

## **B-HORIZON SOIL GEOCHEMICAL SURVEY**

### **Introduction**

B-horizon soil samples have been used extensively during geochemical exploration programs for base and precious metals as well as other commodity types. Routinely, these samples were sieved to -80 mesh and analysed for numerous elements by AAS or ICP-AES, subsequent to an aqua regia digest. Other dissolutions were also utilized including a number of phase specific and sequential digestions.

The b-horizon geochemical database created for Operation Superior samples collected in 1997 is based upon the enzyme leach process. This analysis is a phase specific approach to the delineation of metal-enriched zones within b-horizon samples. The enzyme leach data, like data generated from all other analytical approaches in the dataset, are interpreted from each of two sub-areas within the 1997 survey area.

### **Enzyme Leach**

This process is a phase-specific leach that preferentially attacks amorphous manganese oxide coatings on mineral grains thereby liberating trace metals that are trapped in this material. Amorphous manganese oxide represents an efficient chemical sieve or trap for cations, anions and polar molecules because of its large surface area and the random distribution of charges on this surface. The trace elements that are trapped or complexed on the amorphous manganese oxides are interpreted to represent the chemical signatures of buried, oxidizing mineralization at depth, rather than signatures originating from a transported overburden source, such as till. It should be noted, however, that the geochemical signature within the b-horizon may be strongly affected by the weathering of till and the subsequent downward movement of metals as a result. This could produce a “transported” till geochemical signature in combination with site specific mineralization-related geochemical signatures and a composite signature overall. The possible contribution of parent material composition to the overall enzyme leach signature is not well understood.

Most of the amorphous manganese oxide is developed in the b-horizon, where studies in both arid and humid geological and climatic environments have established that mineral particles within this soil horizon are coated with this authigenic material. The a-soil horizon may not reflect geochemical anomalies identified in the b-horizon since a-horizon is fairly rapidly leached of its metallic components which are carried downwards, perhaps as humic- or fulvic-acid compounds (humates/fulvates?), and trapped or sieved as they encounter the amorphous Mn-oxide coatings on mineral grains in the b-horizon. The chemical composition of the a-horizon is significantly impacted by the metal contents of vegetation contributing litter to the forest floor. This litter will reflect metals obtained by vegetation during nutrient acquisition from soil horizons tapped by root systems. Accordingly, the a-horizon geochemical signature will reflect the ability of various species to acquire and store metals until such time as they are dropped to the forest floor, decompose and move

downward in the soil profile. This source of metal may, therefore, reflect a transported metal signature representing a clastic component within an exotic till or lacustrine clay rather than a buried mineralization signature.

The diffusion of relatively volatile metal phases or metals transported by gases consisting of Hg-vapour,  $\text{CO}_2$ , Rn, He, N,  $\text{O}_2$ ,  $\text{CO}_4$ , Ar and S-compounds, away from an oxidizing zone of mineralization, undoubtedly proceeds as a result of a number of processes. Metal transport may be effected by the influence of an electrochemical or self-potential cell, or as components in soil gases derived from mantle de-gassing (*cf.* Gold and Soter, 1980; “geogas”, Malmquist and Kristiansson, 1984; “earth-gas”, Wang *et al.*, 1997). The role of shallow groundwater as the transport medium for metals from source to surface is also being investigated (Stewart Hamilton, pers. comm.). Metals carried by one or more of these mechanisms will be adsorbed by the amorphous Mn-oxide, enriching this portion of the b-horizon in metals. Native gold and mercury in the soil profile will not be digested using the enzyme leach.

The leachate from the b-horizon soil is analyzed by ICP-MS for 59 elements at detection limits in the parts per billion range. Clark (1992, 1993) provides theory and application of the enzyme leach method.

### **Sample Collection**

B-horizon soil geochemical samples were collected from the same pit dug for the till samples. The b-horizon was isolated on a clean face of one or more walls of the pit and then scooped into a labelled, medium-sized, ZIPLOC sample bag that was filled. Care was taken not to include any organic material either from the overlying humus or from forest litter when collecting this inorganic sample. This precaution was considered particularly important for enzyme leach analyses where considerable variance can be added to the data by mixing organic and inorganic material. The b-horizon in the survey areas ranged in colour from orange to chocolate brown with less intense variants of these colours.

At some sampling sites there was a 3-5 cm zone of mixing between organic and inorganic soil layers. In these instances the b-horizon sample was collected from below the zone of mixing. Another variant in b-horizon sampling is the slumped, contorted and mixed nature of the most decomposed portions of the b-horizon with less oxidized, usually lower b-horizon material. This was attributed to either frost-jacking or to a variation of soft sediment deformation. In these instances the b-horizon sample comprises the most strongly oxidized b-horizon material that was inevitably mixed with less oxidized material.

Duplicate samples were collected every tenth site.

## Sample Preparation and Analysis

At the end of the day, samples were returned to camp and stored in a shaded low lying area out of the direct rays of the sun, where temperatures did not exceed 40°C. This temperature is considered to represent the upper limit for samples to be analysed by the enzyme leach method. Temperatures exceeding 40°C will result in volatilizing metal-bearing compounds from the sample (Bob Clarke, Activation Laboratories Ltd., pers. comm.).

B-horizon soil samples were shipped to the Manitoba Geological Services Branch laboratories by refrigerated transport, where they were air dried at less than 40°C and sieved to obtain the -60 mesh size fraction. The -60 mesh portion was forwarded to Activation Laboratories Ltd. for enzyme leach-ICP-MS analysis. A separate -80 mesh aliquot was submitted to the Manitoba Geological Services Branch laboratory for the measurement of pH and conductivity. The pH and conductivity measurements were corrected and converted to H<sup>+</sup> and specific conductance using the formula of Govett (1976) and reproduced with examples in Govett *et al.*, (1984).

Geochemical data is listed in Appendix 1 and analyses for field duplicate samples are listed in Appendix 2. Percentile bubble plots appear in Appendix 3. With the exception of the hydrogen ion (H<sup>+</sup>) and specific conductance (K) no other analyses were performed on the b-horizon soils.

## Results

### Edmund Lake Belt

The enzyme leach analysis of b-horizon soil samples in the Edmund Lake belt has identified multiple sites of high percentile responses that correspond to the locations of known mineralization at Little Stull Lake and sites identified as geochemically anomalous in the rock geochemical survey.

The Little Stull Lake gold deposits are marked by high percentile responses for numerous “commodity” elements and other elements indicative of associated alteration and structural overprinting (WBSZ) of the mineralized host rocks. Commodity and “ore-related” element responses include 100<sup>th</sup> percentile values for As (137 ppb), Mo (94 ppb), Pb (33 ppb), Ga (23 ppb), Ni (79 ppb), a 99<sup>th</sup> percentile for Sb (3 ppb) and a 98<sup>th</sup> percentile of 29 ppb for Co. Additional responses include the 100<sup>th</sup> percentile for V (349 ppb, 99<sup>th</sup> percentile of 262 ppb, also) and Nb (12 ppb), 99<sup>th</sup> percentiles for Ba (932 ppb) and Cs (6 ppb) and a 98<sup>th</sup> percentile of 76 ppb for Li. Interestingly, the area of the Little Stull Lake gold deposits would have been deemed “anomalous” solely on the basis of a 100<sup>th</sup> percentile response for specific conductance (30.75 mhos cm<sup>-1</sup>).

Due west of the Little Stull Lake area, 100<sup>th</sup> percentile values for Sr (1206 ppb; 99<sup>th</sup> percentile of 872 ppb

also) and I (373 ppb) have been observed. Southwest of Little Stull Lake in the contact area of the greenstone belt and granitic intrusive terrane there are multiple 98<sup>th</sup> (17 ppb) to 95<sup>th</sup> (12 ppb) percentile responses for Mo.

As identified in the rock geochemical survey, the area south and east of Little Stull Lake to the Manitoba-Ontario provincial border is also characterized by an extensive list of elements determined by ICM-MS in b-horizon soils subsequent to enzyme leaching. An affiliation to sulphide mineralization is indicated by 100<sup>th</sup> percentile responses for Cu (150 ppb; 99<sup>th</sup> percentile of 115 ppb as well), Pb (33 ppb), Ni (79 ppb), Mo (94 ppb), Sb (5 ppb; 99<sup>th</sup> percentile of 3 ppb) and Ga (23 ppb). Alteration-, structural-, or lithology- related responses include 100<sup>th</sup> percentile values for Li (134 ppb), Ti (4394 ppb), V (349 ppb), Sr (1206 ppb), Y (104 ppb), Nb (12 ppb) and the REE (1070 ppb). Other significant responses include 99<sup>th</sup> percentiles for Rb (151 ppb), Cs (6 ppb) and Mn (2711 ppb); a 98<sup>th</sup> percentile for As (39 ppb) and both 99<sup>th</sup> and 98<sup>th</sup> percentile responses for specific conductance (30.37 and 29 mhos cm<sup>-1</sup>, respectively). Southwest of Little Stull Lake at or near the margin of the greenstone belt, a 100<sup>th</sup> percentile response for Sc (10539 ppb) is documented. High Sc contents have been previously been observed in association with faults and shear zones and is suggestive that the nature of the greenstone belt/granitic intrusive contact is faulted.

The area of the deflection of the WBSZ is marked by only two commodity element responses and both of these are interpreted to be low contrast signatures. These are Cd (100<sup>th</sup> and 98<sup>th</sup> percentiles of 3 and 1.8 ppb, respectively) and the 98<sup>th</sup> percentile for Ga (11 ppb). Other significant responses include 98<sup>th</sup> percentiles for Ba (845 ppb) and Ti (1536 ppb); three 95<sup>th</sup> percentile (6 ppb) Nb responses and a 100<sup>th</sup> percentile Br response of 1161 ppb that occurs west of the WBSZ deflection. Anomalous rock geochemical response in the general area of the Margaret Lake tonalite intrusion was postulated as representative of mineralization and alteration that accompanied the emplacement of this granite. Some of the observed geochemical variance in the dataset, however, was attributed to samples collected from outcropping magnetite-rich iron formation at the west end of Margaret Lake. Enzyme leach responses in the vicinity of this iron formation include 100<sup>th</sup> percentiles for Co (43 ppb), U (7 ppb), Rb (177 ppb), Hf (11 ppb) and H<sup>+</sup> (8.9 ppb). The area peripheral to the Margaret Lake intrusion is marked by the 100<sup>th</sup> and 99<sup>th</sup> percentile values for Cl (46463 ppb) and 10340 ppb, respectively), the 100<sup>th</sup> percentile for Co (43 ppb), Zn (214 ppb) and Cu (150 ppb). Additional significant "peripheral" response include 99<sup>th</sup> percentiles for Mo (18 ppb), Li (79 ppb), Sc (3883 ppb), Ti (1558 ppb) and H<sup>+</sup> (4.47 ppb). A 98<sup>th</sup> percentile for Zr (93 ppb) and Pb (21 ppb) were also documented. Southeast of the Margaret Lake intrusion near the WBSZ, a 100<sup>th</sup> percentile response (3726 ppb) was obtained.

The east and west shores of Edmund Lake and to a lesser extent islands in the central portion of the Lake are marked by geochemical signatures for elements generally interpreted to be associated with faults and shear zones. This is not unreasonable since the WBSZ transects the lake in a northwest to southeast altitude. These structurally-related elements include 100<sup>th</sup> percentile values for Sc (10539 ppb), Zr (291 ppb),

Rb (177 ppb), Li (134 ppb), Hf (11 ppb; 99<sup>th</sup> percentile = 6 ppb), REE (1070 ppb) and the 99<sup>th</sup> percentile for Nb (10 ppb). Commodity related responses include the 100<sup>th</sup> percentile for Zn (214 ppb), Th (79 ppb – west and central Edmund Lake), U (7 ppb) and Ag (1.1 ppb) albeit the Ag response is very low. The 99<sup>th</sup> percentile values for Pb (24 ppb), Ga (15 ppb) and Cs (6 ppb) and specific conductance (30.4 mhos cm<sup>-1</sup>) and the 98<sup>th</sup> percentile for Ba (845 ppb) also characterize the Edmund Lake area. A 4394 ppb Ti (100<sup>th</sup> percentile) response from the west shore of the lake is interpreted to indicate the presence of high-Mg basalts or ultramafic intrusions that are documented from islands in the central portion of the lake.

Other areas of interest in the Edmund Lake belt include 100<sup>th</sup> percentile values for Cl (46463 ppb), Mn (3726 ppb), Br (1161 ppb), Ba (1130 ppb) and Cd (3 ppb) in the Kistigan Lake area. A 100<sup>th</sup> percentile response for Ba also occurs west of Kistigan approximately one-half way to Margaret Lake. A 99<sup>th</sup> percentile for H<sup>+</sup> (4.47 ppb) was also documented from the Kistigan Lake area. A 98<sup>th</sup> REE (569 ppb) percentile was obtained west of Kistigan Lake in granitic intrusive terrane.

A 100<sup>th</sup> percentile for I (373 ppb) occurs southwest of Rorke Lake and a 99<sup>th</sup> percentile (156 ppb) is documented on the east-west division between Rorke Lake and Kistigan Lake.

### **Sharpe Lake Belt**

The Sharpe Lake belt is marked by excellent correspondence between enzyme leach geochemical signatures and bedrock anomalies identified in the rock geochemical survey. In this regard it is similar to the results for the Edmund Lake greenstone belt.

The Monument Bay area represents the probable eastern extension of a stratigraphic and structural rock “package” that hosts the Twin Lakes and Seeber River gold deposits. Mineralization occurs at or close to the contact between rocks of the volcanic and sedimentary subgroups, Oxford Lake Group. This contact area is the site of numerous geochemical anomalies as defined by the enzyme leach process, some of which are suggestive of a fault related control to the mineralization.

The contact area is marked by 100<sup>th</sup> percentile responses for Sc (7841 ppb), Ti (2922 ppb), Ga (19 ppb) and Mo (70 ppb – 2 responses). Other significant responses include a 99<sup>th</sup> percentile for Hf (4 ppb) and 3 – 98<sup>th</sup> percentile Zr responses (93 ppb). In the area north of Monument Bay, west towards southern Twin Lakes, a string of 100<sup>th</sup> (4884 ppb) and 98<sup>th</sup> (1555 ppb) percentile responses are documented for Mn. A similar pattern is observed for Sr with 95<sup>th</sup> to 98<sup>th</sup> percentile responses (709 to 911 ppb) and V (98<sup>th</sup> percentiles, 270 ppb) occurring in this area. Additional “point source” responses occur in the northern area of Monument Bay and these include Zn (100<sup>th</sup> percentile, 73 ppb), 99<sup>th</sup> percentiles for U (4 ppb) and Rb (131 ppb) and 98<sup>th</sup> percentiles for Pb (19 ppb), Nb (10 ppb) and Li (72 ppb). The southern portion of the Monument Bay area is

marked by a 100<sup>th</sup> and 99<sup>th</sup> percentile response for Cl (14569 and 6657 ppb, respectively) and a 98<sup>th</sup> percentile for As (365 ppb). Further south of Monument Bay, near the southern margin of the Sharpe Lake belt, there are two 100<sup>th</sup> percentile Cu responses (215 ppb) and a single 100<sup>th</sup> As percentile (114 ppb). As in many of the other areas in the Edmund Lake belt a significant (98<sup>th</sup> percentile) specific conductance response is obtained (25.7 mhos) near the northwest corner of Monument Bay.

The Twin Lakes and Seeber Ricer gold deposits occur near the southern end of the Twin Lakes, which is characterized by multiple commodity and structurally related enzyme leach element responses. Commodity element responses include 100<sup>th</sup> percentiles for Pb (21 ppb) and Th (32 ppb), 99<sup>th</sup> percentiles for Zn (61 ppb), Ga (16 ppb) and U (4 ppb) and 98<sup>th</sup> percentiles for Co (27 ppb) and Mo (28 ppb). The Mo signature forms an eastward trend towards Monument Bay at or near the Oxford Lake volcanic-sedimentary rock contact along which multiple 98<sup>th</sup> and 95<sup>th</sup> percentile (13 ppb) are present. Structurally-related elements in the Twin Lakes area include a 100<sup>th</sup> percentile response for Nb (11 ppb), 99<sup>th</sup> percentiles for Sc (7180 ppb) and Ti (2436 ppb) and 98<sup>th</sup> percentiles for Rb (104 ppb) and Y (67 ppb).

South of the immediate Twin Lakes area, multiple moderate to high contrast geochemical responses are documented. These signatures include 100<sup>th</sup> percentiles for As (114 ppb), Ag (1.8 ppb), Cs (11 ppb), Y (77 ppb) and REE (670 ppb), 99<sup>th</sup> percentiles for Sr (974 ppb), I (200 ppb), Cu (99 ppb) and specific conductance (25.7 mhos cm<sup>-1</sup>, also a 98<sup>th</sup> percentile of 26.1 mhos cm<sup>-1</sup>) and 98<sup>th</sup> percentiles for Ga (15 ppb), Nb (10 ppb), Pb (19 ppb –2 responses), Th (23 ppb), Br (365 ppb) and H<sup>+</sup> (4.7 ppb).

