EUB/AGS Geo-Note 2005-09

Geochemical Soil Survey Over the K4B Kimberlite, Buffalo Head Hills, Northern Alberta

Alberta Energy and Utilities Board

Alberta Geological Survey

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Abstract

The K4B kimberlite, one of three kimberlites forming the K4 kimberlite complex, is located in the southeastern Buffalo Head Hills of northern Alberta. The K4B kimberlite is covered by as little as 7 m of overburden composed largely of till. During the summer of 2001, an organic soil and mineral soil (B- and C-horizons) sampling program was completed over and west of the K4B kimberlite. A total of 122 routine soil samples and 22 field site duplicate samples were collected from 42 sites. Multi-element chemical results were obtained for all samples by inductively coupled plasma atomic emission spectroscopy/mass spectrometry (ICP-AES/MS) analyses following aqua regia digestion. Additional results were obtained on the B- and C-horizon soil samples by a) four-acid digestion ICP-AES, b) four-acid digestion ICP-MS, c) instrumental neutron activation analysis (INAA) and d) cold vapour atomic absorption (CVAA).

Aqua regia extractable results for most elements are lower in the organic soil samples than in the C-horizon soil samples. Exceptions are K, Ca, Co, Zn, Sr, Nb, Mo and Ba, for which the median values are similar, and B, P, S, Mn, Se, Ag, Cd and Hg, for which the median organic soil values exceed the median C-horizon values.

Total and near-total results, determined by four-acid ICP-AES/MS and INAA, indicate B-horizon depletion of Mg, P, S, Ca, Mn, Co, Br, Sr and Cd, coupled with B-horizon enrichment of Cr, Rb, Y, Zr, Ag and Sn. Aqua regia extractable results indicate B, Na, Mg, P, Ca, Mn, Co, Sr, Ag, Cd and Ba values are generally lower and Li, Be, Al, Sc, Ti, V, Cr, Fe, Ga, Se, Rb, Y, Nb, In, Sn, Te, Th, U and rare-earth element values are generally higher in B-horizon soil relative to C-horizon soil. Variability in Mg, P, Cr and Nb concentrations in mineral soil related to depth have implications for the use of soil geochemistry in diamond exploration as they may serve as kimberlite pathfinder elements.

Evidence of anomalous soil geochemistry related to kimberlite is found in the results of the organic soil survey for which elevated Mg/Fe, Ni/V and B values are spatially associated with the K4B kimberlite.

1 Introduction

The Buffalo Head Hills are a north-trending upland region located in north-central Alberta between the Peace River Lowland, to the west, and the Wabasca lowland, to the east (Pettapiece, 1986). The K4B kimberlite occurs in the southeastern Buffalo Head Hills within the Buffalo Head Hills field of the northern Alberta kimberlite province (Eccles et al., 2003). During the summer of 2001, an organic soil and B- and C-horizon soil-sampling program was completed over and down-ice (west) of the K4B kimberlite. A total of 122 routine samples and 22 field site duplicate samples were collected from 42 sites.

Multi-element chemical results were obtained for all samples by inductively coupled plasma mass spectrometry (ICP-MS) or inductively coupled plasma atomic emission spectroscopy (ICP-AES) analyses following aqua regia digestion. Additional results were obtained on the B- and C-horizon soil samples by a) four-acid digestion followed by ICP-AES, b) four-acid digestion followed by ICP-MS, c) instrumental neutron activation analysis (INAA) and d) cold vapour atomic absorption (CVAA).

The survey area lies within the northwestern part of NTS map area 84B (in the central part of NTS map area 84B/13) and is approximately centred at 56.84°N latitude and 115.72°W longitude (Figure 1). Access to the area was gained by road from Red Earth Creek, located approximately 45 km to the southeast.

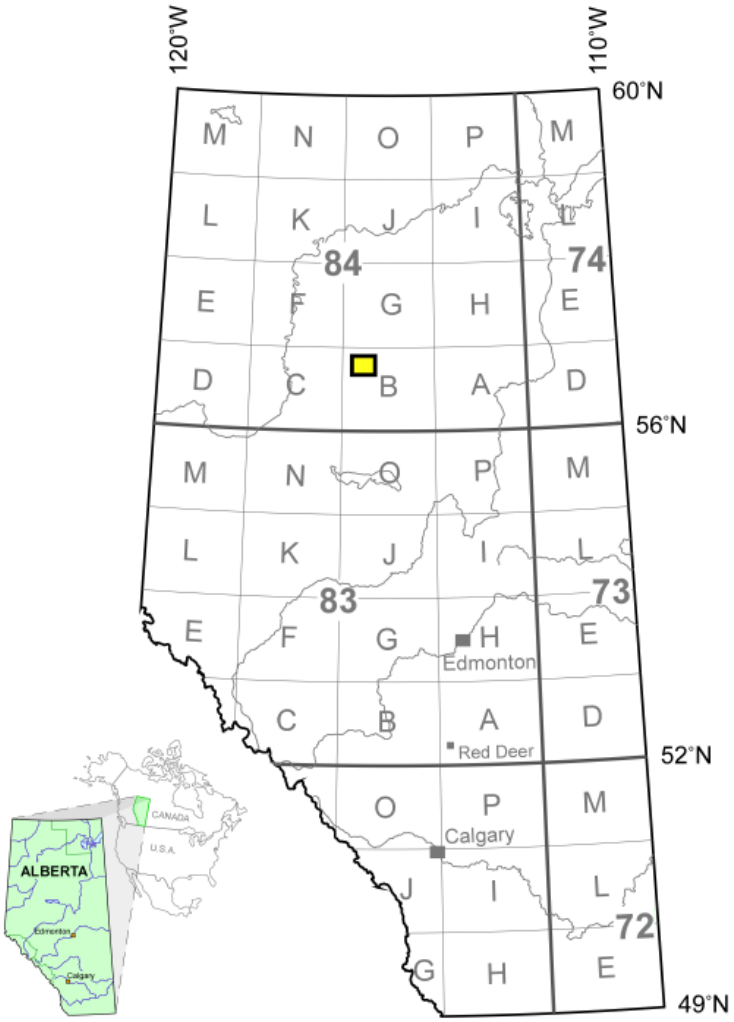

Figure 1. Location of the K4B soil survey area.

2 Geology

2.1 Quaternary Geology

The K4B study area is situated in the southeastern part of the Buffalo Head Hills. The Hills are a north-trending upland flanked on the east by the Wabasca Lowland and the west by the Peace River Lowland (Pettapiece, 1986). The surficial geology of the southeastern Buffalo Head Hills (NTS 84B/NW), which includes the area of the K4B kimberlite, was mapped at 1:100 000 scale by Paulen et al. (2003). Subsequent detailed 1:50 000 mapping of the Sawn Lake area (Trommelen, 2004) provides excellent detail on the distribution of surficial sediments within the soil survey area.

The southeastern Buffalo Head Hills include extensive areas of hummocky moraine, glaciofluvial deposits and wetlands (organic deposits), and local areas of glaciolacustrine and colluvial deposits (Paulen et al., 2002a, 2003). The 2001 soil survey was completed within an area dominated by hummocky moraine. An east-trending meltwater channel, cut into the moraine, lies just north of the survey area. Toward the southwest the land slopes downward into a wetland. Clay-rich, carbonate-bearing till occurs over most of the survey area. At some of the sample sites glaciofluvial sand stringers occur within the till. Glaciolacustrine clay was observed near the western limit of the survey.

The present surficial geology in the region is largely the result of the advance and retreat of Late Wisconsin ice (Lostwood Glaciation; Fenton, 1984). According to regional studies, ice advanced to its maximum Late Wisconsin limit approximately 23 to 24 thousand years before present (ka) and retreated from the Buffalo Head Hills by 11 ka (Dyke et al., 2002, 2003). During the glacial maximum (ca. 18 ka), ice generally flowed to the southwest within the survey area (Paulen et al., 2002b).

Exploration holes drilled by Ashton Mining of Canada Inc. on the K4B kimberlite indicate it is covered by as little as 7 m of overburden (Skelton and Bursey, 1998).

2.2 Bedrock Geology

The area of the K4B kimberlite in the southeastern Buffalo Head Hills is underlain by the Upper Cretaceous Smoky Group, a dark grey shale and silty shale containing nodules and thin beds of concretionary ironstone (Figure 2; Green et al., 1970; Hamilton et al., 1999). Recent work by Pawlowicz et al. (2005) indicates that the uppermost strata in the area of the K4B kimberlite consist of Upper Campanian mudstone, siltstone and sandstone correlative with the lower Wapiti Formation. Eccles et al. (2003) and Skelton et al. (2003) provide details regarding the geological setting of kimberlites in the Buffalo Head Hills.

2.3 Economic Geology and Geophysics

Anomalous magnetic targets in the Buffalo Head Hills area were identified after interpretation of the results of an airborne geophysical survey flown by Alberta Energy Company Ltd. in 1995. Some of these targets were investigated during a 1997 winter drilling program by Ashton Mining of Canada Inc. that resulted in the discovery of 11 kimberlites, of which 10 were discovered by drilling and one was discovered during site preparation (Skelton and Bursey, 1998). Kimberlites K4A, K4B and K4C were discovered during this program (Table 1; Figure 3). Microdiamond testing by Ashton Mining of Canada Inc. identified diamonds in drillcore samples from K4A, K4B and K4C (Skelton and Bursey, 1998).

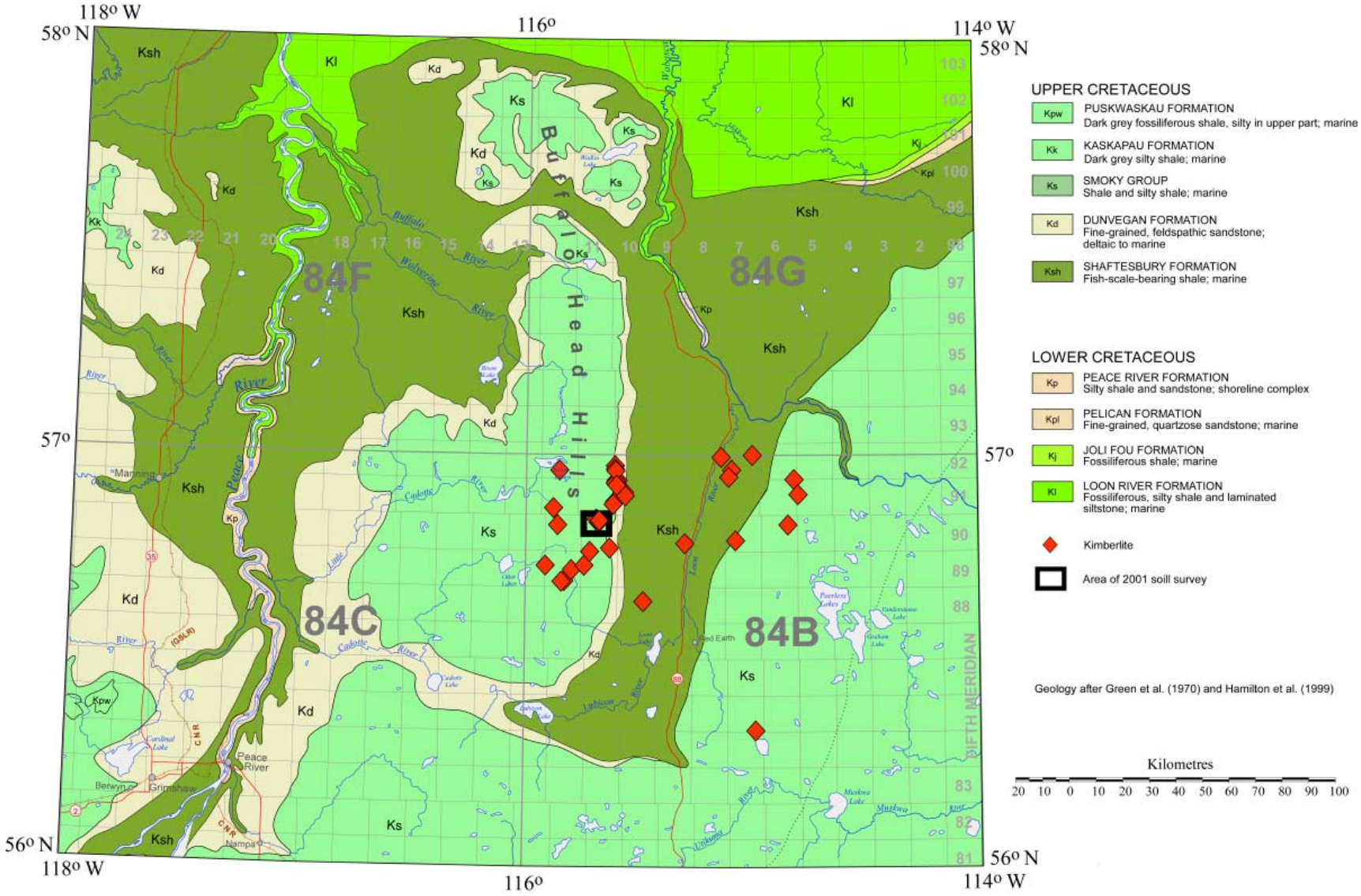

Figure 2. Bedrock geology of Buffalo Head Hills area (84B, C, F and G).

Table 1. Summary of 1997 drilling on the K4A, K4B and K4C kimberlites (*after* Skelton and Bursey, 1998).

Drillhole Number	Magnetic Anomaly	Kimberlite	Length (m)	Inclination at Collar (degrees)	Interval (m)	Summary
DDH4A-1	4A	K4A	128.0	-90	0.0 - 24.7 24.7 - 128.0	overburden kimberlite
DDH4A-2	4A	K4A	51.5	-60	0.0 - 25.8 25.8 - 51.5	overburden kimberlite
DDH4A-3	4A	K4A	152.4	-60	0.0 - 26.4 26.4 - 29.6 29.6 - 39.7 39.7 - 152.4	overburden carbonate-rich rock mudstone kimberlite
DDH4B-1	4B	K4B	200.3	-90	0.0 - 8.5 8.5 - 200.3	overburden kimberlite
DDH4B-2	4B	K4B	32.0	-60	0.0 - 8.2 8.2 - 32.0	overburden kimberlite
DDH4C-1	4C	K4C	105.7	-90	0.0 - 44.0 44.0 - 105.7	overburden kimberlite
DDH4C-2	4C	K4C	121.0	-59	0.0 - 50.9 50.9 - 121.0	overburden kimberlite

The general magnetic response in the area of the K4B kimberlite is shown in Figure 3 based upon an interpretation of airborne and ground magnetic surveys (Spectra Exploration Geoscience Corp., 1998; Skelton and Bursey, 1998). Relatively strong positive magnetic responses, which have a high probability of being underlain by kimberlite, are identified as central magnetic anomalies, whereas marginal areas of weaker magnetic response are described as flanking magnetic anomalies. The magnetic contrast between the central magnetic anomalies and background is about 50 nanoTeslas (nT) based upon ground magnetic data.

Drilling of the three central magnetic anomalies has confirmed they reflect the presence of kimberlite (Table 1). Information obtained to date is consistent with an interpretation in which the three central magnetic anomalies (± parts of the flanking anomalies) represent individual kimberlite pipes (K4A, K4B and K4C). Collectively these three pipes form the K4 kimberlite complex (D.R. Eccles, personal communication, 2002).

3 Sample Media and Field Procedures

Alberta Geological Survey (AGS) staff members Mark Fenton and John Pawlowicz collected samples with the assistance of Jill Weiss and Charlene Brightwell during the latter part of July 2001. Sample lines and sample sites were surveyed using a combination of GPS, hip chain and Silva compass. Sample media collected consisted of organic soil and B- and C-horizon soil. Sample site spacing varied from about 100 to 200 m along the sample lines. A total of 122 routine samples and 22 field site duplicate samples were collected from 42 field sites as summarized in Table 2. A field site duplicate was collected 0.5 to 4 m away from the first sample (at selected sites) from the same soil horizon and generally over approximately the same depth interval. Sample descriptions are listed in Appendix 1.

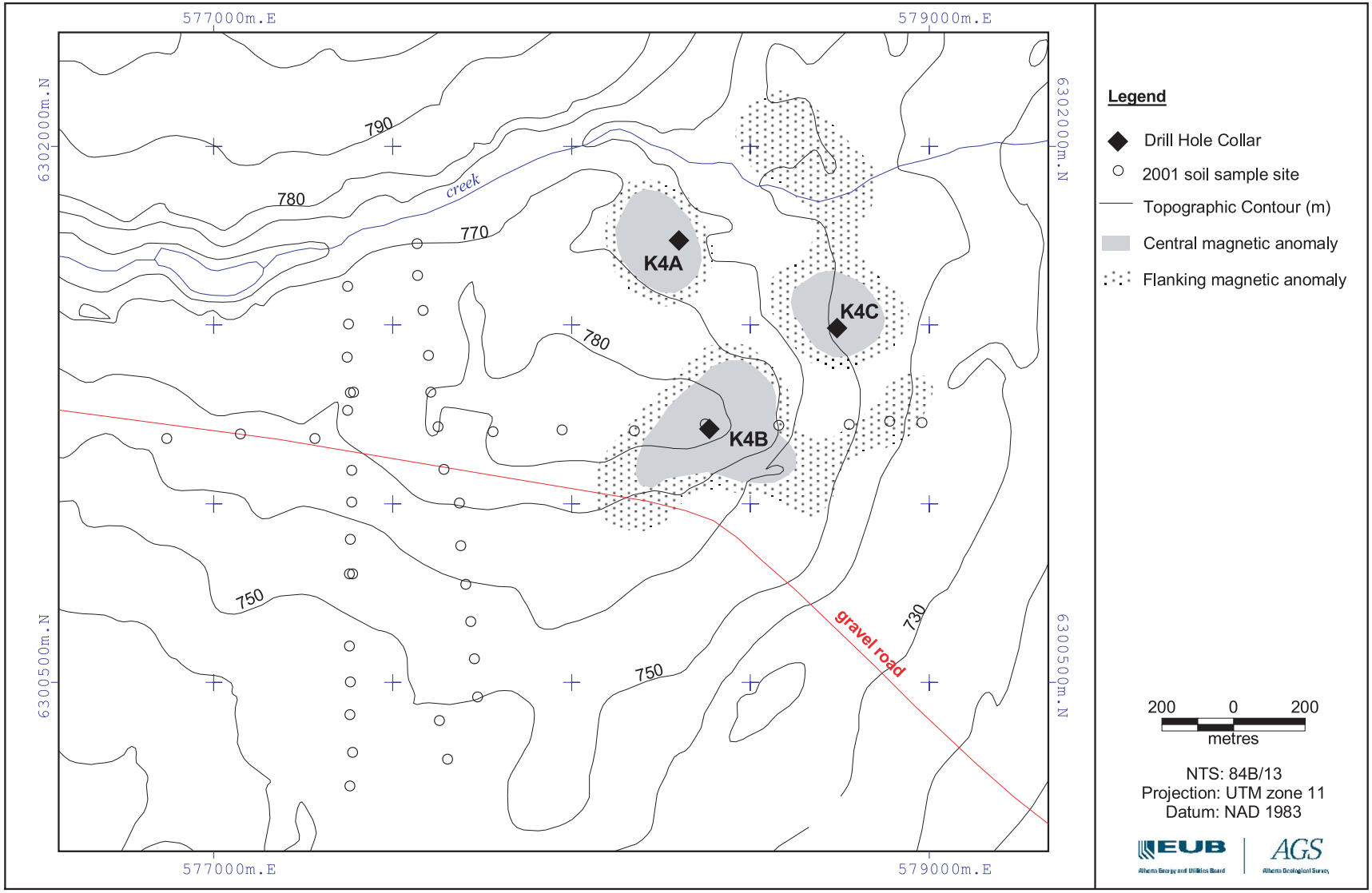

Figure 3. Magnetic response and diamond drillhole locations in the K4B kimberlite area.

Table 2. Summary of soil samples collected near the K4B kimberlite in 2001.

Sample type	Routine samples	Field site duplicate samples
organic soil	42	8
B-horizon soil	41	7
C-horizon soil	39	7

The sampling grid was located within a forested area consisting generally of a mixture of aspen and white spruce. Alders occur locally and at one site, near the edge of a peat bog, the forest is dominated by black spruce. At each sample site an area of at least one square metre was selected that was clear of trees and above the water table. Sample media consisted of organic soil (overlying mineral soil) and mineral soil (both B- and C-horizons). Mineral soil samples were collected only from material identified as till (at most sites both B- and C-horizon soil samples were collected and either a B- or a C-horizon soil sample was collected at all sites). Collection was done using a combination of soil spade, for organic soil samples, and Dutch auger, for the B- and C-horizon soil samples.

3.1 Organic Soil Sampling

The site was cleared of all growing plants and the recent leaf litter accumulation. A block of organic soil about 0.5 by 1 m was cut using a soil spade allowing an organic mat, typically 5 to 20 cm thick and held together by roots, to be overturned onto the adjacent ground. The block was examined and any visible mineral soil (generally Ae-horizon) adhering to the base of the organic mat was removed. Collection of a sample composed predominantly of fine organic material began at the base of the mat and progressed into the mat until approximately 2 litres of sample was collected (enough to fill half to three-quarters of a 30 by 20-cm plastic sample bag). These organic soil samples include both strongly decomposed organic matter (humus) located immediately above the mineral soil and partly decomposed organic matter located closer to the middle of the organic mat (the H- and F-horizons as defined by the Soil Classification Working Group [1998]). Average sample depths are listed in Table 3 (note differences in sampling depth between collectors).

Table 3. Average depths of organic and B- and C-horizon soil samples collected near the K4B kimberlite.

Soil Horizon	Collector[1]	Number of Samples	Average Sample Midpoint (cm)	Average Top of Sample Interval (cm)	Average Bottom of Sample Interval (cm)	Average Sample Depth Range (cm)
organic soil	JP	14	13	10	16	6
organic soil	MF	28	4	1	7	6
organic soil	All	42	7	4	10	6
B-horizon	JP	14	55	44	66	23
B-horizon	MF	27	63	40	86	45
B-horizon	All	41	60	41	79	38
C-horizon	JP	12	116	103	129	26
C-horizon	MF	27	107	93	122	29
C-horizon	All	39	110	96	124	28

[1] JP = John Pawlowicz, MF = Mark Fenton.

3.2 B-Horizon Soil Sampling

Augering began in the hole created to recover the organic soil and continued down until it was below the Ae-horizon and into a zone of visible clay enrichment (usually about 10 cm below the Ae-horizon). The B-horizon was then collected in successive auger bites until about 0.5 to 2 kg of sample was recovered. Soil lifted by the auger was scraped clean of visible uphole material and placed in a plastic bag. Sampling stopped when enough soil was collected or the C-horizon was intersected. At the few sites where insufficient sample was obtained from the initial hole, a second hole was augered immediately adjacent to the first. B-horizon soil samples were commonly collected between depths of 40 and 80 cm (Table 3).

3.3 C-Horizon Soil Sampling

The C-horizon soil sample was collected in the same hole as the B-horizon soil sample. Sampling started at the depth at which the presence of carbonate in the soil could be detected with dilute HCl (Ck-horizon of the Soil Classification Working Group [1998]). Sampling proceeded downward until about 1 kg of soil had been collected. The average sampling depth was from about 95 cm to 125 cm below surface (Table 3). If the initial augering process was stopped before enough sample was obtained a new hole was begun near the first and additional C-horizon soil was collected.

4 Sample Preparation, Analytical Procedures and Data

4.1 Sample Preparation

Initial sample preparation was performed at the AGS laboratory in Edmonton, Alberta.

4.1.1 Organic Soil Sample Preparation

The organic soil samples were allowed to air dry at room temperature on paper plates for a minimum of three weeks. The material was then ground manually using a porcelain mortar and pestle for one to two minutes. At this time, larger material, including roots and wood fragments, was removed and discarded. The samples were then sieved using a 180-micron (80 Tyler mesh) stainless steel sieve. The -180 micron fraction was split into two parts, material for analyses and material to be archived. The -180 micron analytical splits of the organic soil samples, along with laboratory duplicates (-180 micron sample splits) and standard samples, were placed in numbered vials and shipped to Acme Analytical Laboratories Ltd. (Acme) in Vancouver, British Columbia, for ICP-AES/MS analyses. The samples were not renumbered at the AGS laboratory. Before leaving the AGS laboratory, the weight and height (within the plastic sample vials) of the -180 micron organic soil samples were recorded. This information, along with the diameter of the vials (4.55 cm), was used to calculate bulk density values (weight/volume). Bulk densities are lower than actual densities because voids within the sample are included within the volume.

