb; MMI)


Depth (cm)
0-10
10-20
20-30
30-40
0 10 20 30 40 50 60 70
La (ppb; MMI)


Depth (cm)
0-10
10-20
20-30
30-40
20 30 40 50 60 70 80 90 100 110
Rb (ppb; MMI-M)


Depth (cm)
0-10
10-20
20-30
30-40
0 5 10 15 20 25
U (ppb; MMI)


Depth (cm)
0-10
10-20
20-30
30-40
0 10 20 30 40 50
Th (ppb; MMI)

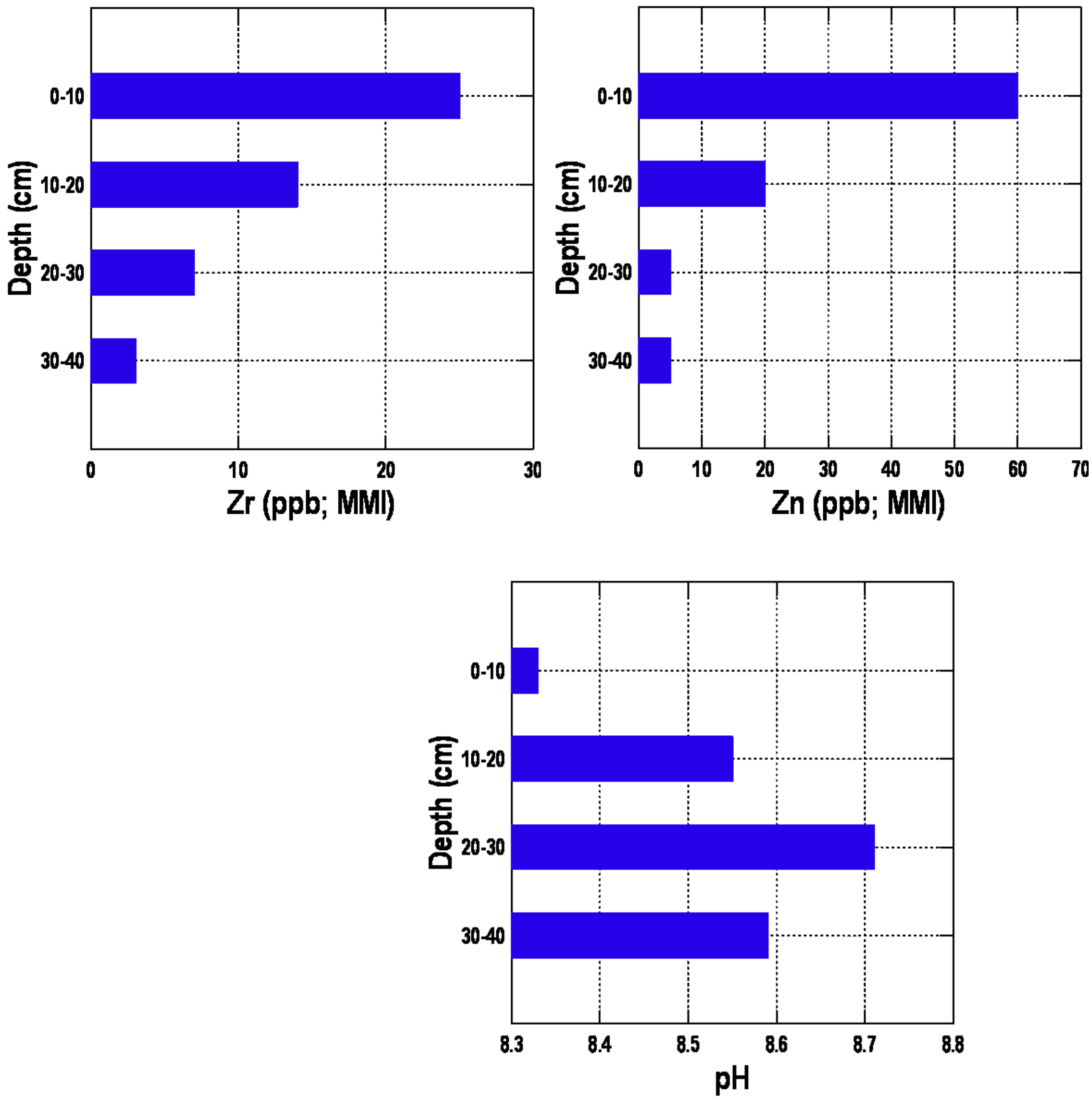
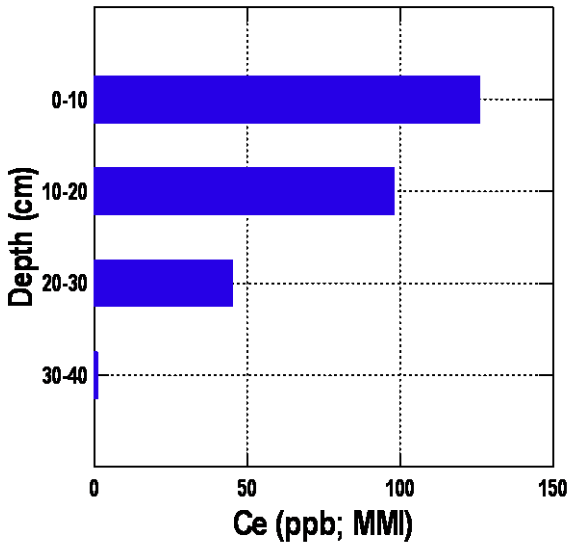
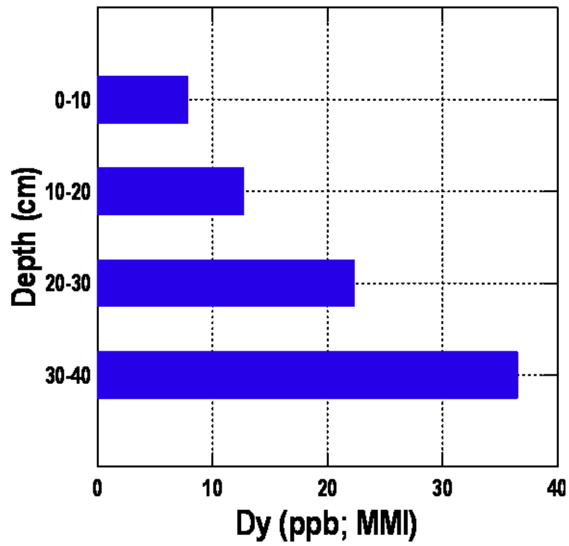
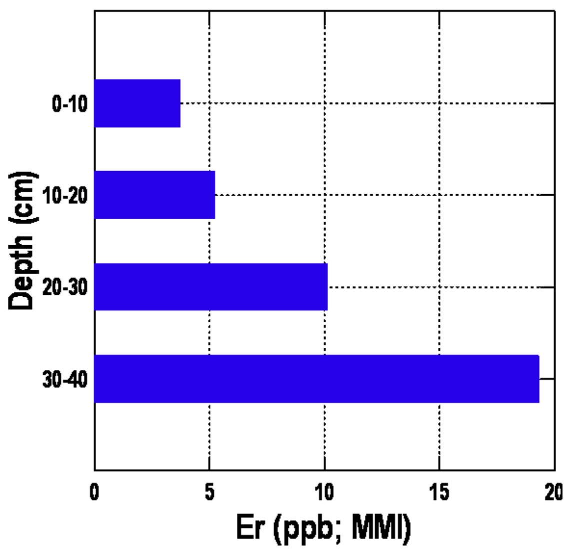
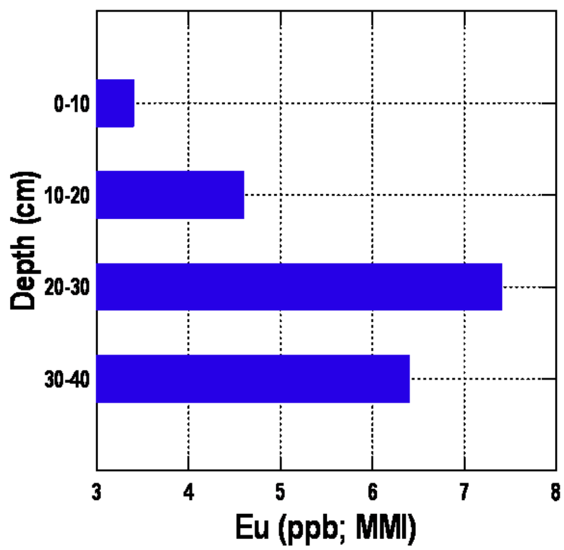


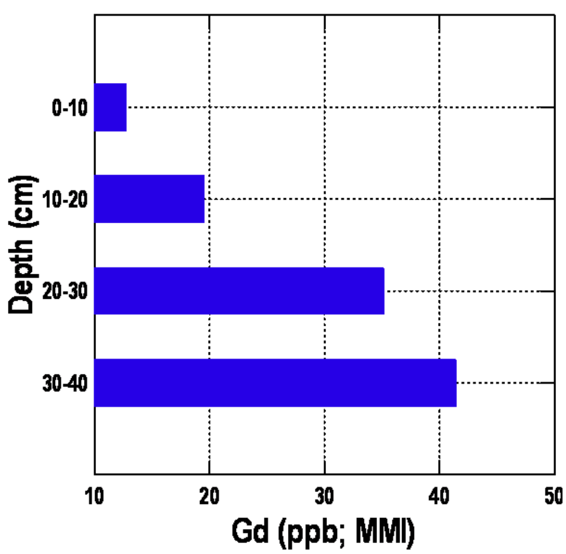
Figure 8. Vertical profiles at Site BR-16-28 for MMI Al, Cs, La, Rb, U, Th, Zr and Zn and pH.

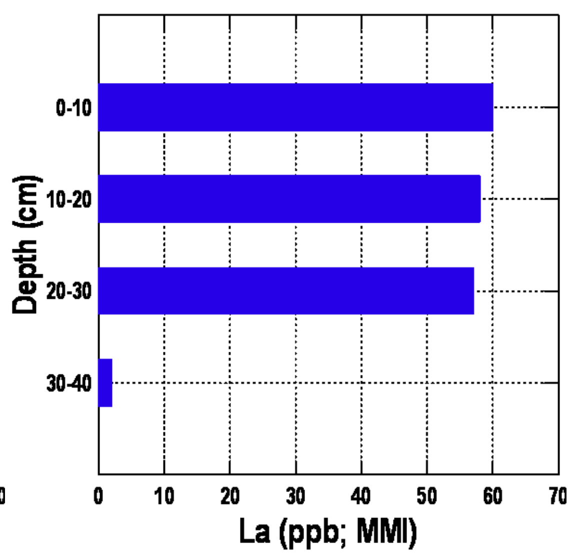

Depth (cm)
0-10
10-20
20-30
30-40
0
50
100
150
Ce (ppb; MMI)


Depth (cm)
0-10
10-20
20-30
30-40
0
10
20
30
40
Dy (ppb; MMI)


Depth (cm)
0-10
10-20
20-30
30-40
0
5
10
15
20
Er (ppb; MMI)


Depth (cm)
0-10
10-20
20-30
30-40
3
4
5
6
7
8
Eu (ppb; MMI)


Depth (cm)
0-10
10-20
20-30
30-40
10
20
30
40
50
Gd (ppb; MMI)


Depth (cm)
0-10
10-20
20-30
30-40
0
10
20
30
40
50
60
70
La (ppb; MMI)

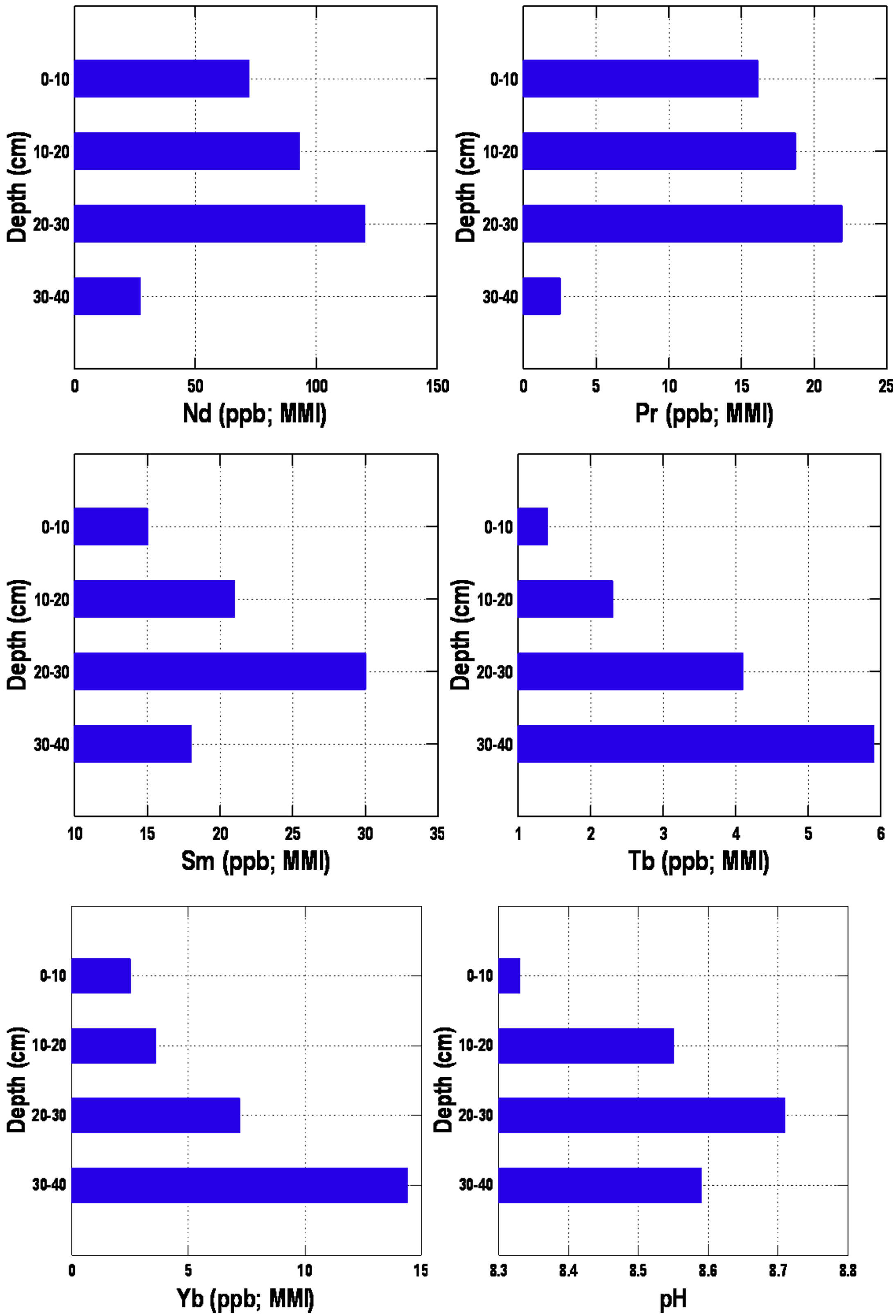


Figure 9. Vertical profiles at Site BR-16-28 for MMI REE (Ce, Dy, Er, Eu, Gd, La, Nd, Pr, Sm, Tb and Yb and pH.

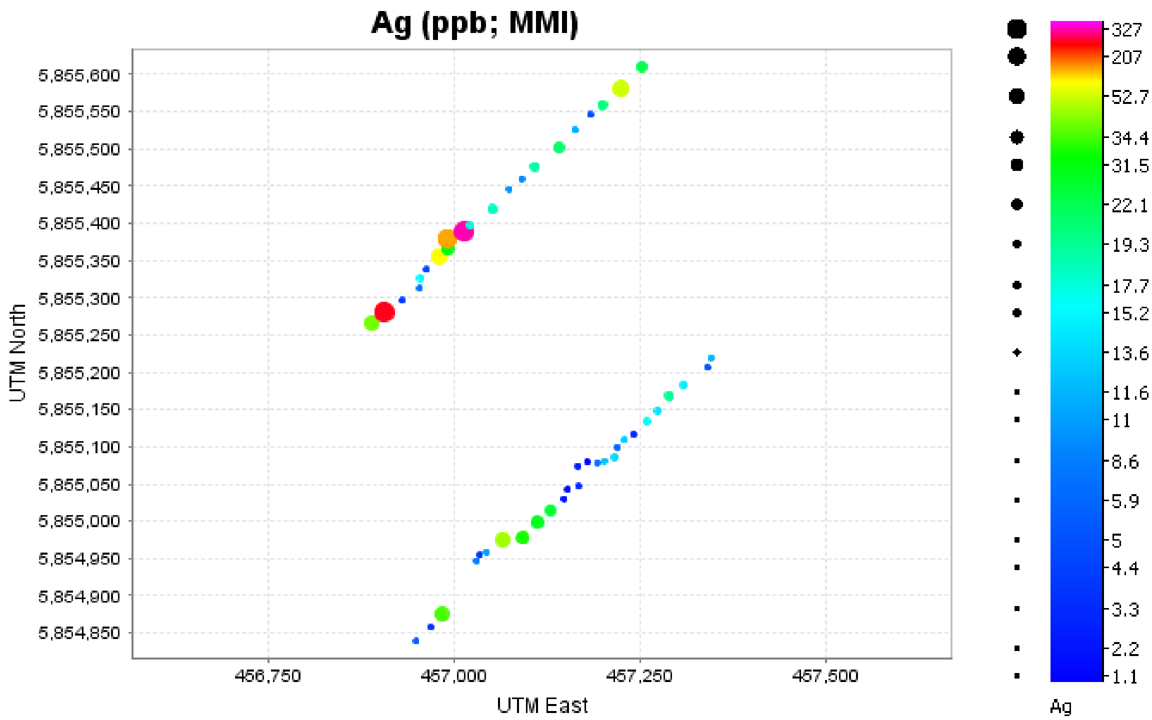
The Variation in Concentration of B Horizon and MMI Extractable Elements in the Berens River Survey (Figure 10)

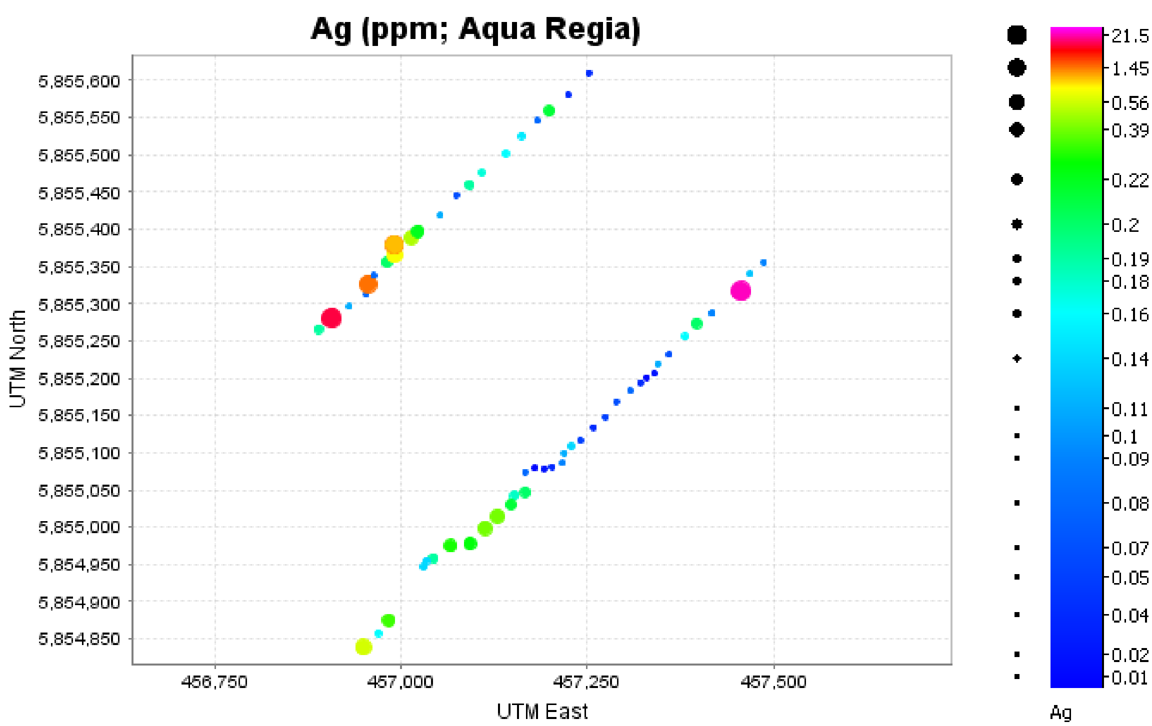
MMI data is presented as bubble plots based on concentration. The plots are constructed with elevated responses coded by colour (Hot colors=anomalous responses) and in size (the larger the symbol the higher the concentration of that particular element at any sample site). Individual element plots are presented for both MMI and B Horizon geochemistry for comparative purposes. The MMI plot uses data from the 30-40 cm sample depth.