The area of the greenstone belt contact with the granitic intrusions to the south is marked by 100<sup>th</sup> percentiles for Ni (83 ppb), Co (37 ppb, 99<sup>th</sup> percentile of 34 ppb) and V (376 ppb). Approximately 5-6 km east of this V response is a second 100<sup>th</sup> percentile signature. The 99<sup>th</sup> percentile response for Li (88 ppb) and the 98<sup>th</sup> percentiles for Sc (5601 ppb) and Ti (2434 ppb) are suggestive of a high-Mg source rock possibly occurring at the faulted belt contact.

The west shore of Makataysip Lake is marked by a circular 6700 nT aeromagnetic anomaly and multiple anomalous rock geochemical signatures. Relatively few elements respond in enzyme leach b-horizon geochemical data. The 100<sup>th</sup> percentile response for Co (37 ppb), relatively low contrast 99<sup>th</sup> percentile for H<sup>+</sup> (5 ppb) and 98<sup>th</sup> percentile responses for Cl (6406 ppb), Ba (841 ppb) and Rb (104 ppb) are the only significant responses. A low 1.8 ppb Ag response (100<sup>th</sup> percentile) is also observed.

This paucity of anomalous responses on the west shore is reversed, however, in the area south of Makataysip Lake at or near the southern margin of the belt. This site was also marked by multi-sample, multi-element rock geochemical anomalies. In the b-horizon enzyme leach data 100<sup>th</sup> percentile values are observed for Zr (148 ppb), Y (77 ppb), Rb (159 ppb), Ba (1240 ppb); H<sup>+</sup> (7 ppb) and a very low and probably

insignificant Ag response of 0.8 ppb. These elements are dominantly those associated with faults and suggest the nature of the southern margin of the belt in this area is in fault contact with granitic intrusions to the south. The 99<sup>th</sup> percentile REE response of 531 ppb and the 98<sup>th</sup> percentile for Nb (10 ppb) are further evidence to support the structural nature of the contact. Commodity element responses include 99<sup>th</sup> percentiles for Ni (56 ppb), Ga (16 ppb) and a low 1.3 ppb for Cd. Pb (19 ppb), Th (23 ppb), Ti (2434 ppb) and U (3 ppb) represent 98<sup>th</sup> percentile responses in this area. The 100<sup>th</sup> percentile for Cl (14569 ppb) occurs in this area as well and is at or near the southern contact of Oxford Group sedimentary and volcanic rocks. West of Makataysip Lake at the southern belt margin, 99<sup>th</sup> percentile As (63 ppb), and 98 percentile Ti (2434 ppb) and Ga (15 ppb) are documented.

Moderate to low contrast base and precious metal signatures occur in the area of the east end of Sharpe Lake. The 100<sup>th</sup> percentile values for Ni (83 ppb), Sb (28 ppb), Sr (1803 ppb), I (226 ppb), Ba (1240 ppb), Cs (11 ppb), Hf (6 ppb), H<sup>+</sup> (7 ppb) and a very low 0.8 ppb Ag are documented. The 99<sup>th</sup> percentile for Br (480 ppb) and the 98<sup>th</sup> percentiles for As (41 ppb) and Ga (15 ppb) are also present. The 100<sup>th</sup> percentile for specific conductance (28.8 mhos cm<sup>-1</sup>) is documented from this portion of the belt.

Further west, from the central portion of Sharpe Lake to the south end of Webber Lake, long and short strike length airborne and ground EM conductors are marked by base and precious metal enzyme leach signatures as well as numerous structurally-related elements. The 100<sup>th</sup> percentile values for Zn (73 ppb), Li (94 ppb – 2 responses), Sc (7841 ppb), Ti (2922 ppb), Rb (159 ppb), Sr (1803 ppb), Zr (148 ppb), Hf (6 ppb), I (226 ppb) and Br (598 ppb) are present. Additionally, 99<sup>th</sup> percentile responses for Mo (46 ppb, plus a 98<sup>th</sup> percentile response of 28 ppb) and Y (68 ppb and a 67 ppb 98<sup>th</sup> percentile) and a 98<sup>th</sup> percentile for Pb (19 ppb) are documented. Also noteworthy are the 100<sup>th</sup> percentile specific conductance response (28.8 mhos cm<sup>-1</sup>) and the 98<sup>th</sup> percentile for H<sup>+</sup> (4.7 ppb). A somewhat different metallogenic environment is indicated by a cluster of 100<sup>th</sup> (32 ppb), 99<sup>th</sup> (27 ppb) and 98<sup>th</sup> (23 ppb) percentile Th responses associated with a 4 ppb U 99<sup>th</sup> percentile that extends north of west-central Sharpe Lake to Barclay Lake. This anomaly was also marked by conspicuous Sb-in-rock enrichment (63 ppb and 10 ppm) in two samples and is related to highly fractured, pyritic and “yellow stained” bleached rocks.

Further north to Barclay Lake, a 100<sup>th</sup> percentile Br response (598 ppb) and 98<sup>th</sup> percentiles for Y (67 ppb), Zr (93 ppb) and REE (513 ppb, also a 432 ppb 95<sup>th</sup> percentile response) characterize a small greenstone outlier centered on this lake. The west shore of the lake is marked by a round aeromagnetic response that appears to correlate to weakly mineralized (1% pyrite), carbonate-altered and epidotized diorite exposed at the west lake shore.

## Synthesis

Enzyme leach based b-horizon soil geochemical survey results have effectively delineated multi-sample and multi-element low to high contrast anomalies centered on the Little Stull Lake gold deposits in the Edmund Lake belt and the Twin Lakes and Seeber River gold deposits in the Sharpe Lake belt. The latter gold deposits are situated at or close to the contact between Oxford Lake Group volcanic and sedimentary rocks and this contact is marked by persistent single sample and linear east-west trending multi-sample responses. A similar response is noted in other areas of both belts where structural features such as the Edmund Lake portion of the Wolf Bay Shear Zone and the southern margins of the Sharpe Lake belt (south of Monument Bay and west to Twin Lakes near the Oxford Lake sedimentary and volcanic rock contact) are marked by high contrast responses of commodity or “ore and ore-related elements” as well as elements usually associated with faults and shear zones. These areas define potentially favourable exploration targets.

Significant multi-element enzyme leach soil geochemical anomalies were identified south of Makataysip Lake at or near the contact between Oxford Lake Group sedimentary rocks and Hayes River basalt in the Sharpe Lake belt, and southeast of the Little Stull Lake gold deposits to the Manitoba-Ontario provincial border in Edmund Lake belt. Both of these locations had been previously identified on the basis of the results of the rock geochemical survey.

Modest but consistent base and precious metal responses were obtained from samples collected in the Sharpe Lake area. Of particular interest in this part of the Sharpe Lake belt is the association of highly elevated Sb-in-rock and U and Th b-horizon soil signatures. These responses are associated with highly altered and mineralized felsic (bleached?) intrusions that are stained to varying degrees of intensity with a yellow coating reminiscent of uranium oxide. Further efforts to identify this mineral coating have not been undertaken. These rocks locally host up to 20% disseminated and veinlet pyrite and are exposed sporadically over approximately 4 km. The exposure of these mineralized rocks was the result of intense forest fires in this portion of the belt and the ability to land the helicopter for sampling in the same area. The association of U-Th-REE suggests the need to assess these mineralized zones for platinum group element contents. As of the writing of this report, PGE analyses have not been undertaken.

The nature of the b-horizon samples collected in 1997 shows a preponderance of variably oxidized glacial Lake Agassiz clays. These surficial deposits comprise 80% of the b-horizon soil samples collected in 1997 with the remainder represented by silt (6.4%), sand (4.5%), till (4.2%) and 4.9% of samples classified as “mixed” owing to the mixing of sands, silts, clays and tills by permafrost action. Within the body of anomalous responses identified in the 1997 survey area, there is a lack of preferential development of high, medium or low contrast geochemical anomalies in any one particular b-horizon soil type. It is somewhat difficult to assess the effects of primary b-horizon soil composition on enzyme leach response given the preponderance



of lacustrine clays as the sample media.

Noteworthy in this enzyme leach survey is the success of the technique at the 1 km sampling scale and the correspondence with the rock geochemical survey results.

## **Conclusions**

The following conclusions are apparent from the 1997 b-horizon soil geochemical survey based on the enzyme leach process:

- 1) known zones of gold mineralization and their respective stratigraphic structural rock “packages” have been effectively delineated;
- 2) new zones of high contrast geochemical response have been delineated at or near the southern greenstone belt margins and are interpreted to represent fault structures with associated precious metal mineralization;
- 3) the northern contact of the Oxford Lake Group Sedimentary and volcanic rocks, as well as the southern Oxford Lake Group sedimentary rock and Hayes River basalt contact is identified as highly prospective for precious metal mineralization. These contacts are sites of significant rheologic difference and as such are probably faulted or sheared. The association of “ore and ore-related” precious metal assemblages as well as elements usually observed in association with structural features (Sc, Nb) would tend to support this hypothesis;
- 4) a properly collected, prepared and analyzed b-horizon soil sample can effectively target base and precious metal targets for subsequent follow-up;
- 5) the significant areal expanses of wet peatlands in the 1997 multi-media survey does not prohibit the acquisition of meaningful soil geochemical data derived from the enzyme leaching of b-horizon soil samples.

# Appendix 1

## B-Horizon Geochemistry: Inductively Coupled Plasma-Mass Spectrometry (ICP-MS), Hydrogen Ion (H<sup>+</sup>) and Specific Conductance (K) Analyses.

Sample Site	UTM		S.Q.Li	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	As	Br	Rb
	EAST	NORTH	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
97B-1	517844	6046787	25	4762	641	1040	68	272	10	26.0	35	35	8.0	72.0	161	50
97B-2	520028	6046856	5	3865	50	212	46	1387	26	9.0	22	19	2.0	11.0	140	24
97B-4	523123	6047360	5	3117	50	180	34	221	13	11.0	45	32	2.0	10.0	225	34
97B-6	518401	6043035	5	1500	50	387	41	204	9	8.0	14	31	3.0	2.5	73	61
97B-7	517331	6040220	19	3794	1408	623	91	466	11	11.0	57	23	6.0	8.0	110	35
97B-8	524367	6055073	11	46463	50	256	85	666	11	44.0	49	23	3.0	15.0	1161	18
97B-9	524733	6056170	21	6086	50	311	195	338	6	17.0	58	30	2.0	25.0	256	15
97B-10	525113	6057420	11	1500	50	242	182	345	5	19.0	52	22	3.0	20.0	196	18
97B-11	522988	6055725	20	3256	50	201	24	246	12	15.0	18	40	1.0	2.5	111	111
97B-12	519560	6055914	5	1500	50	191	24	477	4	2.5	12	16	2.0	6.0	102	21
97B-13	520245	6058104	10	1500	583	362	61	652	19	11.0	25	20	5.0	8.0	80	38
97B-14	511198	6058043	39	1500	50	560	42	129	21	26.0	36	53	5.0	2.5	183	135
97B-15	502125	6054351	19	1500	50	425	99	1573	15	25.0	48	19	3.0	13.0	403	27
97B-16	501813	6056254	5	10340	234	163	20	2431	22	13.0	18	25	3.0	11.0	208	101
97B-17	501778	6057331	16	3670	50	613	63	897	14	27.0	43	28	6.0	10.0	96	37
97B-18	502316	6058450	5	1500	376	486	46	713	16	18.0	29	24	5.0	11.0	155	24
97B-19	503981	6058302	16	1500	50	167	163	969	11	18.0	65	21	2.0	23.0	97	11
97B-20	504550	6057806	5	1500	184	306	40	3726	11	6.0	21	20	4.0	10.0	56	41
97B-22	509841	6054884	5	1500	50	367	39	672	5	7.0	18	24	4.0	5.0	63	22
97B-23	509948	6053778	5	1500	50	190	13	540	7	2.5	11	14	2.0	5.0	63	51
97B-24	509040	6054136	26	3156	1025	1313	134	946	20	28.0	32	47	10.0	13.0	104	42
97B-25	509160	6053238	5	1500	50	337	44	84	11	7.0	22	23	2.0	6.0	75	64
97B-26	507026	6053858	22	1500	50	242	255	1156	12	15.0	70	20	2.0	28.0	128	23
97B-27	503212	6061166	13	1500	50	315	74	1133	17	24.0	32	26	3.0	11.0	93	19
97B-28	500798	6058006	5	5705	50	149	16	72	17	11.0	32	32	1.0	2.5	112	55
97B-29	500018	6058670	5	1500	50	128	138	929	10	11.0	46	21	1.0	18.0	380	12
97B-30	498526	6059429	5	3145	50	311	35	1640	18	7.0	19	20	4.0	13.0	111	23
97B-31	494124	6062419	5	1500	50	265	48	2657	24	2.5	5	15	2.0	2.5	72	36
97B-32	495219	6061599	5	4052	143	403	46	400	17	10.0	47	21	2.0	7.0	82	38
97B-33	502168	6064279	5	1500	50	326	74	644	9	11.0	44	21	3.0	11.0	98	22
97B-35	517033	6052297	11	1500	50	144	83	223	4	5.0	66	24	2.0	17.0	112	10
97B-36	514597	6053054	5	4002	50	163	112	2338	19	25.0	68	23	2.0	22.0	114	14
97B-37	512445	6053053	5	1500	50	371	47	1189	20	9.0	22	29	3.0	8.0	81	15
97B-38	511021	6053344	33	1500	1083	1536	87	448	9	23.0	70	51	11.0	21.0	51	75
97B-39	508748	6056431	5	1500	238	371	27	773	16	10.0	30	33	3.0	8.0	111	23
97B-41	507184	6058780	40	1500	50	149	108	1225	6	17.0	47	28	2.0	28.0	143	18
97B-43	504203	6061045	47	1500	1237	1379	78	362	24	25.0	46	214	8.0	12.0	148	98
97B-44	503423	6060019	5	1500	50	215	64	1220	6	7.0	29	85	2.0	10.0	147	22
97B-45	501781	6059766	11	1500	50	566	62	695	13	17.0	29	39	5.0	9.0	113	30
97B-46	499940	6063989	5	8079	50	1101	46	81	15	13.0	23	39	3.0	15.0	76	24
97B-47	507524	6062152	5	3280	50	285	87	1744	15	18.0	48	21	3.0	14.0	186	28
97B-48	505621	6063322	5	1500	50	317	33	468	22	24.0	54	31	3.0	12.0	106	24
97B-49	505397	6061922	38	1500	50	201	98	883	8	20.0	54	27	2.0	19.0	78	26
97B-50	505247	6059379	48	1500	50	184	138	1136	11	20.0	37	24	2.0	27.0	69	17
97B-51	504271	6063350	5	1500	50	196	73	758	5	2.5	35	18	2.0	18.0	61	10
97B-52	504799	6056393	8	3634	50	346	76	1681	31	22.0	38	23	4.0	11.0	132	15
97B-53	504700	6054812	5	1500	433	180	14	522	15	10.0	12	21	3.0	2.5	42	45
97B-54	486916	6066031	22	4332	374	220	139	1074	14	41.0	76	18	3.0	23.0	205	24
97B-55	485756	6066892	5	5709	285	256	147	797	10	30.0	50	20	2.0	15.0	166	8
97B-56	485088	6068682	5	1500	506	221	40	257	12	9.0	32	27	3.0	7.0	133	31
97B-57	485524	6066062	5	9961	50	140	97	648	11	9.0	24	20	1.0	8.0	166	15
97B-58	485360	6065468	14	1500	488	344	251	717	12	32.0	61	35	3.0	16.0	104	16
97B-59	500719	6060166	5	1500	376	181	29	851	11	6.0	15	18	2.0	5.0	65	55
97B-60	499348	6060438	16	1500	854	502	81	353	13	11.0	31	24	2.0	9.0	55	35
97B-61	497206	6060852	12	11083	432	335	71	1005	17	26.0	78	23	3.0	10.0	230	12
97B-62	496583	6059870	5	1500	1048	223	61	2021	43	9.0	20	23	3.0	9.0	104	11
97B-63	495649	6062459	18	1500	652	294	101	1332	24	29.0	56	29	4.0	11.0	78	25
97B-64	495880	6064914	5	1500	401	470	64	1240	9	8.0	131	88	4.0	8.0	100	16
97B-65	498817	6064616	5	1500	568	190	34	1009	19	2.5	22	22	2.0	2.5	43	14
97B-66	491433	6062854	5	1500	582	141	20	956	19	6.0	15	20	2.0	7.0	119	13