4.1.2 B- and C-Horizon Soil Sample Preparation

The B- and C-horizon soil samples were assigned a new laboratory number at the AGS laboratory, which allowed the sample sequence to be randomized. Samples were allowed to air dry at room temperature before being manually disaggregated using a porcelain mortar and pestle. The samples were then sieved using nested 2 mm, 1 mm and 63 micron (250 Tyler mesh) stainless steel sieves. The –63 micron fraction was split into material for analyses and material to be archived. Analytical splits of the –63 micron B- and C-horizon soil samples, along with laboratory duplicates (-63 micron sample splits) and standard samples, were shipped to Acme for ICP-AES/MS analyses. In addition, a second split of the B- and C-horizon –63 micron samples, along with laboratory duplicates and standard samples, were shipped to

Becquerel Laboratories (Becquerel) of Mississauga, Ontario, for INAA. At Becquerel, an additional set of B- and C-horizon soil sample splits was prepared and shipped to ALS Chemex Analytical Laboratories Ltd. (Chemex) of North Vancouver, British Columbia, for determinations by ICP-AES/MS and CVAA.

4.2 Analytical Procedures

4.2.1 Multi-Element Aqua Regia ICP-AES/MS Analyses

Acme completed aqua regia digestion followed by ICP-AES/MS analyses for organic soil and B- and C-horizon soil samples (Appendices 2 and 3).

B- and C-horizon soil sample analyses were performed using 7.5 g of material following Acme's 1F analytical procedure. The Acme version of aqua regia (equal proportions of HCl, HNO_3 and demineralized H_2O) was added to each sample in a ratio of 6 mL of aqua regia to 1 g of sample. Samples were digested for one hour in a hot water bath (90–95ºC) then diluted to a 20:1 mL/g final ratio (J. Gravel, personal communication, 2001). Concentrations were determined for 63 elements (Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Hg, Ho, In, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, P, Pb, Pr, Rb, Re, S, Sb, Sc, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, Zn and Zr).

All sample solutions were analyzed by both ICP-AES and ICP-MS. ICP-AES values were reported for several elements if concentrations exceeded laboratory determined crossover values (Appendix 4); otherwise, ICP-MS results were reported. If the range of values for any of these elements in a batch of samples brackets the threshold value, then reported results include both ICP-AES determinations (values > threshold) and ICP-MS determinations. For elements not listed in Appendix 4, such as Au, Sc, Tl, S, Hg, Se, Te, Ga and incompatible trace elements, such as Y, Zr, Nb, U and the rare-earth elements (except La), only the results from the ICP-MS were reported (J. Gravel, personal communication, 2001).

Organic soil analyses at Acme were performed using 1 g samples. The methodology was the same as for the B- and C-horizon soil samples except the samples were initially leached with 2 mL HNO_3 for one hour (i.e., 2 mL of HNO_3 to 1 g of sample).

4.2.2 Four-Acid ($HF-HNO_3-HClO_4$) ICP-AES and ICP-MS Multi-Element Analyses

Chemex provided four-acid ($HF-HNO_3-HClO_4$) ICP-AES and ICP-MS determinations for several elements in the B- and C-horizon soil samples (Appendix 3), and Chemex provided the following method description:

> "A prepared sample (0.500 gram) is digested with perchloric, nitric and hydrofluoric acids to dryness. The residue is taken up in nitric and hydrochloric acids and diluted to a final volume with deionized water. The resulting solution is analyzed by inductively coupled plasma-atomic emission spectrometry. Following this analysis, the results are reviewed to ensure that base metal concentrations are less than 1%, with the exception of Silver, Bismuth and Tungsten which have upper analytical limits of 100, 500 and 1000 ppm. Samples that meet this criteria are then diluted and analysed by ICPMS. Results are corrected for spectral interelement interferences."

None of the B- and C-horizon soil samples from the K4B area exceeds the metal limits set by Chemex for ICP-MS analyses. Elements routinely reported by ICP-AES include Al, Ba, Ca, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, P, S, V and Zn. Elements routinely reported by ICP-MS include Ce, Cs, Ga, Ge, Hf, In, La, Li, Nb, Rb, Re, Sb, Se, Sn, Ta, Te, Th, Tl, U, Y and Zr. Elements that may be reported by either ICP-AES or ICP-MS, depending on concentrations, include Ag, Be, Bi, Cd, Co, Ni, Pb, Sr and Ti.

4.2.3 Mercury Analyses by Cold Vapour Atomic Absorption Spectroscopy

Chemex conducted cold vapour atomic absorption spectroscopy (CVAA) determinations for Hg on the B- and C-horizon soil samples (Appendix 3), and provided the following description of the CVAA method:

> "A prepared sample (0.50 gram) is digested with concentrated nitric acid for at least one hour. After cooling, hydrochloric acid is added to produce aqua regia and the mixture is then digested for an additional hour and a half. The resulting solution is diluted to 12.5 ml with demineralized water and mixed. A portion of the sample is treated with stannous chloride to reduce the mercury. The resulting mercury is volatilized by argon-purging and measured by atomic absorption spectrometry."

4.2.4 Multi-Element Instrumental Neutron Activation Analyses

Becquerel completed instrumental neutron activation analyses (INAA) for several elements in B- and C-horizon soil samples (Appendix 3) and provided the following method description:

> "For rocks or mineralogenic sediments such as stream sediments or tills, our neutron activation analysis method involves the transfer of about 15 grams of sample material to tared, plastic, watertight vials. Each vial is uniquely identified with a bar code and a flux monitor affixed to the base. These vials are stacked into one-foot long bundles for irradiation. The bundles contain randomly selected duplicate samples at the base of the bundle and standards inserted at random positions in the bundle.
>
> All bundles are treated in a similar manner. They are submitted for exposure to a flux of neutrons at a nuclear reactor. We currently irradiate our samples at the McMaster Nuclear Reactor. These bundles are inserted into the core of a nuclear reactor for a short period of time. (We use cadmium-shielded RIFLS tubes to increase the epithermal component of the neutron flux.) In the RIFLS reactor sites, the bundles are rotated during irradiation so that there is no horizontal flux variation. (The vertical flux variation is monitored with the individual flux monitors.) This irradiation causes many of the elements in the sample to become radioactive and begin to emit radiation in the form of penetrating gamma rays whose energies (or wavelengths) are characteristic of particular elements.
>
> NOTE: The samples may warm up during irradiation, possibly to 150°C but they are all in sealed containers and no loss of volatiles has been noted. The only potential problem that we have encountered is with organic bromine but this also appears to be contained in the vials.
>
> After an appropriate decay period (usually six to seven days), the irradiated samples are loaded onto the counting system. There the sample weight and the sample I.D. are verified by our counting system before the sample is placed close to a gamma-ray spectrometer with a high resolution, coaxial germanium detector. Gamma rays radiate continuously and the interaction of these with the detector lead to discrete voltage pulses proportional in height to the incident gamma-ray energies. Our specially developed multichannel analyzer sorts out the voltage pulses from the detector according to their size and digitally constructs a spectrum of gamma-ray energies versus intensities. The counting time varies but it is between twenty and thirty minutes per sample. By comparing spectral peak positions and areas with library standards, the elements comprising the samples are qualitatively and quantitatively identified. The results of the analysis are computed and data reports are generated."

4.2.5 Loss on Ignition Analyses

Acme Analytical Laboratories Ltd. determined loss on ignition (LOI) values at 475°C for the organic soil samples using 1 g samples (Appendix 2).

4.2.6 Texture Analyses

Texture analyses on the B- and C-horizon soil samples were performed at the AGS laboratory in Edmonton. Samples were dried overnight in an oven at 40°C. The distribution of particle sizes larger than 0.063 mm was determined by sieving. The size distribution of the <0.063 mm fraction was obtained by measuring the variation in density with time of a suspension of the sample in a dilute sodium hexametaphosphate solution (the sodium hexametaphosphate acts as a dispersing agent). Fifty grams of the <2 mm sample fraction were mixed with 125 mL of 4% sodium hexametaphosphate solution in a 1000 mL cylinder. After one minute of agitation, distilled water was added until the total volume was 1000 mL. Hydrometer readings were taken at 2 hours, 4 hours, 8 hours and 24 hours after agitation. A computer program was used to calculate the proportions of silt and clay in the sample based upon the density measurements (Appendix 3).

5 Organic Soil Analytical Data

5.1 Organic Soil Lower Detection Limits

Elements that returned values in the organic soil samples at or below the lower analytical detection limit for the aqua regia ICP-AES/MS method are listed in Table 4 (lower detection limits are listed in Appendix 5). All of the values for Ta and more than 50% of the values for Ge, In, Lu, Hf, W and Re are below the lower detection limits.

Table 4. Elements for which aqua regia ICP-AES/MS analyses returned values below lower detection limits in organic soil samples.

	Be (ppm)	Ti (%)	Ge (ppm)	In (ppm)	Te (ppm)	Eu (ppm)	Ho (ppm)	Tm (ppm)	Lu (ppm)	Hf (ppm)
LDL[1]	0.1	0.001	0.1	0.02	0.02	0.02	0.02	0.01	0.02	0.02
Number of samples	42	42	42	42	42	42	42	42	42	42
Values < LDL	5	10	40	35	9	1	1	1	26	21
Percentage < LDL	12	24	95	83	21	2	2	2	62	50

	Ta (ppm)	W (ppm)	Re (ppb)	Au (ppb)	Tl (ppm)	Th (ppm)	U (ppm)
LDL	0.05	0.2	1	0.2	0.02	0.1	0.1
Number of samples	42	42	42	42	42	42	42
Values < LDL	42	39	24	4	1	4	7
Percentage < LDL	100	93	57	10	2	10	17

[1] Lower detection limit for Acme aqua regia ICP-AES/MS analyses of organic soil.

5.2 Accuracy of Organic Soil Determinations

To estimate the analytical accuracy of the organic soil analyses, four samples of CANMET lake sediment standard LKSD-4 were introduced into the sample batch at the AGS laboratory. Results for the LKSD-4 standard samples obtained from Acme are compared to CANMET provisional Ag, As, Cd, Co, Cr, Cu, Fe, Hg, Mn, Mo, Ni, Pb, Sb, V and Zn values, obtained using concentrated HNO_3 – HCl (partial) extraction, and total LOI and S values (Figure 4). Most of the Acme values fall within 5% to 10% of the CANMET provisional values. The most significant exceptions are the Acme results for Sb (30% to 40% lower than the CANMET provisional value) and As (10% to 30% higher than the CANMET provisional value).

5.3 Organic Soil Laboratory Duplicate Pairs

The batch of organic soil samples from K4B submitted for aqua regia ICP-AES/MS analyses included four AGS laboratory duplicate pairs created by splitting sieved sample material. Analytical results for these duplicate pairs are summarized in Table 5 in which variability is expressed by the ratio duplicate pair difference/duplicate pair mean. Analytical differences between the laboratory duplicate pairs should reflect a) the homogeneity of the sieved samples and b) the analytical precision. For most elements, the duplicate pair differences are generally less than 10% of the duplicate pair means. Results for Ge, In, Lu, Ta and W laboratory duplicate pairs are not included in Table 5, as the concentrations of these elements in most samples are below lower detection limits.

Table 5. Summary of analytical results for four AGS laboratory organic soil duplicate pairs.

Laboratory duplicate pair difference/laboratory duplicate pair mean	Elements
Worst case ≤5%	Na, Ca, Ti, Cu, Zn, Ge, Mo, In, Ba, Ce, Ta, W, U
Worst case >5% and ≤10%	Mg, Al, P, V, Cr, Mn, Fe, Co, Ni, Ga, As, Y, Ag, Cd, Sb, Cs, La, Nd, Sm, Hg, Pb
Worst case >10% and ≤20%	B, S, K, Rb, Sr, Pr, Gd, Dy, Tm, Bi
Worst case >20% and ≤50%	Li, Sc, Se, Nb, Eu, Tb, Ho, Er, Yb, Tl
Worst case >50% and ≤100%	Be, Zr, Sn, Te, Hf, Au, Th
Worst case >100% and ≤150%	Re

5.4 Organic Soil Field Site Duplicate Pairs

Pairs of organic soil samples were collected from eight field sites during the K4B soil survey. For each of these pairs the second sample was collected from similar material, generally at a similar depth interval, from 0.5 to 4 m away from the first sample. By comparing analytical results for these pairs of samples, a measure of geochemical variability at the scale of individual sample sites (a few square metres in this case) can be obtained, which is herein referred to as field site variability. Note that field site variability, as used in this report, includes components of sample collection variability, sample preparation variability and analytical variability. The results, shown in Figure 5, indicate that field site variability values (expressed as the duplicate pair difference/duplicate pair mean) for the organic soils in the K4B area commonly range from 10% to 50% with several elements exhibiting worst-case values of over 100%.

To assess the influence of analytical variability on the variability in the field site duplicate pair results, a summary of the data for organic soil laboratory duplicates and field site duplicates is presented as a histogram in Figure 6. Based upon the data presented in Figure 6, the following observations may be made regarding elements exhibiting relatively high sample pair variability (note that these results are

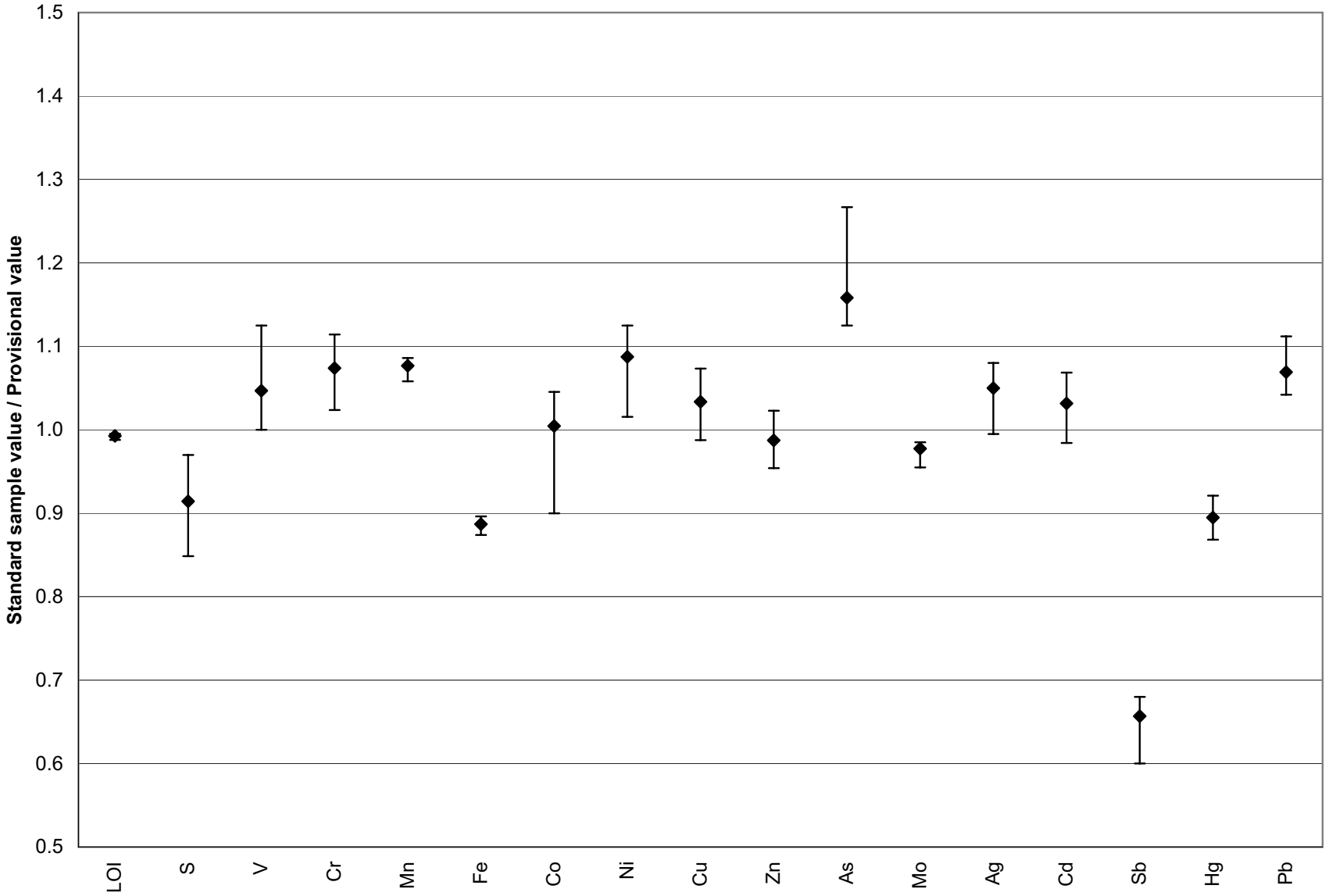

Figure 4. Whisker plot showing analytical results for LKSD-4 standard samples included with the organic soil sample batch. Diamond = median; whiskers (vertical lines) = range.

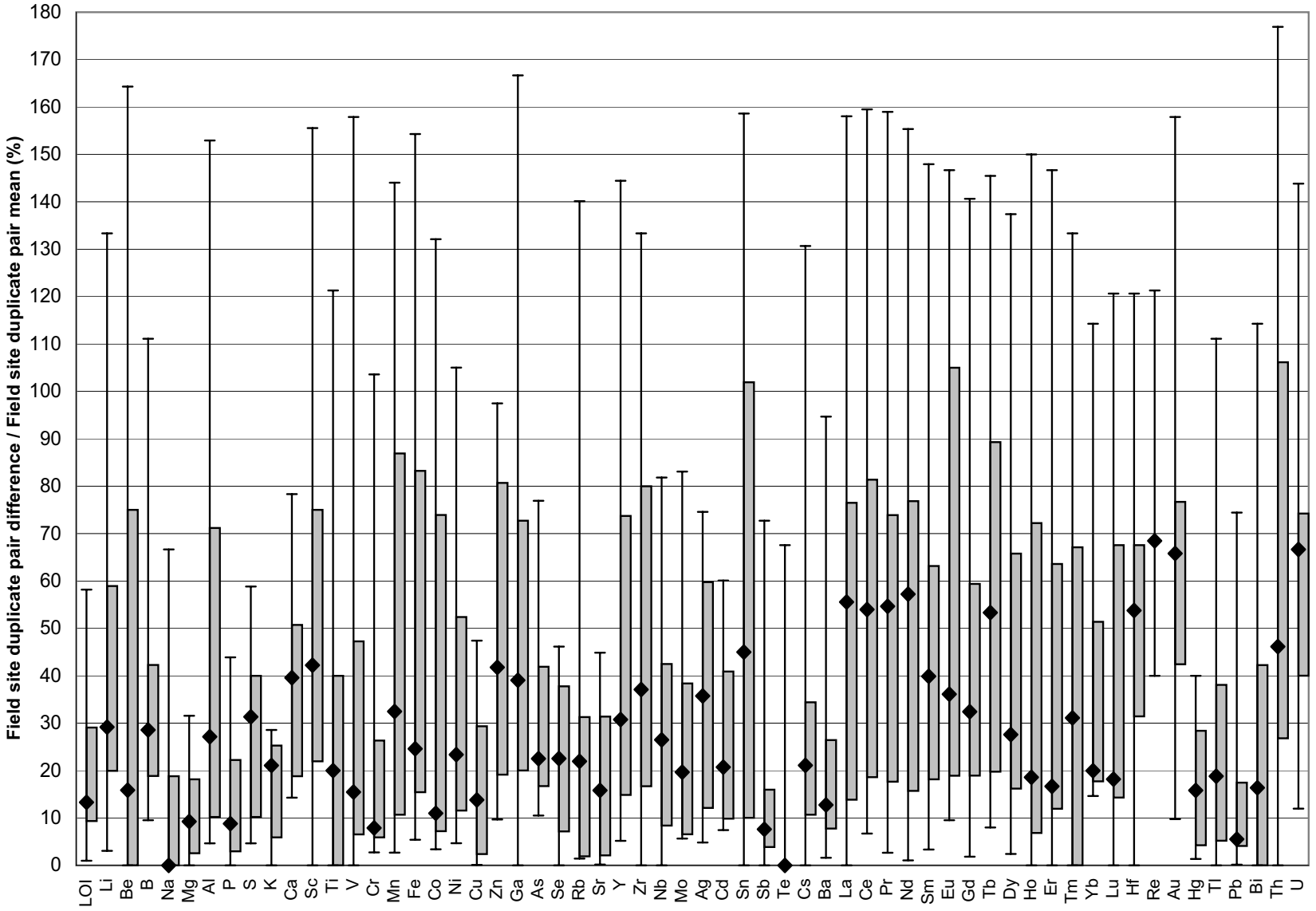

Figure 5. Box and whisker plot showing analytical results by aqua regia ICP-AES/MS for organic soil field site duplicate pairs. Diamond = median, box = interquartile range, whiskers (vertical lines) = range.

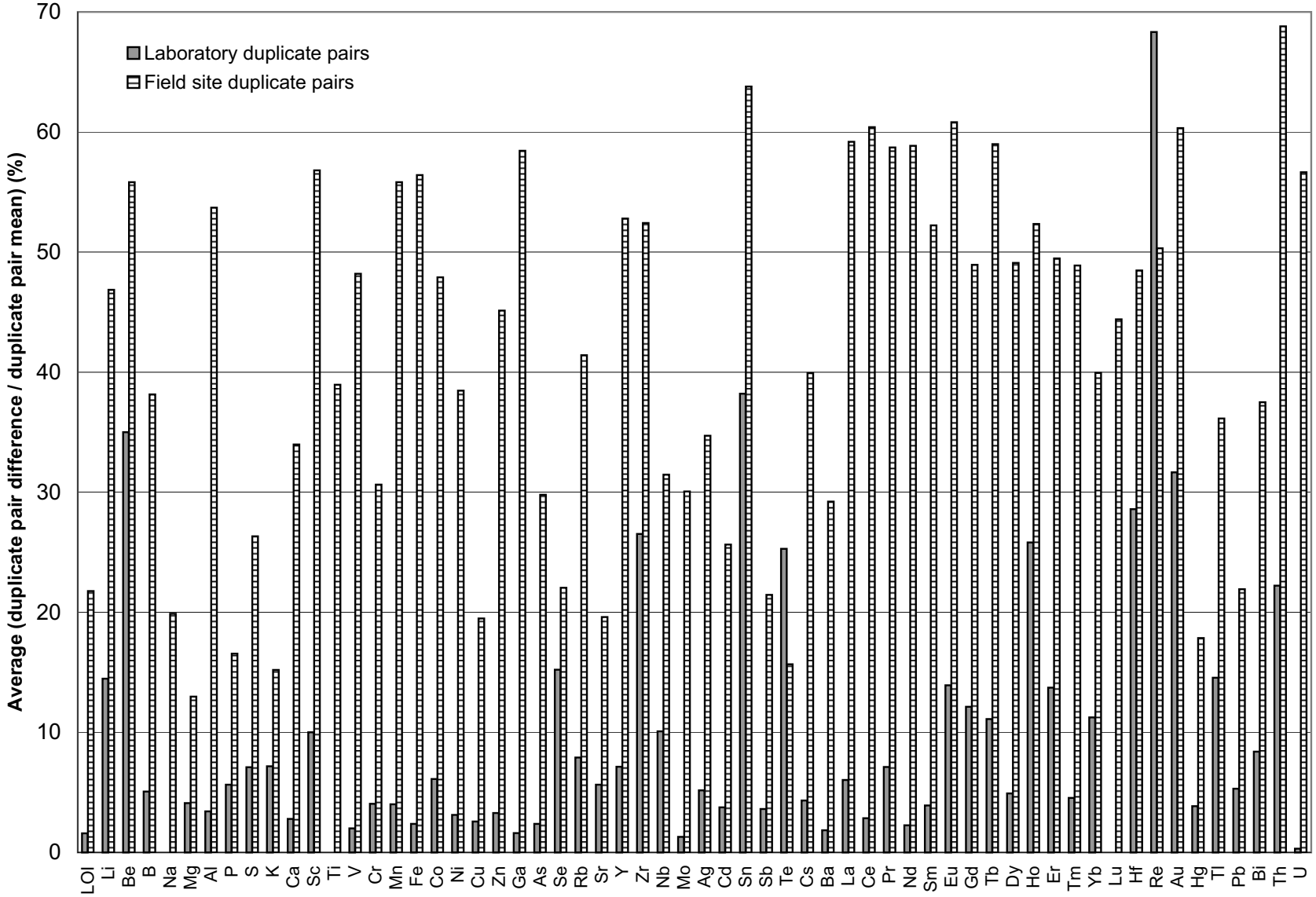

Figure 6. Histogram showing average values of organic soil analytical variability and field site variability based on aqua regia ICP-AES/MS analyses (variability expressed as the duplicate pair difference/duplicate pair mean).

based on small duplicate pair datasets consisting of four pairs of laboratory duplicates and eight pairs of organic soil field site duplicates):

- Be, Sn, Te, Re: Analytical variability accounts for most of the field site variability.
- Zr, Ho, Hf, Au, Th: Analytical variability accounts for roughly half of the field site variability.
- LOI, Li, B, Na, Al, S, Ca, Sc, Ti, V, Cr, Mn, Fe, Co, Ni, Zn, Ga, As, Se, Rb, Y, Nb, Mo, Ag, Cd, Sb, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Er, Tm, Yb, Tl, Pb, Bi, U: Analytical variability accounts for only a small part of the field site variability.