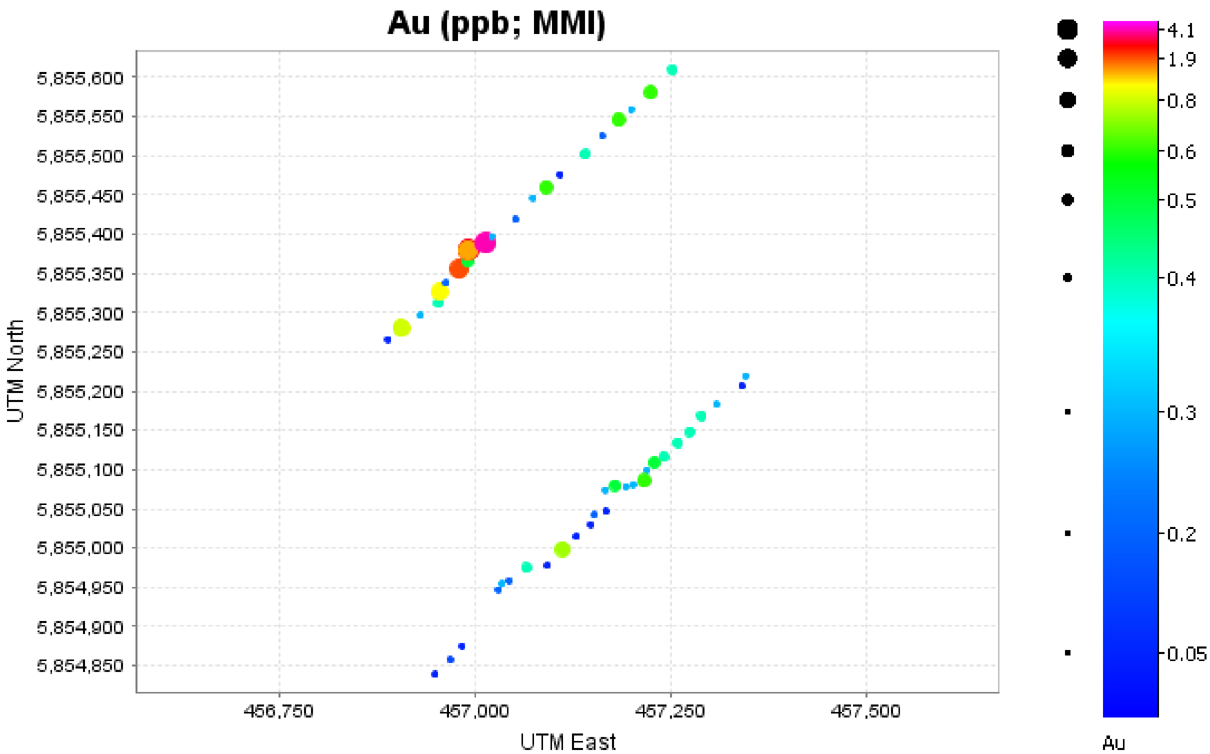
Observations

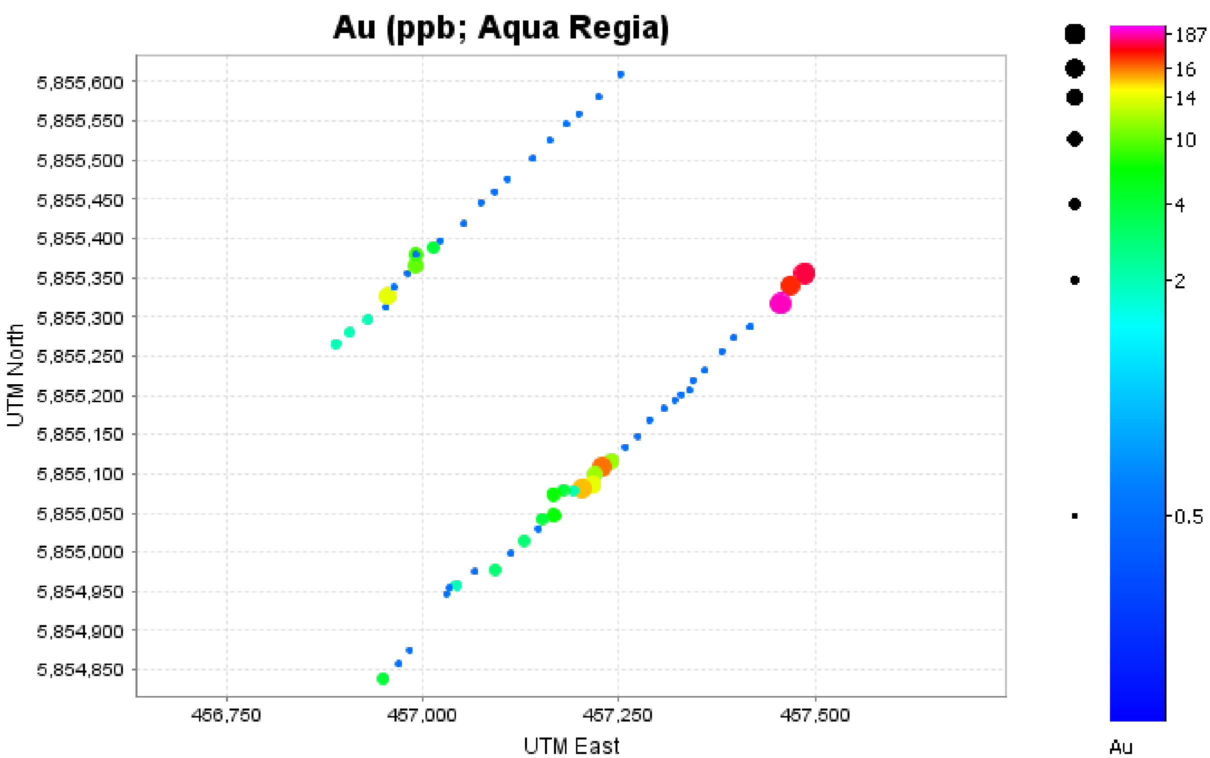
Examination of the B Horizon-MMI plots for commodity and lithologically sensitive elements indicates drastic differences are present for the two sets of results in terms of defining anomalous responses. For the commodity-related elements Ag, As, Cd and Tl and the light, intermediate and heavy rare earth elements the results for the two different analytical approaches are broadly similar. However two distinctly different patterns of response are noted for Co, Li, Nb and Sr (lithology indicators) and major, multi-sample high contrast anomalies for Cu, Pb, Zn, Sb, Mo and Ni are missing from the aqua regia data. Of particular interest is the dramatically different responses for Au. A high-contrast multi-sample Au anomaly defined in the MMI data is missing from the aqua regia dataset and a high-contrast Au response in the aqua regia data is absent from the MMI dataset.

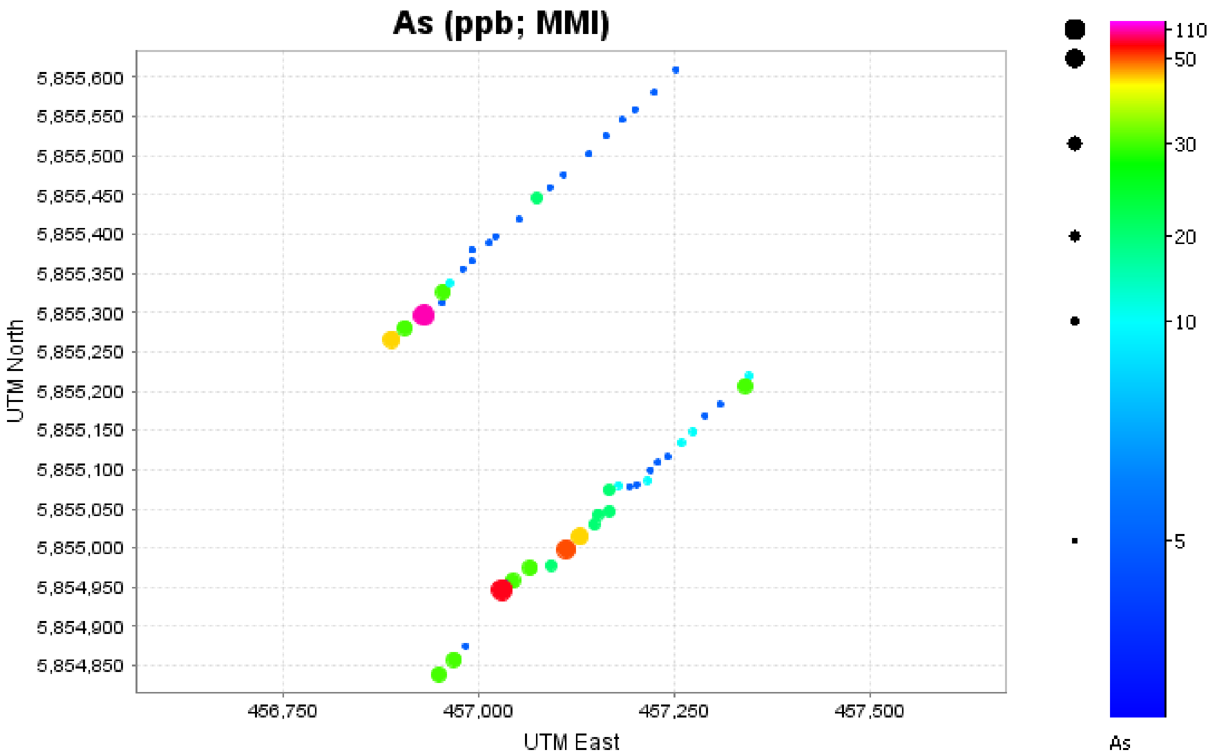
These observations are problematic and an explanation for the missing anomalous responses in the aqua regia dataset may be related to the fact that the soil profile in the survey area is developed upon reworked glacial materials. Boulder alluvium prevented MMI sample collection from a number of sites in the area and the absence of any anomalous response in the B Horizon materials might very well be related to masking by glacially reworked transported materials. Additionally any anomalous response that appears in the aqua regia data that does not correspond to the same or similar response in MMI data might be attributed to either windblown or hydromorphic dispersion from tailings or historic workings. MMI samples have some added benefit in being collected from 4 different sample depths with the deepest sample (30-40 cm) used to prepare the plots in Figure 10.






Au (ppb; MMI)
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
UTM North
456,750
457,000
457,250
457,500
UTM East
4.1
1.9
0.8
0.6
0.5
0.4
0.3
0.2
0.05
Au


Au (ppb; Aqua Regia)
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
UTM North
456,750
457,000
457,250
457,500
UTM East
187
16
14
10
4
2
0.5
Au



As (ppb; MMI)
UTM North
UTM East
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
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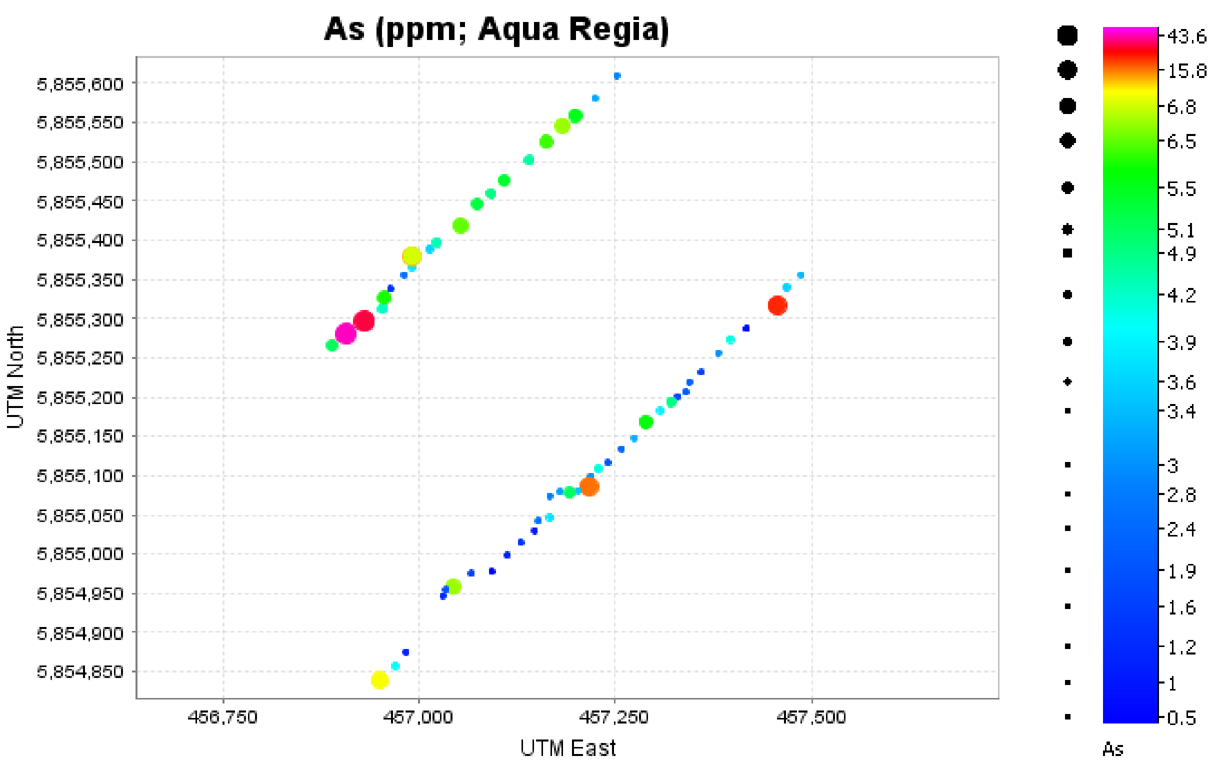
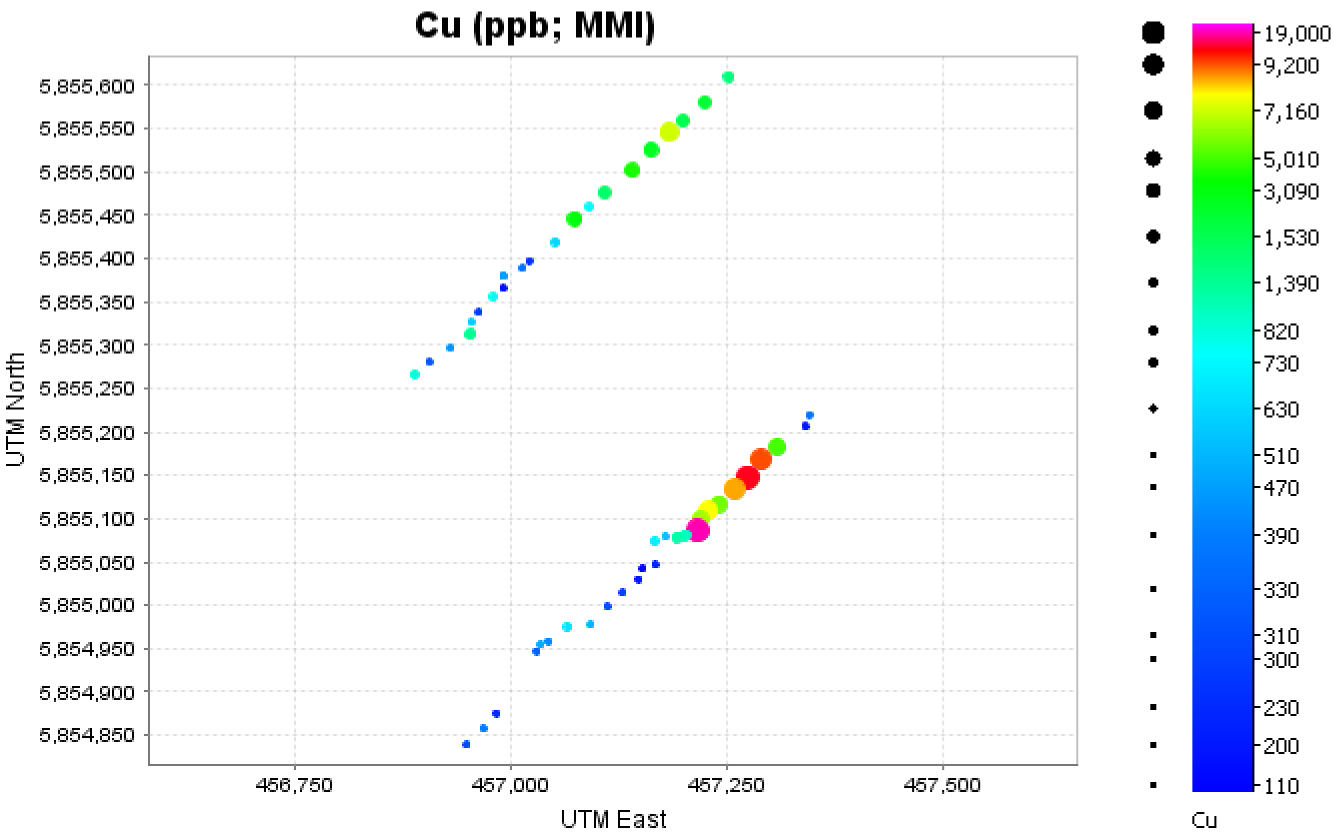
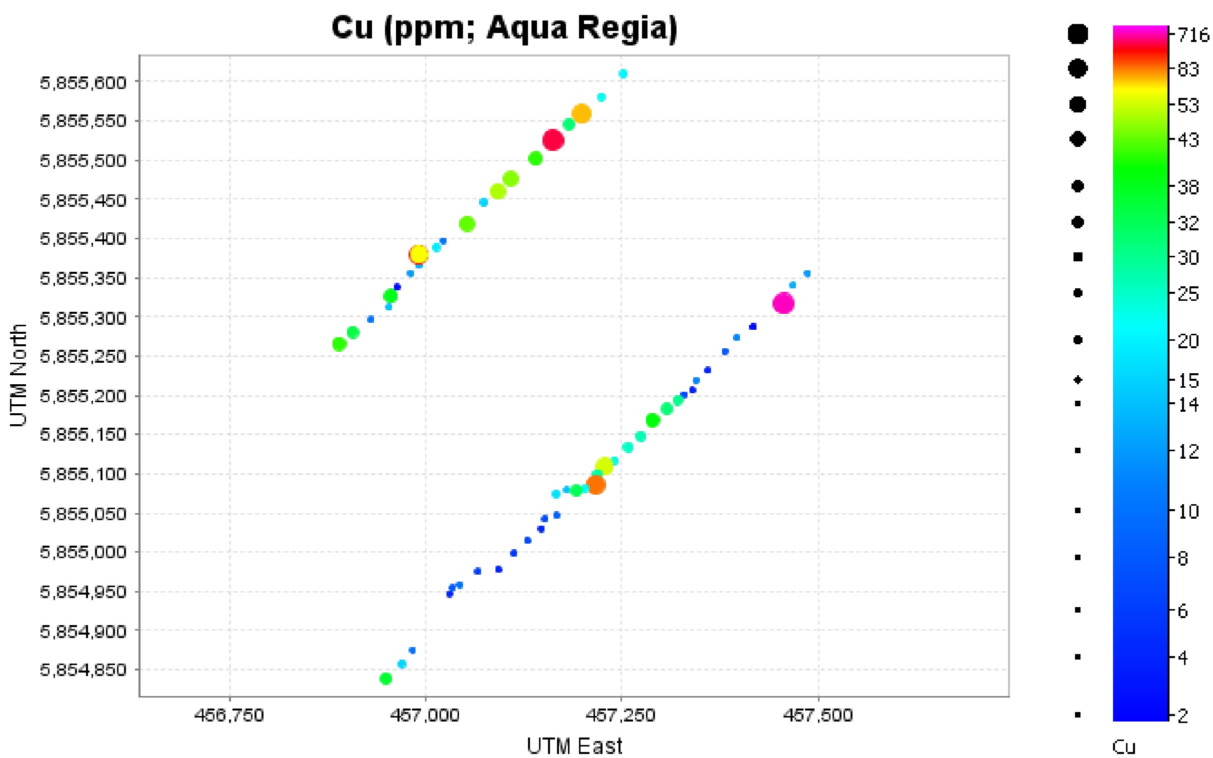
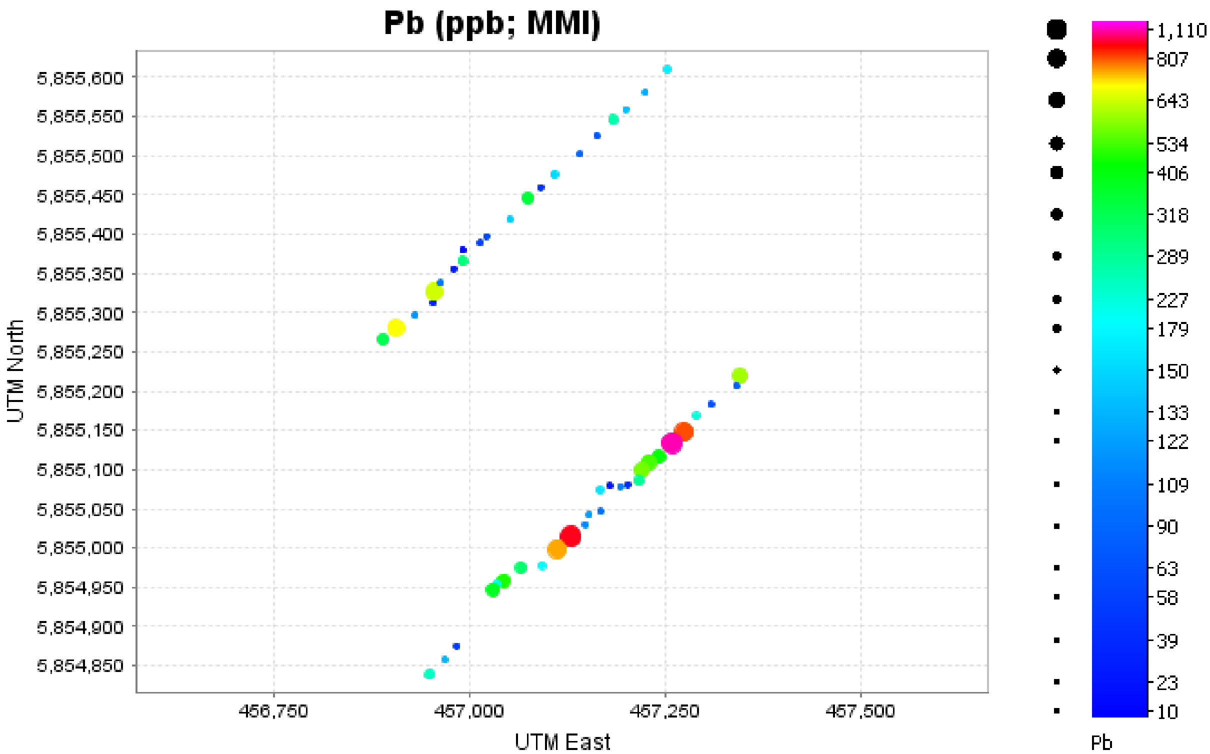
456,750
457,000
457,250
457,500
110
50
30
20
10
5
As