Sample Site	UTM		S.Q.Li	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	As	Br	Rb
	EAST	NORTH	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
97B-67	491159	6063714	45	3006	3883	933	58	1365	25	29.0	69	29	5.0	15.0	139	92
97B-68	492958	6064176	79	4705	3505	1558	93	613	36	35.0	55	71	10.0	8.0	289	177
97B-69	494161	6064535	11	3522	50	191	89	734	10	14.0	47	35	2.0	18.0	182	27
97B-70	492821	6062333	5	5348	50	107	19	188	5	2.5	8	14	1.0	6.0	62	20
97B-71	518287	6046419	5	6235	378	236	45	322	4	7.0	25	19	2.0	12.0	43	9
97B-72	518901	6044811	56	7091	554	358	239	1276	29	79.0	60	81	23.0	21.0	249	138
97B-73	520311	6044617	45	1500	1125	133	262	1501	13	42.0	101	30	4.0	24.0	83	21
97B-74	521245	6042332	16	1500	295	268	109	285	4	2.5	48	26	3.0	137.0	165	16
97B-75	520867	6044001	5	1500	345	167	60	660	7	12.0	32	19	2.0	16.0	114	9
97B-76	522120	6041844	11	1500	580	371	31	126	8	9.0	33	27	2.0	7.0	86	39
97B-77	524950	6041844	5	1500	50	117	8	95	7	9.0	18	34	0.5	2.5	15	64
97B-78	522282	6036707	5	1500	300	111	20	895	9	6.0	23	21	0.5	7.0	15	10
97B-79	523264	6036507	33	3357	472	427	119	817	5	8.0	150	27	3.0	13.0	15	29
97B-80	522574	6036479	50	1500	50	270	188	2711	25	62.0	81	24	2.0	33.0	202	23
97B-81	519985	6039050	94	6825	489	4394	208	1097	22	73.0	115	81	23.0	39.0	47	151
97B-82	521310	6040504	20	4798	50	201	162	444	6	16.0	60	24	3.0	21.0	98	18
97B-83	521313	6039495	22	1500	370	163	163	933	9	14.0	50	19	2.0	24.0	52	10
97B-84	521039	6038827	26	1500	2189	1462	121	1421	22	27.0	64	29	10.0	18.0	127	34
97B-85	521819	6038559	5	1500	274	178	73	505	6	12.0	61	17	2.0	11.0	208	4
97B-86	523226	6037995	5	1500	2887	561	44	951	9	8.0	61	28	7.0	8.0	68	56
97B-87	520938	6037469	5	1500	822	211	107	868	12	14.0	49	22	3.0	15.0	139	17
97B-88	520527	6041691	22	1500	410	1240	78	646	13	22.0	42	33	7.0	12.0	107	41
97B-89	523975	6039555	14	1500	1263	1010	65	568	11	15.0	26	32	5.0	11.0	64	29
97B-90	523174	6042220	13	1500	1168	665	100	336	11	15.0	55	35	5.0	19.0	162	25
97B-91	518535	6038263	5	3593	214	141	64	815	8	18.0	64	21	2.0	10.0	148	7
97B-92	520156	6037478	15	1500	262	225	300	414	4	8.0	79	27	2.0	14.0	15	17
97B-93	520504	6036253	5	3517	394	148	73	278	5	15.0	63	26	1.0	16.0	258	6
97B-94	522084	6035823	24	1500	853	287	180	225	4	7.0	56	23	3.0	28.0	100	17
97B-95	519219	6039836	28	1500	1434	184	105	354	6	12.0	55	22	3.0	31.0	117	25
97B-96	516558	6040903	5	1500	1183	436	75	751	14	20.0	39	33	4.0	13.0	115	25
97B-97	516780	6043256	15	3428	1067	414	82	638	7	9.0	42	27	3.0	14.0	106	28
97B-98	517540	6044424	5	4627	1005	116	92	316	6	15.0	46	20	2.0	15.0	124	10
97B-99	517575	6045717	68	1500	50	496	349	533	8	34.0	56	24	4.0	36.0	299	32
97B-100	516705	6045308	20	4548	50	773	86	678	17	21.0	46	32	7.0	15.0	107	34
97B-101	518918	6036134	49	1500	3413	1506	110	412	9	21.0	83	69	10.0	24.0	97	66
97B-103	528252	6043105	47	1500	1220	224	220	325	5	8.0	37	21	2.0	25.0	154	13
97B-104	527779	6044102	29	1500	1109	175	183	708	7	13.0	56	16	2.0	29.0	211	15
97B-106	529083	6046462	17	3264	612	137	110	446	5	7.0	46	14	1.0	21.0	62	13
97B-109	532452	6050373	5	3602	419	597	54	57	14	6.0	27	41	2.0	6.0	54	49
97B-110	531121	6050631	11	2998	154	289	63	2970	18	19.0	37	21	5.0	8.0	140	59
97B-111	527183	6049725	42	5590	933	188	248	1287	13	25.0	87	21	3.0	39.0	275	21
97B-114	522154	6047887	23	3713	1013	208	202	1224	13	25.0	76	26	3.0	20.0	82	22
97B-115	476770	6068319	5	3128	629	50	37	365	9	7.0	22	22	1.0	8.0	75	8
97B-116	476939	6067881	5	3631	700	168	66	573	7	8.0	31	20	2.0	13.0	144	13
97B-117	476804	6064944	10	3139	1038	195	67	460	11	2.5	16	22	1.0	8.0	60	110
97B-118	476238	6065100	35	4003	1742	466	122	1121	18	18.0	38	29	3.0	11.0	74	28
97B-119	477063	6066473	14	5281	1469	331	89	1097	19	19.0	39	25	2.0	11.0	312	9
97B-120	478086	6066782	134	3625	10539	3685	198	762	27	62.0	94	93	15.0	21.0	219	159
97B-121	484469	6064950	5	6311	616	190	45	426	16	8.0	37	22	2.0	16.0	154	19
97B-122	483447	6064669	44	4231	2138	645	93	767	23	19.0	43	36	3.0	13.0	160	54
97B-123	480778	6065799	18	5694	2275	293	126	1401	18	23.0	69	39	4.0	18.0	203	43
97B-124	481778	6066491	5	3906	949	304	113	545	9	6.0	20	18	2.0	12.0	137	26
97B-125	480838	6068726	5	6829	624	194	40	356	11	8.0	19	25	1.0	7.0	182	54
97B-126	480508	6066960	5	6089	901	258	111	115	14	15.0	39	18	2.0	12.0	340	19
97B-128	512908	6048360	76	5539	1246	139	235	735	9	20.0	54	21	2.0	30.0	306	19
97B-129	514002	6047001	13	1500	1125	321	61	693	8	13.0	39	26	3.0	10.0	395	19
97B-130	514803	6046016	5	7166	815	115	88	344	4	6.0	35	23	1.0	15.0	125	7
97B-131	515458	6047081	5	5481	1153	243	54	647	10	13.0	35	22	2.0	11.0	163	20
97B-132	513910	6049816	5	4219	617	222	67	500	8	15.0	48	25	2.0	12.0	115	7
97B-134	513021	6050137	5	4146	404	258	10	220	4	2.5	14	26	2.0	2.5	15	69
97B-135	513049	6050683	5	1500	740	183	18	184	8	2.5	17	33	1.0	2.5	61	85
97B-136	513377	6052104	13	5277	1558	569	53	625	10	17.0	37	33	5.0	13.0	237	49
97B-137	515612	6054401	5	4784	572	116	38	458	6	10.0	36	15	2.0	11.0	161	20
97B-138	513788	6053203	11	3580	562	149	11	265	17	7.0	11	38	0.5	2.5	57	64
97B-139	512201	6047079	43	1500	999	172	119	912	8	15.0	36	28	2.0	24.0	33	24
97B-140	510561	6051207	31	3627	3322	1464	86	1803	17	32.0	52	40	11.0	14.0	138	36
97B-141	509638	6050746	5	5447	700	396	49	649	8	13.0	44	29	4.0	10.0	98	19
97B-143	503707	6055102	11	5552	50	231	27	649	19	7.0	21	29	2.0	4.3	102	27
97B-144	505932	6054078	5	4427	568	131	48	692	6	6.0	39	25	2.0	8.0	147	13
97B-145	506193	6051607	43	3744	1721	334	202	981	7	24.0	50	30	3.0	18.0	91	25

Sample Site	UTM		S.Q.Li	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	As	Br	Rb
	EAST	NORTH	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
97B-147	515949	6041823	34	3557	4203	1416	107	321	9	26.0	43	52	10.0	14.0	103	77
97B-148	515048	6043031	39	5515	2023	186	158	1812	14	34.0	84	31	3.0	23.0	61	21
97B-149	514154	6044555	56	4182	1788	178	240	422	6	14.0	52	24	2.0	26.0	106	16
97B-150	517486	6033988	15	1500	1724	591	54	955	15	15.0	61	35	4.0	12.0	103	35
97B-151	517522	6032623	11	3445	1865	362	23	914	8	9.0	31	28	2.0	9.0	63	80
97B-152	517917	6030851	26	1500	1769	219	141	377	6	16.0	46	27	2.0	14.0	119	20
97B-153	517089	6028676	13	3996	1785	270	119	986	14	30.0	66	29	3.0	16.0	105	14
97B-154	516412	6032166	15	4499	1914	228	167	897	14	40.0	73	24	3.0	18.0	167	15
97B-155	512777	6028202	10	3462	2081	419	49	706	9	15.0	42	27	3.0	13.0	86	35
97B-156	514874	6028199	18	3594	1857	233	52	4884	21	24.0	47	33	4.0	9.0	48	57
97B-157	514218	6029291	5	6657	1661	261	182	713	7	24.0	52	24	2.0	25.0	315	15
97B-158	513703	6027484	5	6406	136	85	77	902	11	28.0	49	18	1.0	15.0	144	25
97B-159	512845	6033996	48	3194	1906	50	112	1501	15	27.0	51	25	1.0	15.0	15	29
97B-160	495421	6033104	5	1500	1132	121	24	325	3	2.5	24	19	1.0	2.5	15	15
97B-161	494348	6031542	5	1500	1432	50	7	76	2	2.5	12	36	0.5	2.5	15	43
97B-162	494356	6030881	30	1500	2706	914	50	171	14	19.0	31	27	5.0	11.0	82	91
97B-163	514501	6026145	10	1500	1881	259	70	1109	18	13.0	29	17	2.0	7.0	89	28
97B-164	513589	6026247	5	5463	1622	177	48	822	12	23.0	61	27	2.0	11.0	145	15
97B-165	512599	6026335	36	3416	1703	50	191	1065	8	11.0	131	25	1.0	73.0	41	27
97B-166	511598	6026204	64	3443	1543	50	376	1038	10	15.0	215	36	0.5	29.0	47	21
97B-167	513297	6027660	11	7001	2078	189	77	981	13	23.0	77	31	2.0	15.0	148	34
97B-168	512386	6027803	16	1500	1464	245	25	420	10	8.0	26	35	2.0	7.0	69	76
97B-169	501038	6027746	16	1500	1547	293	82	312	7	63.0	47	32	3.0	25.0	109	29
97B-170	515084	6033390	54	1500	7841	2887	165	378	14	45.0	45	73	19.0	16.0	124	131
97B-171	516472	6033483	15	3662	1263	135	98	401	5	29.0	62	40	2.0	14.0	79	19
97B-172	513930	6032694	13	3752	1322	50	170	1391	11	23.0	62	16	2.0	18.0	239	16
97B-173	511989	6032692	63	1500	1811	50	193	485	8	21.0	44	25	1.0	20.0	15	19
97B-174	509849	6029481	23	4120	2218	358	135	413	7	22.0	51	32	3.0	20.0	91	16
97B-175	508028	6029647	52	3341	1488	50	176	769	8	30.0	55	23	2.0	22.0	61	19
97B-176	507855	6030497	20	3868	1692	138	177	477	5	13.0	57	20	2.0	24.0	101	16
97B-177	505523	6031030	12	1500	1138	167	17	77	7	12.0	18	30	0.5	2.5	42	77
97B-179	511145	6030626	14	3270	2161	114	147	285	5	19.0	45	26	2.0	13.0	113	21
97B-181	510327	6032208	19	4657	2124	301	128	1926	17	38.0	75	34	3.0	19.0	168	15
97B-182	513479	6031215	71	5060	1584	185	270	541	6	17.0	40	21	2.0	29.0	101	17
97B-183	502520	6029633	25	2369	50	169	25	127	37	14.0	28	39	1.0	2.5	101	82
97B-184	521348	6034014	12	1500	2241	421	51	305	6	12.0	58	26	3.0	12.0	75	34
97B-185	519147	6033381	18	1500	3667	307	80	460	9	21.0	48	36	3.0	13.0	116	18
97B-186	518573	6031574	28	1500	3408	1067	113	407	8	27.0	56	43	7.0	15.0	79	48
97B-187	499197	6032410	15	4184	2290	749	44	201	6	14.0	30	45	5.0	7.0	66	30
97B-188	498282	6033227	29	4565	965	50	6	224	11	12.0	12	46	0.5	2.5	93	64
97B-189	498849	6029766	35	4058	2694	756	59	798	9	21.0	39	44	6.0	31.0	123	39
97B-190	498167	6028367	27	3596	3014	1050	64	237	6	21.0	33	38	7.0	8.0	15	65
97B-191	497208	6028893	5	4178	1375	264	17	190	3	2.5	10	23	2.0	2.5	35	36
97B-192	485905	6033746	20	3413	1366	176	12	79	11	7.0	11	39	1.0	2.5	55	83
97B-193	489935	6033983	19	4038	50	197	74	1471	7	14.0	36	18	2.0	10.0	83	28
97B-194	491164	6032643	5	4118	249	292	68	492	12	17.0	33	12	3.0	63.0	70	10
97B-195	501211	6032956	5	3524	50	301	73	319	4	11.0	33	16	2.0	12.0	84	32
97B-196	494312	6029503	33	1500	50	395	22	113	27	11.0	22	31	2.0	8.0	34	81
97B-197	496064	6031902	27	5619	50	126	9	458	14	12.0	14	38	0.5	2.5	53	77
97B-198	495940	6029992	44	3136	4983	2434	122	519	14	38.0	48	38	16.0	12.0	77	99
97B-199	495793	6029002	19	1500	50	174	14	135	7	10.0	10	31	1.0	2.5	15	159
97B-200	491974	6031864	5	14569	50	238	69	618	14	56.0	51	11	2.0	14.0	52	29
97B-201	501310	6029875	72	4776	50	148	238	816	11	33.0	85	26	2.0	17.0	15	26
97B-202	503202	6031243	36	3258	1370	201	175	2773	34	53.0	99	33	3.0	18.0	70	24
97B-203	504582	6032523	40	1500	7180	2436	102	1555	21	35.0	43	61	16.0	13.0	60	104
97B-204	493311	6034135	18	4271	50	155	16	531	18	9.0	18	22	0.5	2.5	41	85
97B-205	492691	6034939	30	6262	50	121	9	107	35	11.0	17	28	1.0	6.0	99	95
97B-206	492813	6032211	5	3128	50	111	22	683	4	2.5	9	5	0.5	2.5	43	11
97B-207	505903	6027507	26	1500	4125	1225	109	783	12	25.0	61	51	9.0	16.0	262	64
97B-208	508016	6027463	43	1500	3548	1797	156	717	12	32.0	55	38	15.0	23.0	264	88
97B-209	506661	6028140	58	1500	5530	1339	214	961	12	32.0	65	47	9.0	28.0	94	73
97B-210	506619	6029127	88	1500	5601	1372	302	1282	15	50.0	83	44	9.0	41.0	107	64
97B-212	504366	6029454	5	1500	50	139	27	969	11	2.5	21	5	1.0	2.5	40	20
97B-213	503971	6027895	29	1500	2043	1208	93	529	14	27.0	60	22	7.0	114.0	112	55
97B-214	507873	6033627	42	3198	186	101	230	816	8	20.0	43	13	2.0	28.0	72	18
97B-215	502859	6032947	13	3574	50	319	92	257	6	25.0	64	13	2.0	17.0	73	14
97B-216	500430	6031458	27	1500	1453	1080	73	205	6	19.0	42	25	8.0	12.0	52	55
97B-217	477524	6032937	46	1500	50	1243	248	830	25	83.0	88	37	9.0	17.0	83	74
97B-218	479469	6034111	31	1500	2900	1143	64	361	8	20.0	44	53	7.0	10.0	15	62
97B-219	476476	6033291	22	1500	50	153	118	300	5	13.0	36	10	1.0	15.0	54	17