5.5 Organic Soil Survey Variability Compared to Field Site Variability

The relationship between organic soil field site variability and survey variability is examined using a histogram displaying the ratios of survey range/maximum site difference obtained for individual elements (Figure 7). Higher ratios indicate greater probabilities to detect real geochemical differences between sampling sites (i.e., more subtle anomalies may be detected). Values of two or less for an element indicate that within site differences may account for up to half of the entire analytical range for the survey. Values of greater than four indicate that maximum within site differences account for less than 25% of the entire survey range.

5.6 Organic Soil Loss on Ignition

Some organic soil samples collected during the K4B survey contain a substantial component of mineral soil (primarily silt and clay). This mixing of soil types is evident on a plot of loss on ignition (LOI) versus bulk density in which samples with appreciable amounts of mineral soil are characterized by relatively high bulk density values and relatively low LOI values (Figure 8). The range of LOI values for the K4B organic soil samples, from 21.2% to 88.6%, is similar to the LOI values obtained from humus surveys of two other kimberlites in the southeastern Buffalo Head Hills, an LOI range of 25.2% to 89.0% at K5 and an LOI range of 22.9% to 87.8% at TQ155 (Seneshen et al., 2005). Elements that are more abundant in the organic fraction compared to the inorganic fraction exhibit a positive correlation with LOI. Conversely, elements with greater abundances in the inorganic fraction have negative correlations with LOI. Table 6 lists Spearman rank correlation coefficients for selected elements.

Table 6. Spearman rank correlation coefficients for selected elements and LOI in 42 routine organic soil samples (no duplicates included).

Element	Correlation with LOI
V	-0.79
Cr	-0.74
Li	-0.73
Fe	-0.70
Nb	-0.69
Ce	-0.69
Al	-0.68
Th	-0.67
U	-0.42
Mg	-0.19
Hg	0.55
Ca	0.57
B	0.62
S	0.76

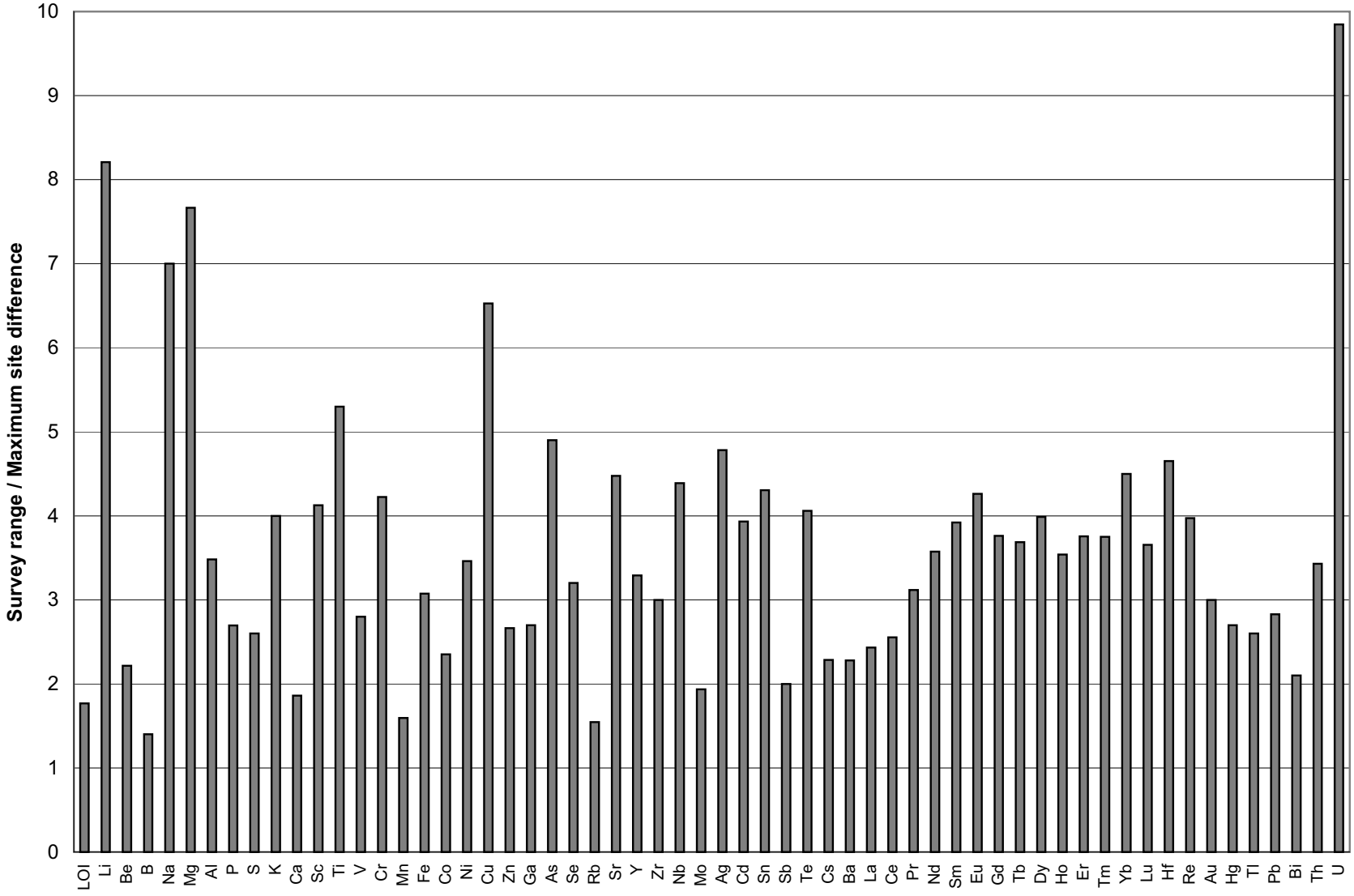

Figure 7. Histogram showing survey range/maximum site difference ratios for organic soil samples.

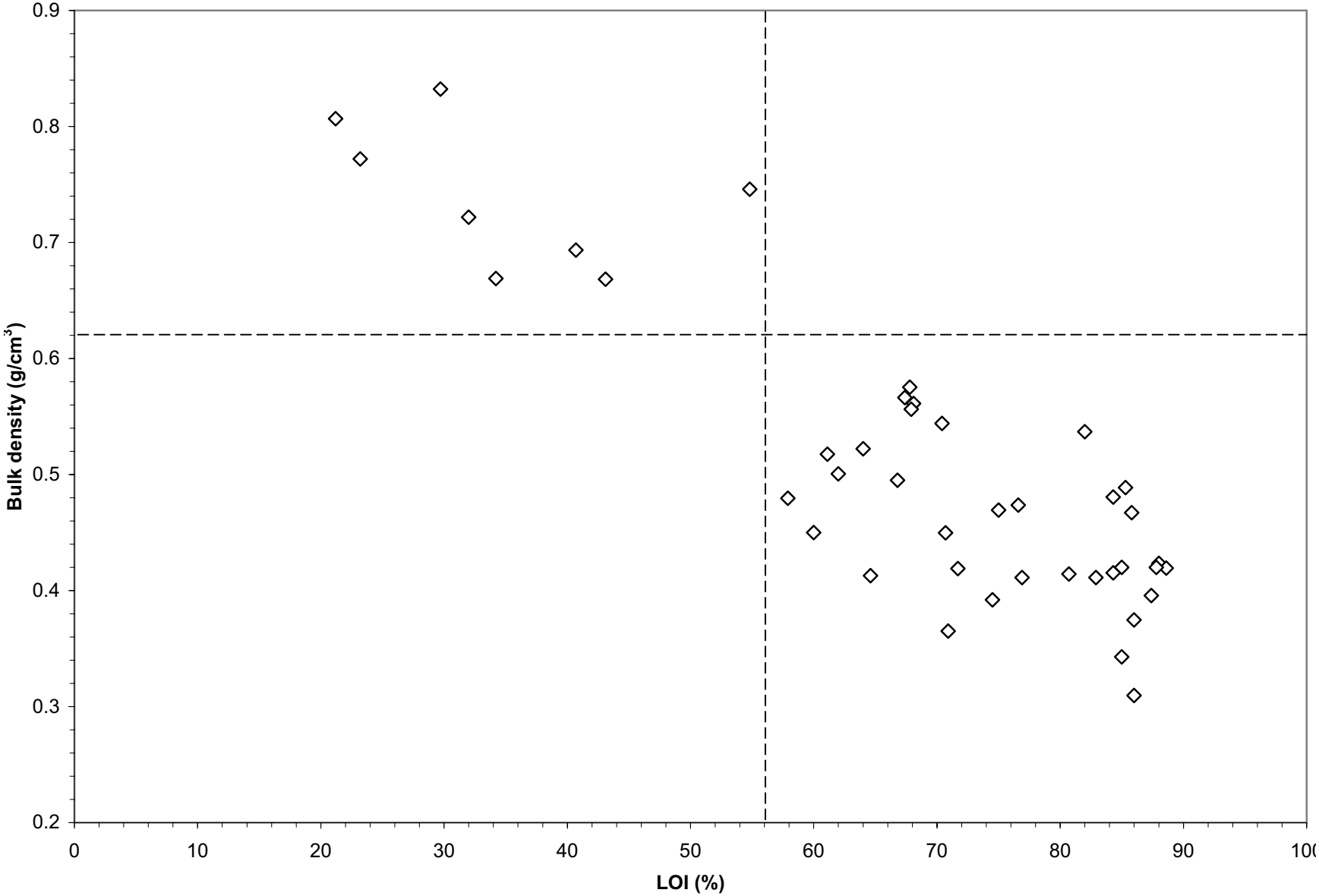

Figure 8. Organic soil LOI versus bulk density.

The relationship between LOI, selected cations (Al, Fe and Mg) and proximity to kimberlite is examined in Figures 9, 10 and 11. Samples identified as proximal were collected over or near the K4B kimberlite (578100E to 579000E), as defined by the K4B magnetic anomaly shown in Figure 3 (Spectra Exploration Geoscience Corp., 1998; Skelton and Bursey, 1999). Note: a) the degree of negative correlation, b) the relatively low values of Al and Fe in proximal samples compared to other samples with similar LOI values and c) the elevated Mg values in four of the six proximal samples relative to other samples with similar LOI values. Ratios of selected elements may a) be less sensitive to variations in LOI and b) serve to enhance anomaly contrast relative to the raw data. This is illustrated by values for the Mg/Fe ratio shown in Figure 12.

6 B- and C-Horizon Analytical Data: Aqua Regia ICP-AES/MS Analyses

6.1 B- and C-Horizon Lower Detection Limits: Aqua Regia ICP-AES/MS Analyses

Elements that returned values in B- and C-horizon soil samples below the lower analytical detection limit for the aqua regia ICP-AES/MS method are listed in Table 7 (lower detection limits are listed in Appendix 5). Ta and W contents in all of the samples and S, Ge and Re contents in 21% to 25% of the samples are below the lower detection limits for these elements.

Table 7. Elements for which aqua regia ICP-AES/MS analyses returned values below lower detection limits in B- and C-horizon soil samples.

	S (%)	Ge (ppm)	Se (ppm)	Te (ppm)	Ta (ppm)	W (ppm)	Re (ppb)
Lower detection limit (LDL)	0.2	0.1	0.01	0.02	0.05	0.2	1
Number of samples	80	80	80	80	80	80	80
Values < LDL	17	17	1	2	80	80	20
Percentage < LDL	21	21	1	3	100	100	25

6.2 B- and C-Horizon Laboratory Duplicate Pairs: Aqua Regia ICP-AES/MS Analyses

The B- and C-horizon soil samples and the one road dust sample from the K4B area (95 samples, including field site duplicates) were included within a single batch of 318 samples analyzed by aqua regia ICP-AES/MS at Acme (in addition to the K4B samples, the batch included till samples collected during Quaternary mapping of the Peerless Lake map area (84B) and samples from two rotary coreholes drilled to investigate thick drift sequences within map area 84B). Included within the batch of 318 samples were 23 laboratory duplicate pairs prepared at the AGS laboratory. The duplicates consist of a) 15 pairs created by splitting the -63 micron fractions of field samples and b) eight pairs of AGS till standard NAT98-282. Analytical results for these laboratory duplicate pairs are shown in Figure 13 in which the vertical axis (duplicate pair difference/laboratory duplicate pair mean) represents a measure of variability. For these pairs, the variability should reflect a) the homogeneity of the sieved samples and b) the analytical precision. For most elements, the duplicate pair differences are generally less than 10% of the duplicate pair means. Elements for which the maximum difference/mean ratios of duplicate pairs exceed 50% include Be, B, S, Ti, Se, Nb, Te, Cs, Re and Au.

6.3 B- and C-Horizon Field Site Duplicate Pairs: Aqua Regia ICP-AES/MS Analyses

Seven field site pairs of both B- and C-horizon soil samples were collected during the K4B soil survey.

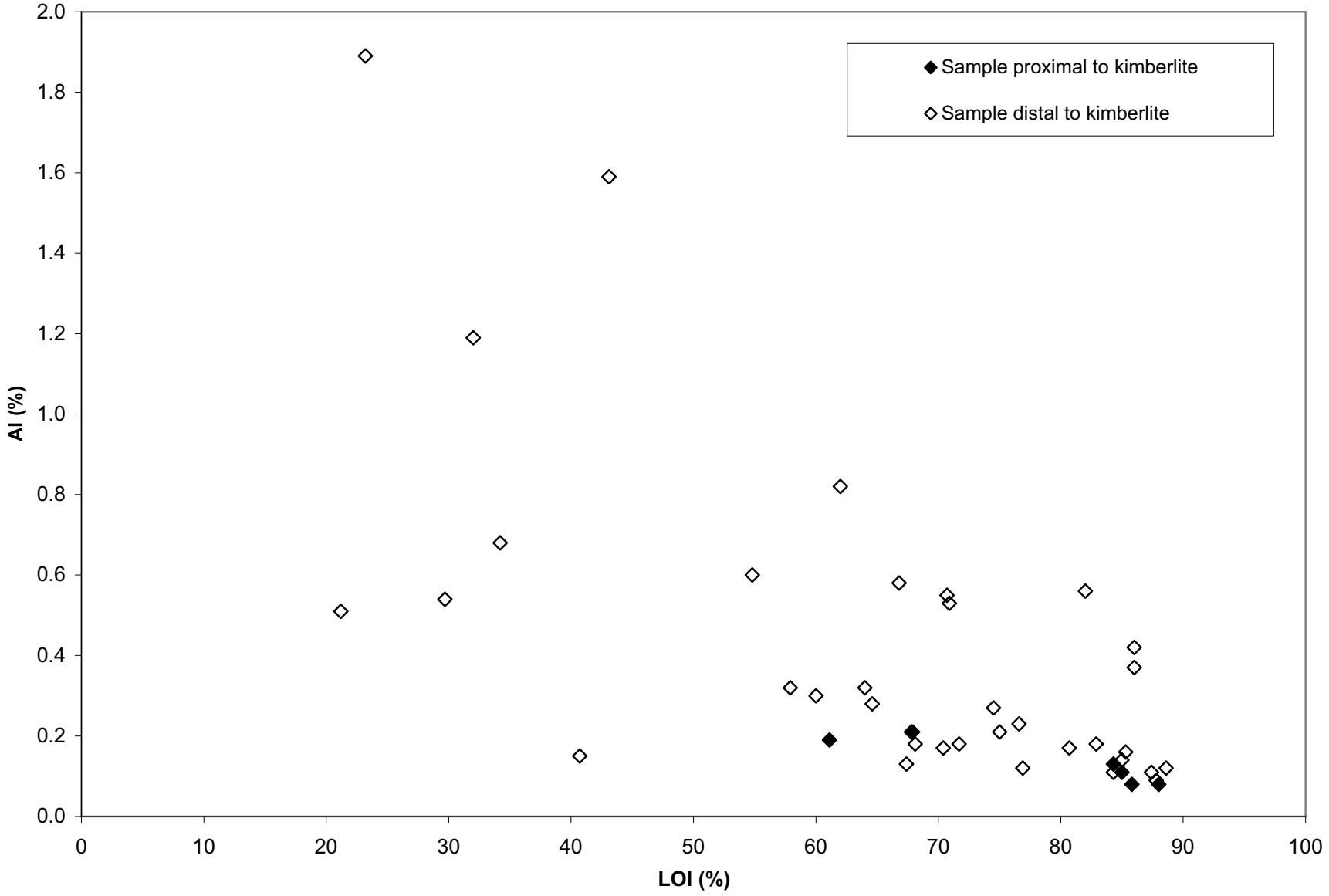

Figure 9. Organic soil LOI versus AI.

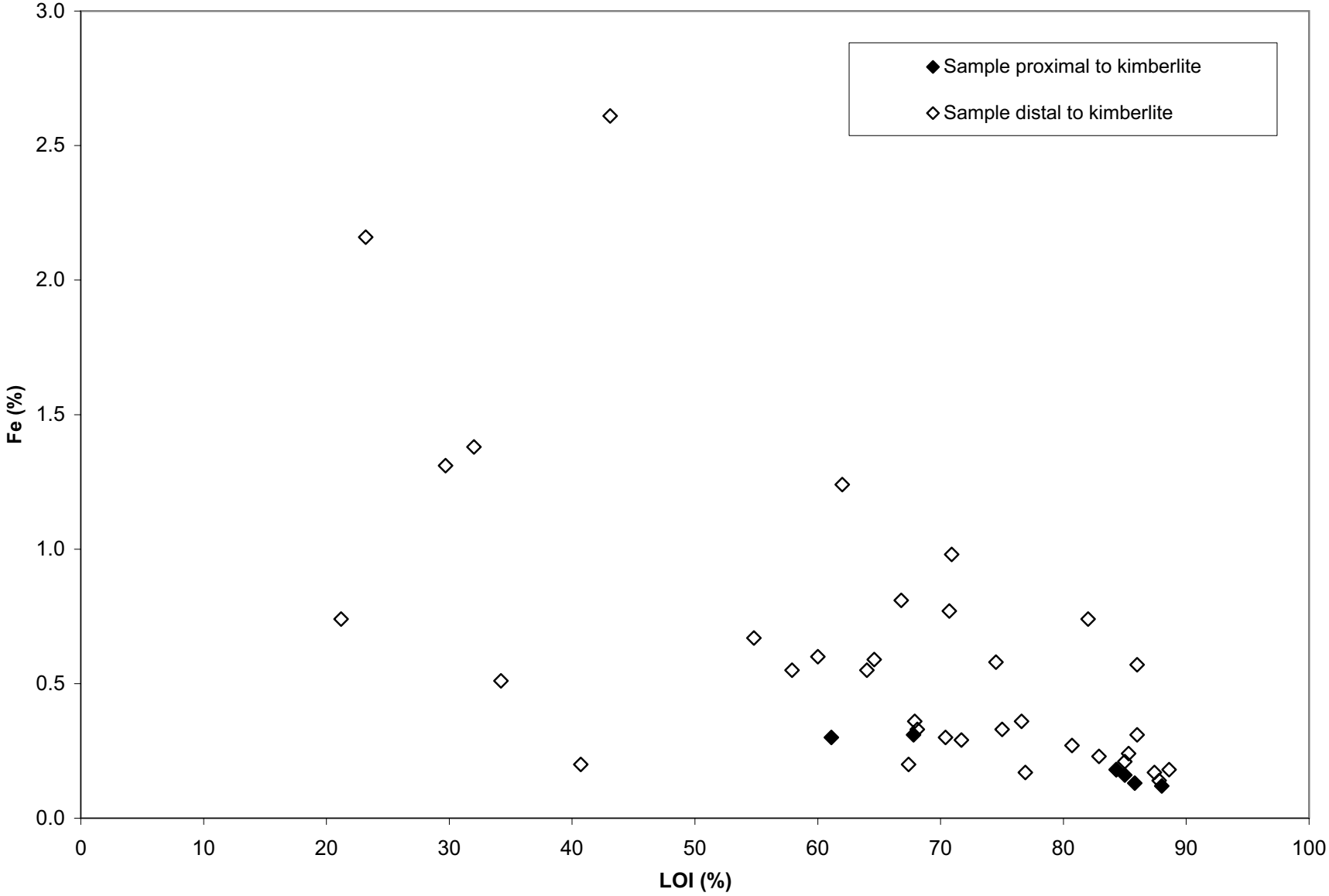

Figure 10. Organic soil LOI versus Fe.

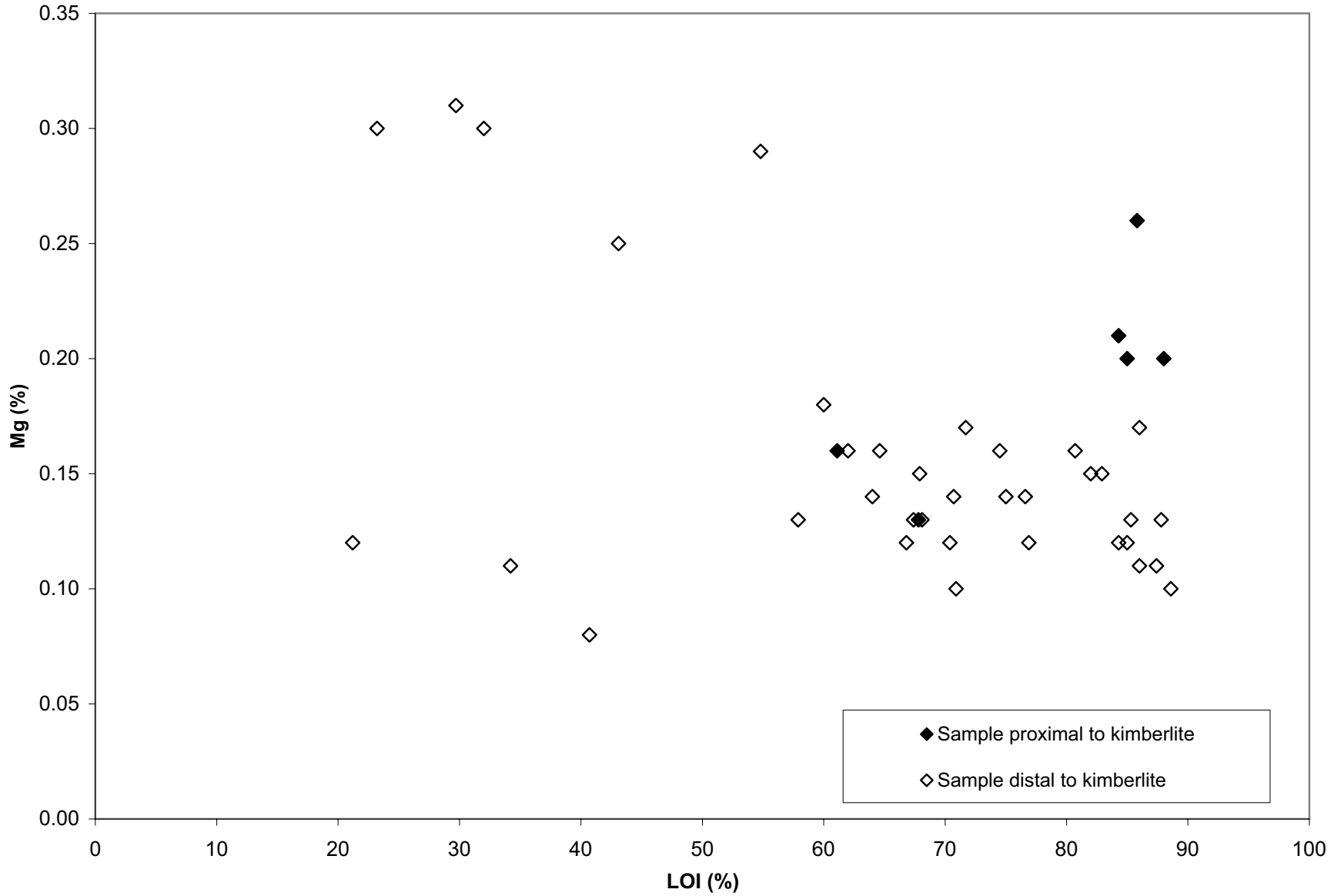

Figure 11. Organic soil LOI versus Mg.