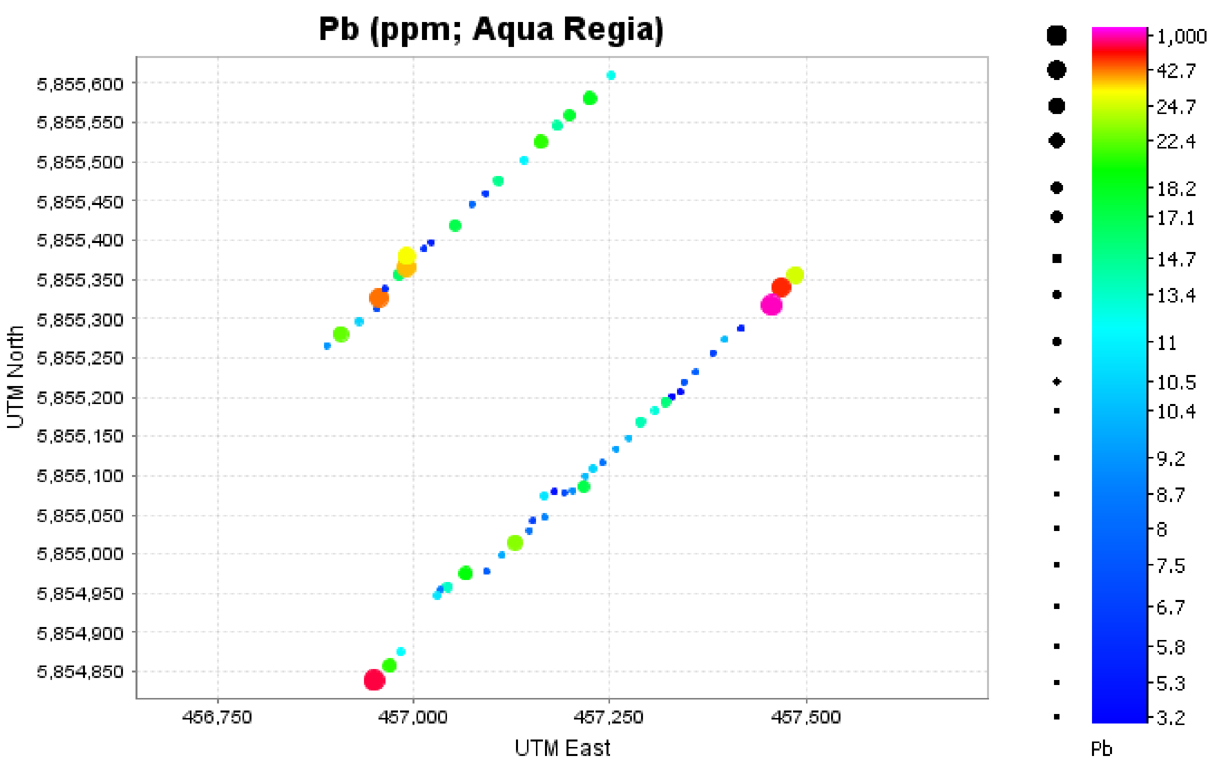


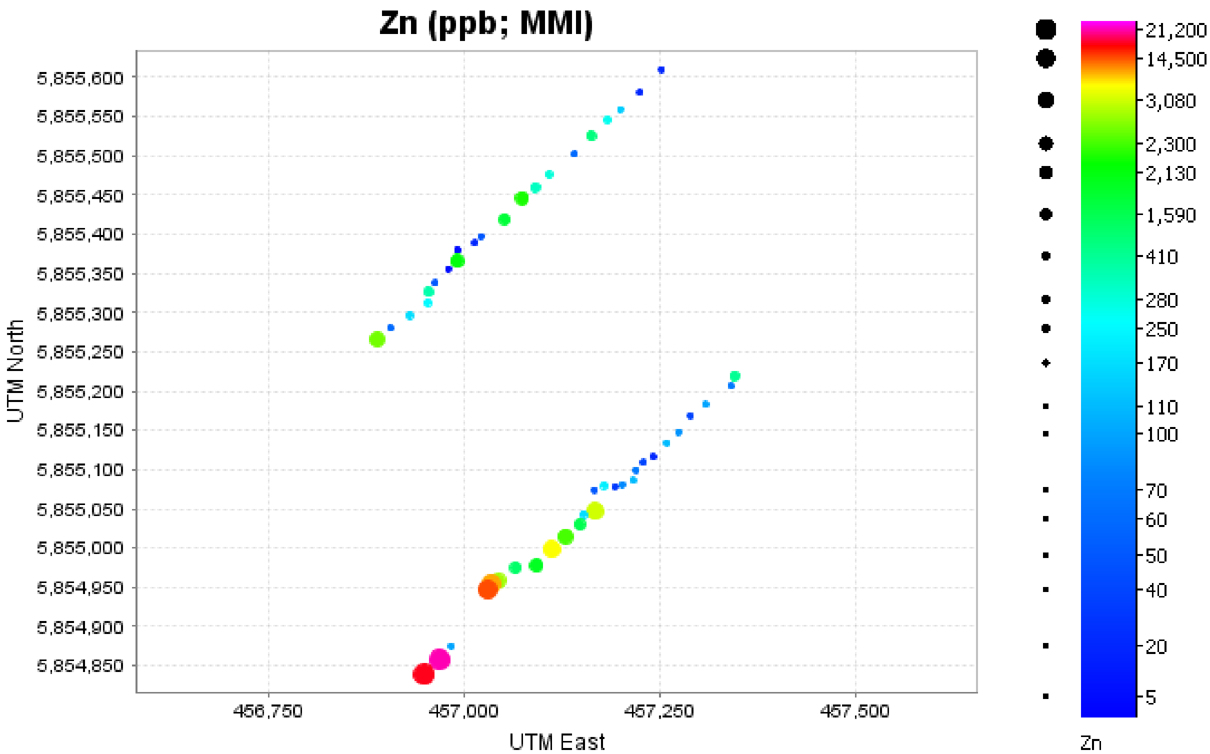
As (ppm; Aqua Regia)
UTM North
UTM East
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
43.6
15.8
6.8
6.5
5.5
5.1
4.9
4.2
3.9
3.6
3.4
3
2.8
2.4
1.9
1.6
1.2
1
0.5
As

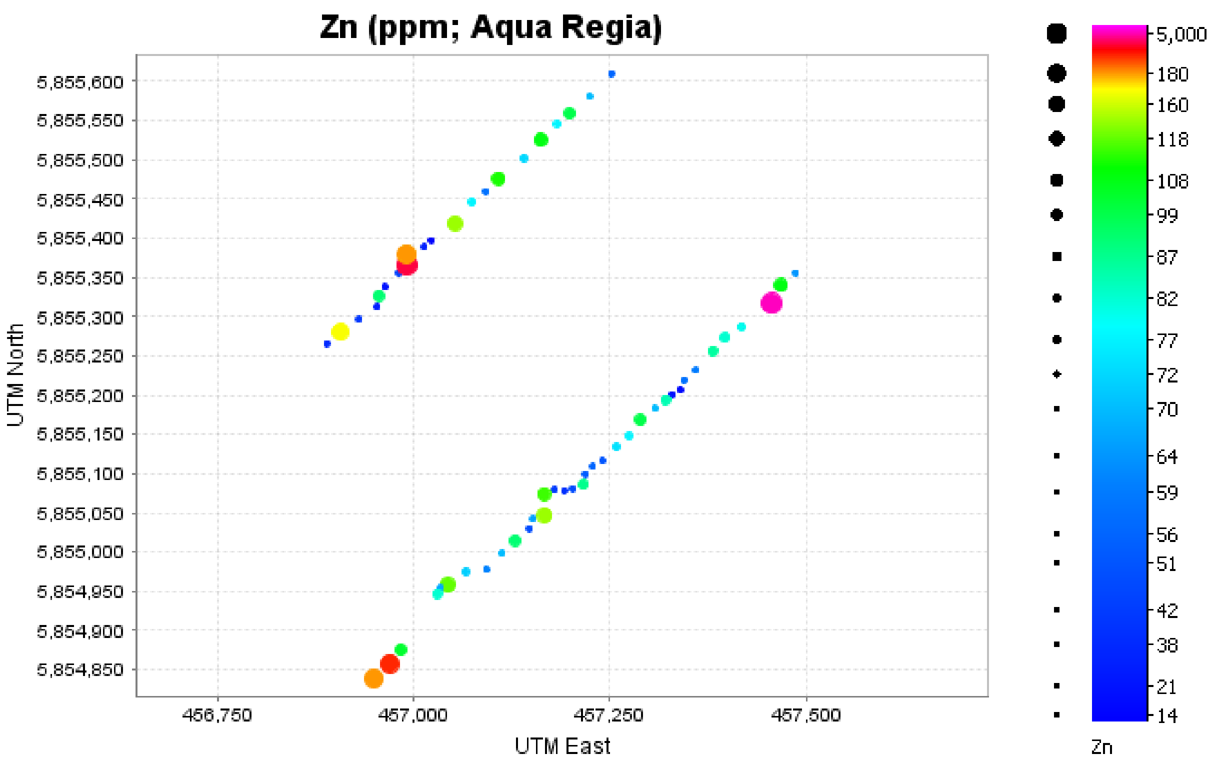

Cu (ppb; MMI)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
19,000
9,200
7,160
5,010
3,090
1,530
1,390
820
730
630
510
470
390
330
310
300
230
200
110
Cu

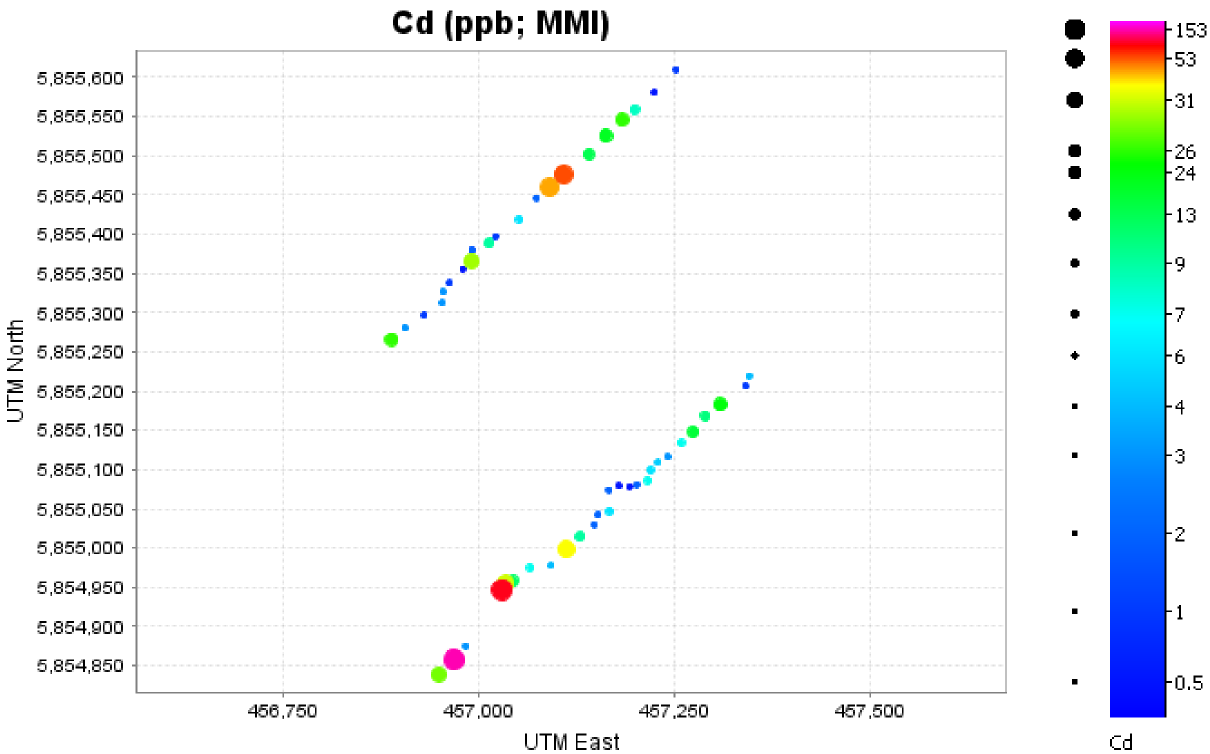

Cu (ppm; Aqua Regia)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
716
83
53
43
38
32
30
25
20
15
14
12
10
8
6
4
2
Cu