Sample Site	UTM		S.Q.Li	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	As	Br	Rb
	EAST	NORTH	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
97B-220	494292	6033037	24	1500	1899	599	56	969	10	22.0	32	28	4.0	10.0	68	40
97B-221	491778	6033333	62	1500	5259	1747	198	446	11	31.0	52	43	10.0	24.0	80	84
97B-222	489734	6033070	5	1500	169	387	39	1278	12	6.0	16	12	3.0	8.0	60	43
97B-223	482129	6034706	20	3840	1138	614	83	881	21	26.0	41	18	5.0	9.0	365	23
97B-224	481343	6033144	42	3031	50	321	75	960	19	28.0	33	15	1.0	11.0	104	19
97B-225	484355	6033976	5	1500	50	50	8	77	9	14.0	23	40	0.5	2.5	63	91
97B-226	507579	6032592	41	1500	607	106	166	1124	24	29.0	73	35	2.0	14.0	15	29
97B-227	509576	6033495	52	3009	50	50	249	736	9	20.0	27	5	1.0	26.0	15	24
97B-228	504672	6033921	24	1500	1256	774	97	1012	14	28.0	43	23	5.0	10.0	38	31
97B-229	464202	6029599	18	5809	50	191	107	356	6	25.0	51	14	2.0	13.0	76	13
97B-230	465126	6029280	34	4948	2835	1507	101	1127	19	29.0	42	31	11.0	10.0	32	60
97B-231	468014	6029211	5	1500	214	244	44	723	15	15.0	37	24	3.0	9.0	142	9
97B-232	474714	6032147	19	1500	1040	777	94	352	8	23.0	30	27	5.0	8.0	94	38
97B-233	475878	6031424	13	3194	50	50	141	290	7	11.0	36	5	1.0	23.0	237	12
97B-234	472653	6030759	17	3579	126	327	124	546	21	18.0	26	13	1.0	12.0	72	21
97B-235	473647	6031180	12	4822	50	214	197	622	10	31.0	65	12	2.0	23.0	247	10
97B-236	471481	6030684	22	4516	1711	378	102	877	19	30.0	44	31	3.0	12.0	120	31
97B-237	467781	6031932	46	5268	368	298	124	737	10	15.0	27	13	1.0	10.0	39	26
97B-238	467303	6030943	31	1500	2413	524	107	224	6	14.0	36	19	1.0	10.0	35	40
97B-239	461733	6028498	27	5218	1669	231	86	1127	14	54.0	60	19	2.0	15.0	94	19
97B-240	460875	6028462	91	3459	2246	50	290	850	9	27.0	49	20	1.0	20.0	89	16
97B-241	461875	6027235	15	3687	2899	565	56	705	12	14.0	20	16	5.0	8.0	51	33
97B-242	459946	6027489	28	3617	2505	541	98	470	12	29.0	50	22	4.0	15.0	203	11
97B-243	456102	6028120	14	6301	1705	256	34	581	20	17.0	33	16	2.0	8.0	93	41
97B-244	453747	6028681	25	3199	3362	859	88	581	13	32.0	75	33	6.0	12.0	76	40
97B-245	452251	6028338	21	4786	2139	288	91	939	16	25.0	67	19	3.0	14.0	598	21
97B-246	458806	6027939	58	1500	2181	358	100	272	4	21.0	37	20	2.0	14.0	82	21
97B-247	455132	6028325	25	1500	3423	988	92	756	16	44.0	47	26	8.0	12.0	119	41
97B-248	452495	6028976	32	4193	2008	394	88	580	9	19.0	68	32	3.0	21.0	47	25
97B-249	450994	6027808	32	3681	2429	492	125	864	12	45.0	77	27	3.0	13.0	83	21
97B-250	449886	6028510	5	3110	2729	171	81	480	6	16.0	51	20	2.0	17.0	159	20
97B-251	448682	6028724	5	5084	247	133	31	425	10	11.0	48	15	1.0	14.0	173	15
97B-252	445395	6029398	13	4182	2329	366	85	204	4	9.0	28	24	3.0	11.0	70	26
97B-253	443963	6030330	11	3874	50	447	54	763	15	21.0	38	14	5.0	12.0	119	27
97B-254	443423	6028525	10	3381	2044	206	23	422	7	6.0	14	14	1.0	5.0	15	43
97B-255	442843	6030013	5	1500	1727	158	73	304	6	17.0	42	14	1.0	16.0	80	24
97B-256	442448	6029172	53	3420	1951	167	169	683	5	16.0	33	15	2.0	30.0	232	20
97B-257	439225	6030492	17	5885	1582	141	99	779	9	21.0	53	14	1.0	13.0	71	5
97B-258	437900	6030559	5	1500	1970	123	15	193	7	5.0	11	23	0.5	2.5	48	60
97B-259	438456	6031752	5	1500	1818	121	34	172	3	10.0	29	15	1.0	9.0	58	11
97B-260	437640	6031393	13	4053	2038	189	98	357	11	29.0	67	20	3.0	20.0	181	9
97B-261	448532	6027763	57	5667	2843	661	111	891	13	33.0	50	36	4.0	17.0	15	37
97B-262	435111	6031848	5	3620	1408	117	74	368	6	14.0	48	14	1.0	16.0	77	13
97B-263	436445	6031287	5	5083	1705	125	59	357	11	31.0	66	15	2.0	21.0	174	25
97B-264	435337	6030452	29	3836	2193	50	113	819	10	16.0	54	25	1.0	19.0	70	23
97B-265	440681	6030640	37	1500	5142	1794	134	425	10	29.0	37	49	11.0	13.0	127	79
97B-266	447639	6028463	5	3310	1079	174	45	955	9	13.0	41	17	2.0	11.0	184	17
97B-267	449222	6028541	12	1500	2633	625	40	446	10	16.0	30	22	5.0	7.0	46	33
97B-268	457373	6028180	15	1500	1882	153	111	540	7	24.0	53	17	2.0	16.0	47	12
97B-269	457918	6028804	47	1500	3818	1251	69	440	22	26.0	40	39	7.0	12.0	38	83
97B-270	457492	6027529	94	1500	7617	2922	128	435	22	48.0	75	68	8.0	17.0	74	158
97B-271	465155	6030614	11	1500	2234	336	102	586	13	25.0	56	28	2.0	15.0	226	22
97B-272	467904	6033232	55	3213	2429	233	191	455	9	35.0	80	22	3.0	37.0	480	16
97B-273-1	466096	6029651	20	3420	50	122	81	462	6	30.0	66	20	2.0	17.0	66	12
97B-274	468869	6031353	5	3870	2027	189	54	579	8	23.0	49	16	1.0	11.0	107	12
97B-275	441854	6030334	45	4480	1788	134	134	603	8	20.0	30	18	1.0	16.0	51	23
97B-277	455200	6033531	5	1500	1886	207	14	155	8	2.5	14	17	2.0	2.5	42	46
97B-278	456290	6033898	36	1500	2772	436	96	652	13	26.0	49	27	4.0	14.0	91	26
97B-279	455920	6035035	36	3550	2684	668	122	265	9	16.0	31	29	4.0	9.0	15	39
97B-280	456272	6032489	29	3594	2208	524	108	533	11	14.0	40	23	2.0	12.0	52	28
97B-281	458988	6036919	5	5154	1939	264	57	608	10	20.0	53	18	3.0	11.0	77	21
97B-282	459526	6035375	15	4683	2557	525	67	506	10	25.0	47	28	5.0	11.0	84	39
97B-283	457995	6036193	5	4056	1397	342	198	269	7	21.0	43	14	2.0	17.0	597	16
97B-284	457394	6031755	20	3599	2963	577	79	743	13	23.0	57	36	4.0	10.0	93	47
97B-285	454410	6030342	52	5576	1317	189	253	497	6	26.0	59	13	3.0	28.0	132	15
97B-286	453991	6031977	35	1500	2608	285	60	201	15	21.0	59	15	2.0	7.0	30	40

\*Note: Tree = Total Rare Earth Element

Sample Site	Sr ppb	Y ppb	Zr ppb	Nb ppb	Mo ppb	Ag ppb	Cd ppb	Sb ppb	I ppb	Cs ppb	Ba ppb	La ppb	Ce ppb	Pr ppb	Nd ppb	Sm ppb	Eu ppb	Gd ppb	Tb ppb	Dy ppb
97B-1	178	35	53	5.0	5.0	0.4	0.1	0.5	60	2.0	251	52	56	15	56	14	3.0	13	1.0	7.0
97B-2	134	30	42	2.0	4.0	0.1	0.5	0.5	68	0.5	242	40	106	14	57	14	3.0	13	2.0	7.0
97B-4	170	27	35	2.0	5.0	0.1	0.3	0.5	69	0.5	254	41	104	13	53	14	2.0	12	1.0	6.0
97B-6	235	23	25	2.0	4.0	0.1	0.6	0.5	25	0.5	428	52	107	14	52	11	3.0	12	1.0	5.0
97B-7	170	80	162	3.0	4.0	0.6	0.1	0.5	91	0.5	329	96	157	37	150	38	8.0	38	4.0	19.0
97B-8	393	50	60	3.0	8.0	0.3	0.3	0.5	107	0.5	177	67	108	21	78	17	3.0	19	2.0	10.0
97B-9	375	44	83	3.0	5.0	0.3	0.4	0.5	145	0.5	264	62	93	18	71	17	3.0	15	2.0	8.0
97B-10	317	45	55	3.0	6.0	0.1	0.6	0.5	90	0.5	233	65	92	18	69	14	3.0	16	2.0	9.0
97B-11	334	9	14	2.0	2.0	0.1	1.9	0.5	27	0.5	1130	14	26	4	15	3	0.5	3	0.5	2.0
97B-12	205	13	13	1.0	6.0	0.1	0.3	0.5	31	0.5	185	25	46	7	25	6	1.0	5	0.5	2.0
97B-13	137	66	109	3.0	2.0	0.4	0.4	0.5	54	0.5	273	86	259	31	130	33	6.0	27	3.0	16.0
97B-14	276	18	64	3.0	0.5	0.1	1.4	0.5	84	0.5	938	34	82	9	33	9	2.0	7	0.5	5.0
97B-15	156	33	37	2.0	3.0	0.3	0.4	0.5	132	0.5	214	49	62	14	53	13	3.0	12	1.0	6.0
97B-16	236	41	35	2.0	2.0	0.1	0.9	0.5	53	0.5	374	90	201	20	76	15	4.0	17	2.0	8.0
97B-17	165	77	59	4.0	3.0	0.3	0.1	0.5	94	0.5	236	107	115	29	115	26	5.0	26	2.0	12.0
97B-18	173	38	63	2.0	4.0	0.3	0.4	0.5	52	0.5	243	62	136	17	67	17	4.0	16	2.0	8.0
97B-19	349	22	34	2.0	6.0	0.1	0.7	0.5	107	0.5	238	34	68	9	41	9	2.0	9	0.5	4.0
97B-20	296	59	51	2.0	2.0	0.2	1.0	0.5	47	0.5	488	88	251	28	112	28	6.0	25	3.0	14.0
97B-22	116	19	21	2.0	3.0	0.1	0.1	0.5	27	0.5	143	30	68	8	34	8	1.0	8	0.5	3.0
97B-23	126	20	37	1.0	1.0	0.1	1.3	0.5	22	0.5	192	34	98	11	43	10	2.0	10	0.5	5.0
97B-24	180	58	61	5.0	4.0	0.4	0.1	0.5	126	2.0	334	81	109	22	89	23	5.0	20	2.0	9.0
97B-25	325	13	21	2.0	1.0	0.1	0.4	0.5	47	0.5	831	19	42	6	22	6	1.0	6	0.5	3.0
97B-26	311	27	35	2.0	3.0	0.1	0.4	0.5	81	0.5	288	41	96	12	47	11	2.0	10	1.0	4.0
97B-27	135	43	81	2.0	2.0	0.4	0.4	0.5	53	0.5	245	55	113	19	74	19	3.0	16	1.0	8.0
97B-28	177	12	36	1.0	2.0	0.1	0.5	0.5	40	0.5	506	19	39	5	19	6	0.5	4	0.5	3.0
97B-29	337	18	28	1.0	3.0	0.1	0.6	0.5	83	0.5	269	31	65	9	36	8	1.0	7	0.5	3.0
97B-30	147	62	48	2.0	2.0	0.2	0.7	0.5	41	0.5	168	93	240	28	111	28	5.0	27	3.0	14.0
97B-31	120	12	11	1.0	2.0	0.1	0.1	0.5	31	0.5	235	18	48	5	19	4	0.5	6	0.5	3.0
97B-32	145	23	92	2.0	2.0	0.5	0.4	0.5	58	0.5	254	39	101	13	46	12	2.0	11	1.0	5.0
97B-33	228	36	46	2.0	2.0	0.2	0.7	0.5	72	0.5	229	52	76	16	61	15	3.0	15	1.0	8.0
97B-35	305	33	42	2.0	3.0	0.3	0.4	0.5	76	0.5	213	46	74	13	53	12	2.0	12	1.0	6.0
97B-36	375	37	58	2.0	6.0	0.3	0.7	0.5	107	0.5	238	55	99	16	62	12	3.0	15	1.0	8.0
97B-37	128	35	49	2.0	2.0	0.3	0.1	0.5	59	0.5	230	48	95	15	61	16	3.0	14	1.0	7.0
97B-38	316	21	53	6.0	2.0	0.3	0.3	0.5	50	3.0	409	32	65	9	30	7	1.0	7	0.5	4.0
97B-39	153	29	78	2.0	2.0	0.3	0.3	0.5	55	0.5	337	39	144	16	64	15	3.0	14	1.0	7.0
97B-41	540	30	63	1.0	8.0	0.1	0.5	0.5	152	0.5	329	45	84	14	56	14	3.0	13	1.0	6.0
97B-43	179	27	138	6.0	2.0	0.4	0.5	0.5	68	2.0	475	53	123	17	61	15	3.0	12	1.0	6.0
97B-44	240	12	18	1.0	6.0	0.2	0.4	0.5	67	0.5	190	19	35	5	20	4	0.5	5	0.5	3.0
97B-45	133	33	47	3.0	3.0	0.1	0.8	0.5	65	1.0	184	49	72	15	56	13	3.0	12	1.0	6.0
97B-46	258	6	11	2.0	4.0	0.1	0.5	0.5	30	0.5	122	12	19	3	10	2	0.5	2	0.5	1.0
97B-47	268	36	67	2.0	2.0	0.3	0.4	0.5	97	0.5	227	53	100	16	63	14	3.0	14	1.0	6.0
97B-48	144	52	116	2.0	2.0	0.3	0.5	0.5	74	0.5	281	58	113	21	85	23	4.0	21	2.0	12.0
97B-49	384	35	61	1.0	7.0	0.1	0.4	0.5	124	0.5	264	45	84	14	56	14	3.0	13	1.0	6.0
97B-50	603	20	33	1.0	18.0	0.1	0.5	0.5	88	0.5	333	30	70	10	38	9	2.0	8	1.0	4.0
97B-51	288	14	17	1.0	4.0	0.1	0.3	0.5	63	0.5	176	21	41	6	23	6	1.0	5	0.5	2.0
97B-52	172	64	84	2.0	3.0	0.4	0.6	0.8	69	0.5	225	71	152	24	104	24	5.0	27	2.0	11.0
97B-53	141	22	42	1.0	2.0	0.1	0.9	0.5	30	0.5	285	29	93	10	41	11	2.0	10	1.0	6.0
97B-54	667	59	96	2.0	7.0	0.3	0.7	0.5	136	0.5	338	73	129	22	86	24	5.0	21	2.0	10.0
97B-55	332	40	41	1.0	6.0	0.1	0.5	0.5	137	0.5	188	47	66	13	53	12	2.0	13	2.0	8.0
97B-56	187	30	43	2.0	4.0	0.2	0.5	0.5	52	0.5	164	50	127	15	60	13	3.0	14	2.0	7.0
97B-57	200	12	7	1.0	6.0	0.1	0.3	0.5	61	0.5	109	20	45	6	23	5	1.0	5	0.5	2.0
97B-58	284	57	102	3.0	5.0	0.5	0.7	0.5	91	0.5	275	76	118	23	94	23	4.0	23	2.0	10.0
97B-59	172	23	30	1.0	2.0	0.1	1.1	0.5	30	0.5	285	41	114	13	51	14	3.0	11	1.0	6.0
97B-60	141	25	80	2.0	4.0	0.4	0.1	0.5	49	0.5	231	36	103	13	50	11	3.0	12	1.0	6.0
97B-61	164	52	32	2.0	6.0	0.2	0.8	0.5	68	0.5	177	78	78	22	86	19	4.0	19	2.0	8.0
97B-62	185	31	43	2.0	2.0	0.1	0.1	0.5	67	0.5	294	48	104	15	59	15	3.0	14	1.0	6.0
97B-63	200	50	90	2.0	3.0	0.4	0.4	0.5	37	0.5	229	73	191	20	85	23	4.0	21	2.0	11.0
97B-64	168	31	33	2.0	5.0	0.2	0.3	0.5	67	0.5	170	44	96	13	50	11	3.0	13	1.0	5.0
97B-65	121	24	36	1.0	2.0	0.1	0.4	0.5	44	0.5	221	30	76	10	39	11	2.0	10	1.0	5.0
97B-66	204	33	31	1.0	3.0	0.1	0.3	0.5	60	0.5	310	51	120	15	60	16	3.0	14	2.0	6.0