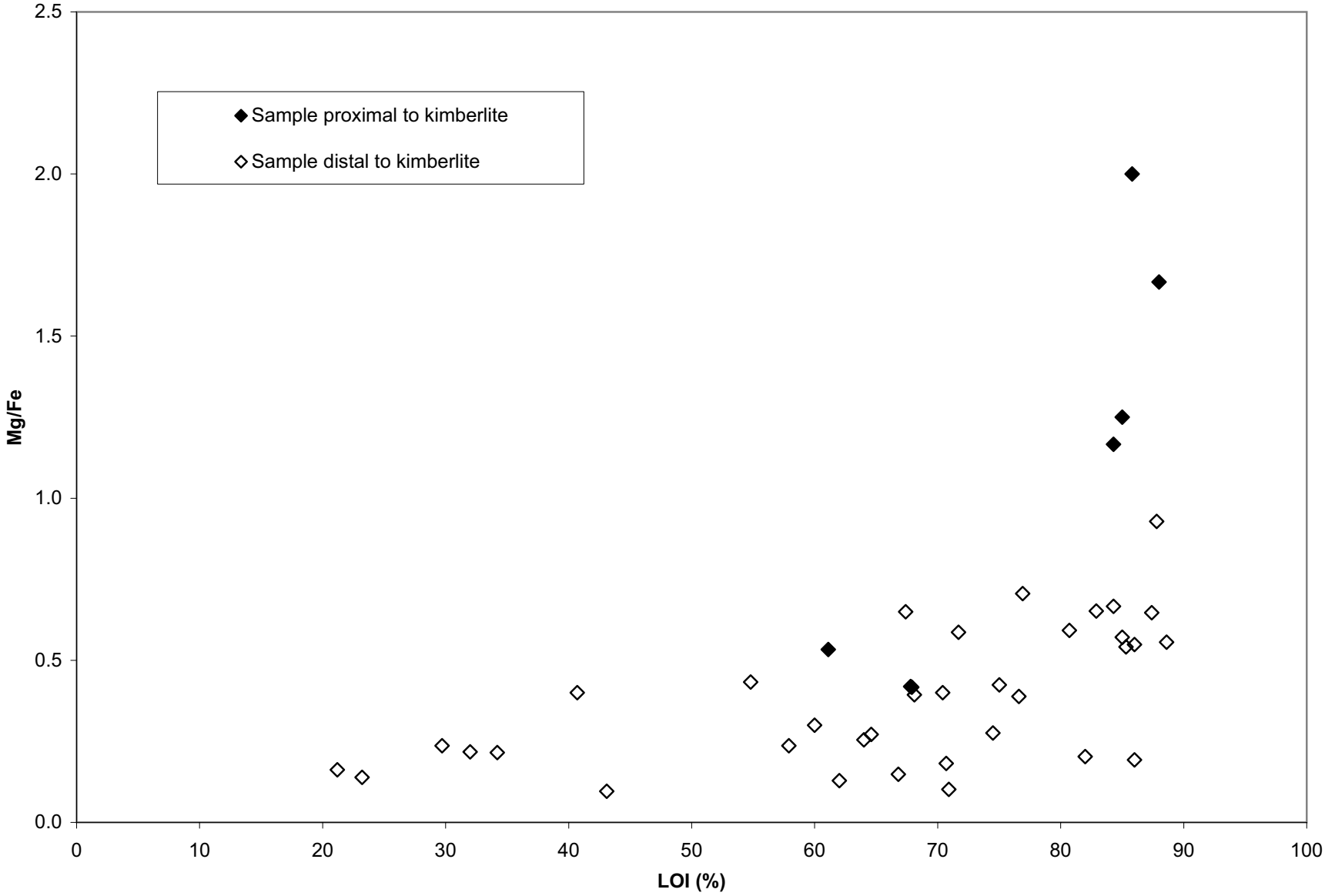

Figure 12. Organic soil LOI versus Mg/Fe.

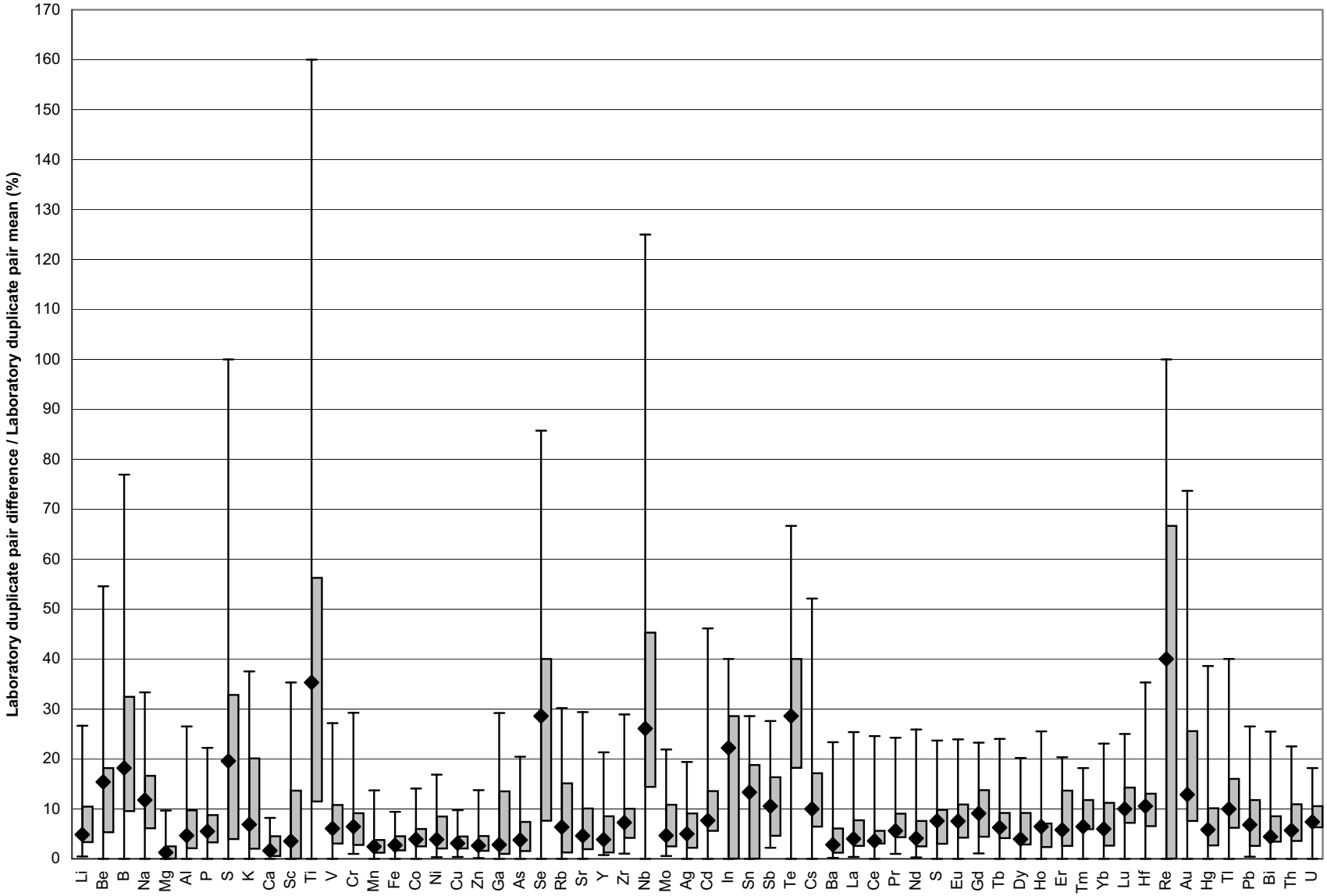

Figure 13. Box and whisker plot showing analytical results by aqua regia ICP-AES/MS for laboratory duplicate pairs. Diamond = median; box = interquartile range; whiskers (vertical lines) = range.

For each of these pairs the second sample was collected from similar material, at a similar depth interval, from 0.5 to 4 m away from the first sample. By comparing analytical results for these pairs of samples, a measure of geochemical variability at the scale of individual sample sites (a few square metres in this case) can be obtained, which is herein referred to as field site variability. Note that field site variability also includes components of sample collection variability, sample preparation variability and analytical variability. The results, shown in Figures 14 and 15, indicate that field site variability values (expressed as the duplicate pair difference/duplicate pair mean) for both B- and C-horizon soils in the K4B area are generally less than 15% for most elements. Relatively high field site variabilities in B-horizon soil are exhibited by Be, S, Mn, Se, Mo, Ag, Cd, In, Lu, Au and Hg. Relatively high field site variabilities in C-horizon soil are exhibited by S, Se, Nb, Te, Re and Au.

To evaluate the influence of analytical variability on the variability in the field site duplicate pair results, a summary of the data for B- and C-horizon laboratory duplicates and field site duplicates is presented in the form of a histogram in Figure 16. Based upon the data presented in Figure 16, the following observations may be made regarding elements exhibiting relatively high sample pair variability (note that these results are based on relatively small duplicate pair datasets consisting of 23 pairs of laboratory duplicates, seven pairs of B-horizon field site duplicates and seven pairs of C-horizon field site duplicates).

- Be, B, Na, S, Ti, Se, Nb, In, Te, Cs, Re, Au: Analytical variability accounts for most of the field site variability in both B- and C-horizon samples.
- P, Mn, Ag, Cd, Yb, Lu, Hg: Analytical variability accounts for only a small part of the B-horizon field site variability.
- Ca, Sr: Analytical variability accounts for only a small part of the C-horizon field site variability.
- Mo: Analytical variability accounts for only a small part of the field site variability in both B- and C-horizons.

6.4 B- and C-Horizon Survey Variability Compared to Field Site Variability: Aqua Regia ICP-AES/MS Analyses

The relationship between field site variability and survey variability in the aqua regia ICP-AES/MS results is examined using a histogram displaying the ratios of survey range/maximum site difference for individual elements in the B- and C-horizon soil samples (Figure 17). Higher ratios indicate greater potentials to detect real geochemical differences between sampling sites. Values of two or less for an element indicate that within site differences may account for up to half of the entire analytical range for the survey. Values of greater than four indicate that maximum within site differences account for less than 25% of the entire survey range. The very small value of survey range/maximum site difference for Au in B-horizon soil reflects a site duplicate pair in which the original sample returned 3.7 ppb Au and the site duplicate returned 42.1 ppb Au.

7 B- and C-Horizon Analytical Data: Four-Acid ICP-AES/MS and CVAA Analyses

7.1 B- and C-Horizon Lower Detection Limits: Four-Acid ICP-AES/MS and CVAA Analyses

Elements that returned values below the lower analytical detection limit for four-acid ICP-AES/MS analyses are listed in Table 8. All of the Se and Re values reported are either below or at the lower detection limits for these elements. All of the Hg values, determined by CVAA analyses, are above the lower detection limit of 0.01 ppm.

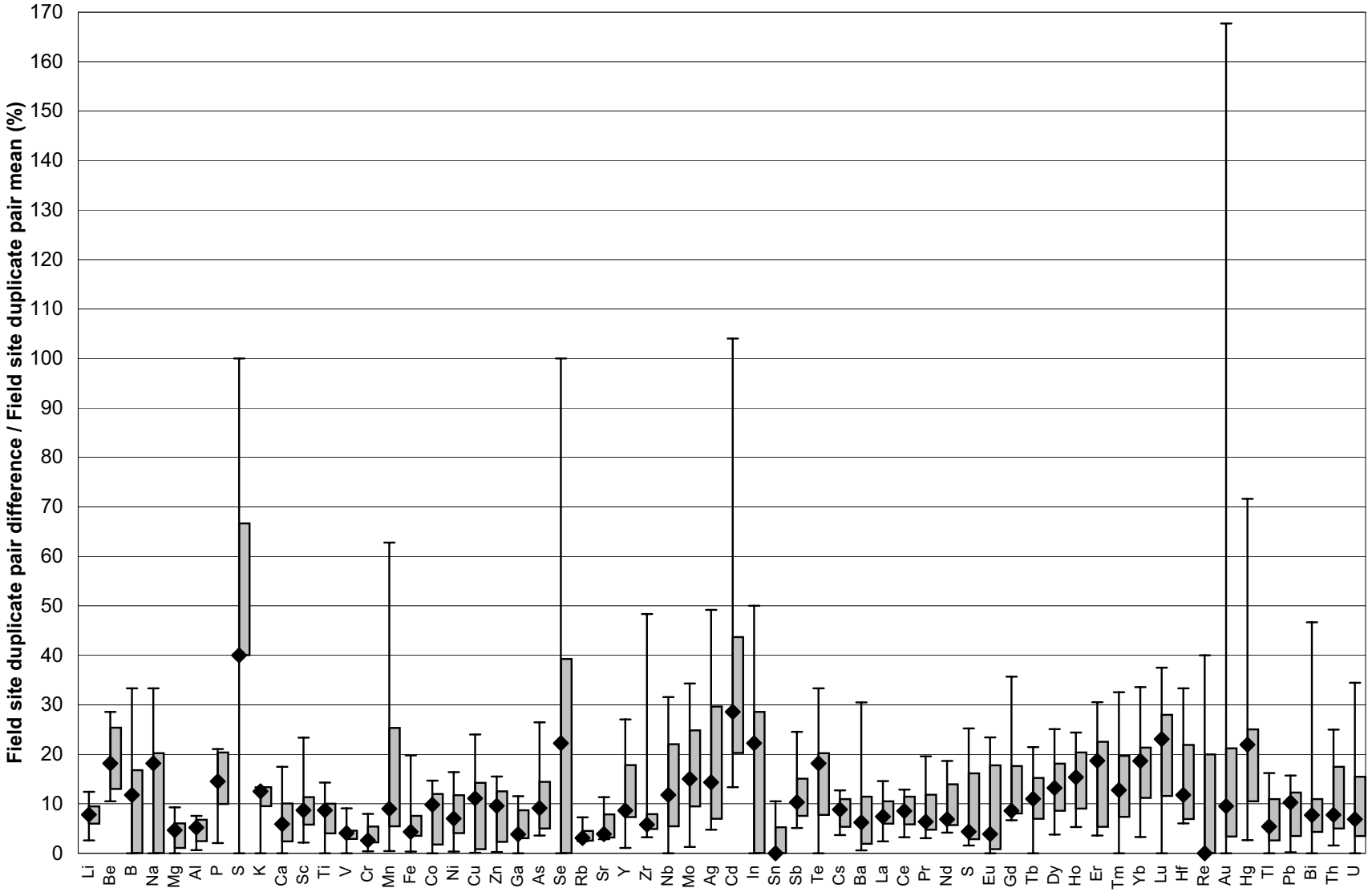

Figure 14. Box and whisker plot showing analytical results by aqua regia ICP-AES/MS for B-horizon soil field site duplicate pairs. Diamond = median, box = interquartile range, whiskers (vertical lines) = range.

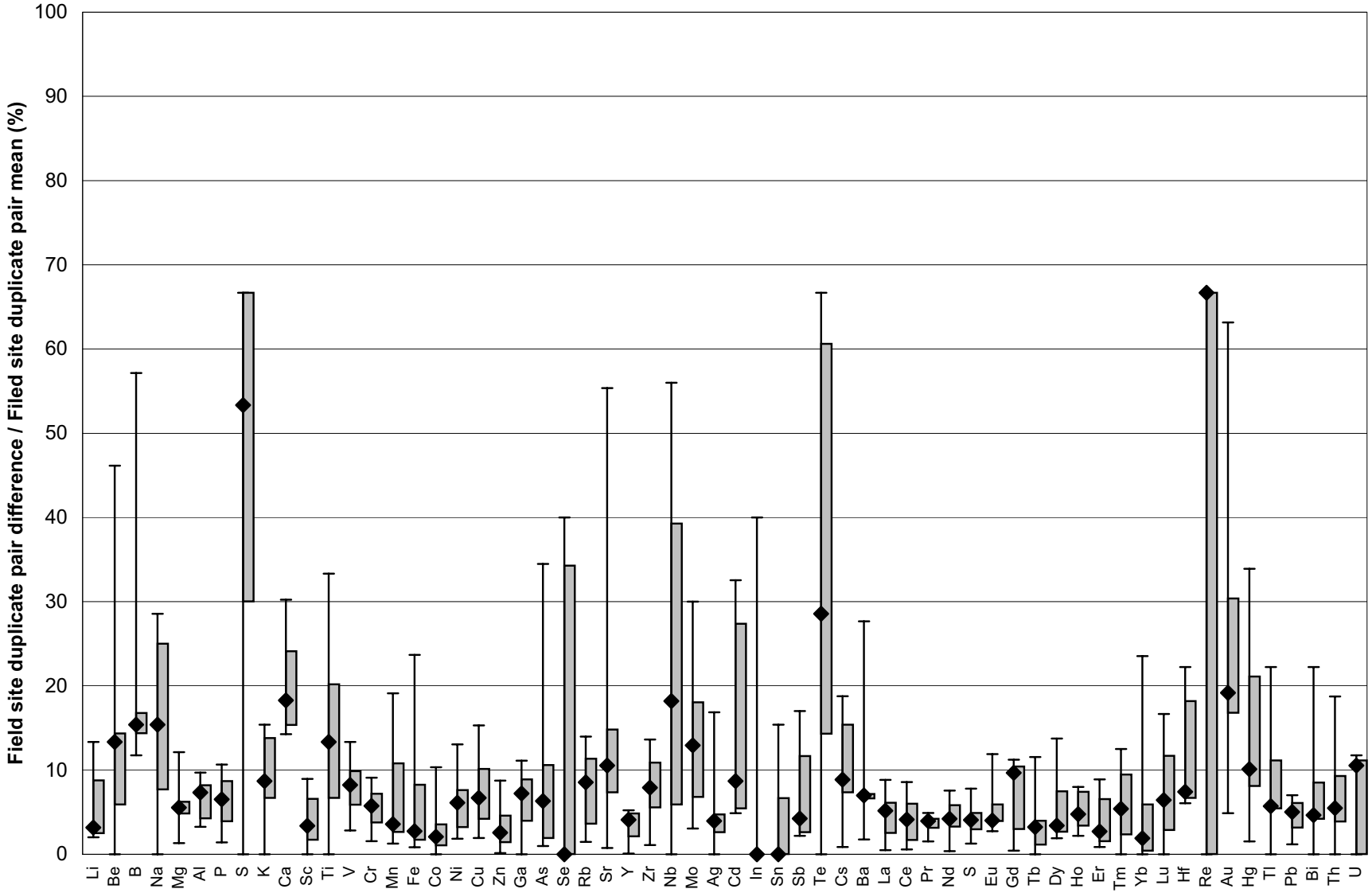

Figure 15. Box and whisker plot showing analytical results by aqua regia ICP-AES/MS for C-horizon soil field site duplicate pairs. Diamond = median; box = interquartile range; whiskers (vertical lines) = range.

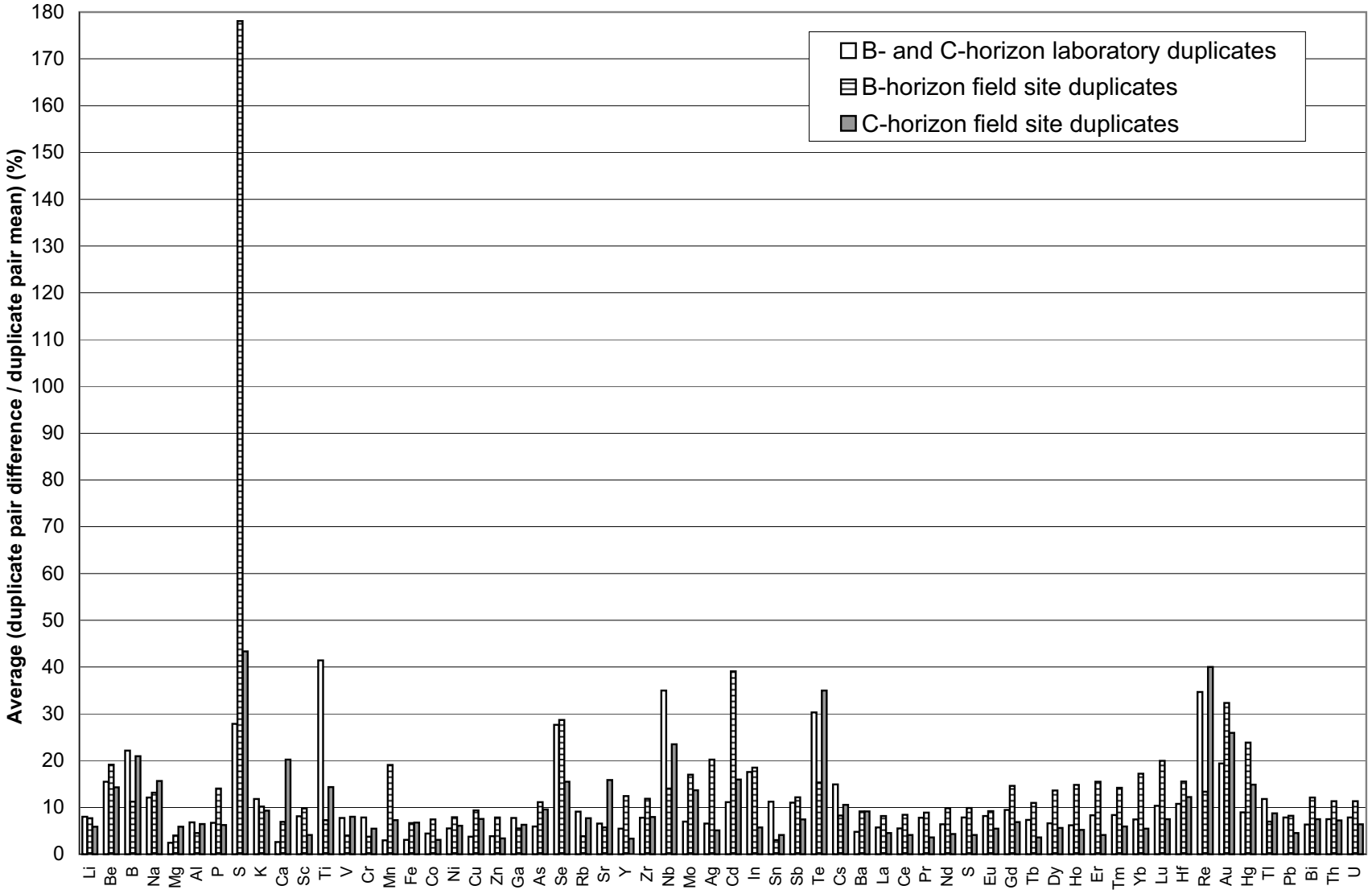

Figure 16. Histogram showing average values of analytical variability, B-horizon field site variability and C-horizon field site variability based on aqua regia ICP-AES/MS analyses (variability expressed as the duplicate pair difference/duplicate pair mean).