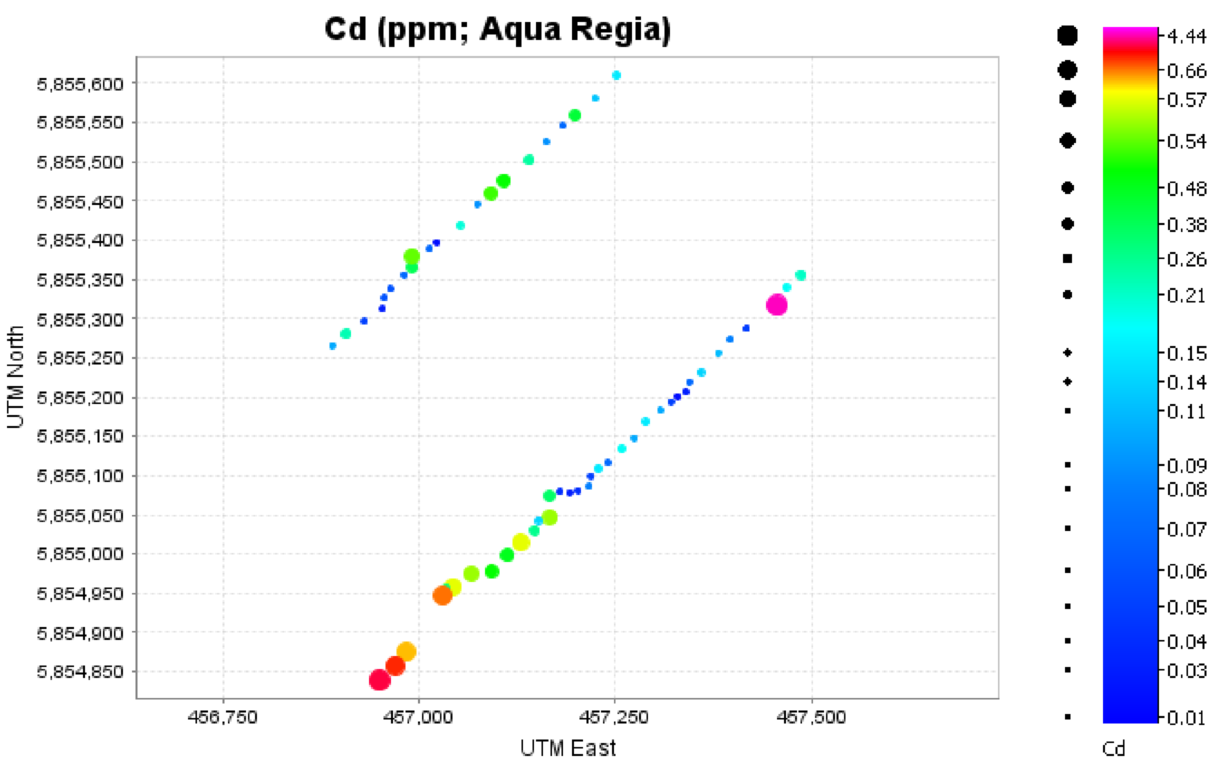

Pb (ppb; MMI)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
1,110
807
643
534
406
318
289
227
179
150
133
122
109
90
63
58
39
23
10
Pb

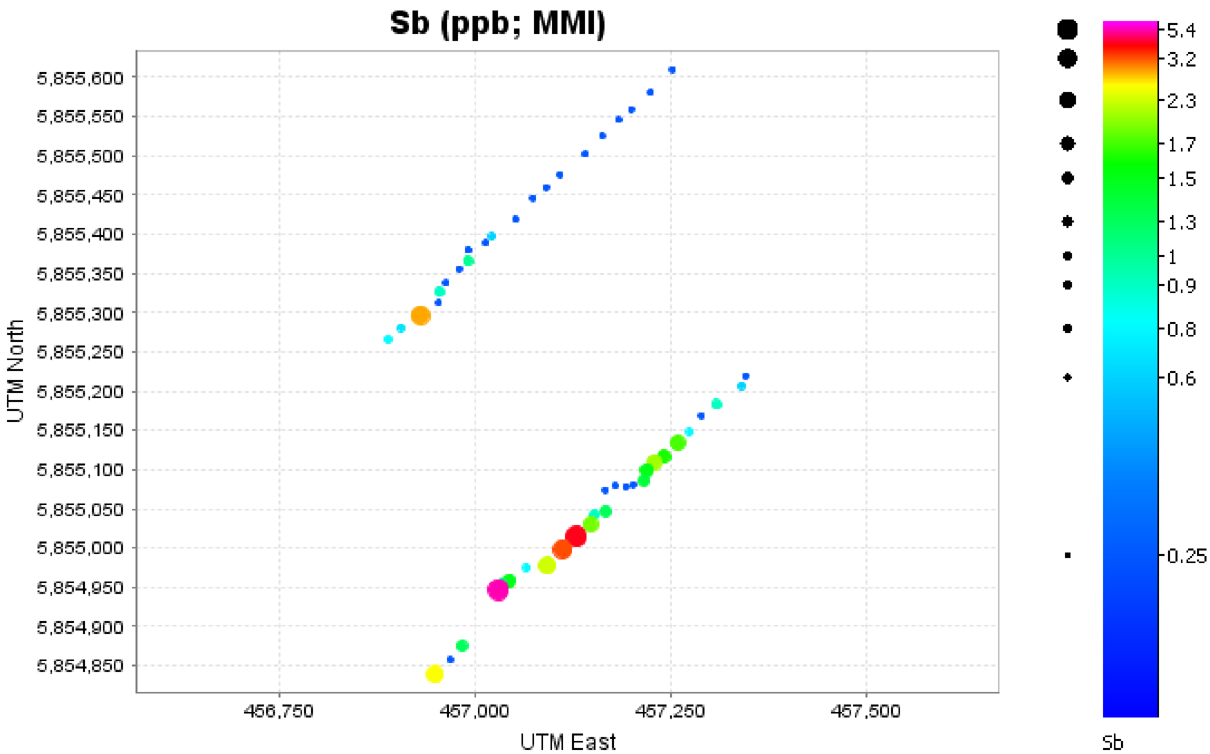

Pb (ppm; Aqua Regia)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
1,000
42.7
24.7
22.4
18.2
17.1
14.7
13.4
11
10.5
10.4
9.2
8.7
8
7.5
6.7
5.8
5.3
3.2
Pb

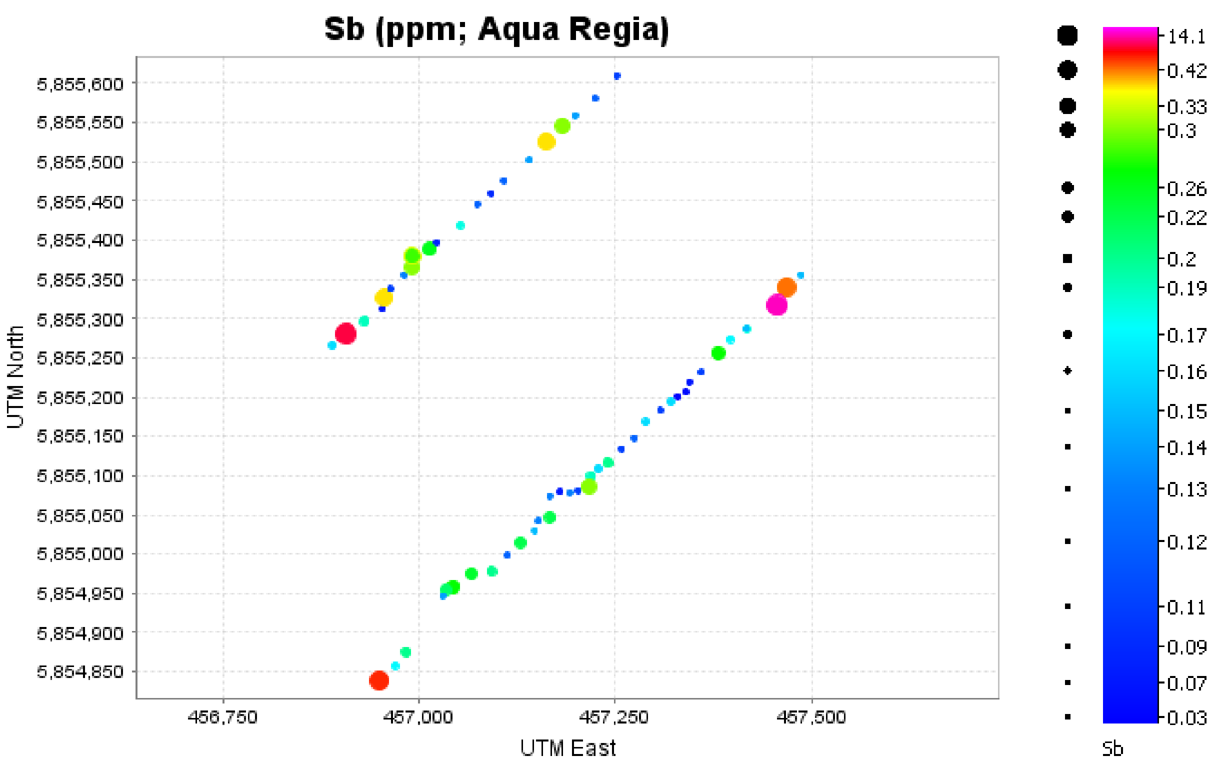

Zn (ppb; MMI)
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
UTM North
456,750
457,000
457,250
457,500
UTM East
21,200
14,500
3,080
2,300
2,130
1,590
410
280
250
170
110
100
70
60
50
40
20
5
Zn

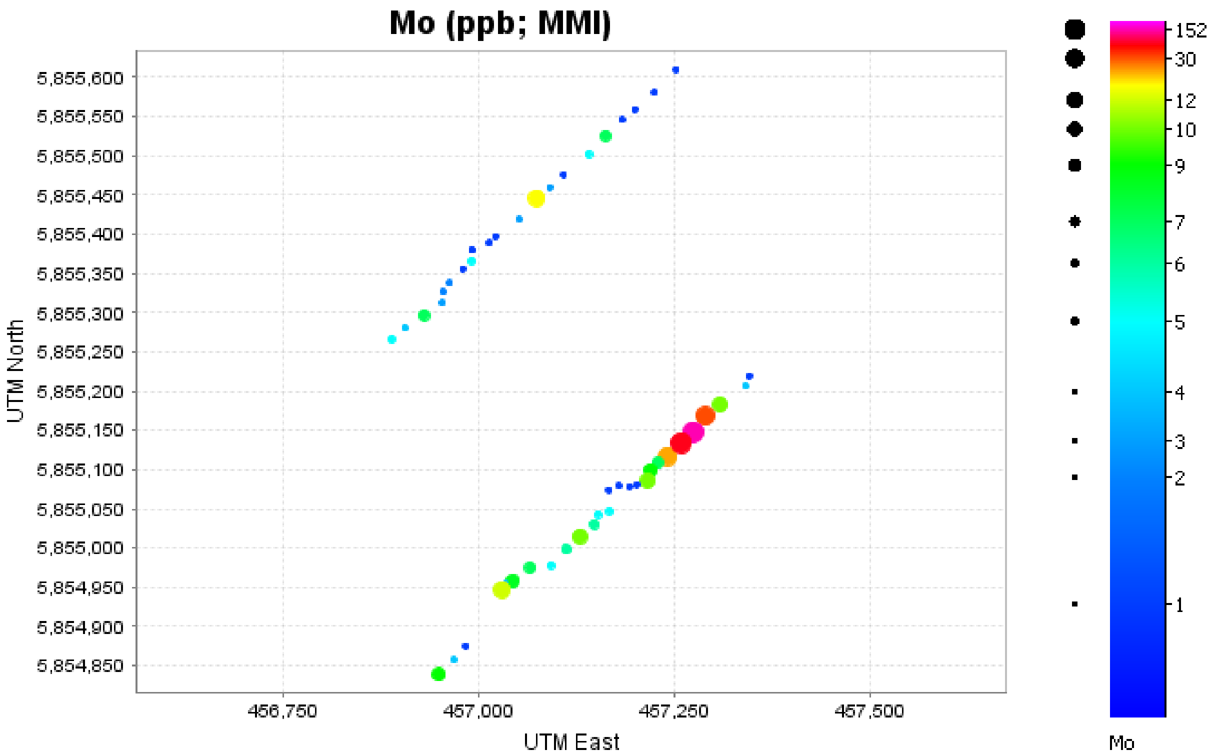

Zn (ppm; Aqua Regia)
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
UTM North
456,750
457,000
457,250
457,500
UTM East
5,000
180
160
118
108
99
87
82
77
72
70
64
59
56
51
42
38
21
14
Zn

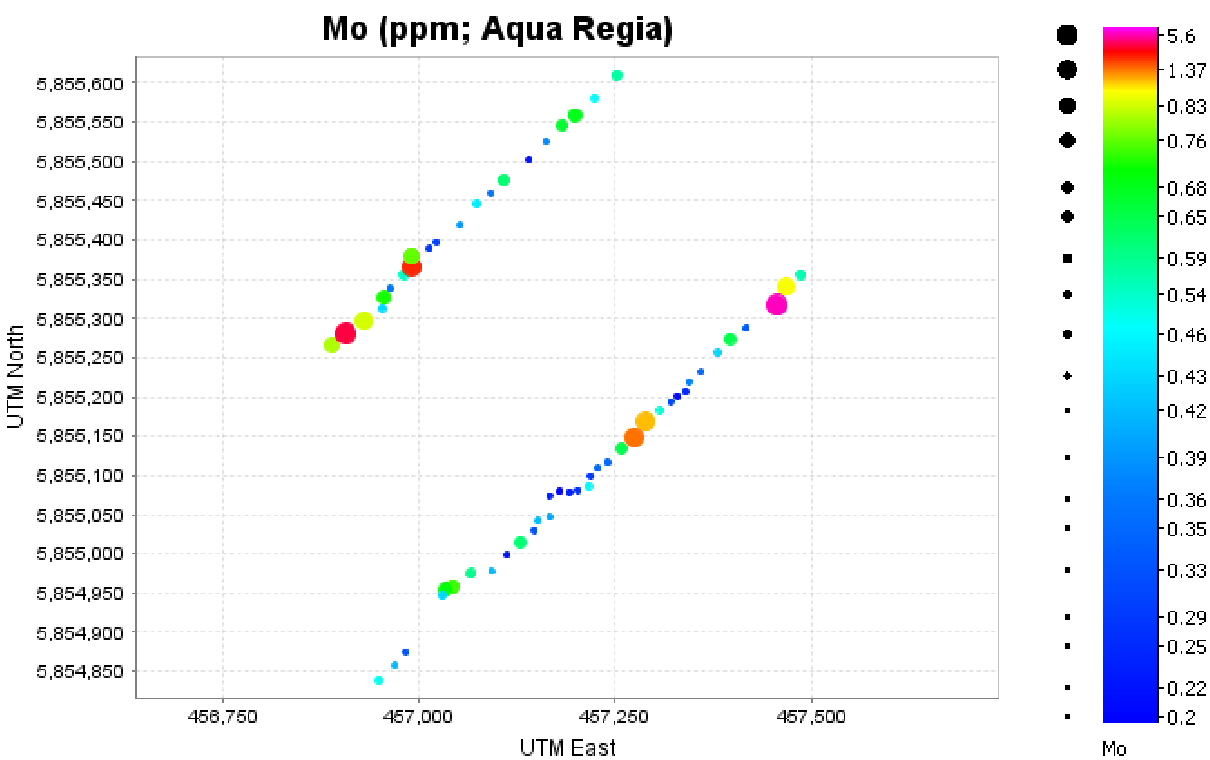

Cd (ppb; MMI)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
153
53
31
26
24
13
9
7
6
4
3
2
1
0.5
Cd

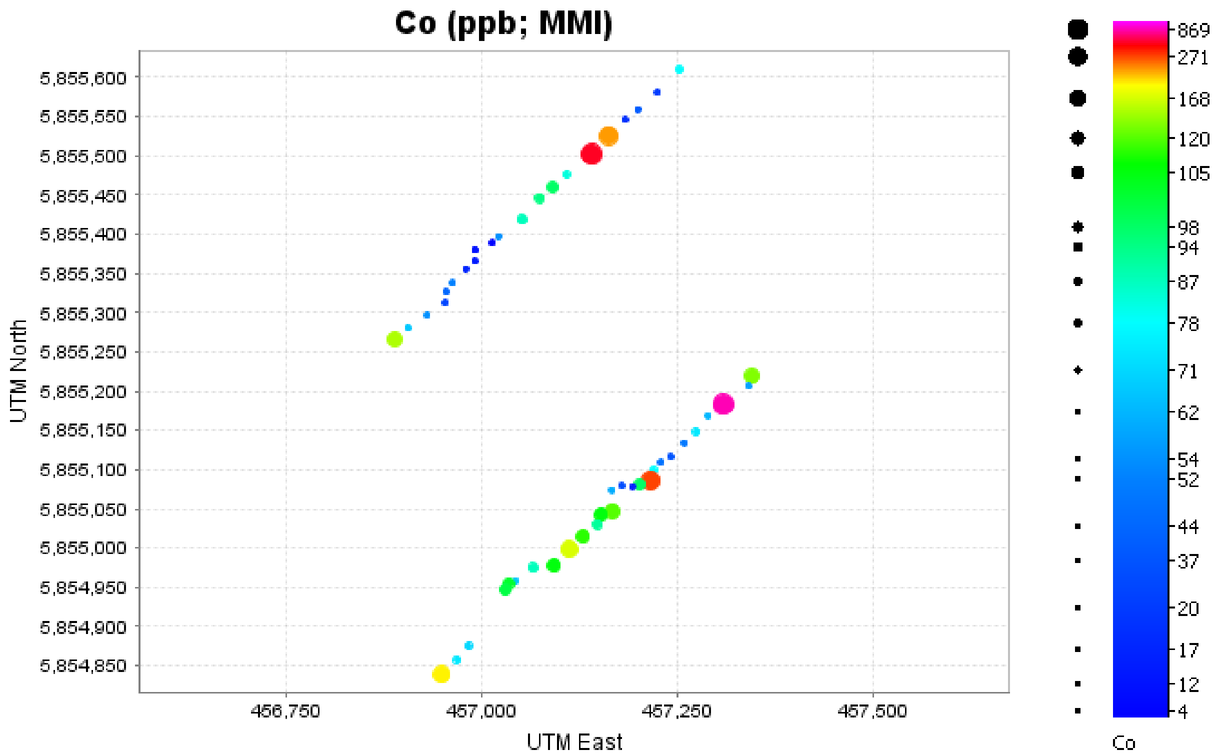

Cd (ppm; Aqua Regia)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
4.44
0.66
0.57
0.54
0.48
0.38
0.26
0.21
0.15
0.14
0.11
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.01
Cd