Sample Site	Sr ppb	Y ppb	Zr ppb	Nb ppb	Mo ppb	Ag ppb	Cd ppb	Sb ppb	I ppb	Cs ppb	Ba ppb	La ppb	Ce ppb	Pr ppb	Nd ppb	Sm ppb	Eu ppb	Gd ppb	Tb ppb	Dy ppb
97B-67	191	50	169	4.0	1.3	0.7	0.6	0.5	56	0.8	560	80	165	25	95	26	5.0	22	3.0	12.0
97B-68	219	40	96	7.0	1.0	0.4	0.9	0.5	116	2.0	805	78	192	23	89	20	4.0	23	2.0	9.0
97B-69	310	23	32	1.0	5.0	0.1	0.1	0.5	93	0.5	229	37	63	11	42	9	2.0	10	1.0	5.0
97B-70	266	7	14	1.0	2.0	0.1	0.6	0.5	24	0.5	146	10	25	3	11	3	0.5	4	0.5	1.0
97B-71	163	16	14	1.0	4.0	0.1	0.1	0.5	38	0.5	105	23	37	6	24	5	1.0	6	0.5	3.0
97B-72	526	55	125	12.0	11.0	0.6	0.1	1.0	64	6.0	932	99	170	26	99	20	4.0	22	3.0	11.0
97B-73	468	51	58	2.0	6.0	0.3	0.4	1.0	120	0.5	332	69	140	21	87	22	4.0	20	2.0	9.0
97B-74	297	22	32	2.0	3.0	0.2	0.3	0.5	89	0.5	211	33	52	9	34	8	2.0	10	0.5	3.0
97B-75	223	33	34	1.0	4.0	0.1	0.4	0.5	71	0.5	168	45	62	13	48	12	3.0	11	1.0	6.0
97B-76	204	20	37	2.0	0.5	0.2	0.1	0.5	47	0.5	440	42	89	11	42	8	2.0	10	0.5	4.0
97B-77	119	5	4	0.5	1.0	0.1	0.1	0.5	14	1.0	278	12	23	3	11	2	0.5	3	0.5	1.0
97B-78	266	3	3	0.5	10.0	0.1	0.1	0.5	14	0.5	174	5	11	1	5	1	0.5	1	0.5	0.5
97B-79	331	5	11	2.0	8.0	0.1	0.1	0.5	5	0.5	282	9	17	2	8	1	0.5	2	0.5	0.5
97B-80	1068	22	36	2.0	94.0	0.1	1.0	3.0	28	0.5	590	33	69	10	36	9	2.0	7	1.0	5.0
97B-81	473	27	90	12.0	11.0	0.4	0.1	0.5	19	6.0	845	62	126	15	50	11	3.0	13	1.0	7.0
97B-82	322	32	47	2.0	6.0	0.1	0.3	0.5	73	0.5	235	42	70	13	50	11	2.0	12	1.0	5.0
97B-83	324	20	24	1.0	3.0	0.2	0.7	0.5	45	0.5	293	35	73	10	37	9	2.0	9	0.5	4.0
97B-84	141	59	61	6.0	3.0	0.4	0.6	0.5	109	1.0	225	88	181	25	93	23	5.0	24	2.0	10.0
97B-85	306	52	39	1.0	3.0	0.1	0.8	0.5	105	0.5	193	59	57	15	66	17	3.0	15	2.0	8.0
97B-86	192	104	84	3.0	2.0	0.5	0.5	0.5	62	0.5	325	194	386	63	256	58	12.0	54	5.0	23.0
97B-87	241	66	72	2.0	4.0	0.3	0.2	0.5	73	0.5	239	90	159	29	111	27	6.0	26	2.0	12.0
97B-88	143	49	59	5.0	3.0	0.2	0.3	0.5	52	1.3	289	68	109	21	85	19	4.0	18	2.0	9.0
97B-89	104	32	50	4.0	3.0	0.2	0.1	0.5	52	0.5	207	46	91	14	55	14	3.0	13	1.0	6.0
97B-90	153	63	66	3.0	4.0	0.3	0.3	0.5	97	0.5	197	84	107	27	106	24	5.0	23	2.0	12.0
97B-91	315	28	22	1.0	5.0	0.1	0.1	0.5	98	0.5	189	37	50	10	39	8	2.0	8	0.5	4.0
97B-92	206	6	10	1.0	14.0	0.1	0.3	5.0	13	0.5	265	10	18	3	9	2	0.5	2	0.5	1.0
97B-93	364	27	27	0.5	7.0	0.1	0.1	0.5	68	0.5	204	40	48	11	44	11	2.0	9	1.0	5.0
97B-94	328	24	34	2.0	3.0	0.1	0.1	0.5	69	0.5	292	37	75	10	41	10	2.0	10	0.5	4.0
97B-95	386	40	53	2.0	7.0	0.3	0.6	1.0	48	0.5	275	55	98	16	61	15	4.0	16	2.0	7.0
97B-96	252	30	31	3.0	13.0	0.1	0.5	0.5	49	0.5	175	50	90	14	51	13	3.0	14	1.0	6.0
97B-97	307	17	20	2.0	8.0	0.2	0.1	0.5	67	0.5	221	28	48	8	29	6	2.0	7	0.5	4.0
97B-98	336	45	47	1.0	8.0	0.2	0.1	0.5	99	0.5	202	65	64	19	72	16	3.0	16	2.0	7.0
97B-99	722	41	63	3.0	22.0	0.2	0.6	3.0	132	0.5	591	68	145	19	73	21	3.0	21	2.0	9.0
97B-100	237	72	83	3.0	5.0	0.2	0.1	0.5	53	0.5	328	109	194	32	124	27	6.0	28	3.0	15.0
97B-101	350	22	46	6.0	9.0	0.3	0.3	1.0	44	3.0	469	43	81	10	35	9	2.0	10	1.0	5.0
97B-103	542	28	44	2.0	13.0	0.2	0.5	1.0	232	0.5	338	42	92	13	51	14	2.0	14	1.0	7.0
97B-104	394	31	47	2.0	6.0	0.2	0.1	1.0	102	0.5	304	43	103	13	49	13	3.0	13	1.0	6.0
97B-106	314	17	17	1.0	5.0	0.1	0.2	0.5	57	0.5	216	29	56	8	30	7	2.0	6	0.5	4.0
97B-109	238	4	10	1.0	2.0	0.1	0.4	0.5	24	0.5	289	9	16	2	8	2	0.5	3	0.5	1.0
97B-110	242	49	60	2.0	2.0	0.2	0.1	0.5	64	0.8	435	77	237	25	95	24	5.0	23	2.0	11.0
97B-111	509	38	60	2.0	8.0	0.3	0.4	1.0	156	0.5	349	56	138	16	66	16	3.0	16	2.0	8.0
97B-114	300	17	25	2.0	10.0	0.1	0.1	0.5	35	0.5	256	26	61	7	30	6	1.0	8	0.5	3.0
97B-115	291	16	14	1.0	5.0	0.1	0.1	0.5	41	0.5	147	23	39	7	26	6	0.5	7	0.5	2.0
97B-116	341	18	23	1.0	6.0	0.1	0.4	0.5	74	0.5	186	34	59	8	32	7	1.0	9	0.5	3.0
97B-117	232	8	16	2.0	2.0	0.1	0.3	0.5	29	0.5	511	14	39	4	14	4	1.0	3	0.5	2.0
97B-118	162	58	57	2.0	2.0	0.3	0.3	0.5	66	0.5	235	55	114	23	92	28	6.0	25	3.0	13.0
97B-119	204	37	89	2.0	4.0	0.4	0.4	0.5	100	0.5	288	42	119	16	60	15	4.0	18	2.0	9.0
97B-120	254	63	291	10.0	3.0	1.1	1.3	0.5	96	6.0	786	119	312	37	141	38	8.0	32	3.0	16.0
97B-121	286	28	36	1.0	4.0	0.2	0.5	0.5	83	0.5	211	44	91	13	48	13	3.0	11	1.0	5.0
97B-122	233	22	146	4.0	3.0	0.6	0.1	0.5	88	0.5	255	34	115	13	49	13	2.0	10	1.0	6.0
97B-123	213	46	192	3.0	3.0	0.8	0.4	0.5	97	0.5	419	69	198	23	90	21	5.0	22	3.0	11.0
97B-124	182	26	35	2.0	7.0	0.1	0.1	0.5	78	0.5	227	40	87	12	43	11	2.0	12	1.0	6.0
97B-125	153	14	27	1.0	2.0	0.1	0.2	0.5	72	0.5	245	21	51	6	24	6	1.0	6	0.5	3.0
97B-126	192	24	19	2.0	4.0	0.1	0.1	0.5	128	0.5	88	36	84	10	41	11	2.0	11	1.0	5.0
97B-128	1206	27	44	2.0	7.0	0.1	0.2	1.0	373	0.5	382	42	89	12	48	12	2.0	10	1.0	5.0
97B-129	281	21	19	2.0	3.0	0.2	0.4	0.5	85	0.5	189	36	38	9	32	8	2.0	8	0.5	4.0
97B-130	332	32	34	1.0	4.0	0.3	0.1	0.5	102	0.5	245	45	67	13	49	11	2.0	12	1.0	6.0
97B-131	166	37	55	2.0	3.0	0.1	0.3	0.5	47	0.5	177	58	97	16	64	14	2.0	14	2.0	7.0
97B-132	236	33	27	1.0	5.0	0.1	0.1	0.5	132	0.5	181	48	54	12	46	13	3.0	12	1.0	5.0
97B-134	136	7	15	0.5	2.0	0.1	0.5	0.5	16	0.5	190	12	24	3	10	3	0.5	2	0.5	1.0
97B-135	135	10	20	1.0	1.0	0.1	0.2	0.5	37	0.5	466	17	40	5	17	5	1.0	4	0.5	2.0
97B-136	192	32	38	3.0	3.0	0.2	0.3	0.5	64	1.0	289	49	65	13	50	15	2.0	12	1.0	5.0
97B-137	277	21	21	0.5	5.0	0.1	0.4	0.5	51	0.5	144	28	34	7	29	7	1.0	6	0.5	4.0
97B-138	181	5	6	0.5	0.5	0.1	3.0	0.5	17	0.5	399	7	12	2	8	2	0.5	2	0.5	0.5
97B-139	467	18	19	1.0	17.0	0.2	0.4	0.5	67	0.5	352	28	66	9	34	11	2.0	8	0.5	3.0
97B-140	145	65	88	5.0	3.0	0.4	0.5	0.5	85	2.0	332	94	146	27	102	24	5.0	25	3.0	13.0
97B-141	233	36	33	2.0	3.0	0.1	0.4	0.5	63	0.5	193	53	71	14	53	15	3.0	14	1.0	6.0
97B-143	150	25	35	1.0	2.0	0.1	0.3	0.5	41	0.5	237	37	107	10	48	10	2.0	10	0.8	5.0
97B-144	267	14	12	0.5	3.0	0.1	0.6	0.5	59	0.5	174	21	36	5	23	5	1.0	5	0.5	3.0
97B-145	501	24	33	2.0	7.0	0.1	0.3	0.5	103	0.5	301	45	61	12	46	10	2.0	11	0.5	5.0

Sample Site	Sr ppb	Y ppb	Zr ppb	Nb ppb	Mo ppb	Ag ppb	Cd ppb	Sb ppb	I ppb	Cs ppb	Ba ppb	La ppb	Ce ppb	Pr ppb	Nd ppb	Sm ppb	Eu ppb	Gd ppb	Tb ppb	Dy ppb
97B-147	374	17	42	6.0	6.0	0.1	0.3	0.5	58	3.0	453	35	68	8	30	8	2.0	7	1.0	4.0
97B-148	383	37	46	2.0	9.0	0.1	0.6	0.5	41	0.5	350	51	115	17	62	17	3.0	16	2.0	7.0
97B-149	872	25	32	2.0	12.0	0.1	0.7	0.5	112	0.5	319	42	78	13	45	12	2.0	11	1.0	4.0
97B-150	212	22	35	2.0	4.0	0.3	0.1	0.5	51	0.5	286	34	78	11	40	11	2.0	9	1.0	5.0
97B-151	201	13	31	2.0	3.0	0.1	1.0	0.5	34	0.5	461	26	78	8	30	6	2.0	8	0.5	3.0
97B-152	276	25	29	1.0	7.0	0.1	0.3	1.0	82	0.5	272	41	57	11	42	11	2.0	11	1.0	4.0
97B-153	222	50	47	2.0	6.0	0.2	0.7	0.5	91	0.5	291	68	91	19	82	19	4.0	19	2.0	10.0
97B-154	367	54	54	2.0	8.0	0.1	0.3	0.5	122	0.5	304	77	96	22	91	22	4.0	18	2.0	11.0
97B-155	189	33	31	2.0	4.0	0.2	0.4	0.5	56	0.5	187	49	82	14	55	13	2.0	11	1.0	6.0
97B-156	147	36	47	2.0	3.0	0.3	0.9	0.5	28	0.5	244	61	144	16	67	15	3.0	16	2.0	7.0
97B-157	389	26	25	2.0	10.0	0.1	0.7	1.0	117	0.5	219	37	61	10	36	10	2.0	10	1.0	5.0
97B-158	361	26	24	1.0	5.0	0.1	0.1	0.5	62	0.5	205	35	58	9	38	9	2.0	8	0.5	3.0
97B-159	456	19	22	1.0	11.0	0.1	0.7	0.5	5	0.5	304	23	55	8	31	7	2.0	6	0.5	4.0
97B-160	128	7	15	0.5	5.0	0.1	0.4	0.5	20	0.5	88	12	24	3	13	3	0.5	3	0.5	2.0
97B-161	197	3	2	0.5	2.0	0.1	0.7	0.5	5	0.5	348	4	9	1	4	1	0.5	2	0.5	0.5
97B-162	179	8	64	4.0	2.0	0.1	0.1	0.5	40	0.5	392	16	42	4	18	5	0.5	4	0.5	2.0
97B-163	129	30	35	2.0	2.0	0.1	0.1	0.5	38	0.5	250	40	84	13	57	12	3.0	13	1.0	6.0
97B-164	246	41	24	0.5	5.0	0.1	0.4	0.5	67	0.5	202	53	63	15	58	15	3.0	13	2.0	7.0
97B-165	792	13	16	0.5	69.0	0.1	0.6	1.0	5	0.5	335	17	34	5	19	6	1.0	5	0.5	3.0
97B-166	561	13	21	1.0	70.0	0.1	0.7	2.0	5	0.5	347	16	37	4	18	4	1.0	5	0.5	2.0
97B-167	258	47	48	1.0	7.0	0.2	0.4	0.5	80	0.5	257	65	107	20	80	20	4.0	18	2.0	9.0
97B-168	130	11	36	2.0	2.0	0.1	0.7	0.5	36	0.5	300	22	61	6	23	5	2.0	6	0.5	3.0
97B-169	149	30	49	2.0	4.0	0.3	0.8	0.5	89	0.5	223	47	94	14	58	13	3.0	13	1.0	6.0
97B-170	224	35	89	10.0	4.0	0.5	0.4	0.5	60	4.0	488	64	106	17	62	14	3.0	13	1.0	7.0
97B-171	336	20	23	1.0	5.0	0.1	0.1	0.5	85	0.5	205	31	42	8	34	7	1.0	7	0.5	4.0
97B-172	344	16	20	1.0	8.0	0.1	0.1	0.5	74	0.5	221	27	54	7	27	6	1.0	6	0.5	3.0
97B-173	699	26	26	1.0	12.0	0.1	0.5	0.5	63	0.5	305	35	76	12	47	14	2.0	11	1.0	5.0
97B-174	258	41	40	2.0	6.0	0.3	0.2	0.5	74	0.5	242	55	56	16	65	16	3.0	15	1.0	9.0
97B-175	554	34	44	1.0	13.0	0.1	0.4	0.5	200	0.5	417	52	97	16	62	14	3.0	14	2.0	7.0
97B-176	605	30	39	1.0	6.0	0.2	0.1	0.5	99	0.5	324	47	91	13	53	14	2.0	12	1.0	6.0
97B-177	248	5	15	0.5	2.0	0.1	0.6	0.5	20	0.5	520	8	16	2	7	2	0.5	2	0.5	0.5
97B-179	200	36	38	1.0	2.0	0.1	0.4	0.5	111	0.5	236	48	61	14	57	14	3.0	14	1.0	7.0
97B-181	200	61	77	2.0	3.0	0.4	0.4	0.5	97	0.5	217	82	132	23	97	24	4.0	25	2.0	11.0
97B-182	744	24	30	1.0	8.0	0.1	0.3	0.5	106	0.5	416	45	80	12	50	12	2.0	13	1.0	6.0
97B-183	194	9	13	0.8	0.5	0.1	1.8	0.5	25	1.0	692	18	38	4	17	4	1.0	4	0.5	2.0
97B-184	224	20	25	2.0	7.0	0.1	0.3	0.5	51	0.5	259	29	36	7	30	7	1.0	8	0.5	3.0
97B-185	157	48	93	2.0	3.0	0.4	0.6	0.5	73	0.5	209	58	103	19	79	20	3.0	20	2.0	9.0
97B-186	201	41	64	4.0	3.0	0.4	0.3	0.5	83	2.0	329	57	61	16	63	16	3.0	14	1.0	7.0
97B-187	133	19	39	3.0	3.0	0.2	0.3	0.5	31	1.0	230	33	58	10	36	9	2.0	8	0.5	4.0
97B-188	138	4	4	0.5	0.5	0.1	0.8	0.5	16	0.5	281	6	10	2	6	2	0.5	1	0.5	0.5
97B-189	217	18	36	3.0	4.0	0.4	0.1	0.5	71	2.0	346	30	42	7	27	6	1.0	6	0.5	3.0
97B-190	262	21	37	4.0	2.0	0.1	0.1	0.5	37	2.0	327	38	58	10	39	9	2.0	8	0.5	4.0
97B-191	139	6	9	1.0	1.0	0.1	0.1	0.5	13	0.5	211	11	23	3	12	4	0.5	4	0.5	0.5
97B-192	186	3	6	0.5	1.0	0.1	0.7	0.5	23	0.5	656	6	13	2	7	1	0.5	2	0.5	0.5
97B-193	317	22	20	1.0	8.0	0.1	0.1	0.5	96	0.5	281	34	57	10	37	8	2.0	8	1.0	4.0
97B-194	210	40	31	2.0	6.0	0.1	0.5	1.0	51	0.5	246	57	88	17	67	17	3.0	17	2.0	9.0
97B-195	208	38	31	2.0	6.0	0.1	0.1	0.5	50	0.5	256	67	80	17	67	15	4.0	15	2.0	7.0
97B-196	152	8	13	2.0	2.0	0.1	1.3	0.5	16	0.5	616	16	29	4	16	3	1.0	4	0.5	2.0
97B-197	189	6	9	1.0	1.0	0.1	0.8	0.5	23	0.5	826	12	22	3	10	2	0.5	3	0.5	2.0
97B-198	194	75	104	10.0	4.0	0.7	0.7	0.5	39	4.0	561	130	140	34	133	28	6.0	28	3.0	13.0
97B-199	391	8	7	1.0	2.0	0.1	0.9	0.5	16	2.0	999	16	23	4	16	4	0.5	4	0.5	2.0
97B-200	206	46	51	2.0	3.0	0.2	0.5	0.5	51	0.5	319	62	85	18	72	16	3.0	16	2.0	9.0
97B-201	785	29	44	2.0	19.0	0.1	0.6	0.5	27	0.5	437	40	86	12	50	13	3.0	12	2.0	7.0
97B-202	314	77	75	2.0	8.0	0.2	1.1	1.0	154	0.5	423	104	202	33	133	34	6.0	33	3.0	16.0
97B-203	264	62	93	11.0	3.0	0.3	0.2	0.5	54	3.0	728	110	277	34	141	35	7.0	32	3.0	15.0
97B-204	171	13	15	0.8	2.0	0.1	1.8	0.5	34	1.8	778	24	54	6	24	6	1.0	6	0.5	3.0
97B-205	207	8	12	1.0	1.0	0.1	1.2	0.5	30	0.5	841	14	30	4	15	4	0.5	4	0.5	2.0
97B-206	266	5	5	0.5	3.0	0.1	0.3	0.5	22	0.5	207	9	18	3	8	2	0.5	1	0.5	1.0
97B-207	393	20	41	5.0	4.0	0.1	1.0	0.5	56	2.0	418	39	66	9	37	8	2.0	8	0.5	4.0
97B-208	537	22	63	7.0	5.0	0.5	0.2	0.5	43	4.0	617	47	95	11	40	9	2.0	9	0.5	4.0
97B-209	584	28	54	5.0	6.0	0.3	0.7	0.5	45	2.0	616	50	93	13	51	13	2.0	12	1.0	5.0
97B-210	974	35	67	6.0	13.0	0.3	0.2	0.5	172	2.0	639	55	122	17	63	16	3.0	14	1.0	7.0
97B-212	116	10	5	0.5	2.0	0.1	0.2	0.5	20	0.5	123	21	43	5	20	5	0.5	5	0.5	2.0
97B-213	179	29	43	4.0	5.0	0.3	0.3	0.5	61	7.0	319	53	87	14	52	12	3.0	13	1.0	6.0
97B-214	911	29	36	1.0	20.0	0.1	0.2	0.5	57	0.5	432	43	89	13	53	13	3.0	11	1.0	6.0
97B-215	311	37	27	2.0	5.0	0.1	0.2	0.5	73	0.5	242	60	59	16	63	14	3.0	14	1.0	6.0
97B-216	318	21	40	4.0	5.0	0.1	0.1	0.5	33	2.0	415	36	56	9	32	8	2.0	7	0.5	4.0
97B-217	453	48	70	5.0	4.0	0.8	0.2	0.5	55	11.0	1240	113	180	25	91	19	4.0	23	2.0	8.0
97B-218	239	16	38	4.0	2.0	0.1	0.4	0.5	31	2.0	375	29	46	7	25	6	1.0	6	0.5	3.0
97B-219	393	28	40	1.0	5.0	0.1	0.6	0.5	54	0.5	344	47	66	13	53	12	3.0	11	1.0	6.0