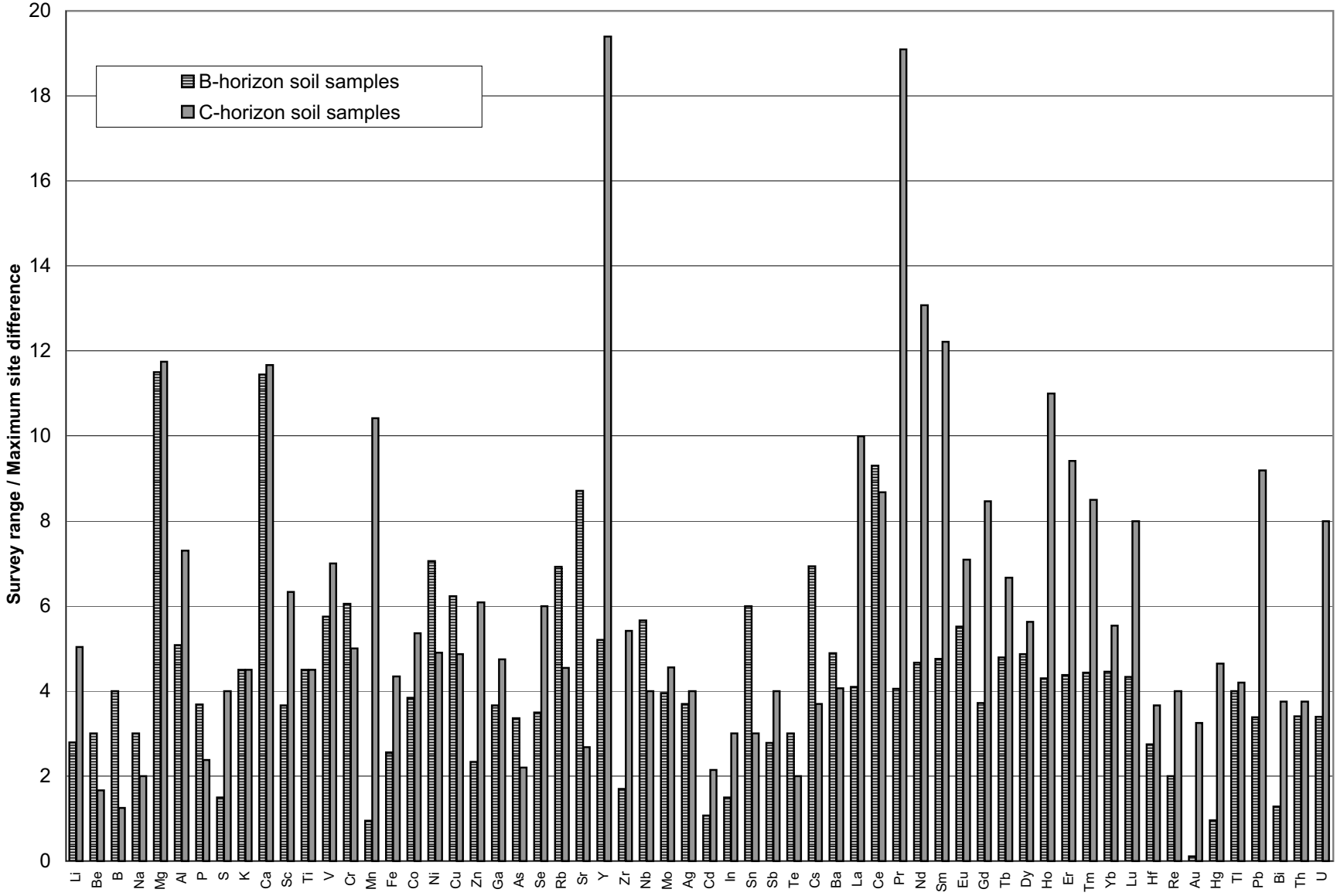

Figure 17. Histogram showing survey range/maximum site difference based on aqua regia ICP-AES/MS analyses of B- and C-horizon soil samples.

Table 8. Elements for which four-acid ICP-AES/MS analyses returned values below lower detection limits in B- and C-horizon soil samples.

	Se (ppm)	Te (ppm)	Re (ppm)
Lower detection limit (LDL)	1	0.05	0.002
Number of samples	80	80	80
Values < LDL	76	1	64
Percentage < LDL	95	1	80

7.2 B- and C-Horizon Laboratory Duplicate Pairs: Four-Acid ICP-AES/MS and CVAA Analyses

The batch of B- and C-horizon soil samples from K4B submitted for four-acid ICP-AES/MS and CVAA analyses at Chemex included seven duplicate pairs consisting of five laboratory sample splits and two sample pairs of AGS till standard NAT98-282. Analytical results for these laboratory duplicate pairs are shown in Figure 18 in which the vertical axis (duplicate pair difference/duplicate pair mean) represents a measure of variability. For these pairs the variability should reflect a) the homogeneity of the sieved samples and b) the analytical precision. For most elements, the duplicate pair differences are generally less than 10% of the duplicate pair means. Elements for which the third quartile of duplicate pair difference/duplicate pair mean ratios exceeds 20% include Ge, Ag, Cd, Te, Ta, W and Hg.

7.3 B- and C-Horizon Field Site Duplicate Pairs: Four-Acid ICP-AES/MS and CVAA Analyses

Seven field site pairs of both B- and C-horizon soil samples were collected during the K4B soil survey. For each of these pairs the second sample was collected from similar material, at a similar depth interval, from 0.5 m to 4 m away from the first sample. By comparing analytical results for these pairs of samples, a measure of geochemical variability at the scale of individual sample sites (a few square metres in this case) can be obtained, which is herein referred to as field site variability. Note that field site variability included components of sample collection variability, sample preparation variability and analytical variability. Results based on four-acid ICP-AES/MS and CVAA analyses, shown in Figures 19 and 20, indicate that field site variability values (expressed as the duplicate pair difference/duplicate pair mean) for both B- and C-horizon soils in the K4B area are generally less than 10% for most elements. Relatively high field site variabilities in B-horizon soil are exhibited by Mn, Cd, Te and Hg. Relatively high field site variabilities in C-horizon soil are exhibited by S, Ca, Cd, Te and Ta.

To determine the influence of analytical variability on the variability in the field site duplicate pair results, a summary of data for laboratory duplicate and field site duplicate B- and C-horizon soil samples is presented as a histogram in Figure 21. Based upon the four-acid ICP-AES/MS and CVAA data presented in Figure 21, the following observations may be made regarding elements exhibiting relatively high sample pair variability (note that these results are based on relatively small duplicate pair datasets consisting of seven pairs of laboratory duplicates, seven pairs of B-horizon duplicates and seven pairs of C-horizon duplicates).

- Ag, Cd, Te, Ta, W, Hg: Analytical variability accounts for a substantial part of the field site variability in both B- and C-horizon soil samples.
- Mn: Analytical variability accounts for only a small part of the B-horizon field site variability.
- S, Ca, Ba: Analytical variability accounts for only a small part of the C-horizon field site variability.

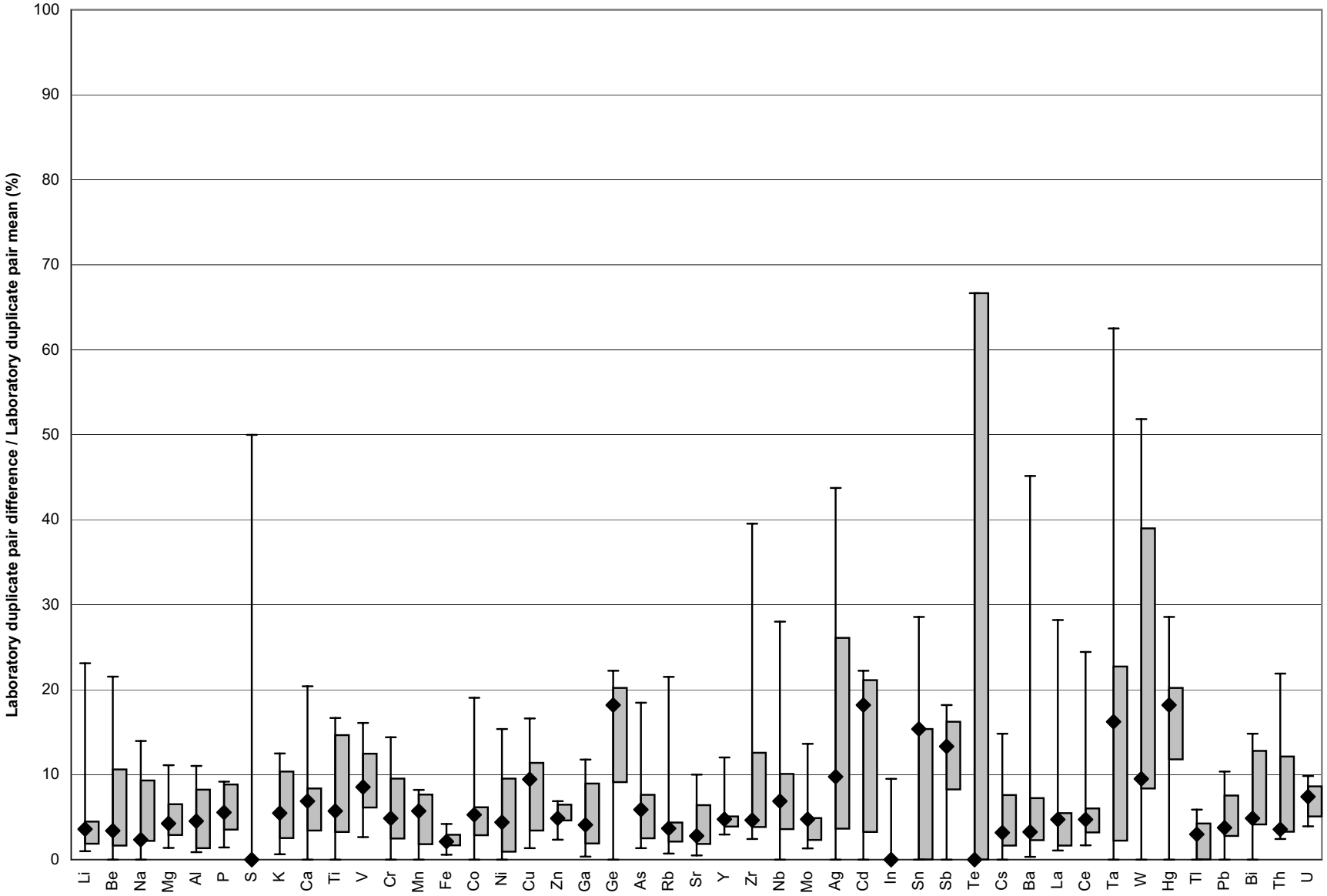

Figure 18. Box and whisker plot showing analytical results by four-acid ICP-AES/MS and CVAA for laboratory duplicate pairs. Diamond = median; box = interquartile range; whiskers (vertical lines) = range.

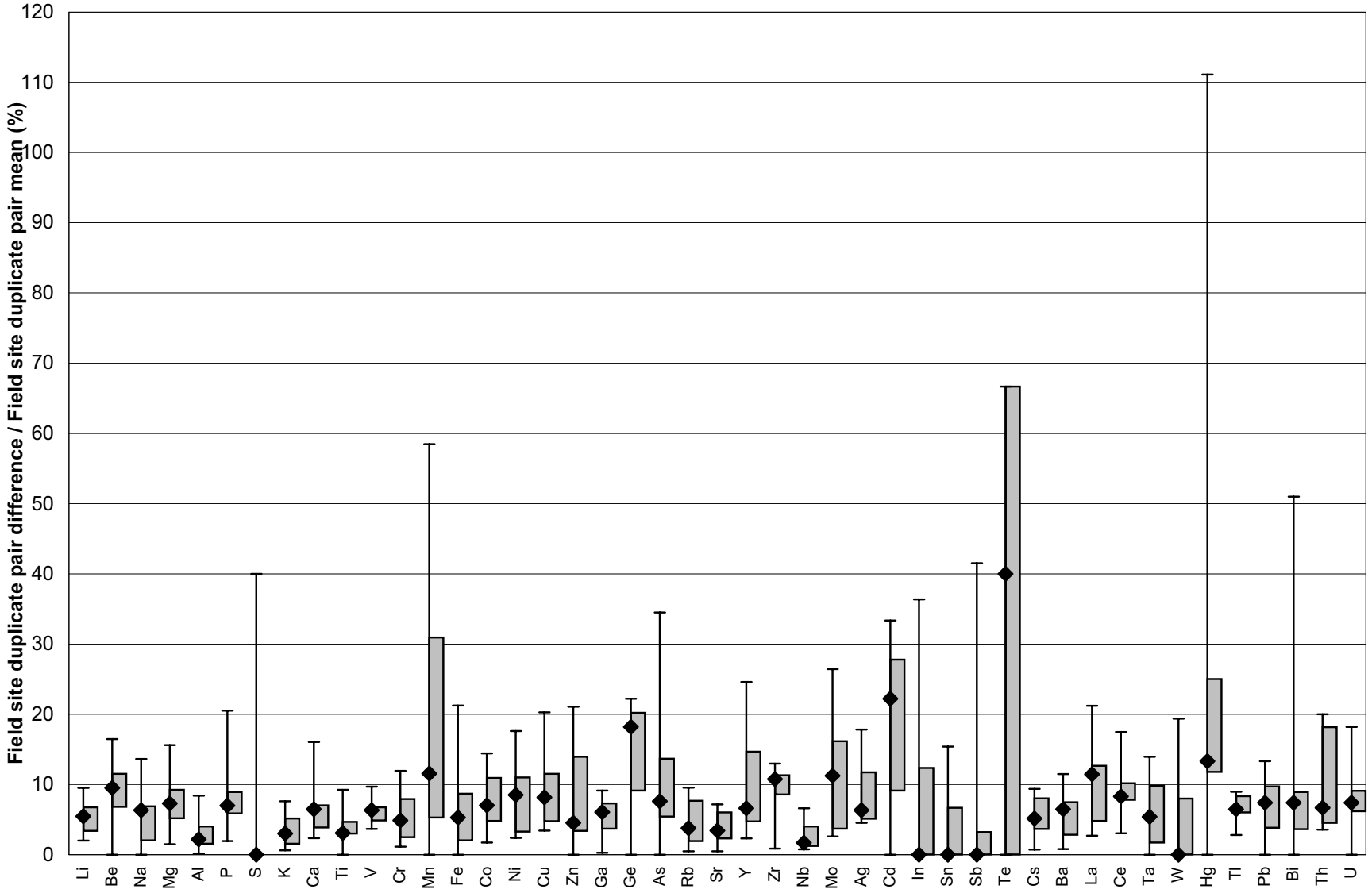

Figure 19. Box and whisker plot showing analytical results by four-acid ICP-AES/MS and CVAA for B-horizon soil field site duplicate pairs. Diamond = median; box = interquartile range; whiskers (vertical lines) = range.

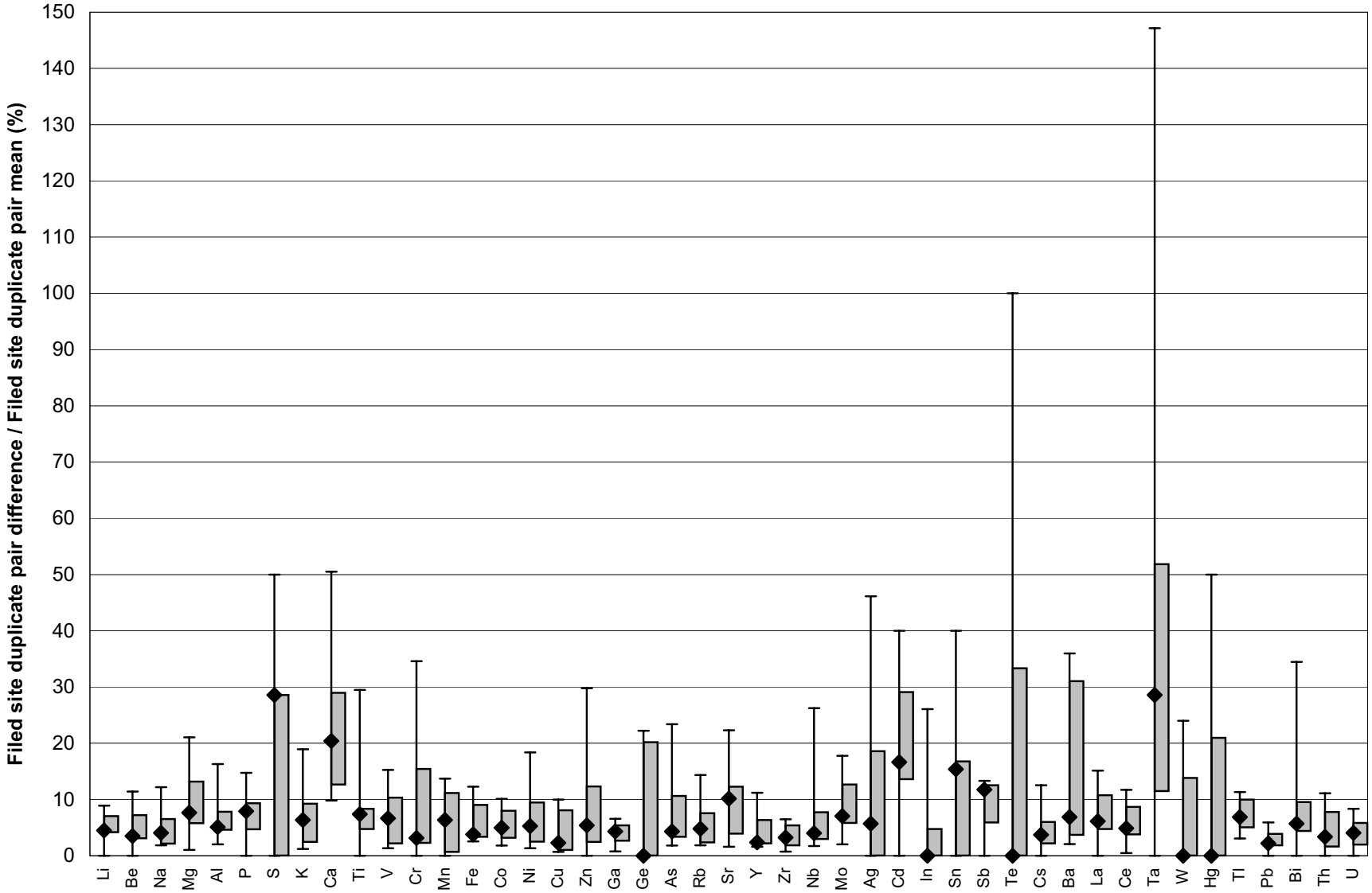

Figure 20. Box and whisker plot showing analytical results by four-acid ICP-AES/MS and CVAA for C-horizon soil field site duplicate pairs. Diamond = median; box = interquartile range; whiskers (vertical lines) = range.

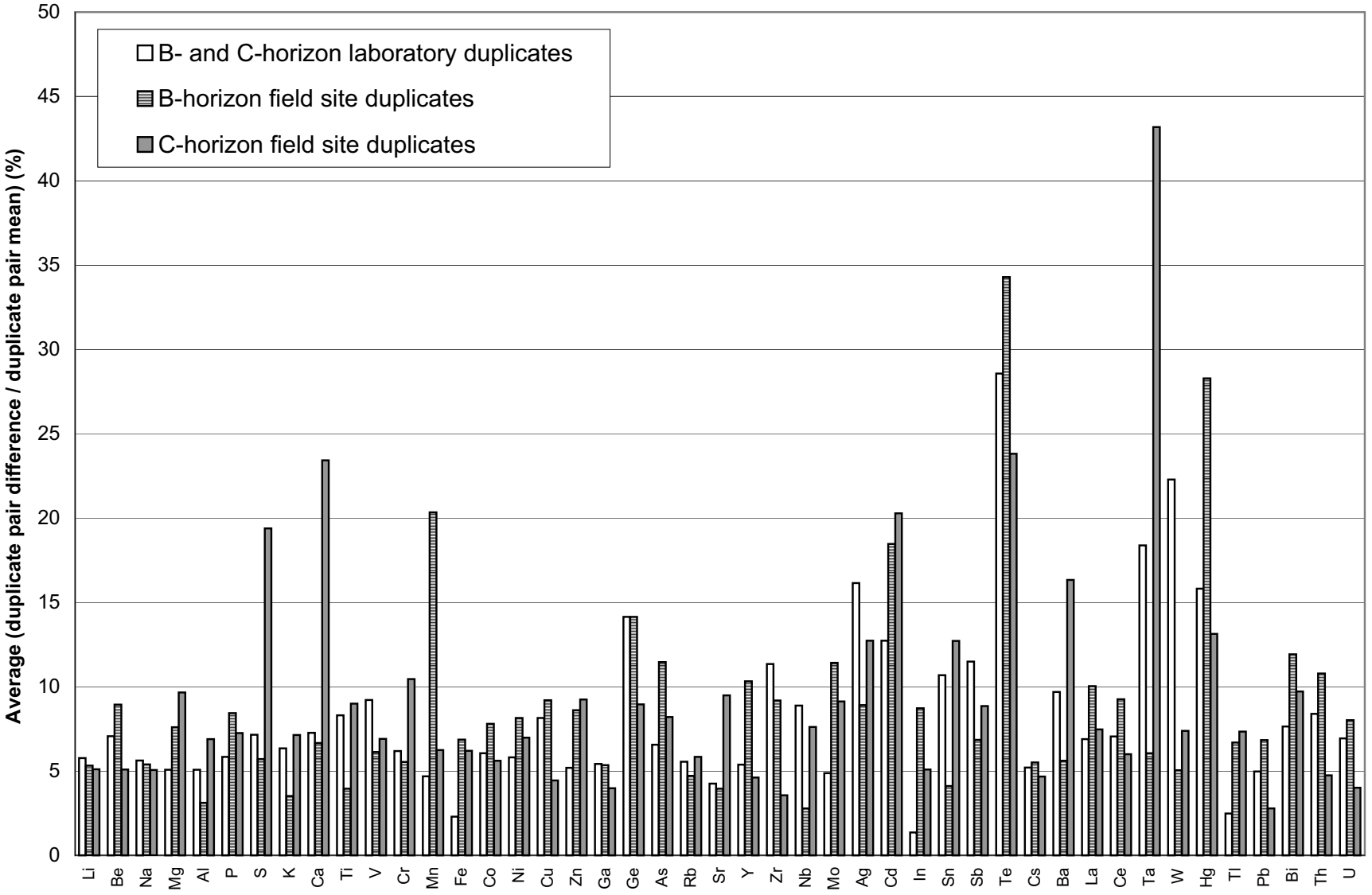

Figure 21. Histogram showing average values of analytical variability, B-horizon field site variability and C-horizon field site variability based on four-acid ICP-AES/MS and CVAA analyses (variability expressed as the duplicate pair difference/duplicate pair mean).

7.4 B- and C-Horizon Survey Variability Compared to Field Site Variability: Four-Acid ICP-AES/MS and CVAA Analyses

The relationship between field site variability and survey variability for the four-acid ICP-AES/MS and CVAA analyses is presented in Figure 22. This histogram displays the ratios of survey range/maximum site difference for elements in B- and C-horizon soil samples. Higher ratios indicate greater potentials to detect real geochemical differences between sampling sites. Values of two or less for an element indicate that within site differences may account for up to half of the entire analytical range for the survey. Values of greater than four indicate that maximum within site differences account for less than 25% of the entire survey range.

8 B- and C-Horizon Analytical Data: Instrumental Neutron Activation Analyses

8.1 B- and C-Horizon Lower Detection Limits: INAA

Elements that returned values in B- and C-horizon soil samples below the lower analytical detection limit for INAA are listed in Table 9. All of the samples submitted for INAA contain Cd, Sn, Te and Ir contents below the lower detection limits for these elements. In addition, very significant proportions of the samples (from 33% to 91%) have Zn, Zr, Ag, W and Au contents below the lower detection limits for these elements.

Table 9. Elements for which INAA returned values below lower detection limits in B- and C-horizon soil samples.

	Zn (ppm)	Zr (ppm)	Mo (ppm)	Ag (ppm)	Cd (ppm)	Sn (ppm)	Te (ppm)	Eu (ppm)	Tb (ppm)	W (ppm)	Ir (ppb)	Au (ppb)
LDL[1]	100	200	1	2	5	100	10	1	0.5	1	50	2
Number of samples	80	80	80	80	80	80	80	80	80	80	80	80
Values < LDL	41	32	8	73	80	80	80	3	2	39	80	26
Percentage < LDL	51	40	10	91	100	100	100	4	3	49	100	33

[1] Lower detection limit by INAA.