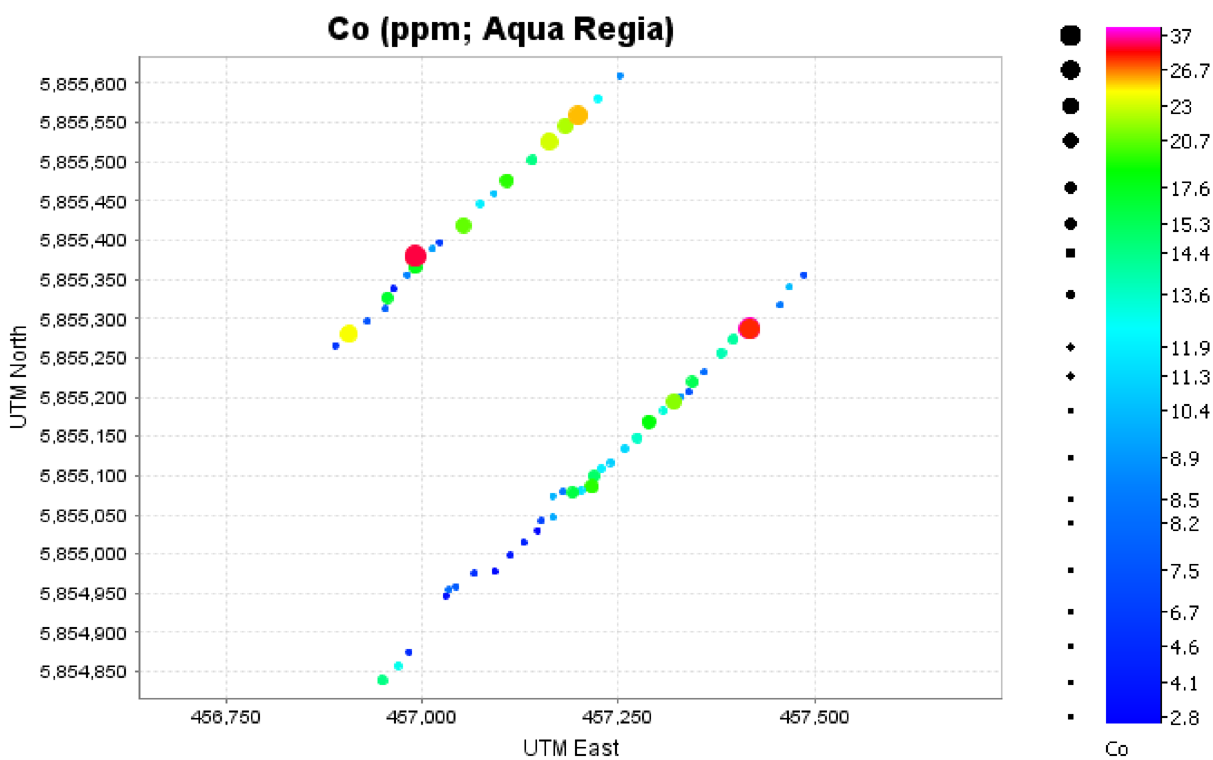

Sb (ppb; MMI)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
5.4
3.2
2.3
1.7
1.5
1.3
1
0.9
0.8
0.6
0.25
Sb

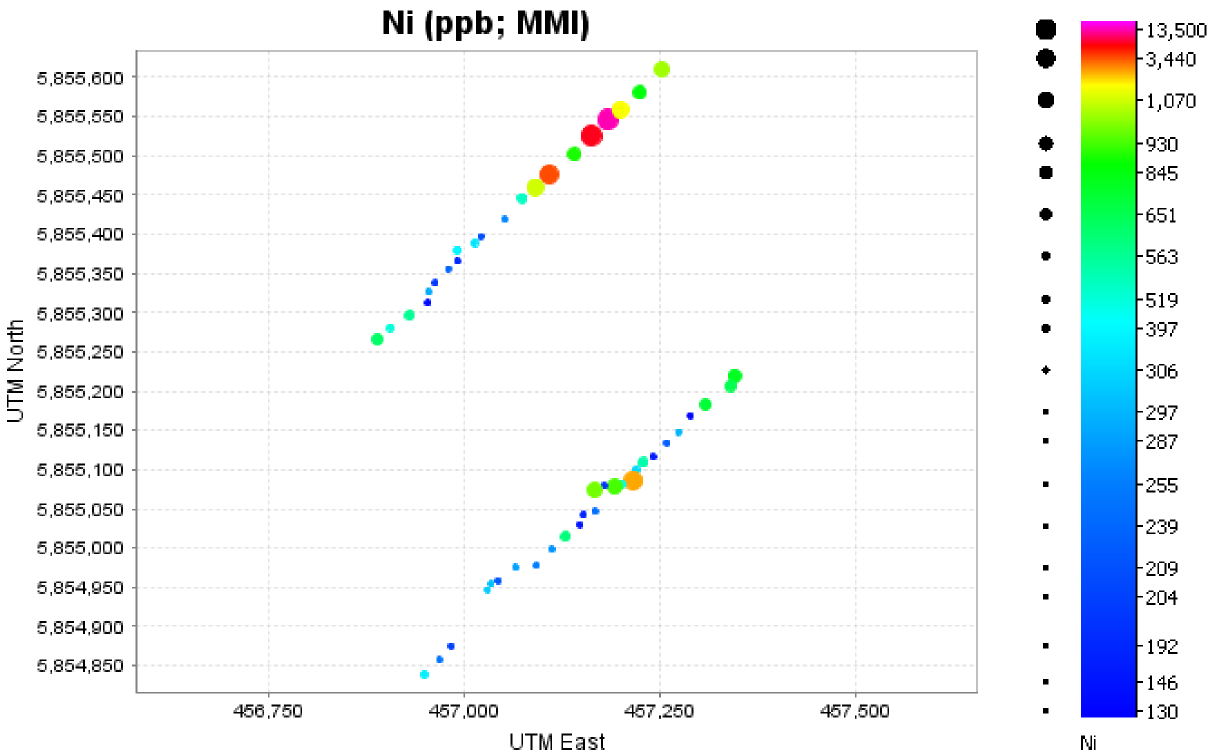

Sb (ppm; Aqua Regia)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
14.1
0.42
0.33
0.3
0.26
0.22
0.2
0.19
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.09
0.07
0.03
Sb

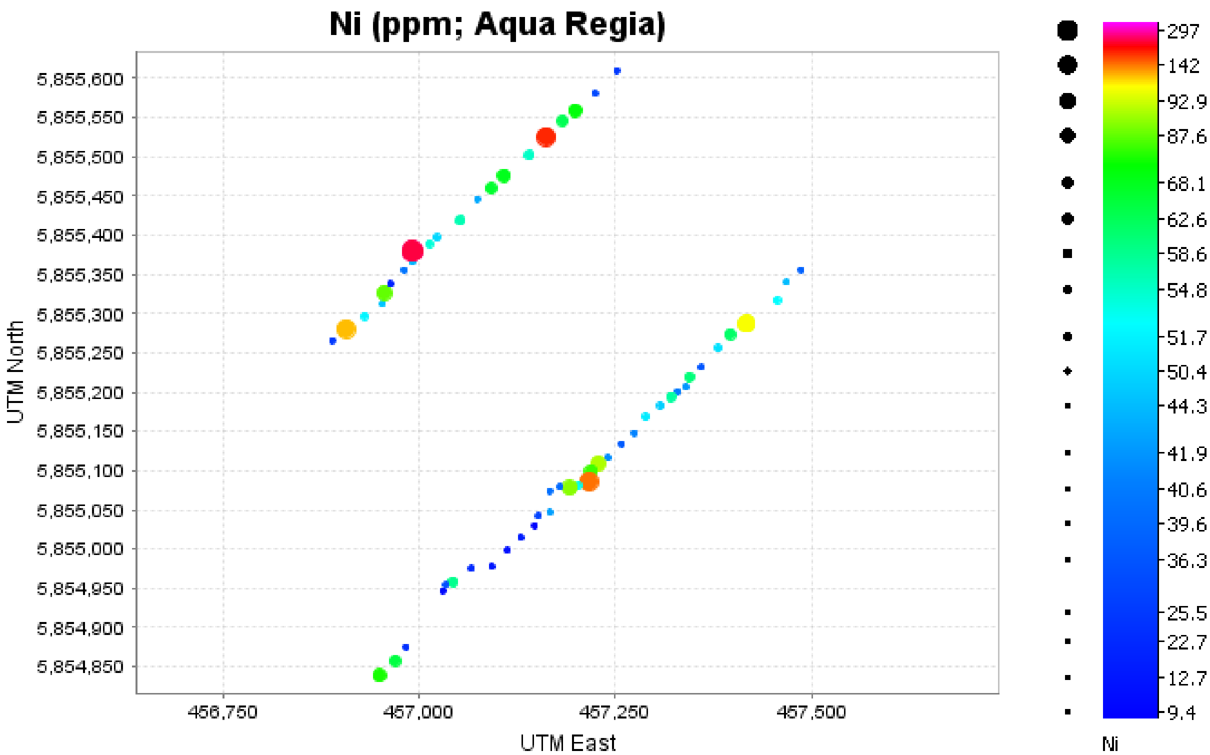

Mo (ppb; MMI)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
152
30
12
10
9
7
6
5
4
3
2
1
Mo

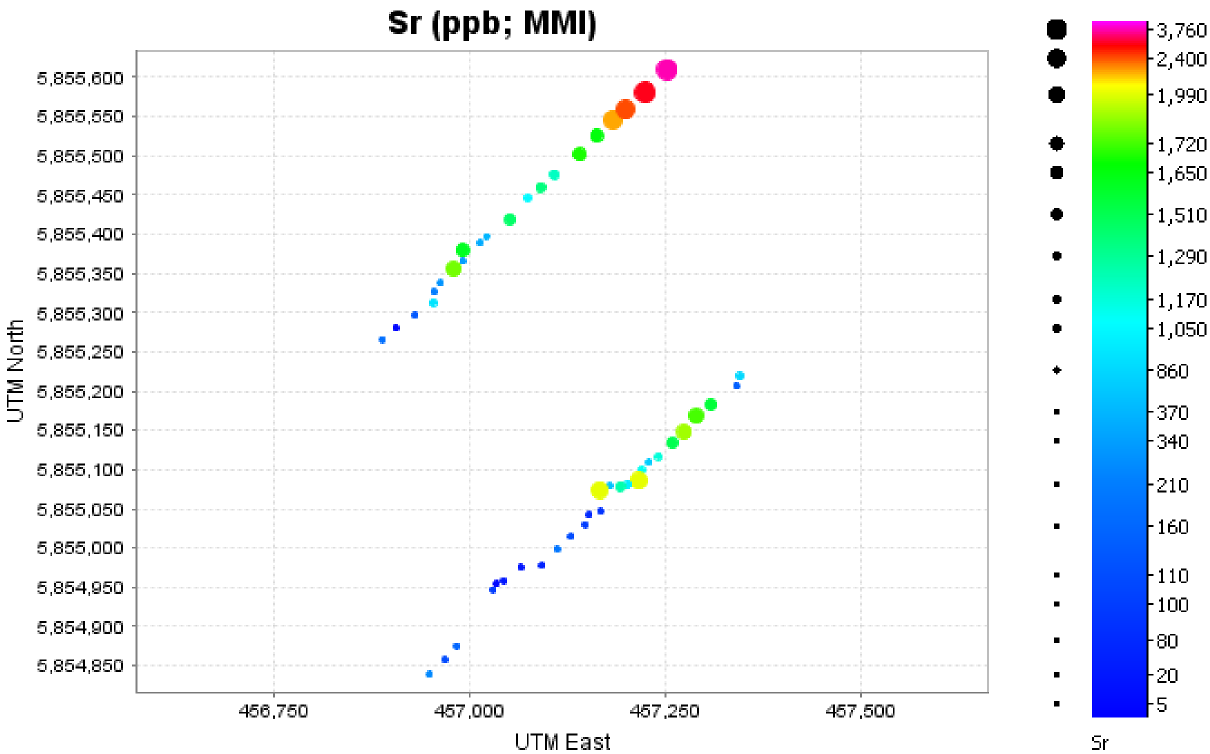

Mo (ppm; Aqua Regia)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
5.6
1.37
0.83
0.76
0.68
0.65
0.59
0.54
0.46
0.43
0.42
0.39
0.36
0.35
0.33
0.29
0.25
0.22
0.2
Mo

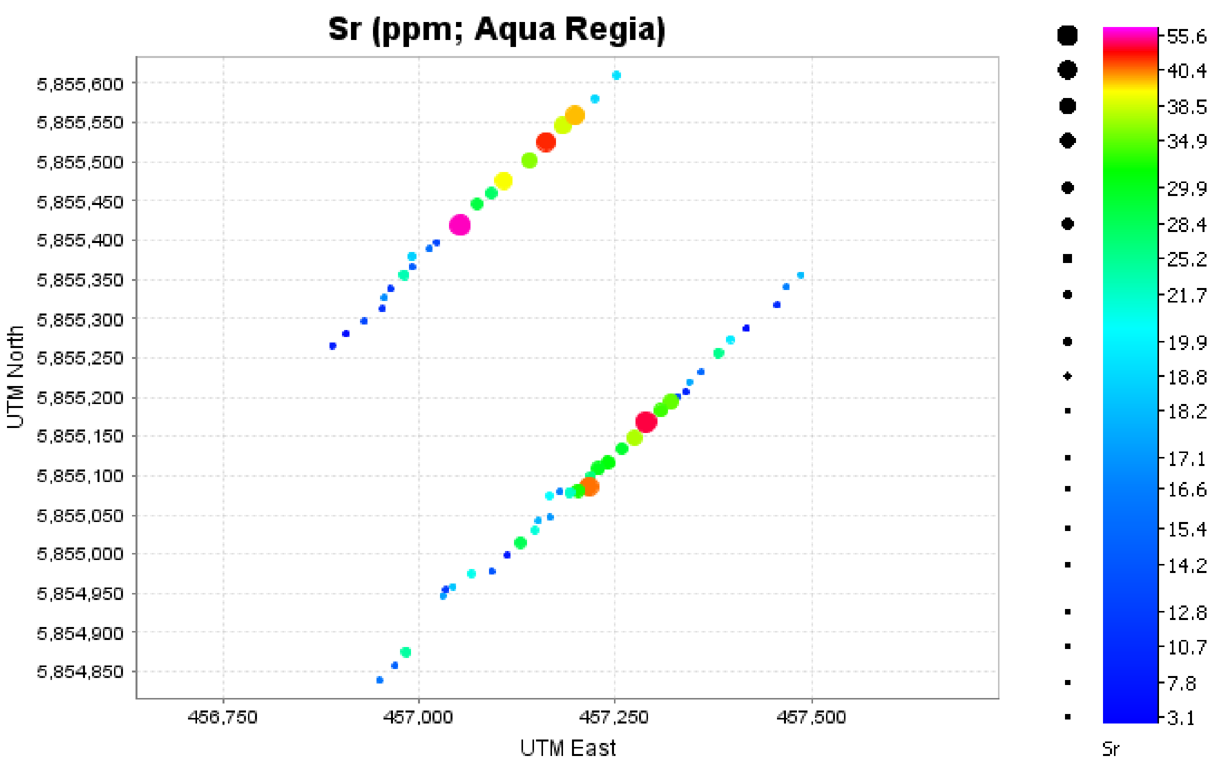

Co (ppb; MMI)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
869
271
168
120
105
98
94
87
78
71
62
54
52
44
37
20
17
12
4
Co

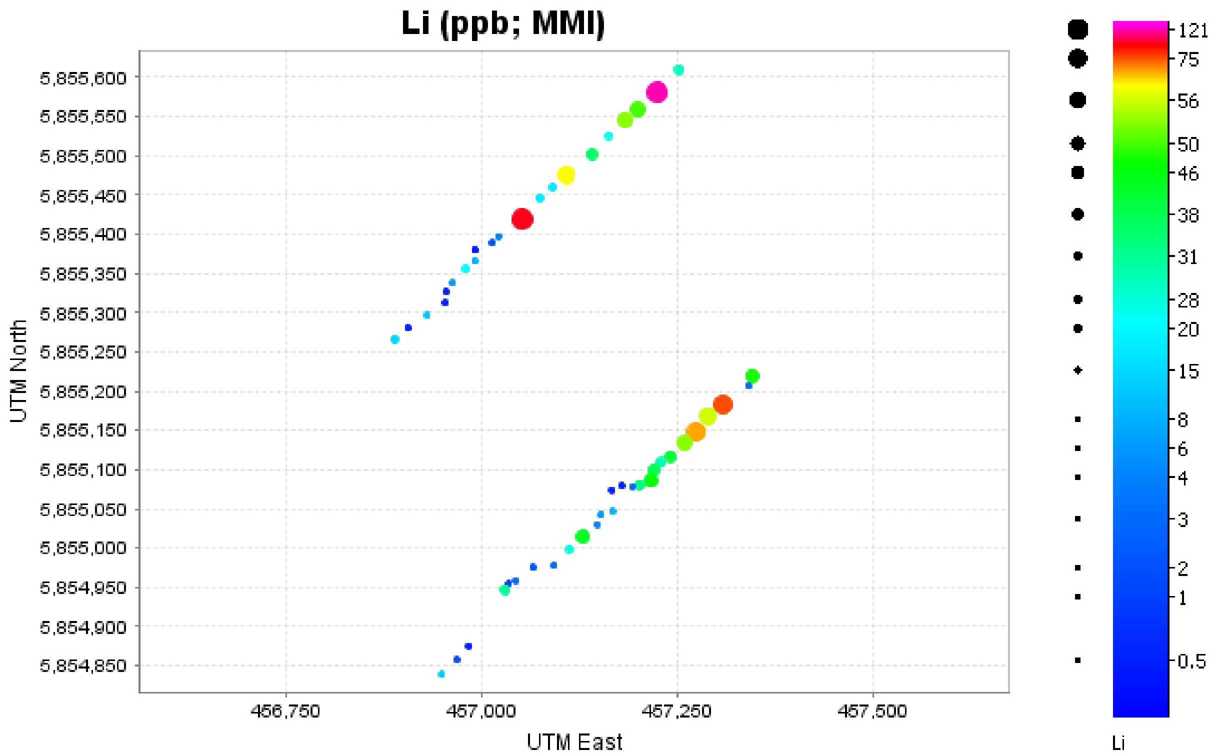

Co (ppm; Aqua Regia)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
37
26.7
23
20.7
17.6
15.3
14.4
13.6
11.9
11.3
10.4
8.9
8.5
8.2
7.5
6.7
4.6
4.1
2.8
Co