Sample Site	Sr ppb	Y ppb	Zr ppb	Nb ppb	Mo ppb	Ag ppb	Cd ppb	Sb ppb	I ppb	Cs ppb	Ba ppb	La ppb	Ce ppb	Pr ppb	Nd ppb	Sm ppb	Eu ppb	Gd ppb	Tb ppb	Dy ppb
97B-220	227	19	28	2.0	4.0	0.1	0.5	0.5	61	1.0	194	29	59	8	33	9	1.0	6	0.5	3.0
97B-221	364	21	51	6.0	4.0	0.1	0.3	0.5	74	3.0	548	42	82	10	38	9	2.0	8	0.5	4.0
97B-222	155	25	25	2.0	2.0	0.2	0.5	0.5	34	0.5	247	39	93	11	41	11	2.0	10	1.0	6.0
97B-223	139	58	40	3.0	2.0	0.2	0.2	0.5	78	0.5	256	72	74	23	92	24	5.0	22	2.0	12.0
97B-224	146	30	46	2.0	1.0	0.1	0.7	0.5	49	0.5	211	37	66	12	52	14	2.0	13	1.0	7.0
97B-225	124	5	6	0.5	0.5	0.1	1.1	0.5	19	0.8	958	9	17	2	8	2	0.5	2	0.5	0.8
97B-226	259	43	29	1.0	6.0	0.1	0.8	0.5	40	0.5	390	59	128	19	78	17	4.0	19	2.0	8.0
97B-227	709	24	24	0.5	12.0	0.1	0.5	0.5	85	0.5	449	32	78	11	46	12	2.0	11	0.5	5.0
97B-228	190	53	38	3.0	4.0	0.3	0.8	0.5	46	1.0	308	73	71	22	86	19	4.0	18	2.0	10.0
97B-229	340	41	33	2.0	3.0	0.1	0.3	0.5	83	0.5	283	58	63	16	66	14	3.0	14	1.0	7.0
97B-230	194	41	50	6.0	2.0	0.2	0.3	0.5	55	3.0	384	71	91	18	68	14	3.0	17	2.0	7.0
97B-231	161	52	25	1.0	3.0	0.1	0.1	0.5	59	0.5	200	73	94	23	92	20	4.0	21	2.0	11.0
97B-232	219	32	33	3.0	3.0	0.2	0.1	0.5	66	1.0	380	52	64	14	51	13	3.0	13	1.0	6.0
97B-233	423	17	13	2.0	6.0	0.1	0.2	28.0	160	0.5	237	33	57	8	31	8	2.0	7	0.5	4.0
97B-234	249	9	38	2.0	3.0	0.1	0.1	2.0	51	0.5	239	19	52	6	25	7	1.0	6	0.5	2.0
97B-235	493	43	58	2.0	6.0	0.3	0.7	1.0	94	0.5	277	59	84	17	69	14	3.0	15	2.0	7.0
97B-236	213	39	70	2.0	2.0	0.4	0.1	0.5	65	0.5	322	51	104	16	63	16	4.0	16	1.0	10.0
97B-237	137	33	33	2.0	1.0	0.1	0.5	0.5	54	0.5	288	38	74	14	57	18	3.0	14	1.0	7.0
97B-238	133	22	51	2.0	4.0	0.1	0.2	0.5	49	0.5	174	31	63	11	44	10	3.0	9	1.0	5.0
97B-239	375	36	32	1.0	7.0	0.1	0.1	0.5	68	0.5	242	56	94	17	66	14	3.0	15	2.0	7.0
97B-240	531	24	27	2.0	28.0	0.1	0.1	2.0	88	0.5	359	41	69	13	45	11	2.0	11	1.0	5.0
97B-241	185	41	45	3.0	5.0	0.1	0.5	0.5	73	0.5	331	61	120	19	68	16	4.0	16	2.0	9.0
97B-242	143	68	79	3.0	5.0	0.5	0.5	0.5	67	0.5	186	85	160	32	126	30	7.0	29	3.0	15.0
97B-243	146	38	50	2.0	4.0	0.2	0.7	0.5	44	0.5	217	51	103	17	67	16	3.0	17	2.0	9.0
97B-244	195	56	49	4.0	4.0	0.2	0.1	0.5	67	1.0	286	89	72	23	86	23	4.0	24	2.0	9.0
97B-245	144	49	42	2.0	2.0	0.2	0.3	1.0	78	0.5	163	63	61	21	85	20	4.0	19	2.0	9.0
97B-246	117	35	42	2.0	2.0	0.2	0.1	0.5	75	0.5	149	39	57	14	59	16	3.0	15	2.0	7.0
97B-247	136	67	66	4.0	4.0	0.4	0.5	0.5	84	1.0	260	96	116	29	105	27	5.0	25	3.0	14.0
97B-248	338	22	26	2.0	7.0	0.1	0.2	0.5	41	0.5	349	40	64	11	36	10	2.0	10	0.5	5.0
97B-249	249	41	32	2.0	5.0	0.1	0.1	0.5	103	0.5	293	72	67	19	70	15	3.0	15	2.0	8.0
97B-250	331	37	28	1.0	5.0	0.1	0.2	0.5	79	0.5	221	55	72	15	58	16	3.0	13	1.0	5.0
97B-251	331	30	20	1.0	5.0	0.1	0.9	0.5	40	0.5	166	42	55	12	44	11	2.0	11	1.0	5.0
97B-252	273	25	21	2.0	3.0	0.1	0.3	1.0	69	0.5	242	38	51	10	42	9	2.0	11	1.0	4.0
97B-253	284	54	47	2.3	3.0	0.2	0.1	0.5	59	0.5	221	79	127	23	92	23	4.0	23	3.0	11.0
97B-254	111	25	37	1.0	2.0	0.1	0.1	0.5	28	0.5	303	37	76	12	46	12	2.0	12	1.0	5.0
97B-255	503	32	27	1.0	7.0	0.2	0.3	0.5	71	0.5	267	49	66	14	55	15	2.0	11	1.0	6.0
97B-256	1803	29	48	2.0	7.0	0.2	0.5	0.5	226	0.5	492	58	112	15	56	13	2.0	12	1.0	6.0
97B-257	390	30	25	1.0	4.0	0.1	0.4	0.5	84	0.5	250	52	58	13	52	10	2.0	11	1.0	6.0
97B-258	137	7	8	0.5	2.0	0.1	0.3	0.5	18	0.5	518	12	23	3	12	4	0.5	2	0.5	2.0
97B-259	246	19	10	0.5	5.0	0.1	0.2	0.5	48	0.5	241	27	32	8	29	6	1.0	6	0.5	3.0
97B-260	455	47	64	2.0	9.0	0.3	0.2	0.5	110	0.5	315	67	99	19	76	18	3.0	20	2.0	9.0
97B-261	557	19	32	3.0	46.0	0.2	0.2	0.5	29	1.0	359	36	66	9	33	7	2.0	8	0.5	4.0
97B-262	330	28	27	1.0	10.0	0.1	0.8	0.5	47	0.5	216	39	55	11	43	10	2.0	8	0.5	5.0
97B-263	313	33	22	1.0	11.0	0.1	1.1	0.5	70	0.5	186	54	62	14	50	13	2.0	12	1.0	6.0
97B-264	421	39	55	1.0	8.0	0.4	0.2	0.5	60	0.5	393	62	110	17	68	17	3.0	15	1.0	7.0
97B-265	221	28	59	7.0	4.0	0.4	0.2	0.5	58	3.0	421	56	68	14	51	13	2.0	13	1.0	5.0
97B-266	220	26	21	1.0	4.0	0.1	0.1	0.5	55	0.5	176	39	52	10	42	9	2.0	9	0.5	6.0
97B-267	201	32	30	3.0	5.0	0.2	0.3	0.5	43	0.5	215	50	78	13	51	11	3.0	11	1.0	6.0
97B-268	325	25	28	1.0	5.0	0.1	0.3	0.5	66	0.5	257	41	45	12	47	11	2.0	10	0.5	4.0
97B-269	157	18	81	5.0	2.0	0.4	1.2	0.5	37	1.0	369	33	67	9	33	7	2.0	8	0.5	3.0
97B-270	205	34	148	11.0	1.0	0.4	0.7	0.5	47	4.0	595	66	144	19	76	17	3.0	14	2.0	8.0
97B-271	281	42	41	2.0	8.0	0.3	0.1	0.5	84	0.5	292	68	94	19	76	18	4.0	19	2.0	8.0
97B-272	1543	54	72	2.0	9.0	0.3	0.1	0.5	209	0.5	406	78	111	22	90	21	4.0	21	2.0	10.0
97B-273-1	495	31	28	0.8	6.0	0.1	0.4	0.5	41	0.5	258	48	46	11	47	12	2.0	10	1.0	5.0
97B-274	248	30	25	0.5	5.0	0.1	0.1	0.5	70	0.5	187	45	47	12	48	10	2.0	10	1.0	6.0
97B-275	494	25	34	0.5	7.0	0.3	0.5	0.5	138	0.5	403	39	78	12	46	12	3.0	11	1.0	6.0
97B-277	270	18	35	1.0	1.0	0.1	1.0	0.5	28	0.5	556	29	77	10	38	10	2.0	9	0.5	4.0
97B-278	158	56	50	2.0	2.0	0.1	0.1	0.5	94	0.5	288	71	76	23	91	26	4.0	20	2.0	10.0
97B-279	114	24	34	3.0	0.5	0.2	0.1	0.5	44	0.5	238	31	58	12	45	11	2.0	11	1.0	5.0
97B-280	124	34	50	3.0	1.0	0.2	0.1	0.5	63	0.5	193	43	83	17	71	20	4.0	16	2.0	9.0
97B-281	154	39	36	1.0	3.0	0.1	0.1	0.5	61	0.5	196	52	85	17	63	16	3.0	17	2.0	8.0
97B-282	169	52	53	3.0	1.0	0.2	0.5	0.5	58	0.5	236	75	107	23	90	21	4.0	20	2.0	10.0
97B-283	296	32	28	2.0	6.0	0.1	0.2	0.5	102	0.5	180	51	76	14	58	15	2.0	14	1.0	6.0
97B-284	136	62	83	3.0	3.0	0.4	0.2	0.5	52	0.5	268	88	175	29	126	30	5.0	28	3.0	15.0
97B-285	581	50	68	2.0	4.0	0.2	0.6	1.0	108	0.5	465	88	157	26	96	21	4.0	23	2.0	11.0
97B-286	170	47	68	2.0	0.5	0.3	0.9	0.5	36	0.5	256	65	84	23	96	24	5.0	23	2.0	10.0