8.2 B- and C-Horizon Laboratory Duplicate Pairs: INAA

The batch of B- and C-horizon soil samples from K4B submitted for INAA at Becquerel included seven duplicate pairs consisting of five laboratory sample splits and two sample pairs of AGS till standard NAT98-282. Analytical results for these duplicate pairs are shown in Figure 23 in which the vertical axis (duplicate pair difference/duplicate pair mean) represents a measure of variability. For most elements, the duplicate pair differences are generally less than 10% of the duplicate pair means. The analytical reproducibilities of Zn, Zr, Mo, Eu, W and Au within this sample batch are poor with all of these elements having third quartile duplicate pair difference/duplicate pair mean ratios exceeding 50%.

8.3 B- and C-Horizon Field Site Duplicate Pairs: INAA

Seven field site pairs of both B- and C-horizon soil samples were collected during the K4B soil survey. For each of these pairs the second sample was collected from similar material, at a similar depth interval, from 0.5 to 4 m away from the first sample. By comparing analytical results for these pairs of samples, a measure of geochemical variability at the scale of individual sample sites (a few square metres in this case) can be obtained, which is herein referred to as field site variability. Note that field site variability includes components of sample collection variability, sample preparation variability and analytical variability. The results, shown in Figures 24 and 25, indicate that field site variabilities (expressed as

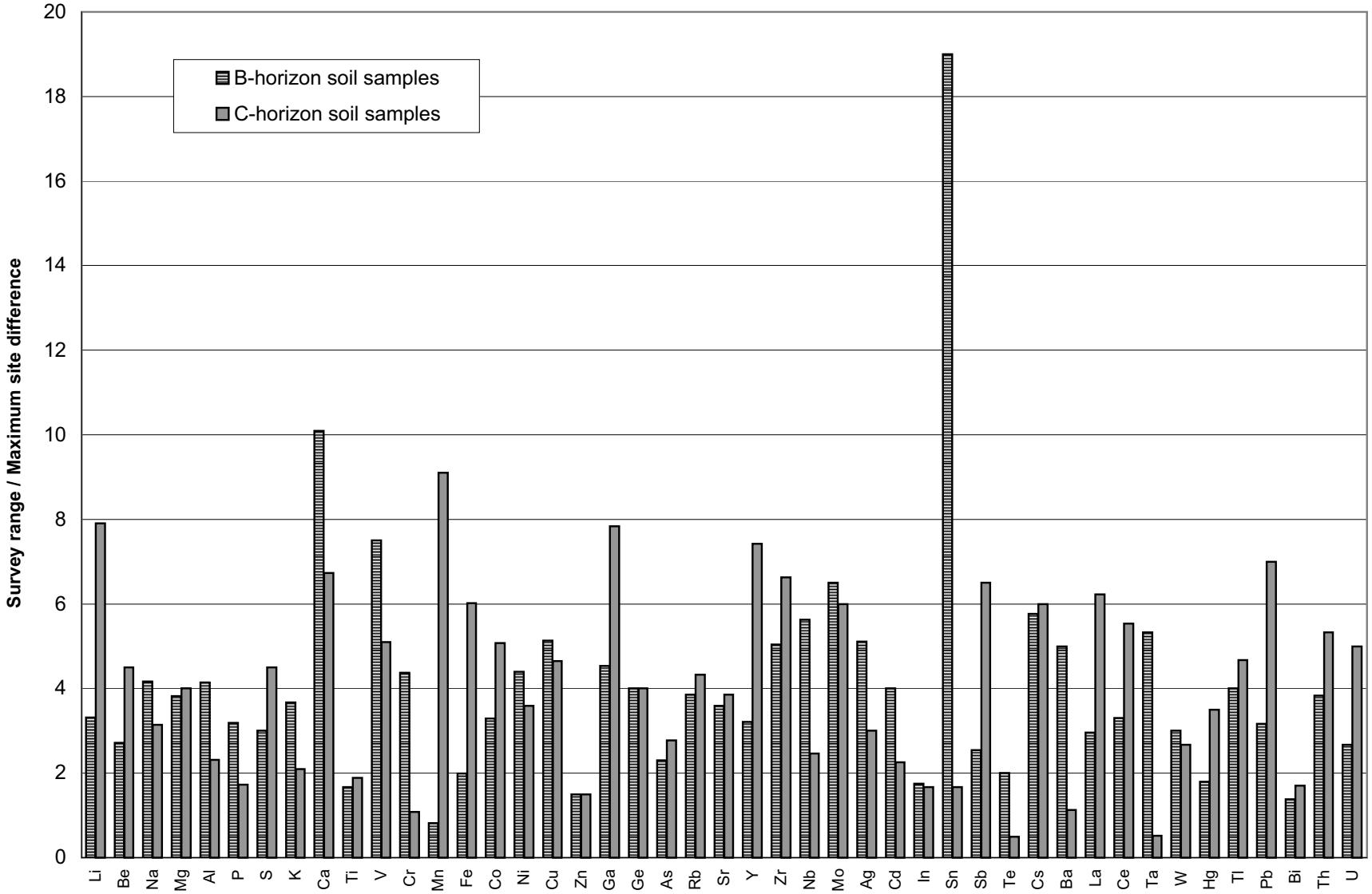

Figure 22. Histogram showing survey range/maximum site difference ratios based on four-acid ICP-AES/MS and CVAA analyses.

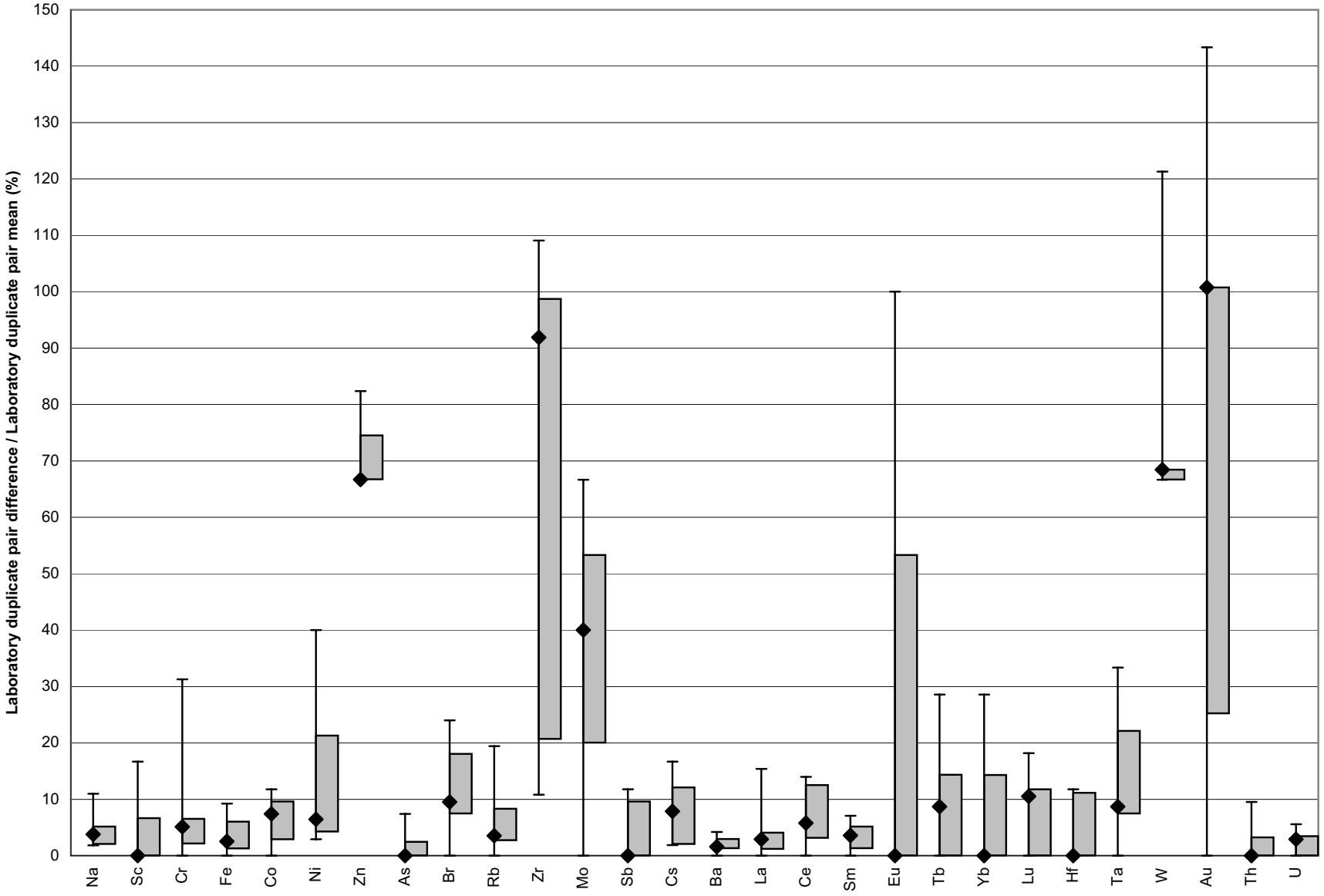

Figure 23. Box and whisker plot showing analytical results by INAA for laboratory duplicate pairs. Diamond = median; box = interquartile range; whiskers (vertical lines) = range.

the duplicate pair difference/duplicate pair mean) for both B- and C-horizon soils in the K4B area are generally less than 10% for most elements determined by INAA. In both B- and C-horizon soils, Zn, Zr, Mo, Eu, W and Au exhibit relatively high field site variabilities. Comparison to Figure 23 indicates that most of the variability shown by these elements is due to analytical variability.

To determine the influence of analytical variability on the variability in the field site duplicate pair results, a summary of the data from laboratory duplicate and field site duplicate B- and C-horizon soil samples is presented as a histogram in Figure 26. Based upon the INAA data presented in Figure 26, the following observations may be made regarding elements exhibiting relatively high sample pair variability (note that these results are based on relatively small duplicate pair datasets consisting of seven pairs of laboratory duplicates, seven pairs of B-horizon duplicates and seven pairs of C-horizon duplicates).

- Zn, Zr, Mo, Eu, W and Au: Analytical variability accounts for most of the field site variability in both B- and C-horizon soil samples.

8.4 B- and C-Horizon Survey Variability Compared to Field Site Variability: INAA

The relationship between field site variability and survey variability for INAA is presented in Figure 27. This histogram displays the ratios of survey range/maximum site difference for elements in B- and C-horizon soil samples. Higher ratios indicate greater potentials to detect real geochemical differences between sampling sites. Values of two or less for an element indicate that within site differences may account for up to half of the entire analytical range for the survey. Values of greater than four indicate that maximum within site differences account for less than 25% of the entire survey range.

9 Road Dust Analytical Data

One representative sample of road dust was collected during the 2001 program (field sample number 1335, laboratory sample number 2001G 156). The analytical results for this sample, which include determinations by aqua regia ICP-AES/MS, four-acid ICP-AES/MS, CVAA and INAA, are listed in Appendix 3.

10 Mineral Soil Texture

The results of the mineral soil (B- and C-horizon) texture analyses, performed at the AGS laboratory, are listed in Appendix 3 and summarized in Table 10. The general enrichment of clay in the B-horizon relative to the C-horizon is illustrated in Figure 28. This increase of clay in the B-horizon, combined with field observations, suggests that samples collected in the K4B area are of Luvisolic soil. This interpretation is in agreement with the soil landscape map of Alberta (Shields, J.A. and Lindsay, J.D., 1986).

Table 10. Median values of mineral soil texture analyses.

	Sand (%)	Silt (%)	Clay (%)
B-horizon median (41 samples)	31.1	27.1	41.6
C-horizon median (39 samples)	32.1	30.0	37.8

Note: Size fractions are 63 microns to 1 mm (sand), 4 to 63 microns (silt) and <4 microns (clay).

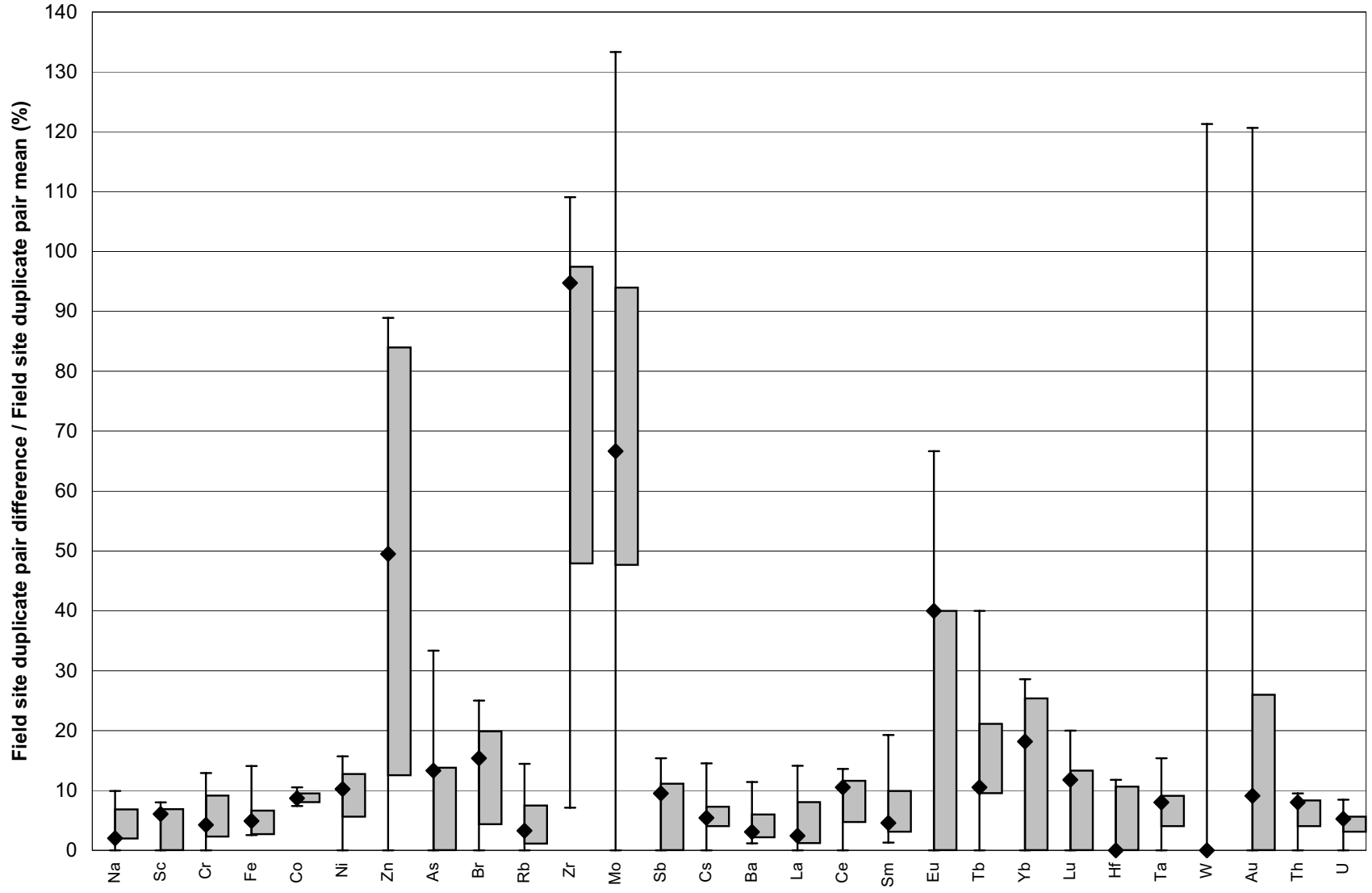

Figure 24. Box and whisker plot showing analytical results by INAA for B-horizon soil field site duplicate pairs. Diamond = median; box = interquartile range; whiskers (vertical lines) = range.

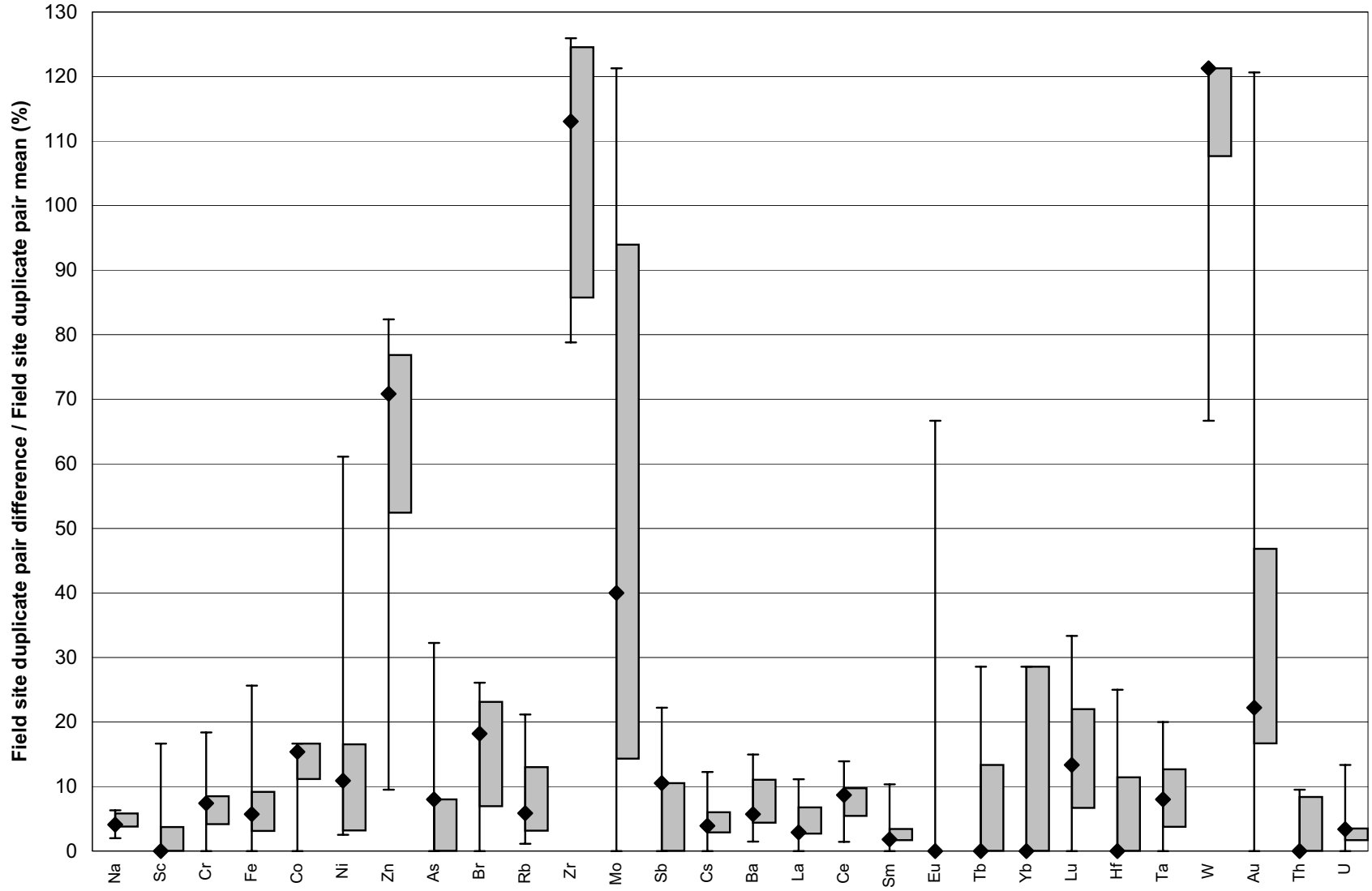

Figure 25. Box and whisker plot showing analytical results by INAA for C-horizon soil field site duplicate pairs. Diamond = median; box = interquartile range; whiskers (vertical lines) = range.

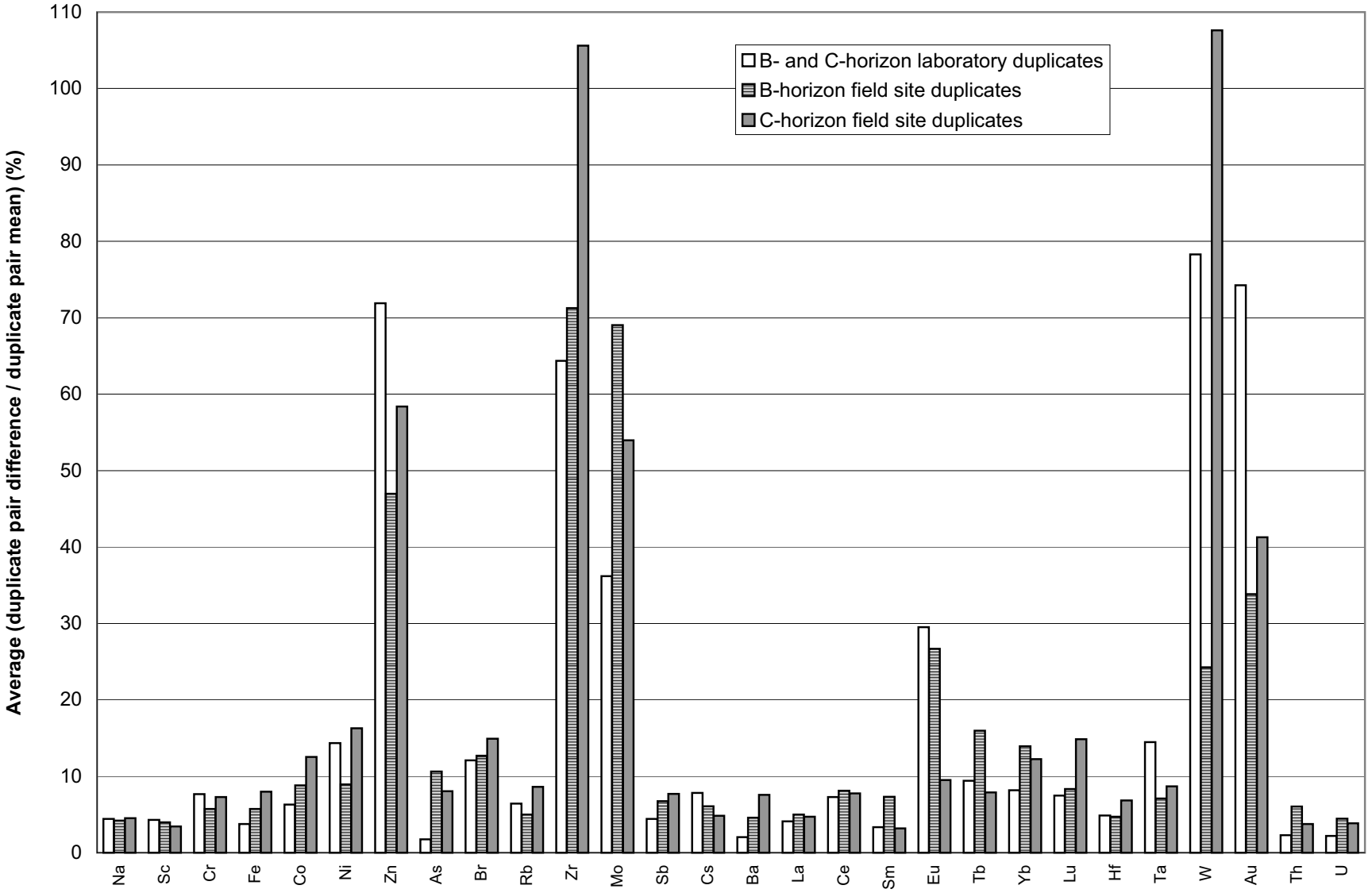

Figure 26. Histogram showing average values of analytical variability, B-horizon field site variability and C-horizon field site variability based on INAA (variability expressed as the duplicate pair difference/duplicate pair mean).