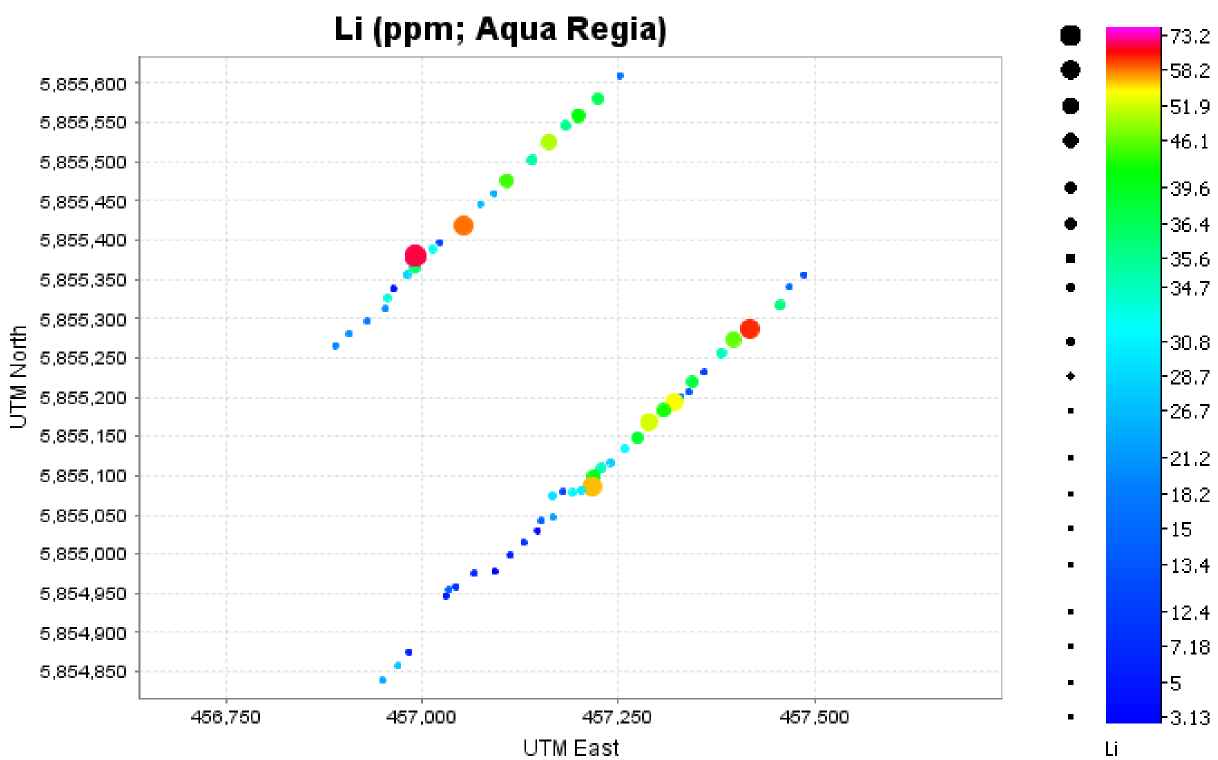

Ni (ppb; MMI)
UTM North
UTM East
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
13,500
3,440
1,070
930
845
651
563
519
397
306
297
287
255
239
209
204
192
146
130
Ni

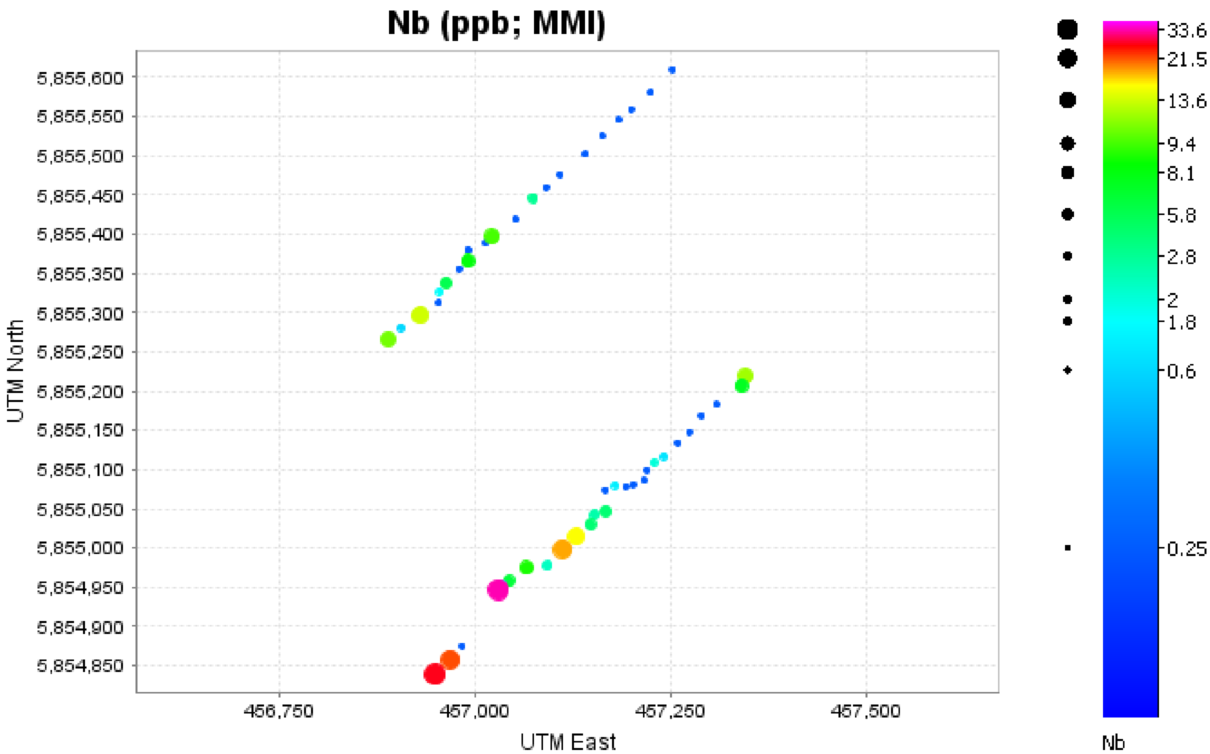

Ni (ppm; Aqua Regia)
UTM North
UTM East
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
297
142
92.9
87.6
68.1
62.6
58.6
54.8
51.7
50.4
44.3
41.9
40.6
39.6
36.3
25.5
22.7
12.7
9.4
Ni


Sr (ppb; MMI)
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
UTM North
456,750
457,000
457,250
457,500
UTM East
3,760
2,400
1,990
1,720
1,650
1,510
1,290
1,170
1,050
860
370
340
210
160
110
100
80
20
5
Sr

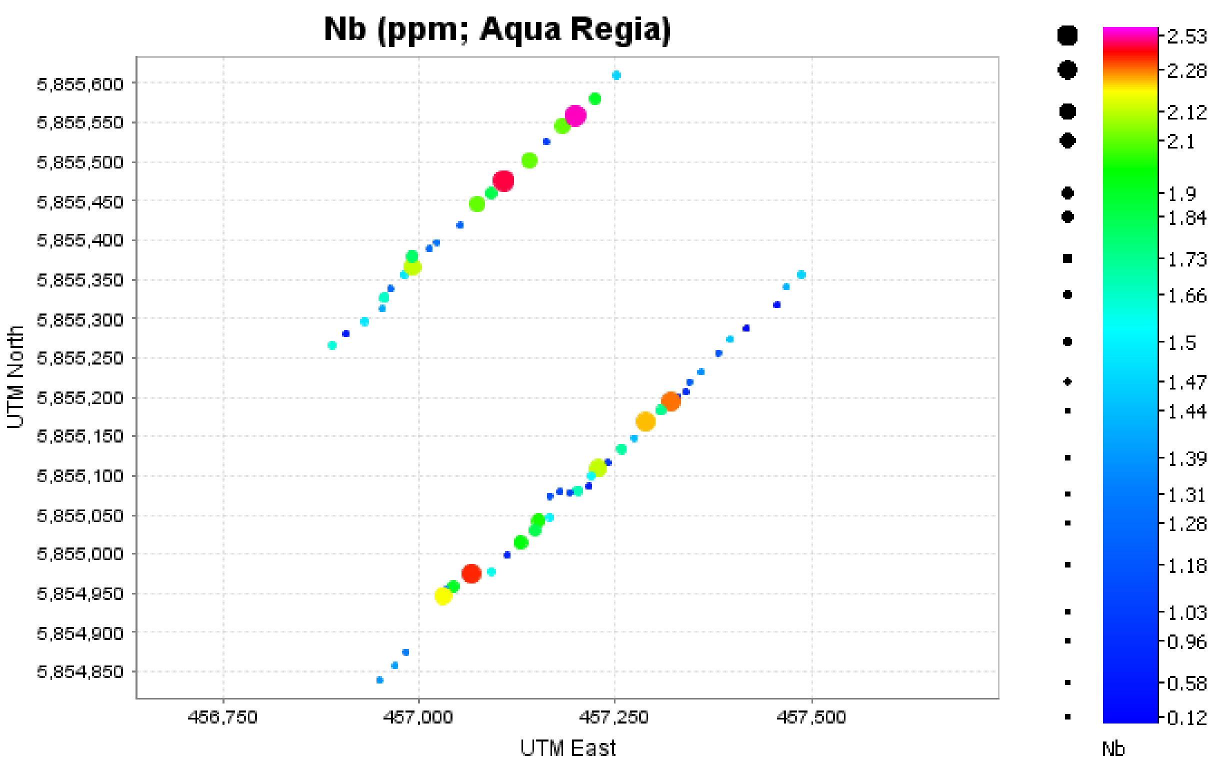

Sr (ppm; Aqua Regia)
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
UTM North
456,750
457,000
457,250
457,500
UTM East
55.6
40.4
38.5
34.9
29.9
28.4
25.2
21.7
19.9
18.8
18.2
17.1
16.6
15.4
14.2
12.8
10.7
7.8
3.1
Sr


Li (ppb; MMI)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
121
75
56
50
46
38
31
28
20
15
8
6
4
3
2
1
0.5
Li

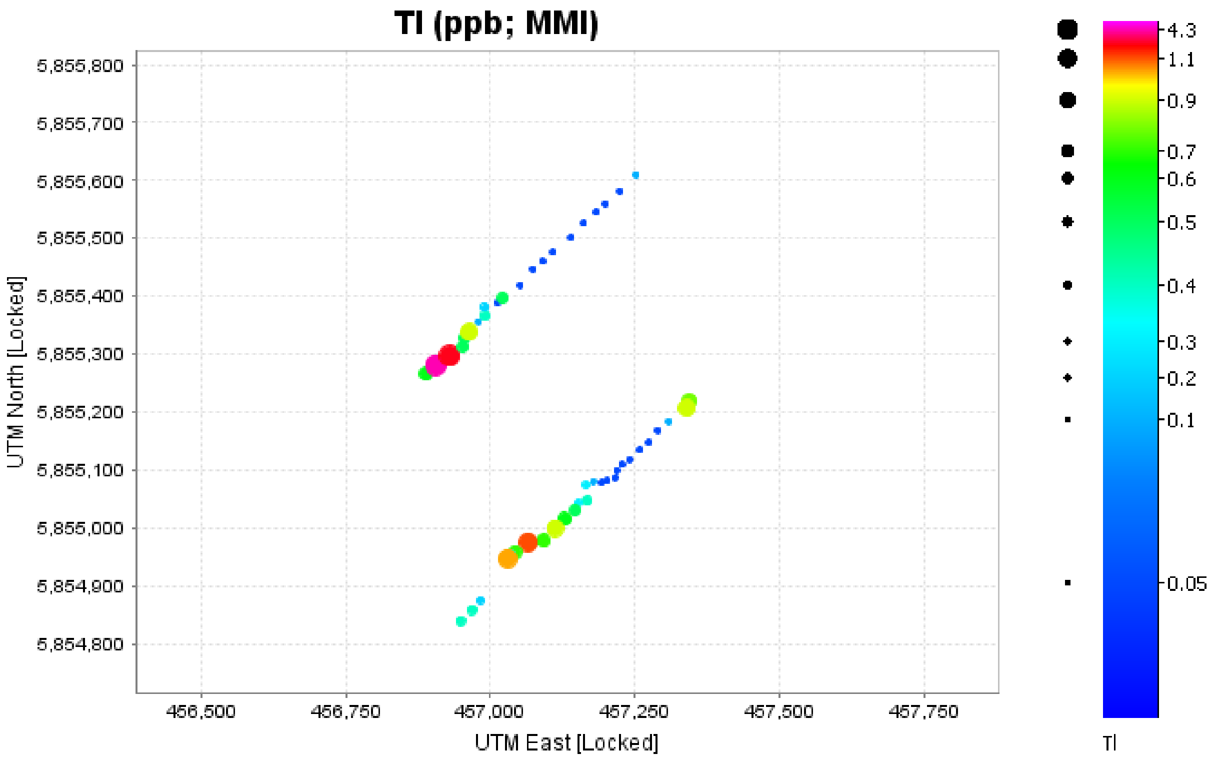

Li (ppm; Aqua Regia)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
73.2
58.2
51.9
46.1
39.6
36.4
35.6
34.7
30.8
28.7
26.7
21.2
18.2
15
13.4
12.4
7.18
5
3.13
Li

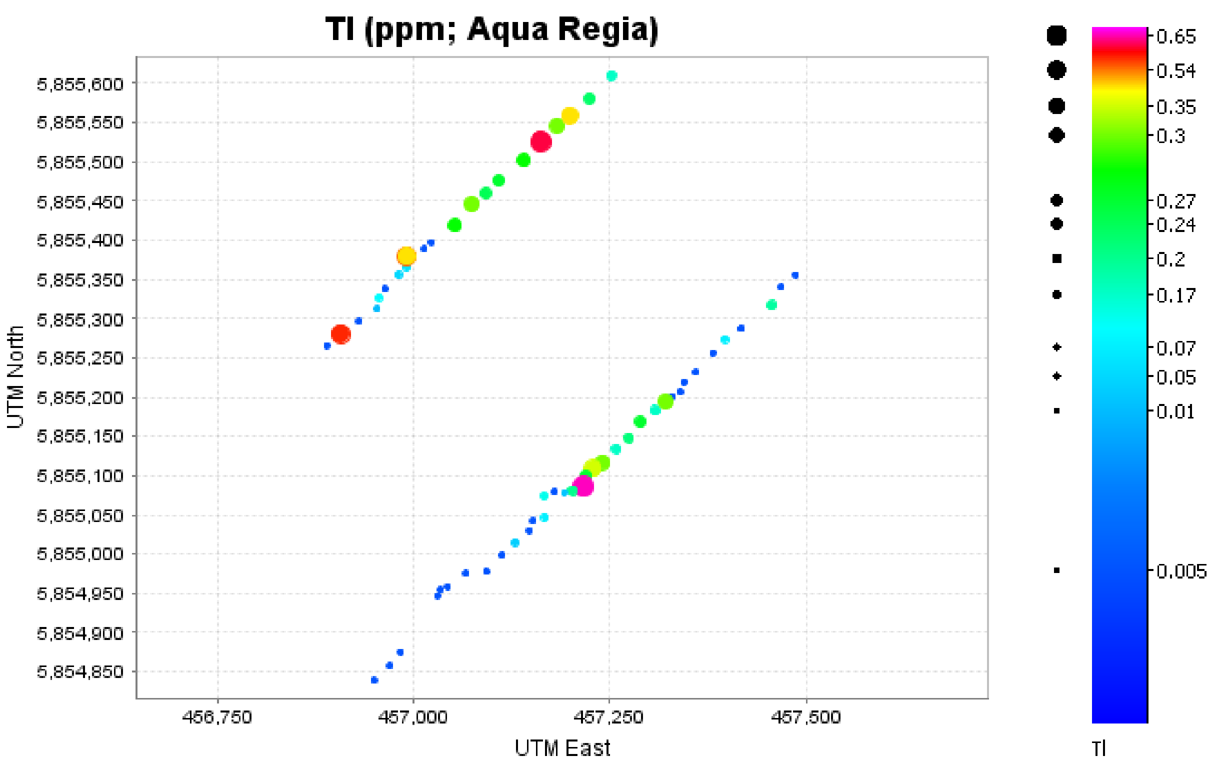


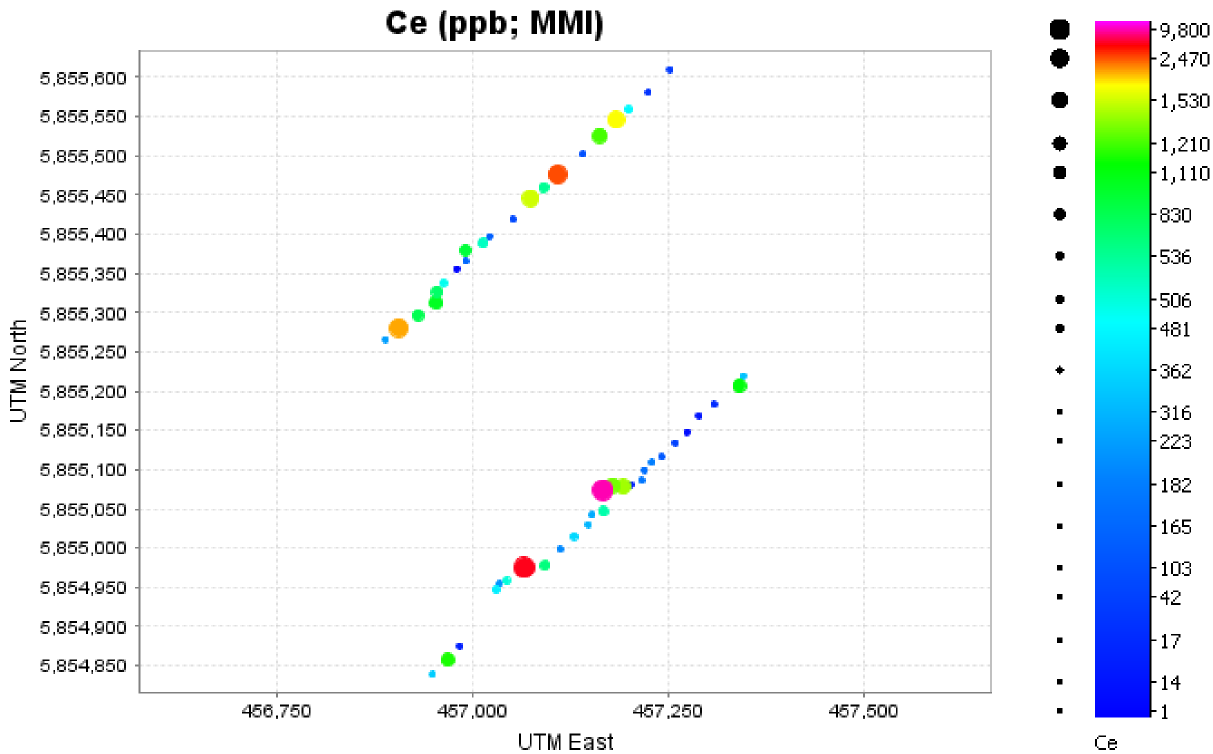
Nb (ppb; MMI)
UTM North
UTM East
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
33.6
21.5
13.6
9.4
8.1
5.8
2.8
2
1.8
0.6
0.25
Nb