Sample Site	Er ppb	Yb ppb	TREE ppb	Hf ppb	Pb ppb	Th ppb	U ppb	H <sup>+</sup> ppb	K mhos cm <sup>-1</sup>
97B-1	3.0	4.0	224.0	1.0	7	16	1.0	-1.9	3.7
97B-2	4.0	3.0	263.0	2.0	3	12	2.0	-1.4	1.9
97B-4	4.0	3.0	253.0	1.0	10	9	2.0	-1.1	2.4
97B-6	3.0	2.0	262.0	1.0	5	6	2.0	-0.9	1.1
97B-7	11.0	11.0	569.0	5.0	5	38	4.0	-1.2	1.7
97B-8	5.0	5.0	335.0	1.0	4	14	1.0	-2.0	13.6
97B-9	4.0	3.0	296.0	2.0	4	16	0.5	-2.0	9.9
97B-10	5.0	4.0	297.0	1.0	5	14	0.5	-2.0	10.0
97B-11	1.0	0.5	69.5	0.5	4	5	1.0	2.0	0.5
97B-12	2.0	1.0	120.5	0.5	2	5	0.5	-2.0	4.4
97B-13	8.0	7.0	606.0	4.0	6	38	4.0	-0.9	2.8
97B-14	3.0	1.0	185.5	2.0	8	17	3.0	1.2	1.8
97B-15	4.0	3.0	220.0	1.0	5	8	1.0	-2.0	4.8
97B-16	4.0	4.0	441.0	2.0	11	14	2.0	-1.4	4.4
97B-17	7.0	7.0	451.0	2.0	7	11	2.0	-2.0	4.8
97B-18	4.0	4.0	337.0	2.0	6	18	2.0	-1.9	4.7
97B-19	2.0	2.0	180.5	0.5	4	8	0.5	-2.0	23.3
97B-20	7.0	6.0	568.0	2.0	6	23	2.0	-1.2	1.9
97B-22	2.0	1.0	163.5	0.5	3	7	0.5	-2.0	4.0
97B-23	2.0	2.0	217.5	1.0	4	16	1.0	-0.8	1.6
97B-24	6.0	4.0	370.0	2.0	11	13	2.0	-1.9	3.8
97B-25	2.0	1.0	108.5	0.5	4	4	1.0	1.0	0.5
97B-26	2.0	2.0	228.0	0.5	4	11	0.5	-2.0	24.2
97B-27	5.0	4.0	317.0	3.0	4	16	3.0	-1.6	3.0
97B-28	1.0	1.0	98.0	1.0	4	12	2.0	2.4	1.7
97B-29	2.0	1.0	163.5	0.5	4	6	0.5	-2.0	24.4
97B-30	8.0	6.0	563.0	2.0	5	19	1.0	-1.9	4.1
97B-31	2.0	0.5	106.5	0.5	3	4	0.5	-1.7	2.0
97B-32	3.0	2.0	235.0	5.0	4	23	2.0	0.5	2.0
97B-33	3.0	3.0	253.0	1.0	5	9	1.0	-2.0	5.7
97B-35	3.0	3.0	225.0	1.0	4	10	0.5	-2.3	16.4
97B-36	4.0	3.0	278.0	1.0	4	10	2.0	-2.3	11.4
97B-37	4.0	3.0	267.0	0.5	4	14	2.0	-2.0	2.1
97B-38	2.0	2.0	159.5	2.0	11	12	1.0	-2.3	15.0
97B-39	4.0	3.0	310.0	3.0	5	25	2.0	-0.7	2.6
97B-41	3.0	3.0	242.0	1.0	4	14	1.0	-2.3	13.6
97B-43	3.0	4.0	298.0	6.0	14	35	4.0	4.5	0.5
97B-44	1.0	0.5	93.5	0.5	4	5	0.5	-2.3	9.6
97B-45	4.0	3.0	234.0	2.0	6	10	2.0	-2.3	4.8
97B-46	0.5	0.5	51.0	0.5	3	4	4.0	-0.2	1.9
97B-47	4.0	3.0	277.0	2.0	4	17	2.0	-2.1	7.7
97B-48	7.0	5.0	351.0	4.0	5	31	4.0	-1.0	3.3
97B-49	4.0	3.0	243.0	2.0	4	17	1.0	-2.3	20.8
97B-50	2.0	2.0	176.0	0.5	3	12	0.5	-2.3	22.2
97B-51	2.0	0.5	108.0	0.5	4	4	0.5	-2.3	18.5
97B-52	7.0	6.0	433.0	3.0	7	16	2.0	-2.1	4.4
97B-53	3.0	3.0	209.0	2.0	6	14	1.0	0.7	1.4
97B-54	5.0	5.0	382.0	3.0	6	17	2.0	-2.3	13.4
97B-55	5.0	4.0	225.0	1.0	5	5	0.5	-2.3	11.0
97B-56	3.0	2.0	296.0	3.0	4	12	3.0	-1.8	3.2
97B-57	1.0	1.0	109.5	0.5	3	2	0.5	-2.3	7.1
97B-58	6.0	5.0	384.0	4.0	5	16	1.0	-2.3	7.7
97B-59	3.0	2.0	259.0	1.0	4	14	1.0	-0.7	2.0
97B-60	3.0	3.0	241.0	3.0	4	15	2.0	-0.7	2.0
97B-61	5.0	4.0	325.0	1.0	6	6	0.5	-2.3	9.0
97B-62	4.0	3.0	272.0	2.0	5	9	4.0	-1.7	2.9
97B-63	6.0	5.0	441.0	3.0	5	18	4.0	-2.2	6.0
97B-64	3.0	3.0	242.0	1.0	21	9	0.5	-2.3	5.1
97B-65	3.0	3.0	190.0	1.0	5	9	1.0	-1.6	1.8
97B-66	3.0	3.0	293.0	2.0	5	11	1.0	-2.2	4.6

Sample Site	Er ppb	Yb ppb	TREE ppb	Hf ppb	Pb ppb	Th ppb	U ppb	H <sup>+</sup> ppb	K mhos cm <sup>-1</sup>
97B-67	7.0	7.0	447.0	7.0	12	40	5.0	3.7	1.4
97B-68	5.0	4.0	449.0	3.0	16	33	4.0	8.9	-0.1
97B-69	2.0	2.0	184.0	0.5	4	7	1.0	-2.3	12.3
97B-70	1.0	0.5	59.5	0.5	4	5	0.5	-2.1	3.0
97B-71	2.0	2.0	109.5	0.5	3	4	0.5	-2.3	5.1
97B-72	7.0	5.0	466.0	4.0	33	27	3.0	-2.3	7.9
97B-73	5.0	5.0	384.0	0.5	3	18	1.0	-2.3	26.2
97B-74	2.0	2.0	155.5	0.5	3	6	0.5	-2.3	24.0
97B-75	4.0	3.0	208.0	1.0	4	6	1.0	-2.1	8.0
97B-76	2.0	2.0	212.5	2.0	4	15	2.0	1.2	1.3
97B-77	0.5	0.5	57.0	0.5	3	3	1.0	-0.4	1.0
97B-78	0.5	0.5	26.5	0.5	2	2	0.5	-2.1	16.4
97B-79	0.5	0.5	41.5	0.5	4	3	1.0	-2.1	23.8
97B-80	3.0	3.0	178.0	0.5	11	7	1.0	-2.1	29.0
97B-81	3.0	3.0	294.0	3.0	29	18	2.0	-2.1	23.9
97B-82	3.0	3.0	212.0	0.5	4	8	1.0	-2.1	29.4
97B-83	2.0	2.0	183.5	0.5	5	9	0.5	-2.1	27.0
97B-84	5.0	5.0	461.0	2.0	12	19	2.0	-2.1	3.7
97B-85	5.0	4.0	251.0	1.0	3	5	0.5	-2.1	20.9
97B-86	12.0	7.0	1070.0	4.0	3	25	4.0	1.3	0.9
97B-87	7.0	5.0	474.0	2.0	4	14	1.0	-2.1	10.0
97B-88	5.0	5.0	345.0	2.0	10	16	3.0	-2.1	4.6
97B-89	4.0	3.0	250.0	2.0	7	13	2.0	-2.0	3.0
97B-90	6.0	6.0	402.0	2.0	6	13	1.0	-2.0	4.8
97B-91	3.0	2.0	163.5	0.5	3	4	0.5	-2.1	22.5
97B-92	0.5	0.5	47.0	0.5	3	2	1.0	-2.1	18.4
97B-93	3.0	3.0	177.0	0.5	3	3	0.5	-2.1	15.1
97B-94	2.0	2.0	193.5	1.0	4	8	0.5	-2.1	23.9
97B-95	4.0	4.0	282.0	1.0	5	15	0.5	-2.1	17.8
97B-96	3.0	3.0	248.0	1.0	8	8	2.0	-2.1	6.1
97B-97	2.0	2.0	136.5	0.5	7	5	0.5	-2.1	17.4
97B-98	5.0	4.0	273.0	2.0	5	8	0.5	-2.1	11.5
97B-99	5.0	5.0	371.0	1.0	9	18	2.0	-2.1	30.8
97B-100	8.0	6.0	552.0	3.0	10	22	2.0	-1.8	3.5
97B-101	3.0	2.0	201.0	2.0	13	12	1.0	-2.1	24.4
97B-103	3.0	2.0	241.0	1.0	3	12	0.5	-2.1	26.9
97B-104	3.0	3.0	250.0	1.0	4	10	0.5	-2.1	23.4
97B-106	2.0	1.0	145.5	0.5	3	6	0.5	-2.1	25.0
97B-109	0.5	0.5	43.0	0.5	4	1	0.5	4.5	1.0
97B-110	6.0	5.0	510.0	2.0	6	32	3.0	-0.6	2.5
97B-111	4.0	4.0	329.0	1.0	5	13	1.0	-2.1	27.5
97B-114	2.0	1.0	145.5	0.5	6	5	1.0	-2.1	22.0
97B-115	2.0	1.0	114.0	0.5	3	5	0.5	-2.1	16.4
97B-116	2.0	1.0	156.5	0.5	4	10	0.5	-2.1	30.4
97B-117	1.0	0.5	83.0	1.0	6	7	0.5	0.6	2.4
97B-118	7.0	7.0	373.0	2.0	5	7	2.0	-1.5	2.6
97B-119	5.0	4.0	294.0	4.0	4	13	3.0	-1.7	5.0
97B-120	10.0	8.0	724.0	11.0	24	79	7.0	2.5	2.8
97B-121	3.0	2.0	234.0	2.0	3	11	1.0	-2.2	9.9
97B-122	3.0	3.0	249.0	6.0	7	48	4.0	-0.7	4.2
97B-123	6.0	5.0	453.0	6.0	6	59	3.0	-0.6	5.0
97B-124	3.0	2.0	219.0	0.5	3	11	1.0	-2.1	4.7
97B-125	2.0	1.0	121.5	0.5	2	8	2.0	0.2	2.1
97B-126	2.0	2.0	205.0	0.5	2	7	2.0	-1.8	4.9
97B-128	3.0	2.0	226.0	1.0	4	15	1.0	-2.2	23.4
97B-129	2.0	1.0	140.5	0.5	5	6	0.5	-2.2	10.3
97B-130	3.0	4.0	213.0	1.0	4	7	0.5	-2.2	10.3
97B-131	4.0	4.0	282.0	2.0	3	12	1.0	-2.1	4.5
97B-132	3.0	2.0	199.0	0.5	4	5	0.5	-2.2	9.1
97B-134	0.5	0.5	57.0	0.5	3	6	0.5	-1.3	1.3
97B-135	2.0	1.0	94.5	1.0	5	5	1.0	0.8	1.5
97B-136	4.0	2.0	218.0	2.0	6	10	1.0	-2.2	7.2
97B-137	2.0	1.0	119.5	0.5	3	4	0.5	-2.2	17.8
97B-138	0.5	0.5	35.5	0.5	3	2	0.5	1.6	0.8
97B-139	2.0	1.0	164.5	0.5	4	10	0.5	-2.2	22.3
97B-140	7.0	7.0	453.0	3.0	11	23	2.0	-2.1	4.2
97B-141	3.0	3.0	236.0	1.0	5	6	0.5	-2.2	8.7
97B-143	3.0	2.0	234.8	1.3	5	10	0.8	-1.5	3.2
97B-144	1.0	0.5	101.0	0.5	4	3	0.5	-2.2	21.3
97B-145	2.0	2.0	196.5	0.5	4	7	0.5	-2.2	12.9

Sample Site	Er ppb	Yb ppb	TREE ppb	Hf ppb	Pb ppb	Th ppb	U ppb	H <sup>+</sup> ppb	K mhos cm <sup>-1</sup>
97B-147	2.0	2.0	167.0	2.0	13	10	2.0	-2.2	16.2
97B-148	4.0	4.0	298.0	1.0	6	14	0.5	-2.2	26.2
97B-149	3.0	3.0	214.0	0.5	5	9	2.0	-2.2	20.4
97B-150	3.0	2.0	196.0	1.0	7	10	2.0	-1.2	2.2
97B-151	2.0	2.0	165.5	0.5	4	13	2.0	-0.8	2.9
97B-152	2.0	3.0	185.0	1.0	5	6	0.5	-2.2	8.8
97B-153	5.0	5.0	324.0	2.0	5	7	0.5	-2.2	6.9
97B-154	6.0	5.0	354.0	1.0	5	7	1.0	-2.2	9.5
97B-155	3.0	3.0	239.0	0.5	5	9	0.5	-2.2	6.7
97B-156	3.0	3.0	337.0	2.0	5	10	2.0	-0.9	3.2
97B-157	3.0	2.0	177.0	0.5	4	4	0.5	-2.2	12.1
97B-158	2.0	1.0	165.5	0.5	4	4	0.5	-2.2	16.9
97B-159	2.0	1.0	139.5	0.5	5	6	0.5	-2.2	25.5
97B-160	0.5	0.5	62.0	0.5	2	2	0.5	-2.2	4.8
97B-161	0.5	0.5	23.5	0.5	2	1	0.5	-0.5	1.3
97B-162	1.0	0.5	93.5	2.0	8	19	2.0	2.6	2.7
97B-163	3.0	3.0	235.0	1.0	4	6	2.0	-1.7	3.6
97B-164	4.0	3.0	236.0	0.5	4	4	1.0	-2.1	14.7
97B-165	1.0	1.0	92.5	0.5	5	3	0.5	-2.1	23.4
97B-166	2.0	1.0	90.5	0.5	8	3	2.0	-2.1	25.7
97B-167	5.0	4.0	334.0	1.0	5	10	2.0	-1.9	6.3
97B-168	2.0	1.0	131.5	2.0	6	14	1.0	2.7	1.7
97B-169	4.0	3.0	256.0	2.0	6	11	1.0	-2.0	5.5
97B-170	4.0	3.0	294.0	4.0	18	19	4.0	-2.0	4.1
97B-171	2.0	1.0	137.5	0.5	4	4	0.5	-2.1	20.8
97B-172	1.0	1.0	133.5	0.5	4	4	0.5	-2.1	23.0
97B-173	3.0	2.0	208.0	0.5	4	9	1.0	-2.1	20.4
97B-174	5.0	3.0	244.0	1.0	5	7	0.5	-2.1	6.3
97B-175	4.0	2.0	273.0	1.0	4	15	1.0	-2.1	25.0
97B-176	4.0	3.0	246.0	1.0	4	12	1.0	-2.1	25.1
97B-177	0.5	0.5	39.5	0.5	3	2	0.5	2.0	0.8
97B-179	3.0	4.0	226.0	1.0	3	6	1.0	-2.0	5.8
97B-181	6.0	5.0	411.0	2.0	5	12	2.0	-2.0	5.8
97B-182	3.0	2.0	226.0	0.5	4	10	2.0	-2.1	25.1
97B-183	1.0	0.5	90.0	0.5	6	4	1.0	4.7	-0.1
97B-184	2.0	1.0	124.5	0.5	5	6	0.5	-2.1	10.4
97B-185	6.0	5.0	324.0	3.0	4	15	2.0	-1.9	4.9
97B-186	4.0	4.0	246.0	2.0	8	11	1.0	-2.1	7.1
97B-187	2.0	2.0	164.5	0.5	5	12	1.0	-1.8	3.3
97B-188	0.5	0.5	29.5	0.5	3	2	0.5	1.6	1.1
97B-189	2.0	1.0	125.5	1.0	9	7	0.5	-2.1	8.3
97B-190	2.0	2.0	172.5	1.0	7	10	2.0	-2.1	7.9
97B-191	0.5	0.5	59.5	0.5	2	3	0.5	-1.7	1.8
97B-192	0.5	0.5	33.5	0.5	3	2	0.5	3.2	0.4
97B-193	3.0	3.0	167.0	0.5	5	4	0.5	-2.1	18.4
97B-194	3.0	4.0	284.0	0.5	6	6	0.5	-2.1	7.0
97B-195	4.0	3.0	281.0	0.5	4	6	0.5	-2.1	5.5
97B-196	1.0	0.5	77.0	0.5	5	4	0.5	2.7	0.5
97B-197	0.5	0.5	56.0	0.5	5	3	0.5	5.3	0.7
97B-198	8.0	8.0	531.0	3.0	19	23	3.0	-1.9	4.1
97B-199	0.5	0.5	71.0	0.5	5	2	0.5	3.2	0.8
97B-200	5.0	4.0	292.0	1.0	5	8	1.0	-2.0	8.0
97B-201	3.0	2.0	230.0	1.0	4	12	2.0	-2.1	26.1
97B-202	8.0	7.0	579.0	2.0	4	17	1.0	-2.1	6.1
97B-203	8.0	8.0	670.0	2.0	21	32	4.0	-0.2	1.2
97B-204	1.0	1.0	126.5	0.5	6	7	0.5	1.8	1.1
97B-205	0.5	0.5	75.0	0.5	7	4	1.0	5.0	1.5
97B-206	0.5	0.5	44.0	0.5	3	3	0.5	-2.1	12.9
97B-207	2.0	2.0	177.5	2.0	19	10	1.0	-2.1	19.4
97B-208	3.0	2.0	222.5	2.0	19	15	2.0	-2.1	17.7
97B-209	3.0	3.0	246.0	1.0	12	17	2.0	-2.1	21.2
97B-210	4.0	3.0	305.0	2.0	12	21	2.0	-2.1	21.5
97B-212	1.0	1.0	104.0	0.5	3	4	0.5	-2.1	3.7
97B-213	3.0	3.0	247.0	2.0	7	10	2.0	-2.1	5.2
97B-214	4.0	2.0	238.0	0.5	3	11	1.0	-2.1	21.1
97B-215	4.0	3.0	243.0	0.5	5	5	0.5	-2.1	9.7
97B-216	1.0	1.0	156.5	1.0	8	8	1.0	-2.1	14.6
97B-217	5.0	4.0	474.0	5.0	11	15	0.5	-2.1	7.5
97B-218	2.0	1.0	126.5	1.0	8	8	0.5	-2.1	10.5
97B-219	3.0	3.0	218.0	1.0	4	10	0.5	-2.1	20.5