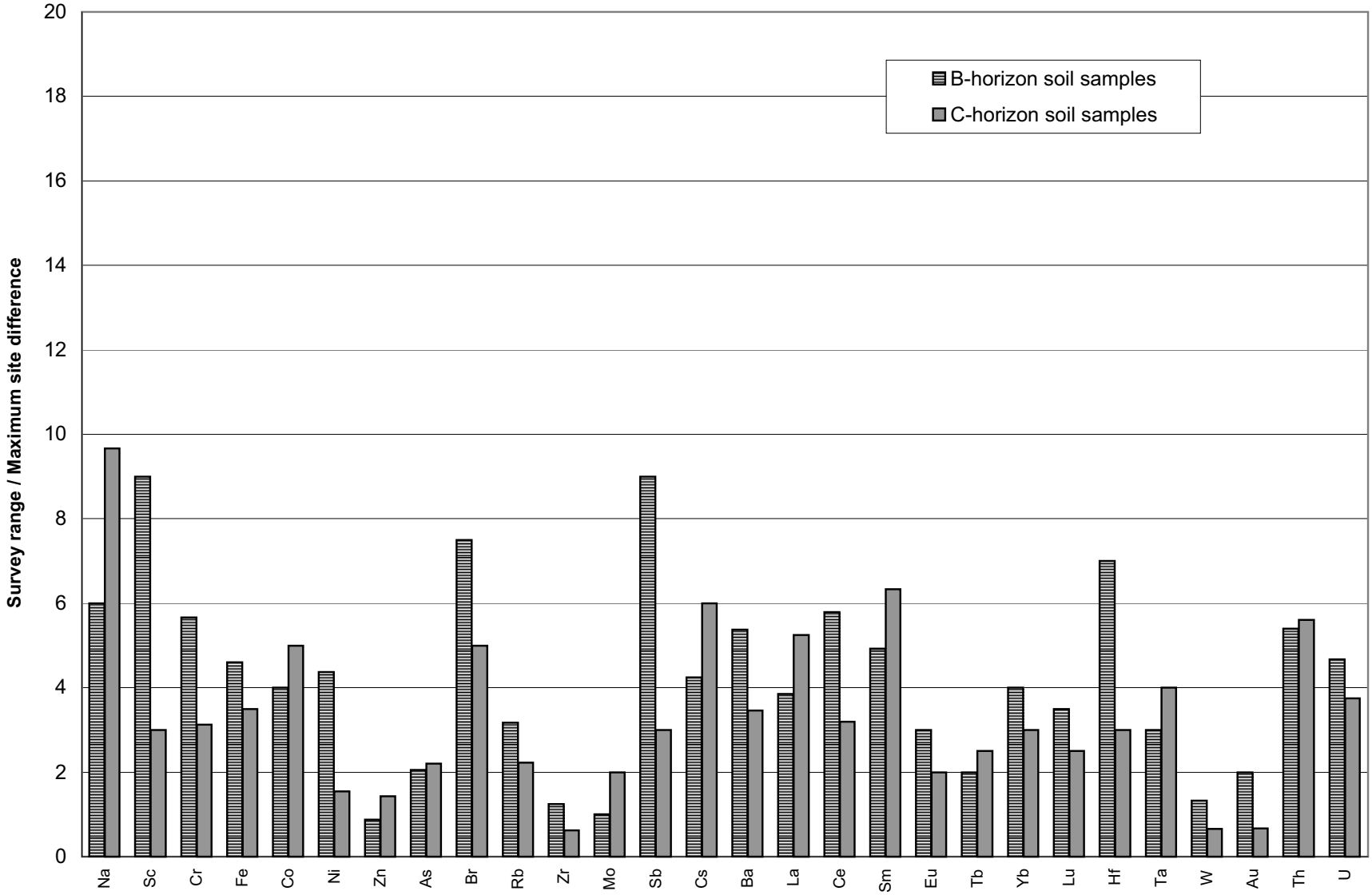

Figure 27. Histogram showing survey range/maximum site pair difference based on INAA.

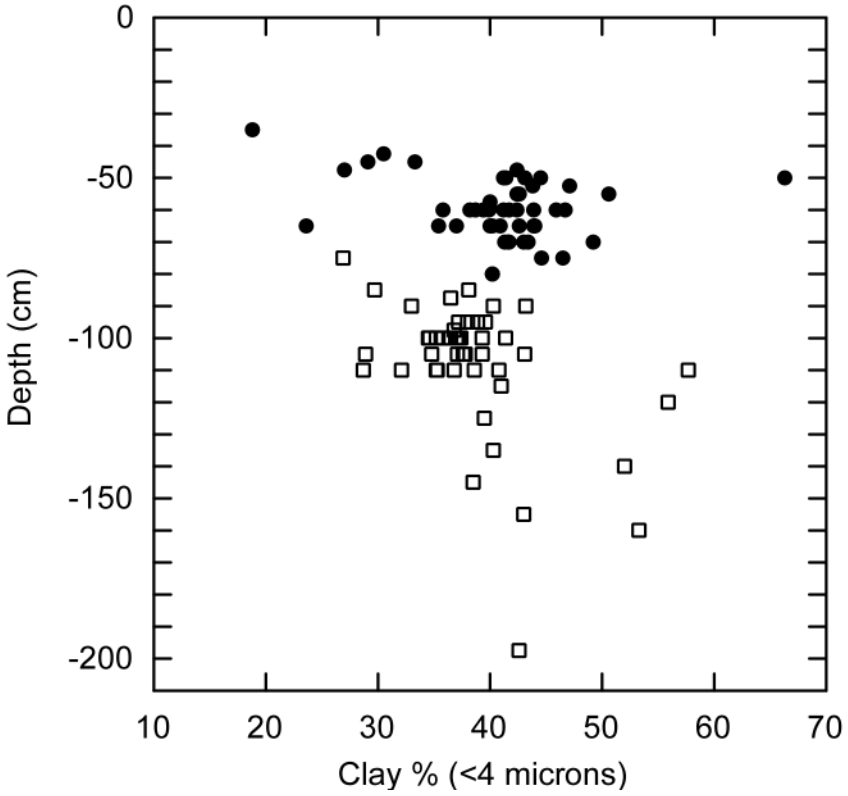

Figure 28. Percentage of clay in the <1 mm fraction of 41 B-horizon (filled circles) and 39 C-horizon (open squares) soil samples from 42 sites in the K4B area.

11 Spatial Distribution of Elements

11.1 Vertical Distribution of Elements: Comparison Between Organic Soil, B- and C-Horizon Soil Samples

During the 2001 soil-sampling program over the K4B kimberlite, samples were collected at 42 sites. At most sites samples of organic soil, B-horizon soil and C-horizon soil were collected. The organic soil dataset consists of 42 samples (excluding duplicates) from an average depth of 7 cm below surface. The B-horizon dataset consists of 41 samples (excluding duplicates) from an average depth of 60 cm below surface. The C-horizon dataset consists of 39 samples (excluding duplicates) from an average depth of 110 cm below surface. Diagrams illustrating relative abundances of elements in B- and C-horizon soil samples from the K4B area are shown in Figure 29 for aqua regia ICP-AES/MS analyses, in Figure 30 for four-acid ICP-AES/MS and CVAA analyses and in Figure 31 for INAA. The information contained within these figures is summarized in Appendix 6.

The total and near-total element concentrations, determined by INAA and/or four-acid ICP-AES/MS, indicate B-horizon depletion of Mg, P, S, Ca, Mn, Co, Br, Sr and Cd, coupled with B-horizon enrichment of Cr, Rb, Y, Zr, Ag and Sn. Aqua regia extractable results indicate B, Na, Mg, P, Ca, Mn, Co, Sr, Ag, Cd and Ba values are generally lower and Li, Be, Al, Sc, Ti, V, Cr, Fe, Ga, Se, Rb, Y, Nb, In, Sn, Te, La, Eu, Yb, Th and U values are generally higher in B-horizon soil relative to C-horizon soil. Plots highlighting aqua regia extractable chemical contrasts between the B-horizon and the C-horizon soil samples are presented in Figure 32 (Al), Figure 33 (Ca), Figure 34 (Mg), Figure 35 (Fe), Figure 36 (P), Figure 37 (Cr), Figure 38 (Ni) and Figure 39 (Nb).

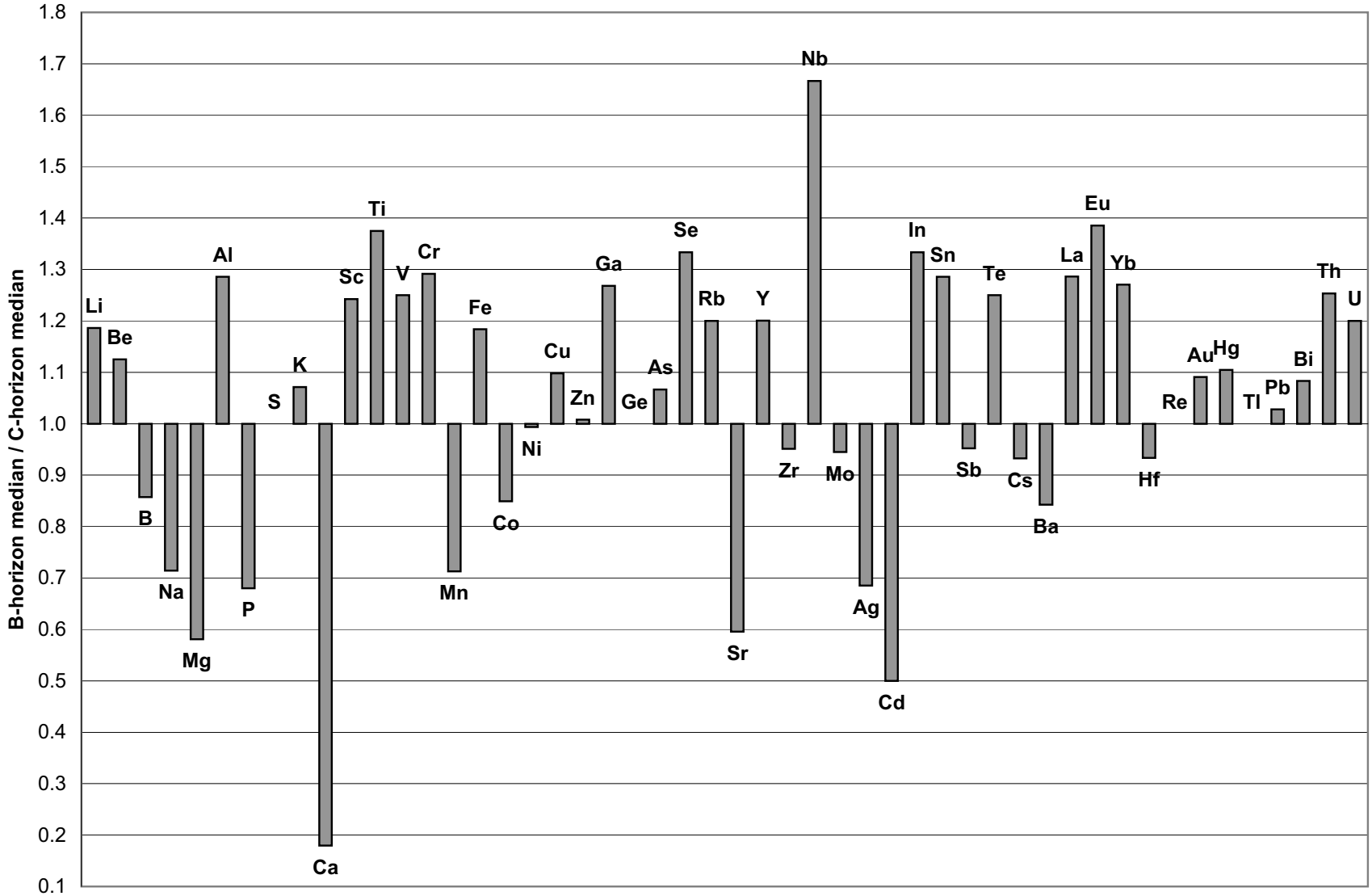

Figure 29. Histogram comparing median element abundances determined by aqua regia ICP-AES/MS in 41 B-horizon and 39 C-horizon soil samples from 42 sites in the K4B area.

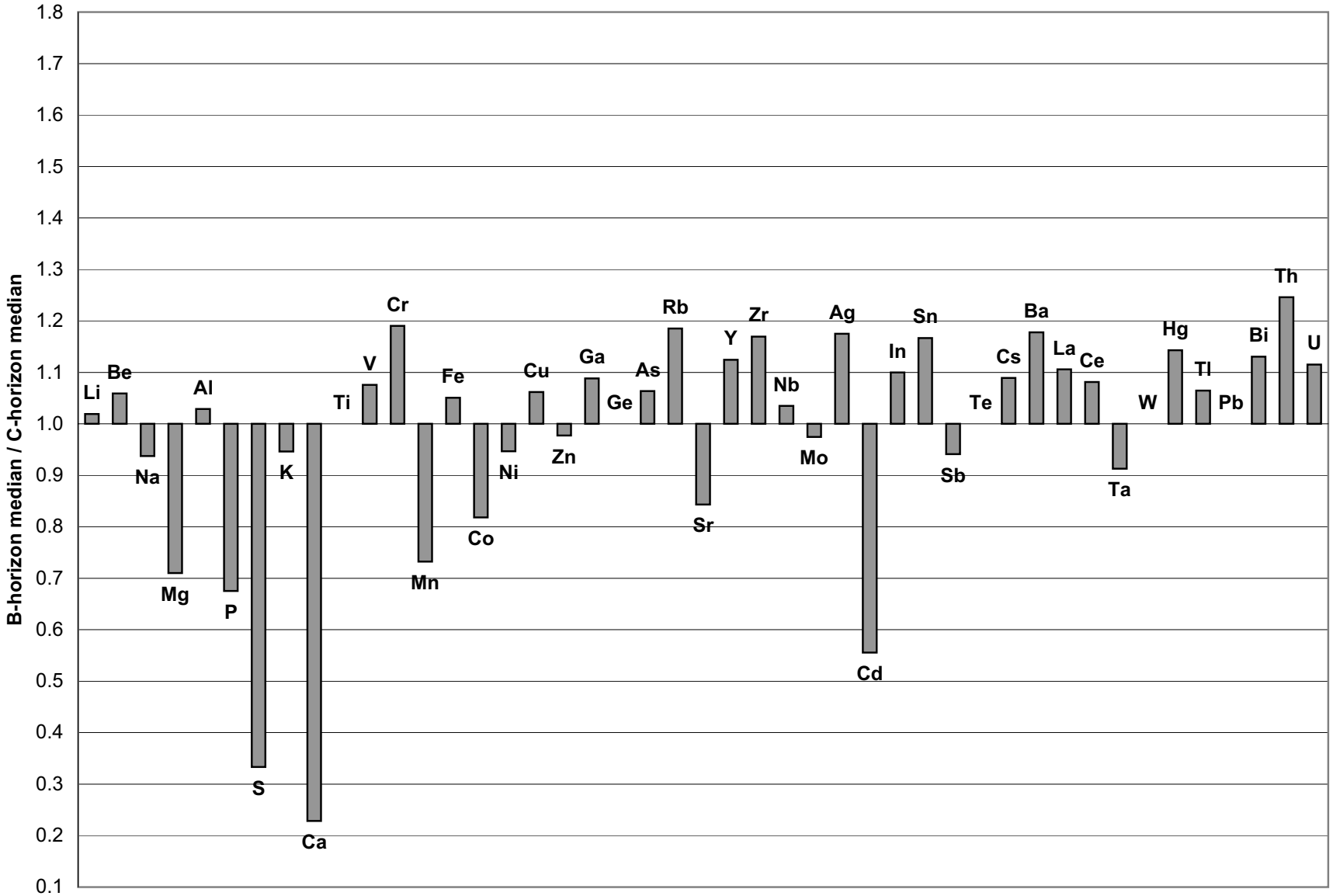

Figure 30. Histogram comparing median element abundances determined by four-acid ICP-AES/MS and CVAA (for Hg determinations) in 41 B-horizon and 39 C-horizon soil samples from 42 sites in the K4B area.

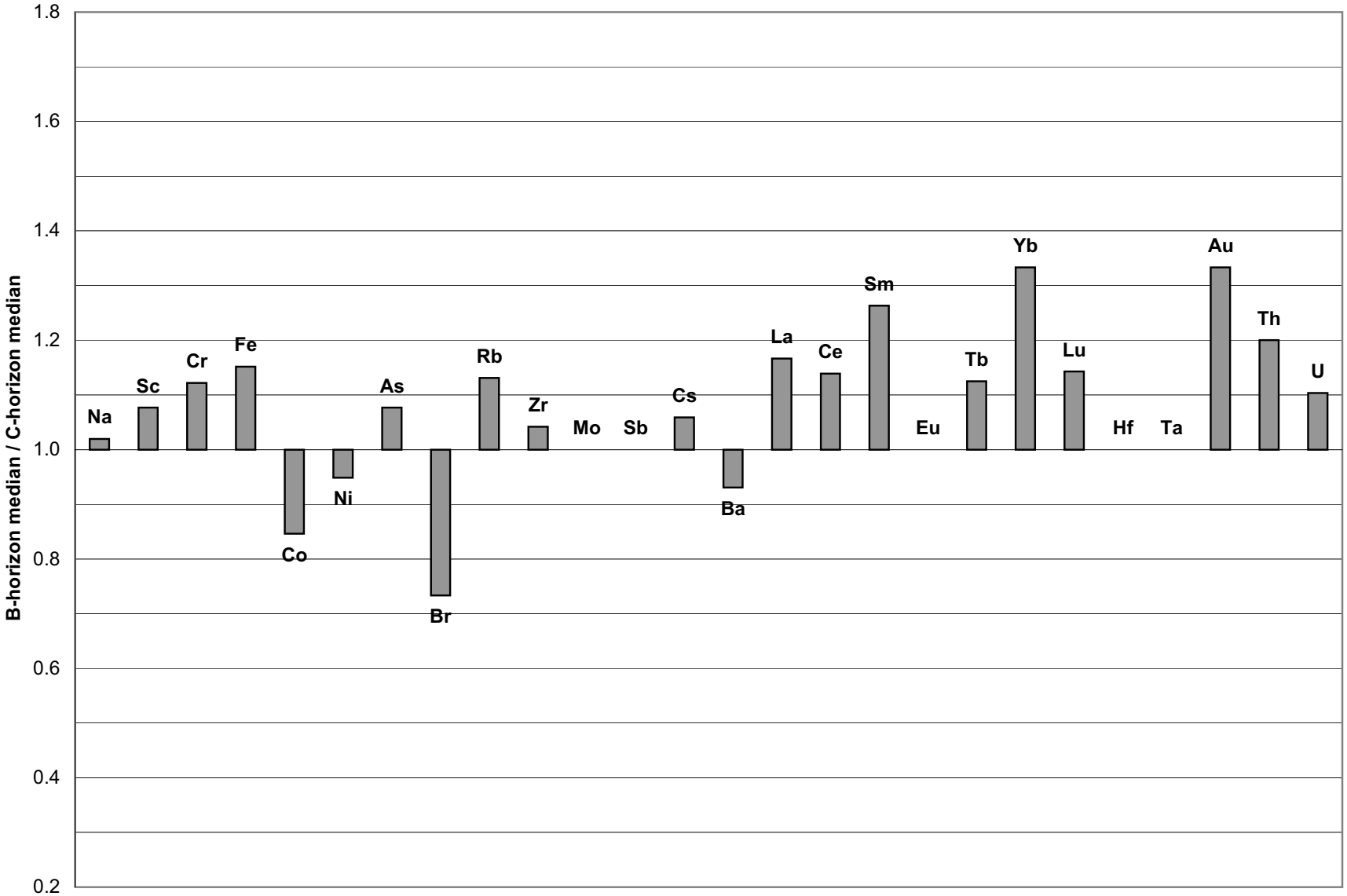

Figure 31. Histogram comparing median element abundances determined by INAA in 41 B-horizon and 39 C-horizon soil samples from 42 sites in the K4B area.

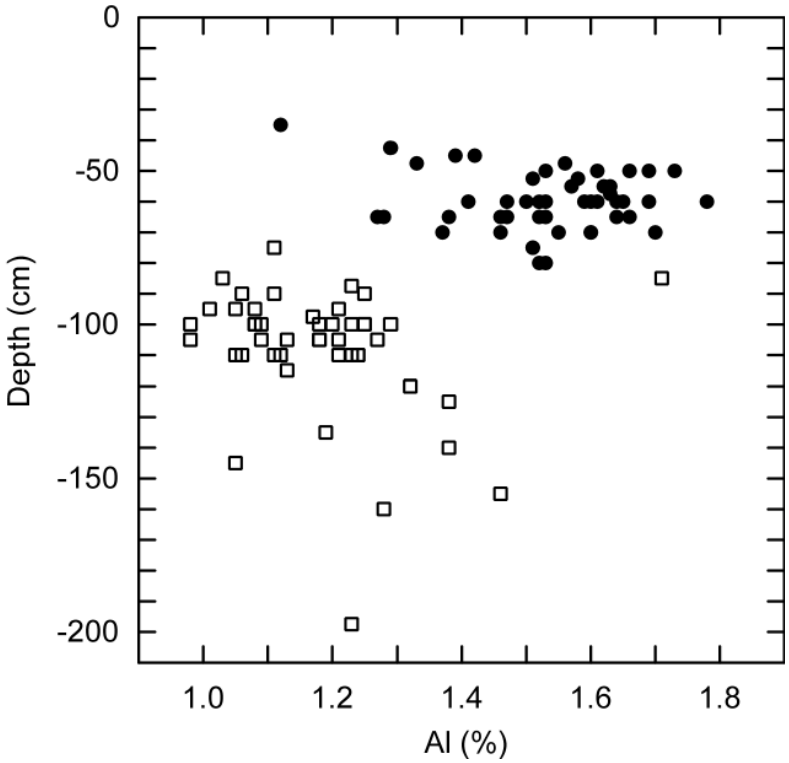

Figure 32. Distribution of aqua regia extractable Al in 41 B-horizon (filled circles) and 39 C-horizon (open squares) soil samples from 42 sites in the K4B area.

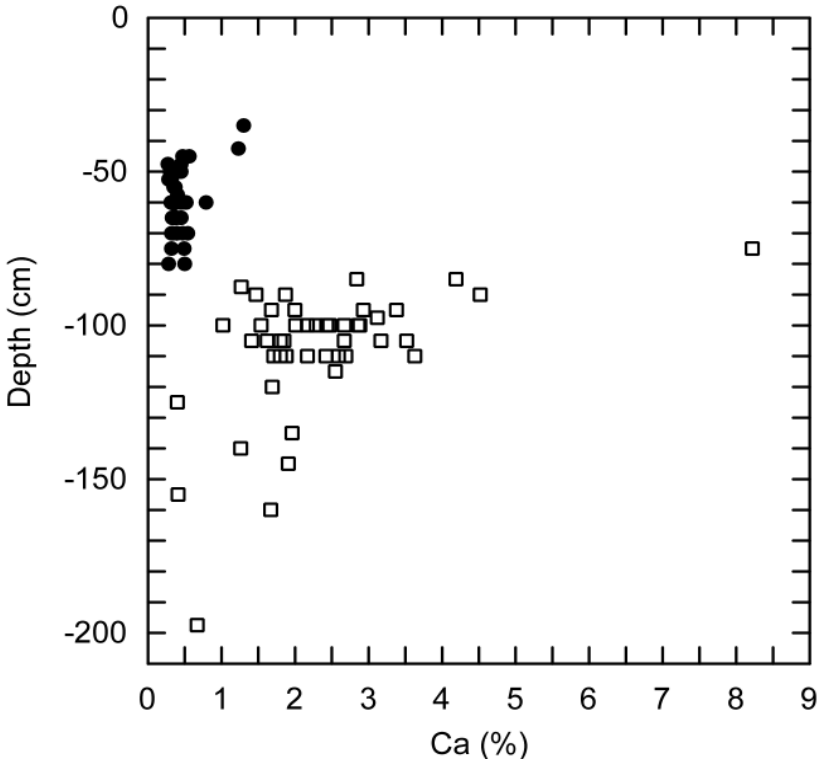

Figure 33. Distribution of aqua regia extractable Ca in 41 B-horizon (filled circles) and 39 C-horizon (open squares) soil samples from 42 sites in the K4B area.