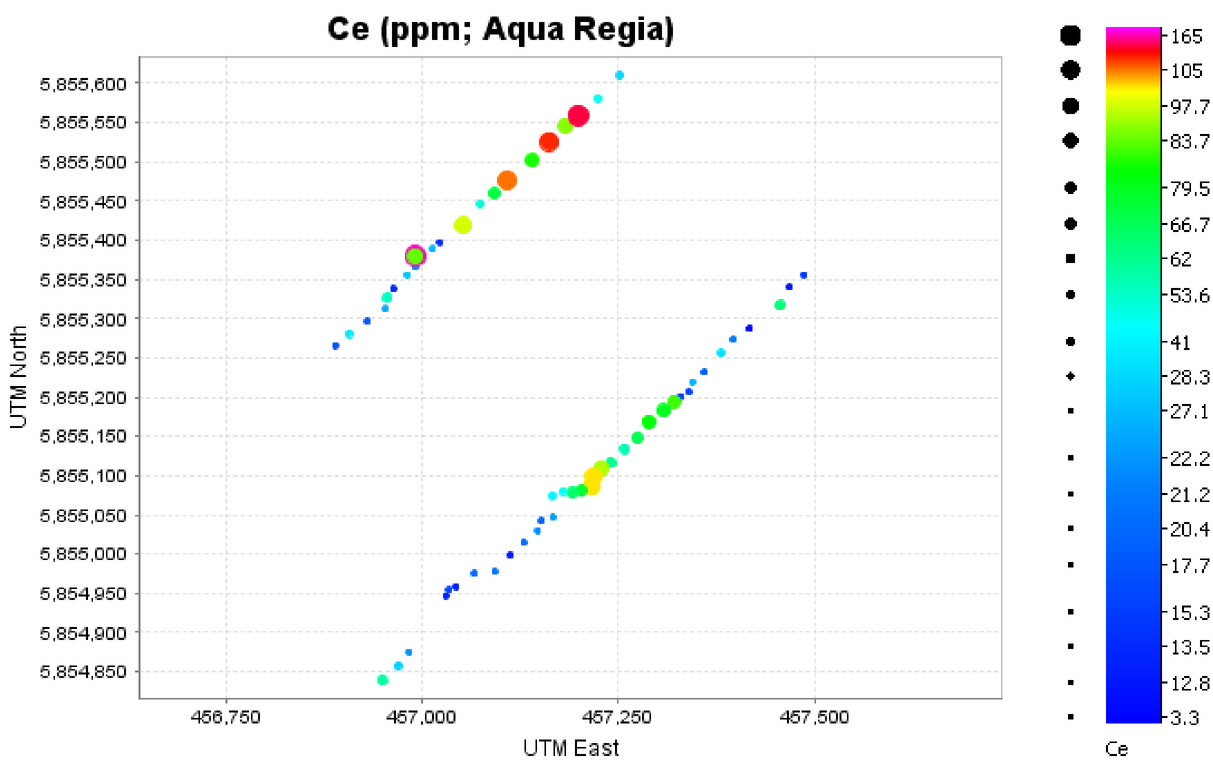


Nb (ppm; Aqua Regia)
UTM North
UTM East
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
2.53
2.28
2.12
2.1
1.9
1.84
1.73
1.66
1.5
1.47
1.44
1.39
1.31
1.28
1.18
1.03
0.96
0.58
0.12
Nb


Tl (ppb; MMI)
5,855,800
5,855,700
5,855,600
5,855,500
5,855,400
5,855,300
5,855,200
5,855,100
5,855,000
5,854,900
5,854,800
UTM North [Locked]
456,500
456,750
457,000
457,250
457,500
457,750
UTM East [Locked]
4.3
1.1
0.9
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.05
Tl


Tl (ppm; Aqua Regia)
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
UTM North
456,750
457,000
457,250
457,500
UTM East
0.65
0.54
0.35
0.3
0.27
0.24
0.2
0.17
0.07
0.05
0.01
0.005
Tl


Ce (ppb; MMI)
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
UTM North
456,750
457,000
457,250
457,500
UTM East
9,800
2,470
1,530
1,210
1,110
830
536
506
481
362
316
223
182
165
103
42
17
14
1
Ce


Ce (ppm; Aqua Regia)
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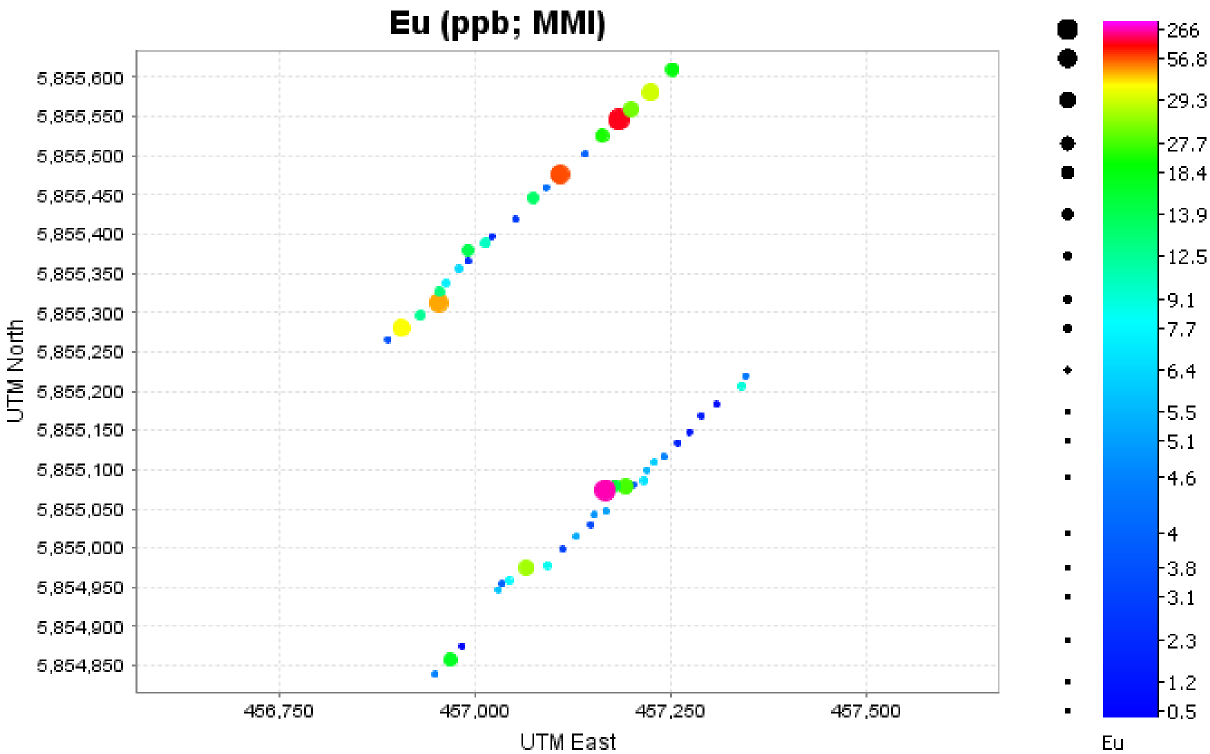
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
UTM North
456,750
457,000
457,250
457,500
UTM East
165
105
97.7
83.7
79.5
66.7
62
53.6
41
28.3
27.1
22.2
21.2
20.4
17.7
15.3
13.5
12.8
3.3
Ce


Eu (ppb; MMI)
UTM North
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5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
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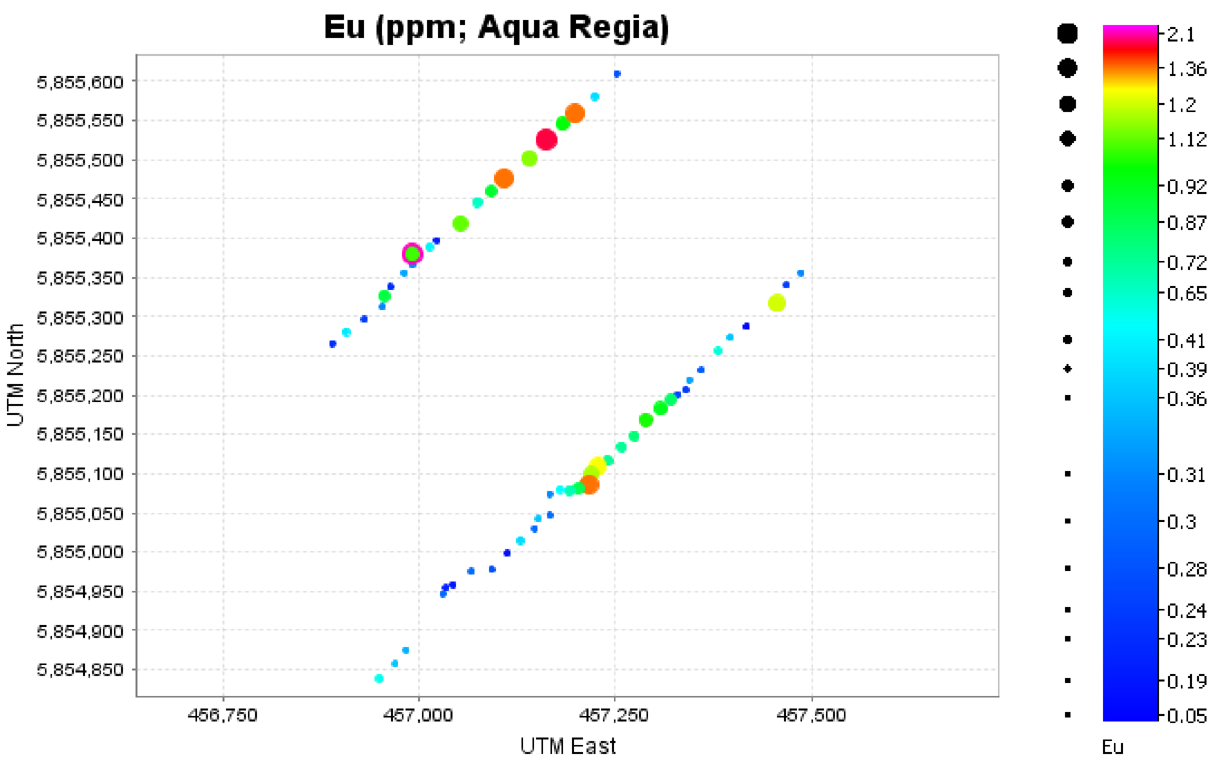
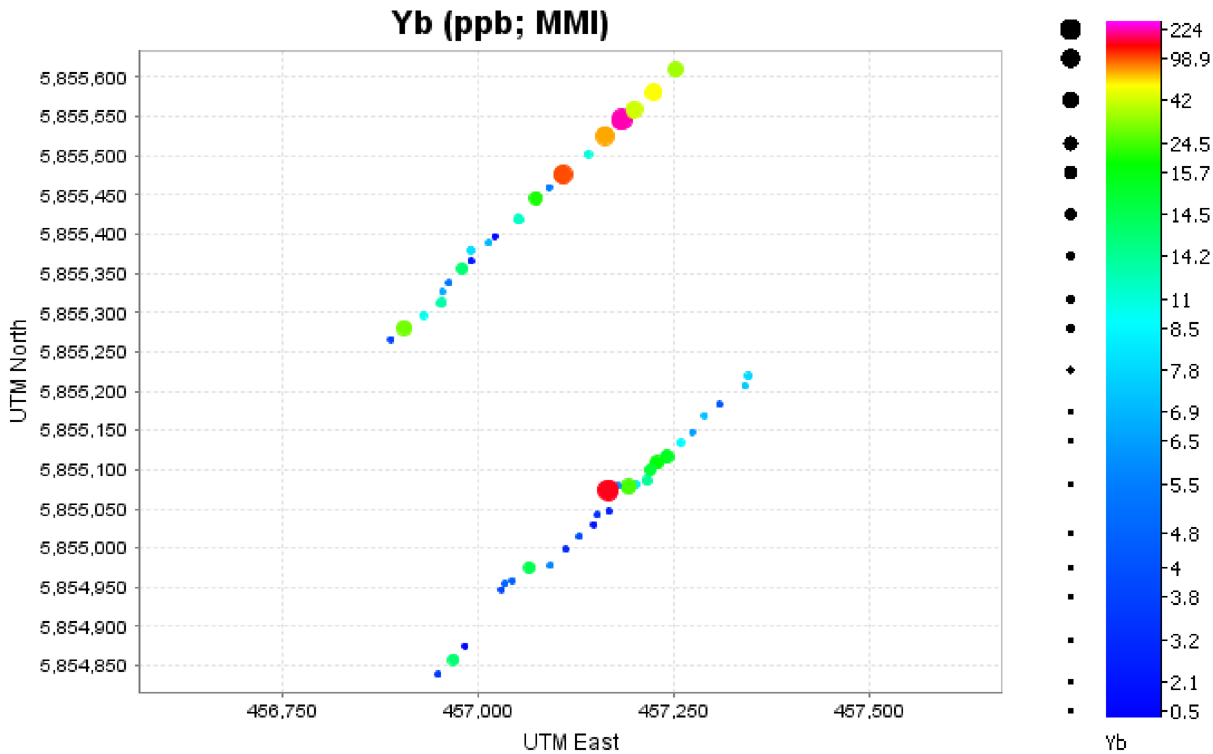
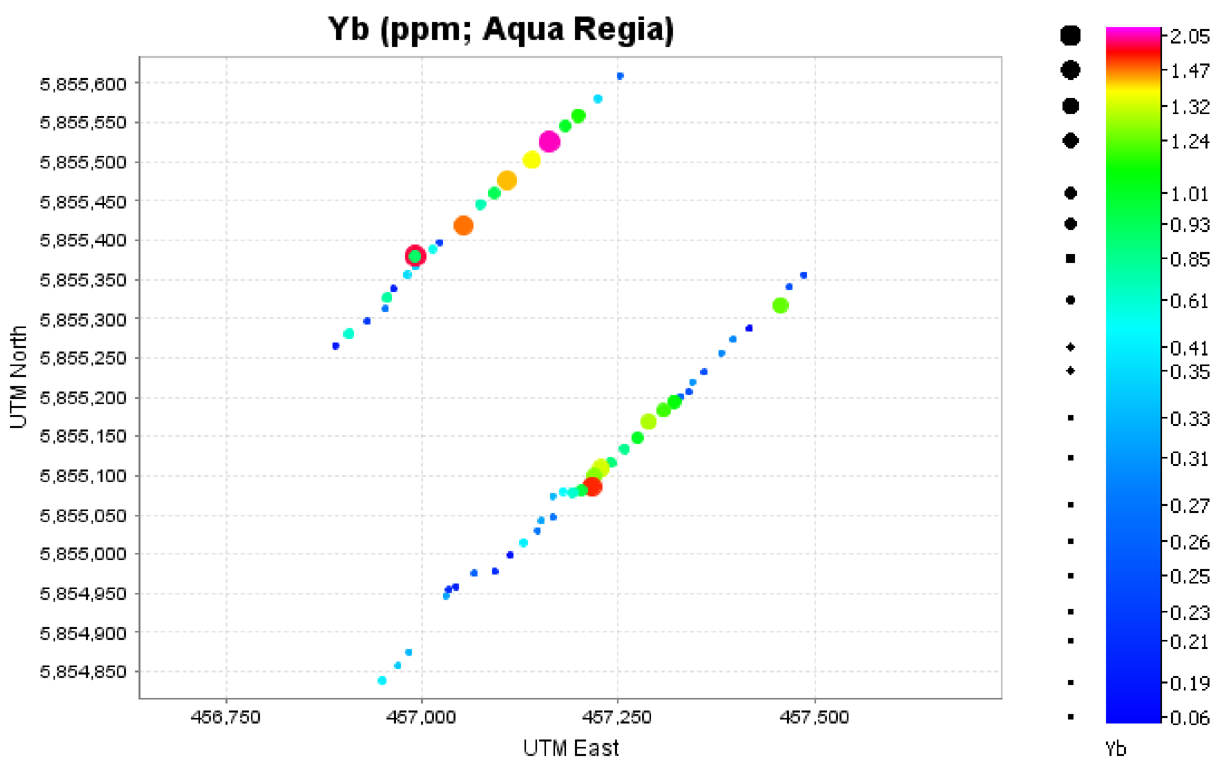
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
266
56.8
29.3
27.7
18.4
13.9
12.5
9.1
7.7
6.4
5.5
5.1
4.6
4
3.8
3.1
2.3
1.2
0.5
Eu


Eu (ppm; Aqua Regia)
UTM North
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
UTM East
2.1
1.36
1.2
1.12
0.92
0.87
0.72
0.65
0.41
0.39
0.36
0.31
0.3
0.28
0.24
0.23
0.19
0.05
Eu


Yb (ppb; MMI)
UTM North
UTM East
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
224
98.9
42
24.5
15.7
14.5
14.2
11
8.5
7.8
6.9
6.5
5.5
4.8
4
3.8
3.2
2.1
0.5
Yb


Yb (ppm; Aqua Regia)
UTM North
UTM East
5,855,600
5,855,550
5,855,500
5,855,450
5,855,400
5,855,350
5,855,300
5,855,250
5,855,200
5,855,150
5,855,100
5,855,050
5,855,000
5,854,950
5,854,900
5,854,850
456,750
457,000
457,250
457,500
2.05
1.47
1.32
1.24
1.01
0.93
0.85
0.61
0.41
0.35
0.33
0.31
0.27
0.26
0.25
0.23
0.21
0.19
0.06
Yb

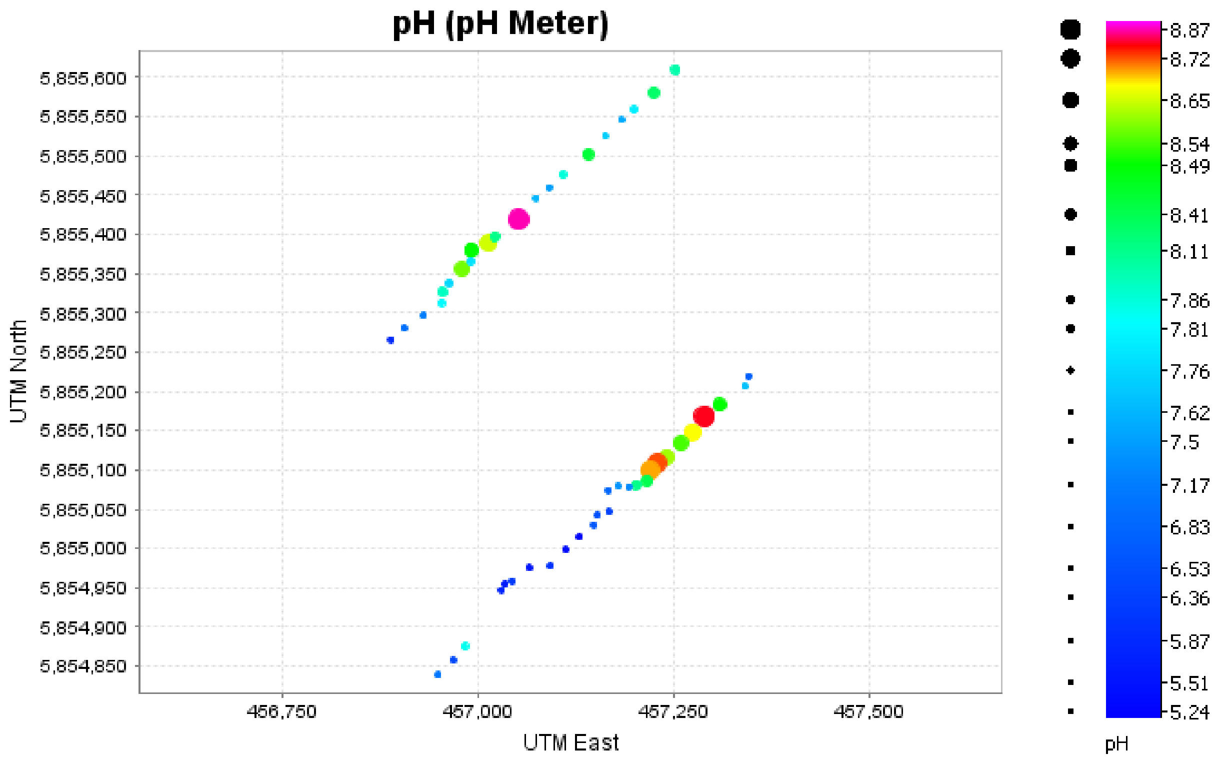


Figure 10. Comparative results for MMI and B Horizon soil geochemical data-Bubble Plots.