Sample Site	Er ppb	Yb ppb	TREE ppb	Hf ppb	Pb ppb	Th ppb	U ppb	H <sup>+</sup> ppb	K mhos cm <sup>-1</sup>
97B-220	2.0	2.0	152.5	1.0	6	9	0.5	-2.1	5.1
97B-221	2.0	2.0	199.5	2.0	12	12	2.0	-2.1	17.9
97B-222	3.0	2.0	219.0	0.5	4	12	2.0	-1.7	2.2
97B-223	6.0	5.0	337.0	1.0	5	8	1.0	-2.0	4.6
97B-224	4.0	4.0	212.0	2.0	3	6	2.0	-1.1	3.0
97B-225	0.5	0.5	42.8	0.5	3	1	0.5	7.0	-0.9
97B-226	5.0	4.0	343.0	0.5	4	9	0.5	-2.1	6.7
97B-227	3.0	2.0	202.5	0.5	2	8	1.0	-2.1	23.0
97B-228	5.0	4.0	314.0	1.0	9	8	1.0	-2.1	4.4
97B-229	4.0	3.0	249.0	0.5	5	8	0.5	-2.1	16.7
97B-230	4.0	3.0	298.0	1.0	12	16	2.0	-2.1	5.1
97B-231	6.0	6.0	352.0	1.0	4	6	0.5	-2.1	5.3
97B-232	3.0	2.0	222.0	0.5	8	6	1.0	-2.1	5.2
97B-233	1.0	1.0	152.5	0.5	4	5	0.5	-2.1	28.8
97B-234	1.0	0.5	120.0	2.0	4	6	0.5	-0.6	4.2
97B-235	4.0	4.0	278.0	1.0	4	10	1.0	-2.1	22.6
97B-236	4.0	3.0	288.0	2.0	4	12	1.0	-1.6	4.6
97B-237	4.0	4.0	234.0	0.5	2	4	1.0	-0.8	2.2
97B-238	3.0	4.0	184.0	1.0	5	7	2.0	-0.8	2.1
97B-239	4.0	3.0	281.0	0.5	6	6	1.0	-2.1	14.2
97B-240	3.0	2.0	203.0	0.5	4	5	1.0	-2.1	11.2
97B-241	5.0	3.0	323.0	2.0	9	15	2.0	-1.5	3.2
97B-242	9.0	8.0	504.0	3.0	5	15	2.0	-1.9	5.3
97B-243	4.0	4.0	293.0	2.0	6	17	2.0	-1.0	3.7
97B-244	6.0	5.0	343.0	1.0	9	10	1.0	-2.1	7.3
97B-245	6.0	4.0	294.0	1.0	6	6	2.0	-2.0	5.8
97B-246	5.0	4.0	221.0	0.5	3	7	2.0	-1.0	2.9
97B-247	7.0	5.0	432.0	2.0	9	17	2.0	-2.0	4.9
97B-248	2.0	2.0	182.5	0.5	6	8	0.5	-2.1	18.9
97B-249	4.0	3.0	278.0	0.5	6	8	0.5	-1.9	6.8
97B-250	4.0	2.0	244.0	0.5	4	7	1.0	-1.9	16.2
97B-251	3.0	2.0	188.0	0.5	4	4	0.5	-1.9	14.9
97B-252	2.0	2.0	172.0	0.5	6	5	0.5	-1.9	6.6
97B-253	7.0	5.0	397.0	1.8	9	15	0.8	-1.9	6.2
97B-254	4.0	4.0	211.0	1.0	5	10	1.0	1.6	1.0
97B-255	3.0	3.0	225.0	0.5	3	5	0.5	-1.9	12.1
97B-256	3.0	3.0	281.0	1.0	4	22	0.5	-1.9	18.6
97B-257	3.0	2.0	210.0	0.5	4	6	0.5	-1.9	13.8
97B-258	0.5	0.5	60.0	0.5	3	4	0.5	-0.9	1.0
97B-259	2.0	2.0	116.5	0.5	2	4	0.5	-1.9	13.0
97B-260	5.0	4.0	322.0	2.0	5	13	2.0	-1.9	19.4
97B-261	2.0	2.0	169.5	0.5	8	8	3.0	-1.9	17.4
97B-262	3.0	2.0	178.5	0.5	4	6	0.5	-1.9	20.2
97B-263	3.0	3.0	220.0	0.5	3	6	1.0	-1.9	16.2
97B-264	4.0	3.0	307.0	1.0	4	13	0.5	-1.9	13.1
97B-265	4.0	2.0	229.0	2.0	14	14	2.0	-1.9	4.5
97B-266	3.0	2.0	174.5	0.5	3	4	0.5	-1.9	6.4
97B-267	4.0	3.0	231.0	1.0	7	11	0.5	-1.8	3.4
97B-268	2.0	2.0	176.5	0.5	4	5	0.5	-1.9	13.7
97B-269	2.0	2.0	166.5	3.0	11	17	2.0	2.3	1.5
97B-270	5.0	5.0	359.0	6.0	13	27	4.0	2.8	2.1
97B-271	4.0	4.0	316.0	2.0	7	8	2.0	-1.9	8.2
97B-272	6.0	5.0	370.0	2.0	4	13	0.5	-1.9	19.4
97B-273-1	3.0	3.0	188.0	0.5	6	6	0.5	-1.9	20.2
97B-274	3.0	3.0	187.0	0.5	4	4	0.5	-1.9	7.9
97B-275	3.0	2.0	213.0	0.5	4	11	0.5	-1.9	21.2
97B-277	2.0	2.0	183.5	2.0	4	13	0.5	0.3	1.2
97B-278	6.0	5.0	334.0	1.0	5	8	1.0	-1.7	4.7
97B-279	3.0	3.0	182.0	1.0	6	5	1.0	-0.4	1.9
97B-280	6.0	5.0	276.0	0.5	4	7	1.0	-1.3	2.9
97B-281	4.0	4.0	271.0	0.5	3	6	1.0	-1.9	6.1
97B-282	6.0	5.0	363.0	2.0	6	11	2.0	-1.8	4.8
97B-283	3.0	3.0	243.0	0.5	4	5	0.5	-1.9	8.3
97B-284	8.0	6.0	513.0	2.0	8	20	2.0	-1.3	3.0
97B-285	6.0	5.0	439.0	2.0	4	29	2.0	-1.9	27.3
97B-286	6.0	6.0	344.0	3.0	4	12	2.0	2.3	1.1

## Appendix 2

### B-Horizon Geochemistry: Duplicate pair ICP-MS Analyses.

Sample Site	UTM		S.Q.Li	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	As	Br	Rb
	EAST	NORTH	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
97B-27-1	503212	6061166	13	1500	50	337	79	1291	18	24.0	32	26	3.0	11.0	95	24
97B-27-2	503212	6061166	14	1500	50	293	68	975	15	25.0	31	27	3.0	10.0	91	13
97B-52-1	504799	6056393	11	3506	50	355	74	1648	31	22.0	39	23	4.0	11.0	135	17
97B-52-2	504799	6056393	5	3762	50	338	77	1714	30	23.0	36	24	4.0	11.0	128	12
97B-67-1	491159	6063714	41	4511	3103	683	60	1402	21	26.0	66	23	5.0	12.0	130	59
97B-67-2	491159	6063714	48	1500	4662	1182	56	1327	28	32.0	71	34	5.0	17.0	148	125
97B-88-1	520527	6041691	27	1500	222	1258	83	657	12	22.0	46	39	8.0	14.0	92	53
97B-88-2	520527	6041691	16	1500	597	1222	72	634	14	22.0	38	28	6.0	10.0	121	29
97B-110-1	531121	6050631	5	1500	164	273	56	1427	13	18.0	37	21	4.0	8.0	141	54
97B-110-2	531121	6050631	16	4496	143	304	70	4513	23	20.0	37	21	6.0	9.0	139	63
97B-143-1	503707	6055102	5	4878	50	150	23	595	19	7.0	21	29	2.0	2.5	115	27
97B-143-2	503707	6055102	17	6225	50	312	31	702	19	8.0	22	30	2.0	6.0	88	26
97B-158-1	513703	6027484	5	4822	50	120	83	850	11	30.0	42	18	1.0	12.0	129	33
97B-158-2	513703	6027484	5	7990	221	50	71	954	11	26.0	55	19	1.0	17.0	158	16
97B-183-1	502520	6029633	26	1500	50	155	25	116	46	15.0	28	43	1.0	2.5	92	80
97B-183-2	502520	6029633	23	3238	50	182	24	138	28	13.0	29	35	1.0	2.5	109	84
97B-204-1	493311	6034135	11	7041	50	115	14	699	16	6.0	15	18	0.5	2.5	38	74
97B-204-2	493311	6034135	24	1500	50	194	18	362	19	12.0	20	25	0.5	2.5	43	96
97B-225-1	484355	6033976	5	1500	50	50	8	76	7	14.0	23	42	0.5	2.5	70	90
97B-225-2	484355	6033976	5	1500	50	50	7	78	11	13.0	23	38	0.5	2.5	56	92
97B-253-1	443963	6030330	17	4265	50	844	63	765	17	23.0	42	22	7.0	14.0	119	33
97B-253-2	443963	6030330	5	3482	50	50	44	770	12	19.0	33	5	2.0	9.0	120	21
97B-273-1	466096	6029651	21	3526	50	50	81	360	6	31.0	63	21	2.0	17.0	79	13
97B-273-2	466096	6029651	19	3314	50	194	82	563	7	29.0	68	19	2.0	17.0	52	11

Sample Site	Sr ppb	Y ppb	Zr ppb	Nb ppb	Mo ppb	Ag ppb	Cd ppb	Sb ppb	I ppb	Cs ppb	Ba ppb	La ppb	Ce ppb	Pr ppb	Nd ppb	Sm ppb	Eu ppb	Gd ppb	Tb ppb	Dy ppb
97B-27-1	140	38	94	2.0	2.0	0.4	0.4	0.5	50	0.5	249	57	131	19	73	19	3.0	16	1.0	8.0
97B-27-2	129	47	67	2.0	2.0	0.3	0.5	0.5	56	0.5	240	53	95	18	75	18	3.0	17	2.0	9.0
97B-52-1	181	58	87	2.0	3.0	0.4	0.7	0.5	67	0.5	222	62	140	22	105	22	5.0	27	2.0	11.0
97B-52-2	163	69	80	2.0	4.0	0.4	0.5	1.0	71	0.5	228	80	163	26	103	25	5.0	27	3.0	12.0
97B-67-1	191	61	166	4.0	0.5	0.8	0.6	0.5	51	0.5	447	79	177	29	118	33	6.0	27	3.0	15.0
97B-67-2	191	39	172	5.0	2.0	0.6	0.7	0.5	60	1.0	672	81	152	20	71	18	4.0	17	2.0	8.0
97B-88-1	156	60	61	5.0	3.0	0.3	0.1	0.5	53	2.0	309	81	117	26	99	21	4.0	22	2.0	10.0
97B-88-2	129	38	56	4.0	4.0	0.1	0.4	0.5	51	0.5	268	55	100	16	71	16	3.0	14	2.0	8.0
97B-110-1	240	50	53	2.0	2.0	0.2	0.1	0.5	63	0.5	419	76	215	25	98	24	5.0	23	2.0	11.0
97B-110-2	243	48	66	3.0	2.0	0.2	0.2	0.5	65	1.0	450	78	258	25	92	23	4.0	24	2.0	11.0
97B-143-1	153	25	32	1.0	2.0	0.1	0.3	0.5	40	0.5	223	38	113	10	49	10	2.0	10	0.5	5.0
97B-143-2	146	24	37	1.0	2.0	0.1	0.3	0.5	42	0.5	250	36	100	11	46	10	2.0	11	1.0	5.0
97B-158-1	361	28	24	1.0	5.0	0.1	0.1	0.5	65	0.5	205	33	57	9	38	9	2.0	8	0.5	3.0
97B-158-2	360	24	25	1.0	5.0	0.1	0.1	0.5	59	0.5	206	36	59	10	38	10	2.0	8	0.5	4.0
97B-183-1	201	9	10	0.5	0.5	0.1	2.0	0.5	22	1.0	717	17	35	4	16	3	1.0	4	0.5	2.0
97B-183-2	186	10	15	1.0	0.5	0.1	1.5	0.5	27	2.0	667	19	41	5	18	5	1.0	5	0.5	2.0
97B-204-1	157	14	15	0.5	2.0	0.1	2.3	0.5	31	0.5	669	22	56	6	25	6	1.0	6	0.5	3.0
97B-204-2	184	12	14	1.0	2.0	0.1	1.3	0.5	36	2.0	887	25	52	6	22	6	1.0	6	0.5	2.0
97B-225-1	136	5	6	0.5	0.5	0.1	1.1	0.5	22	1.0	956	10	19	2	8	2	0.5	2	0.5	1.0
97B-225-2	112	4	6	0.5	0.5	0.1	1.1	0.5	15	0.5	960	8	15	2	7	2	0.5	2	0.5	0.5
97B-253-1	279	69	69	4.0	3.0	0.3	0.1	0.5	54	0.5	285	98	168	29	116	28	5.0	28	3.0	14.0
97B-253-2	288	39	25	0.5	2.0	0.1	0.1	0.5	64	0.5	157	60	86	17	67	17	3.0	17	2.0	8.0
97B-273-1	491	32	28	0.5	6.0	0.1	0.4	0.5	42	0.5	254	49	46	11	44	12	2.0	10	1.0	5.0
97B-273-2	499	30	28	1.0	7.0	0.1	0.3	0.5	39	0.5	261	46	47	12	50	11	3.0	11	1.0	6.0

Sample Site	Er ppb	Yb ppb	TREE ppb	Hf ppb	Pb ppb	Th ppb	U ppb	H <sup>+</sup> ppb	K mhos cm <sup>-1</sup>
97B-27-1	5.0	4.0	336.0	3.0	4	20	3.0	-0.7	2.2
97B-27-2	6.0	5.0	301.0	2.0	4	12	2.0	-1.6	3.0
97B-52-1	7.0	6.0	409.0	3.0	7	15	2.0	-2.0	4.4
97B-52-2	7.0	6.0	457.0	3.0	6	17	1.0	-2.0	4.3
97B-67-1	9.0	9.0	505.0	7.0	7	41	5.0	2.0	2.0
97B-67-2	4.0	4.0	381.0	6.0	17	38	4.0	3.7	1.0
97B-88-1	6.0	6.0	394.0	2.0	11	16	3.0	-2.0	2.0
97B-88-2	4.0	4.0	293.0	2.0	9	17	2.0	-2.0	5.0
97B-110-1	6.0	5.0	490.0	2.0	6	32	3.0	-0.6	2.5
97B-110-2	6.0	6.0	529.0	3.0	7	32	3.0	-0.1	2.1
97B-143-1	3.0	2.0	242.5	0.5	5	10	1.0	-1.5	3.0
97B-143-2	3.0	2.0	227.0	2.0	5	11	0.5	-1.8	3.0
97B-158-1	2.0	1.0	162.5	0.5	4	4	0.5	-2.0	14.0
97B-158-2	2.0	1.0	170.5	0.5	4	5	0.5	-2.0	17.0
97B-183-1	1.0	0.5	84.0	0.5	6	4	1.0	5.0	-0.1
97B-183-2	1.0	0.5	98.0	0.5	6	5	2.0	4.0	0.8
97B-204-1	1.0	1.0	127.5	0.5	6	7	0.5	0.9	1.5
97B-204-2	1.0	1.0	122.5	0.5	7	8	0.5	2.8	0.7
97B-225-1	0.5	0.5	46.0	0.5	3	1	0.5	7.0	-0.8
97B-225-2	0.5	0.5	38.5	0.5	3	1	0.5	3.5	0.4
97B-253-1	8.0	6.0	503.0	3.0	13	24	1.0	-1.6	3.5
97B-253-2	5.0	4.0	286.0	0.5	5	5	0.5	-1.9	6.2
97B-273-1	3.0	3.0	186.0	0.5	6	6	0.5	-2.0	20.0
97B-273-2	3.0	3.0	193.0	0.5	6	6	0.5	-2.0	16.9



Appendix 3

**B-Horizon Geochemistry: Inductively Coupled Plasma - Mass Spectrometry (ICP-MS), Hydrogen Ion ( $H^+$ ), and Specific Conductance (K) Percentile Bubble Plots.**

























































