CONCLUSIONS

Data Quality

Based on a review of the standard reference materials MMISRM18 and AMISO169, the duplicate analysis of unknown samples and the replicate analysis of the analytical blank both the MMI-M and aqua regia databases are considered to be accurate, reproducible and free of significant contaminants that would impact the recognition of bona fide geochemical anomalies including patterns of response on the Berens River property.

Data Character

Both MMI and B Horizon soil geochemical data is positively skewed reflecting a wide range in concentrations for the important commodity elements and some lithologically-sensitive elements. "Tails" of high concentrations are indicated on histograms. These higher concentrations are the signatures of a separate data population which may be "anomalous". The use of a Spearman-Rank correlation coefficient matrix resulted in the recognition of very highly inter-correlated elements (Au, Ag, Cu, Pb, Zn, Mo and Sb) in B Horizon soils which is considered to be highly unusual. This observation coupled with very high outlier and far outlier values determined with Tukey Box plots is suggestive of particulate windblown or hydromorphic contamination from historic mining activities. The very much lower correlations for MMI analytical data may be due to the inability to digest sulphide particulate or from the fact the samples were collected up to 40 cm below the organic-inorganic soil interface.

Optimum Sample Depth and Relative Abundances

The Berens River MMI-M orientation soil geochemical survey has delineated anomalous responses at two different depths in the 40 cm sampling profile. These anomalies are well developed in the survey area and are high-contrast and multi-sample in character. The most distinctive responses delineated for precious and base metals as well as lithologically-sensitive elements occurs at the 30-40 cm sampling depth. In the absence of 40 cm of inorganic overburden significant responses can be acquired from the 20-30 cm sampling interval. The 30-40 cm sampling depth will also assist in the avoidance of contaminants from historic mining activity.

Optimum Sample Spacing

Based on the results of this orientation survey ongoing exploration using MMI Technology particularly for assessing the remainder of the property could be based on a virtual grid draped over the target using 50 m wide lines with 25 m sample spacing.

Vertical Profile-Metal Partitioning

Vertical profiles for MMI-extractable metals in the survey area are consistent for the elements Au, Ag, Cu, Ni, Ca, Mg, Li, Sr, Y and the intermediate to heavy REE. Each of these elements shows and increase with depth and are covariant with Au in this manner. However a second set of elements including Al, Cs, Rb, U, Th, Zr, Zn and the light REE decrease in concentration with depth. This trend is indicative of the effect of pH on element abundance and distribution. pH generally co-varies with Au and related elements and increases with depth signaling a more basic environment at the 30-40 cm depth. There are reversals in the trends noted for Au and related elements (commodity and lithologically-sensitive elements). It is interpreted to be an indication of the presence of anomalous responses at more than one depth in the upper 40 cm of the soil/overburden profile.

Lateral Profiles

Lateral profiles for commodity and lithologic elements were constructed for the preferred sample depth of 30-40 cm and compared with the results for B Horizon soils. This was accomplished using bubble plots. Significant differences between the results for MMI and B Horizon are noted. Significant anomalies for Au, Cu, Pb, Zn, Sb, Mo and Ni are present in MMI data but absent from B Horizon data. There is general agreement for elevated responses for Ag, As, Cd, Tl and the REE in both datasets along both sampling transects. The absence of major geochemical responses from the B Horizon geochemical data is problematic and cause for concern.

Magnitude and Character of Responses

The mobility of metals in the surficial environment together with the nature of the target mineralization will ultimately determine the elements with the most significant responses to MMI Technology. MMI responses will reflect the geochemical character of the mineralized source region but will be either significantly elevated or downgraded due to their mobility's combined with the metals comprising the target, depth of burial and the presence of post-mineralization cover. In the Berens River survey the elements with the highest responses include base and precious metals in both MMI and B Horizon datasets. There is repeated concern in the very high outlier and far outlier values for the element suite Au, Ag, Cu, Pb, Zn, Sb and Mo and their inter-correlation. It is suspected the presence of tailings and "ore piles" observed during sampling may be reflected by these characteristics in the B Horizon soils. The significantly elevated responses for Au, Cu, Pb, Zn, Mo and Sb in soils collected for MMI analysis may be given more credence since they were collected between 30-40cm below the organic-inorganic soil interface and may have avoided potential windblown particulate and hydromorphic contamination originating from past mining activity.

Strength of Digest/Extraction

The magnitude of the response of metals in this survey is directly related to the nature of the manner in which soil samples were treated prior to analysis. The strong partial digest aqua regia will incorporate not only the labile form of any metal in the sample but will also digest a significant proportion of any sulphide and silicate minerals present in the sample. In this regard the contrast between labile/anomalous elements and those present in rock forming minerals in the soil is significantly reduced. In the presence of contaminants from mining activity these components will also be taken into solution by aqua regia. Contrasted with the weak partial digest of MMI technology a very low percentage of metals are extracted from the sample by MMI and as such the percentage of labile element versus elements contributed by rock forming minerals is very low but the contrast is significantly elevated.

References

Gomwe, T. and Verschelden, R. 2013: 43-101 Technical report on the Berens River property, Red Lake Mining Division, Setting Net Lake Township, Province of Ontario, Canada, (NTS: 53C/13SE); 78p.

Mark Fedikow Ph.D. P.Eng. P.Geo. C.P.G.
Mount Morgan Resources Ltd.
November, 2016
Winnipeg, Manitoba

CERTIFICATE OF AUTHOR

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

1. I am currently a self-employed Consulting Geologist/Geochemist with an office at:
   627 Manchester Blvd. North,
   Winnipeg, Manitoba, Canada R3T 1N9.

2. I graduated with a degree in Honors Geology (B.Sc.) from the University of Windsor (Windsor, Ont.) in 1975 and a M.Sc. in geophysics and geochemistry from the University of Windsor in 1978. I earned a Doctor of Philosophy (Ph.D.) in exploration geochemistry from the School of Applied Geology, University of New South Wales (Sydney) in 1982.

3. I am a Member of the Association of Professional Engineers and Geoscientists of Manitoba and registered as a Professional Engineer (P.Eng.) and a Professional Geologist (P.Geo.) by this Association. I am also a Fellow of the Association of Applied Geochemists, and a Member of the Prospectors and Developers Association of Canada. I am registered as a Certified Professional Geologist (C.P.G.) by the American Association of Professional Geologists (Westminster, Colorado, U.S.A.).

4. I have worked as a geologist for a total of forty 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.

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 **"Results of Mobile Metal Ions and Traditional B Horizon Soil Geochemical Orientation Surveys, Golden Share Mining's Berens River Project, Ontario".**

7. I have not had prior involvement with the property that is the subject of the Technical Report.

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.

Dated this 23rd Day of November, 2016.

Original signed by Mark Fedikow P.Geo.

Mark A.F. Fedikow, HB.Sc. M.Sc., Ph.D., P. Eng. P.Geo.

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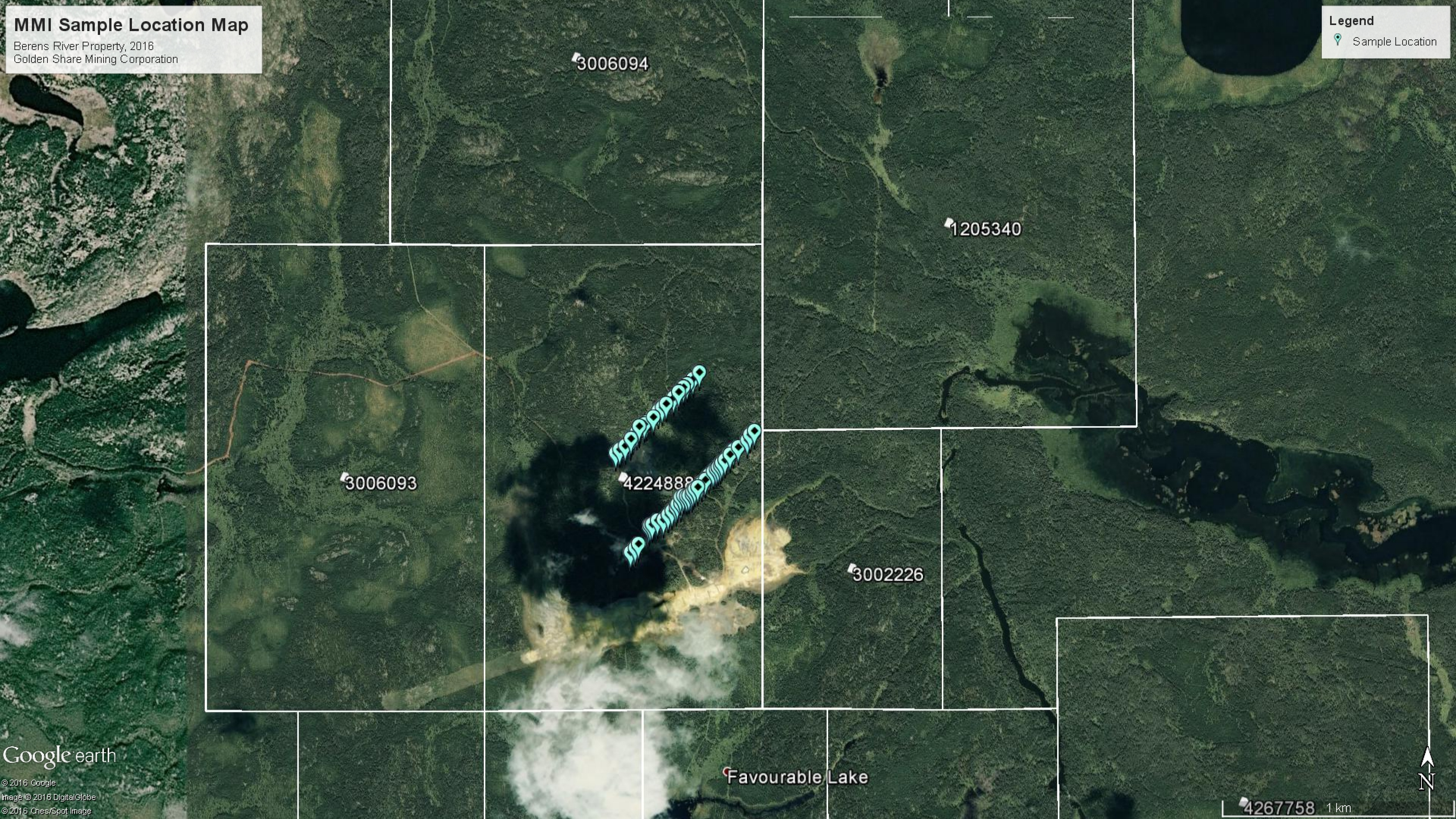
Email: mfedikow@shaw.ca


MMI Sample Location Map
Berens River Property, 2016
Golden Share Mining Corporation
Legend
Sample Location
3006094
1205340
3006093
4224888
3002226
Favourable Lake
4267758
1 km
N
Google earth
© 2016 Google
Image © 2016 DigitalGlobe
© 2016 Cnes/Spot Image


MMI Sample Location Map
Berens River Property, 2016
Golden Share Mining Corporation
Legend
Sample Site
BR-16-043
BR-16-042
BR-16-040
BR-16-039
BR-16-038
BR-16-037
BR-16-036
BR-16-035
BR-16-034
BR-16-033
BR-16-032
BR-16-029
BR-16-027
BR-16-025
BR-16-024
BR-16-023
BR-16-022
4224888
BR-16-044
BR-16-045
BR-16-046
BR-16-049
BR-16-047+048
BR-16-050
BR-16-052
BR-16-053
BR-16-054
BR-16-055
BR-16-059
BR-16-002
BR-16-004
BR-16-008
BR-16-011
BR-16-013
BR-16-014
BR-16-016
BR-16-017
BR-16-018
BR-16-019
BR-16-020
BR-16-021
Google earth
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Image © 2016 DigitalGlobe
200 m
N

Grid	UTM					
Datum	NAD83	15U				
A=0-10cm B=10-20cm C=20-30cm D=30-40cm				MMI orientation survey Berens Mine area 2016		
Sample #	Easting	Northing	Depth(cm)	Description	Line	Station
BR-16-001	457241	5855117	130	A-D wet sticky grey clay	L150E	150N
BR-16-002	457228	5855109	130	A-D wet grey sticky clay	L150E	137N
BR-16-003	457219	5855099	60	A-moist brown sandy clay B-D moist grey silty clay	L150E	125N
BR-16-004	457216	5855086	100	A-B dry brown till C-D grey/brown till	L150E	112N
BR-16-005	457202	5855081	40	A-D damp brown gritty clay	L150E	100N
BR-16-006	457192	5855078	20	A-B dry brown gravelly sand C-D finer brown sand	L150E	87N
BR-16-007	457179	5855080	10	A-D dry brown med grained sand	L150E	75N
BR-16-008	457166	5855074	10	A-dry orange/brown fine sand B-D dry grey fine sand	L150E	62N
BR-16-009	457167	5855047	10	A-D dry orange/brown coarse sand	L150E	50N
BR-16-010	457152	5855043	10	A-dry grey gravelly sand B-D dry orange/brown grav sand	L150E	37N
BR-16-011	457147	5855030	10	A-dry coarse grey grav sand B-D orange/brown coarse sand	L150E	25N
BR-16-012	457129	5855015	5	A-dry grey/brown coarse grav sand B-D oran/brown dry coarse grav sand	L150E	0N
BR-16-013	457112	5854999	5	A-dry grey/brown coarse grav sand B-D dry brown v. coarse grav sand	L150E	25S
BR-16-014	457092	5854978	5	A-dry grey grav sand B-D orange/brown grav sand	L150E	50S
BR-16-015	457066	5854975	5	A-dry light brown grav sand B-d orange/brown grav sand	L150E	75S
BR-16-016	457043	5854958	5	A-dry light brown/grey grav sand B-D orange/brown grav sand	L150E	100S
BR-16-017	457034	5854955	5	A-grey/brown dry grav sand B-D dry orange/brown grav sand	L150E	112S
BR-16-018	457030	5854947	5	A-grey grav sand dry B-D orange/brown dry grav sand	L150E	125S
BR-16-019	456983	5854875	5	A-dry grey sand B-grey brown C-D orange/brown grav sand	L150E	200S
BR-16-020	456969	5854858	5	A-D fine brown sand dry	L150E	225S
BR-16-021	456949	5854839	5	A-D dry brown coarse grav sand-possibly dist ground	L150E	250S
BR-16-022	456889	5855266	5	A-grey dry grav sand B-D brown dry grav sand	L200W	0N

BR-16-023	456906	5855281	5	A-D dry reddish brown grav sand	L200W	25N
BR-16-024	456930	5855297	5	A-grey dry grav sand B-D orange/brown dry grav sand	L200W	50N
BR-16-025	456953	5855313	5	A-D light brown damp grav sand	L200W	75N
BR-16-026	456955	5855327	15	A-D very wet brown soupy grav sand	L200W	87N
BR-16-027	456963	5855338	10	A-dry grey grav sand B-grey/brown C-D orange/brown grav sand	L200W	100N
BR-16-028	456980	5855356	5	A-D very wet brown grav sand	L200W	112N
BR-16-029	456991	5855366	5	A-D very wet soupy brown gravel	L200W	137N
BR-16-030+031	456991	5855380	10	A-D very wet brown coarse grav sand	L200W	150N
BR-16-032	457013	5855389	10	A-wet brown grav sand B-D soupy wet brown grav sand	L200W	175N
BR-16-033	457022	5855397	10	A-damp grey/brown sand B-D damp brown sand	L200W	187N
BR-16-034	457052	5855419	60	A-D wet light brown sticky clay	L200W	225N
BR-16-035	457074	5855446	60	A-D wet grey gritty till/clay	L200W	250N
BR-16-036	457091	5855460	70	A-wet light brown clay/till B-D wet brown clay/till	L200W	275N
BR-16-037	457108	5855476	60	A-B moist grey grav clay C-D mpoist brown gritty clay	L200W	300N
BR-16-038	457140	5855502	70	A-D moist brown clay/till	L200W	350N
BR-16-039	457162	5855526	60	A-D damp brown clay	L200W	375N
BR-16-040	457183	5855546	40	A-D moist dense brown clay	L200W	400N
BR-16-041	457199	5855559	15	A-wet grey sticky clay B-D wet brown dense clay	L200W	425N
BR-16-042	457224	5855581	10	A-D moist -wet brown sticky clay	L200W	450N
BR-16-043	457252	5855610	10	A-D moist-wet brown sticky clay	L200W	500N
BR-16-044	457487	5855356	5	A-B only-dry brown grav sand	L150E	500N
BR-16-045	457468	5855340	5	A-B only-dry brown grav sand	L150E	475N
BR-16-046	457456	5855317	5	A-B only-moist reddish orange grav sand	L150E	450N
BR-16-047+048	457417	5855287	5	A-B only-dry brown grav/sand	L150E	400N
BR-16-049	457396	5855274	5	A-B only-dry brown grav sand	L150E	375N
BR-16-050	457381	5855256	5	A only-dry grey coarse grav sand	L150E	350N
BR-16-051	457359	5855232	5	A only-dry grey coarse grav sand	L150E	325N
BR-16-052	457345	5855219	5	A-D dry brown grav sand	L150E	300N

BR-16-053	457340	5855207	5	A-dry grey grav sand B-D dry brown grav sand	L150E	287N
BR-16-054	457329	5855201	5	A only-dry grey/brown grav sand	L150E	275N
BR-16-055	457321	5855194	40	A-C only-moist brown clay	L150E	262N
BR-16-056	457308	5855183	100	A-D wet grey clay	L150E	250N
BR-16-057	457289	5855168	130	A-D wet grey clay	L150E	225N
BR-16-058	457274	5855148	150	A-D wet grey clay	L150E	200N
BR-16-059	457258	5855134	180	A-D wet grey clay	L150E	175N