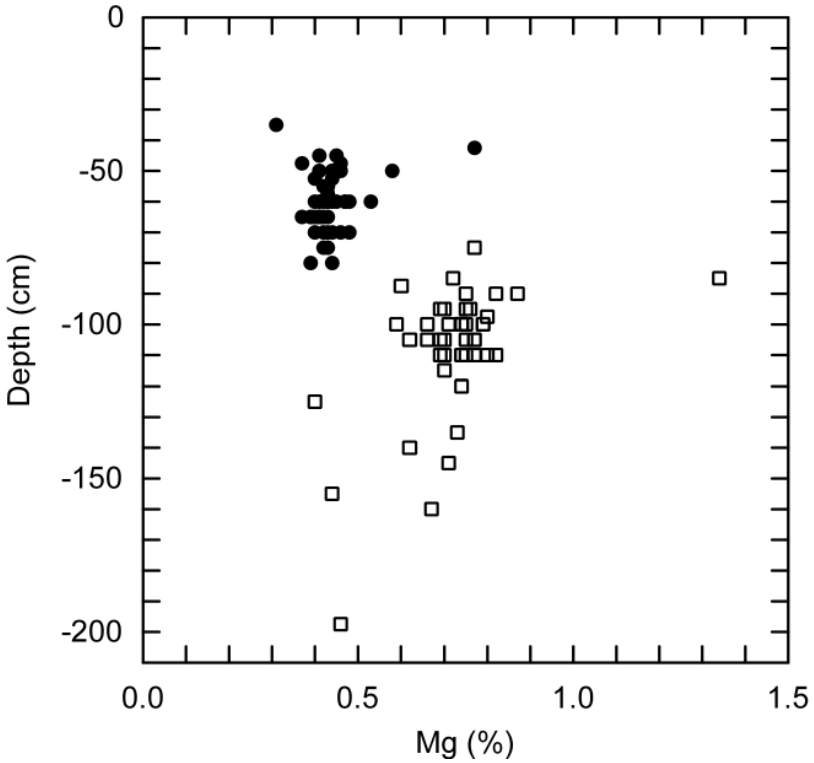

Figure 34. Distribution of aqua regia extractable Mg in 41 B-horizon (filled circles) and 39 C-horizon (open squares) soil samples from 42 sites in the K4B area.

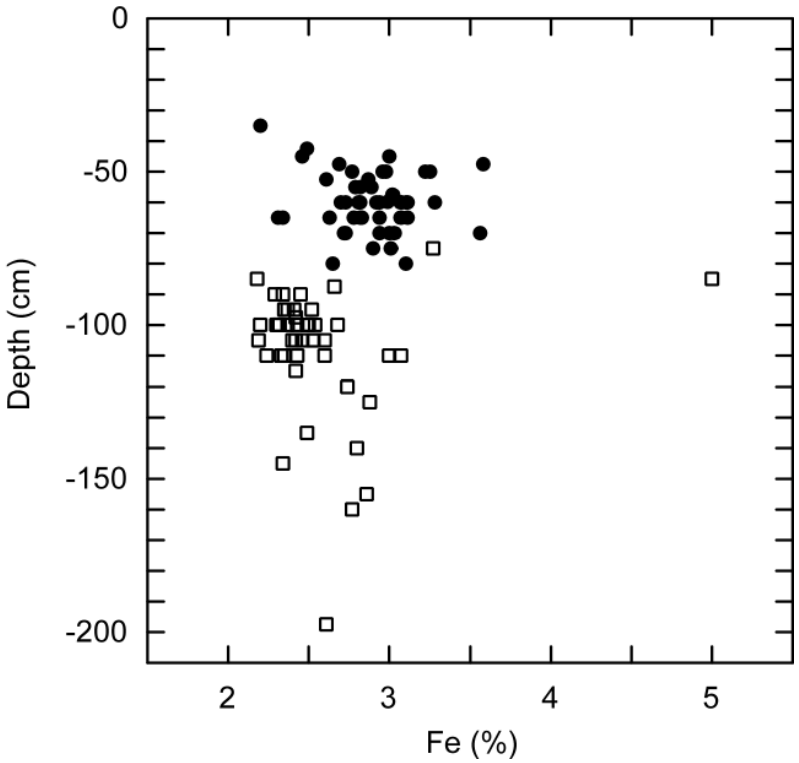

Figure 35. Distribution of aqua regia extractable Fe in 41 B-horizon (filled circles) and 39 C-horizon (open squares) soil samples from 42 sites in the K4B area.

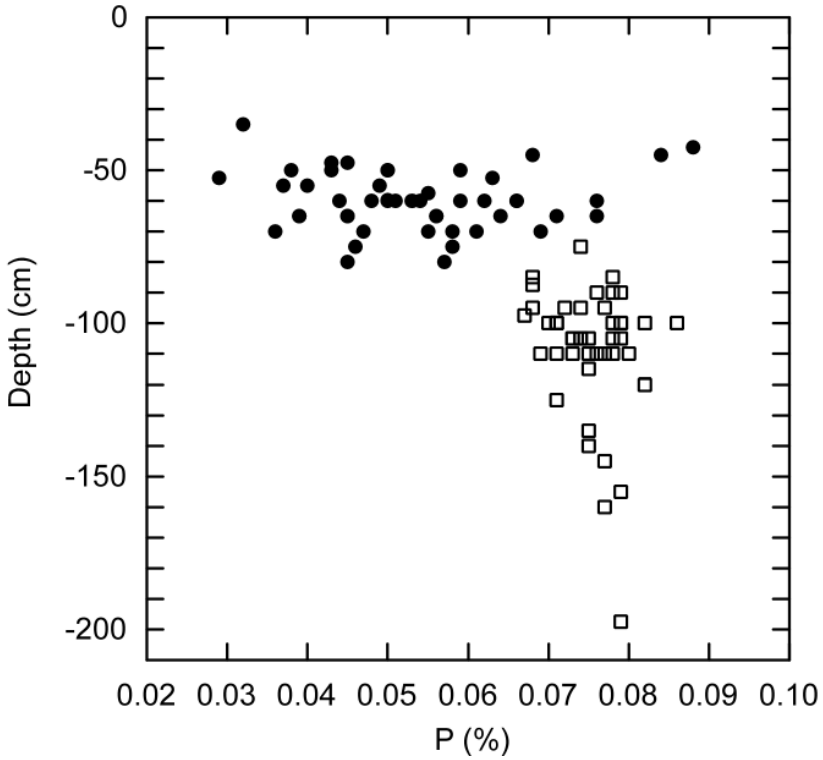

Figure 36. Distribution of aqua regia extractable P in 41 B-horizon (filled circles) and 39 C-horizon (open squares) soil samples from 42 sites in the K4B area.

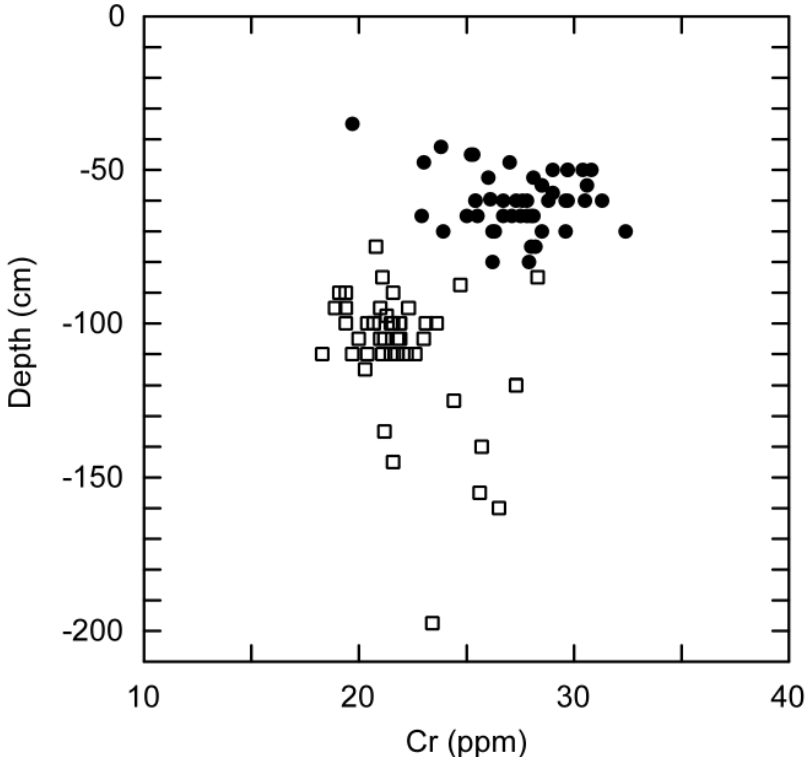

Figure 37. Distribution of aqua regia extractable Cr in 41 B-horizon (filled circles) and 39 C-horizon (open squares) soil samples from 42 sites in the K4B area.

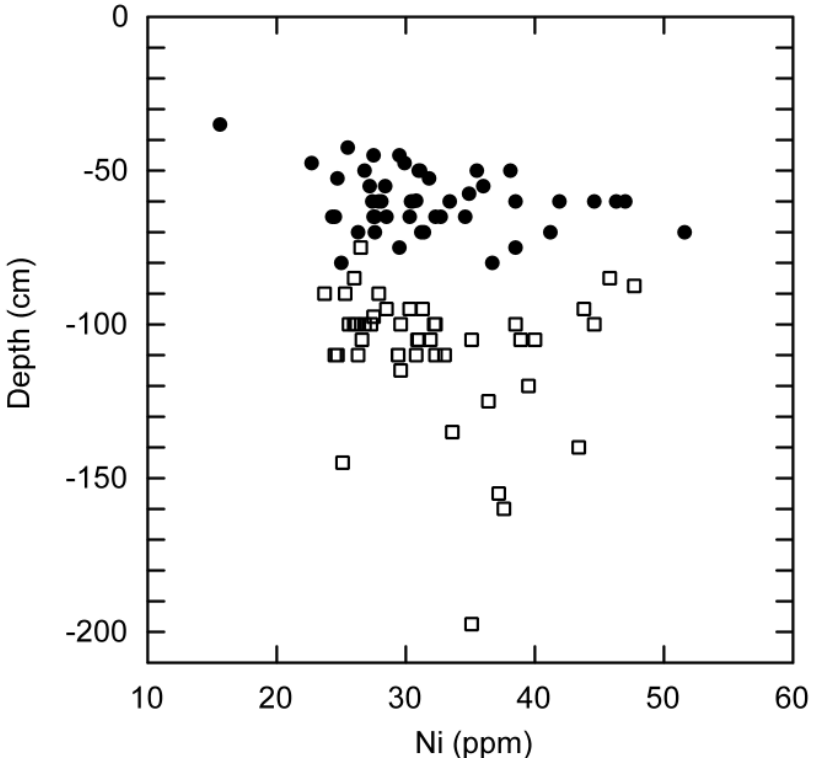

Figure 38. Distribution of aqua regia extractable Ni in 41 B-horizon (filled circles) and 39 C-horizon (open squares) soil samples from 42 sites in the K4B area.

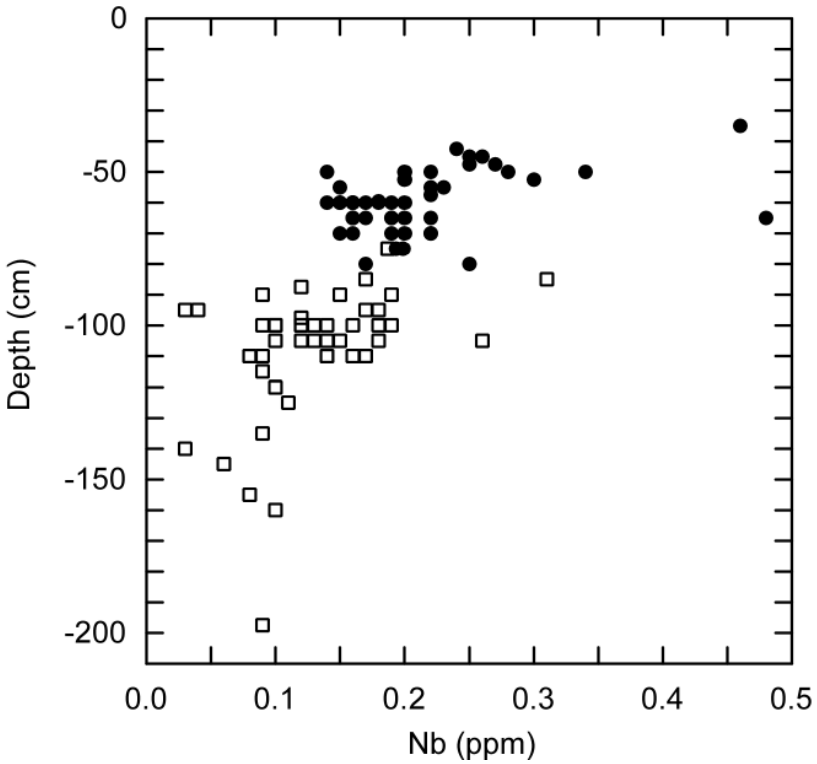

Figure 39. Distribution of aqua regia extractable Nb in 41 B-horizon (filled circles) and 39 C-horizon (open squares) soil samples from 42 sites in the K4B area.

Downward transport due to groundwater percolation (eluviation) from the organic soil and the A-horizon is likely the primary mechanism that has resulted in the enrichment of certain elements in the B-horizon compared to the C-horizon (e.g., aqua regia extractable Al, Fe and Nb). The enrichment in aqua regia extractable Al is consistent with the increase of clay in the B-horizon relative to the C-horizon (Figure 28). Removal of Ca and Sr +/- Mg from the B-horizon is almost certainly the result of downward chemical migration due to chemical weathering of soil carbonate. Chemical weathering is also the probable mechanism for removal of other elements from the B-horizon.

The results shown for Mg, P, Cr, Ni and Nb have implications for the use of soil geochemistry in diamond exploration as they are generally enriched in kimberlites and may serve as pathfinder elements. The concentrations of these elements, with the exception of Ni, in the mineral soil of the K4B area are strongly influenced by sample depth.

Aqua regia extractable results for most elements are lower in the organic soil samples than in the C-horizon soil samples (Figure 40). Exceptions are K, Ca, Co, Zn, Sr, Nb, Mo and Ba, for which the median values are similar, and B, P, S, Mn, Se, Ag, Cd and Hg, for which the median organic soil values exceed the median C-horizon values. Results for this last group of elements may reflect higher total values in the organic soil samples and/or greater proportional extraction of these elements by aqua regia from organic soils relative to mineral soils.

11.2 Plan Distribution of Selected Elements

Previous studies have demonstrated that geochemical surveying of till and soil may be applied to diamond (kimberlite) exploration with success (McClenaghan and Kjarsgaard, 2001; Seneshen et al., 2005). Kimberlite pathfinder elements in till may include Mg, Ni, Cr, Co, V, Mn, Fe, La, Ce, Nd, Sm, Nb, Ti, P, Ba, Ta, Hf, Zr and Sr (McClenaghan and Kjarsgaard, 2001 and references therein). The effectiveness of a particular element as a pathfinder will depend, in part, on the contrast between that element in kimberlite and that element in the hostrocks and up-ice country rocks from which the majority of the till is derived. The kimberlites' hostrocks and the country rocks in the Buffalo Head Hills consist largely of Cretaceous marine shale. Comparisons of average kimberlite composition (Mitchell, 1986) and average Buffalo Head Hills kimberlite composition (Eccles and Luth, 2003) to average shale composition (Krauskopf, 1979) indicate that Mg, Cr, Ni and Nb may provide the greatest anomaly contrasts in this geological setting.

11.2.1 Organic Soil

The field locations of organic soil samples (excluding duplicates), collected during the 2001 survey in the K4B kimberlite area, are shown in Figure 41. Samples with LOI values of less than 56%, which contain a significant component of mineral soil, are identified in Figure 41 (see also Section 5.6 and Figure 8). Maps showing the distribution of Mg, Cr, Ni and Nb are presented in Figures 42 to 45. The area of the K4B kimberlite does not stand out on any of these maps. Elevated values of these elements are commonly associated with organic soil samples containing relatively high mineral soil contents characterized by relatively low LOI values. It is likely that the mineral soil was added to the organic soil during sampling (sample collection variability).

Geochemical maps of Mg/Fe and Ni/V ratios are shown in Figures 46 and 47 (the rational for using ratios to represent the organic soil results is discussed earlier in this report). On these figures, samples collected from organic soil overlying the K4B kimberlite and its eastern flank are characterized by elevated Mg/Fe and Ni/V ratios. Interestingly, a plot of boron in organic soil shows a similar pattern (Figure 48). The samples with elevated Mg/Fe, Ni/V and B results occur in an area of mainly aspen forest with gentle

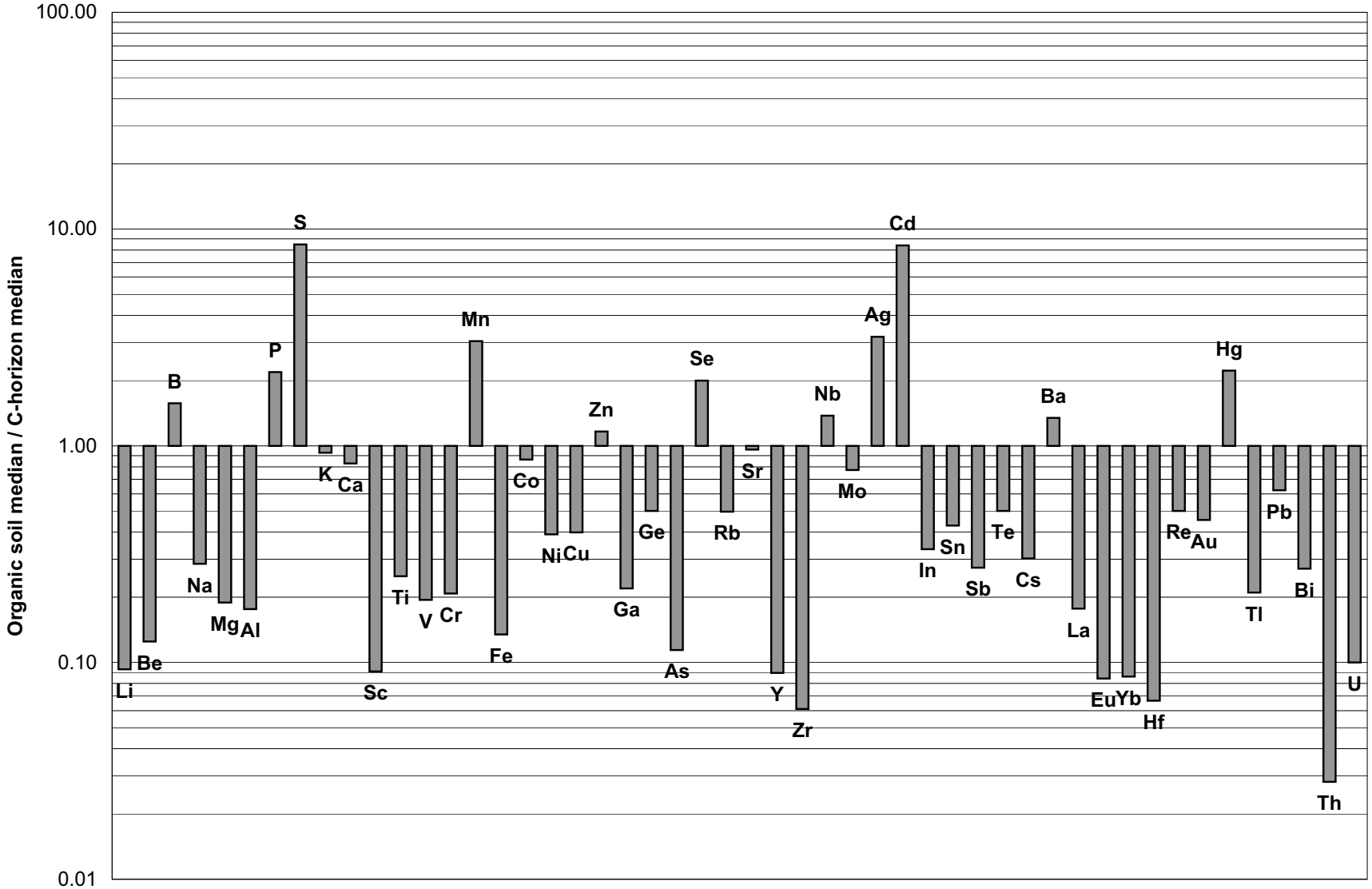

Figure 40. Histogram comparing median element abundances determined by aqua regia ICP-AES/MS in 42 organic and 39 C-horizon soil samples from 42 sites in the K4B area.

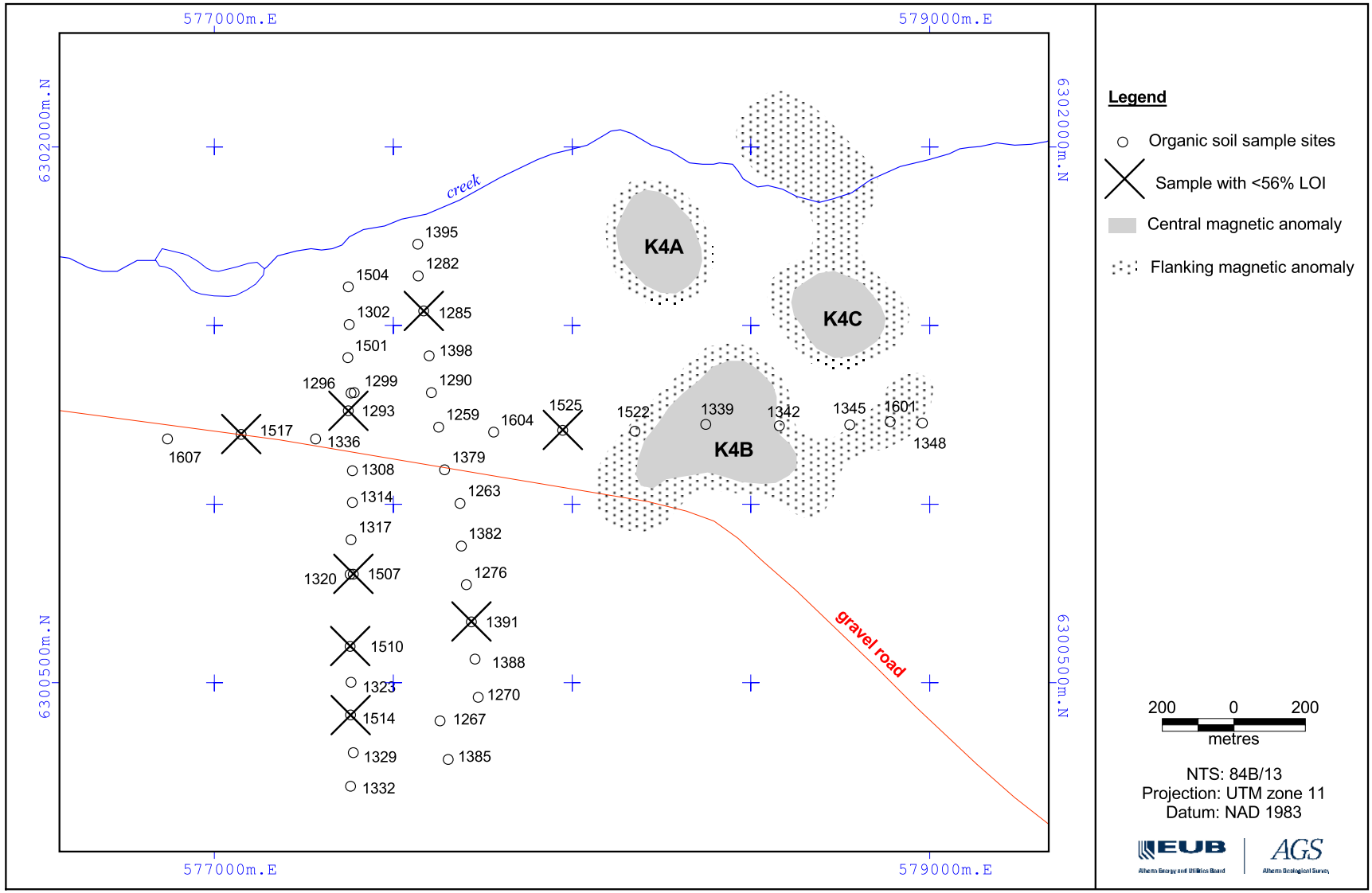

Figure 41. Organic soil sample sites.

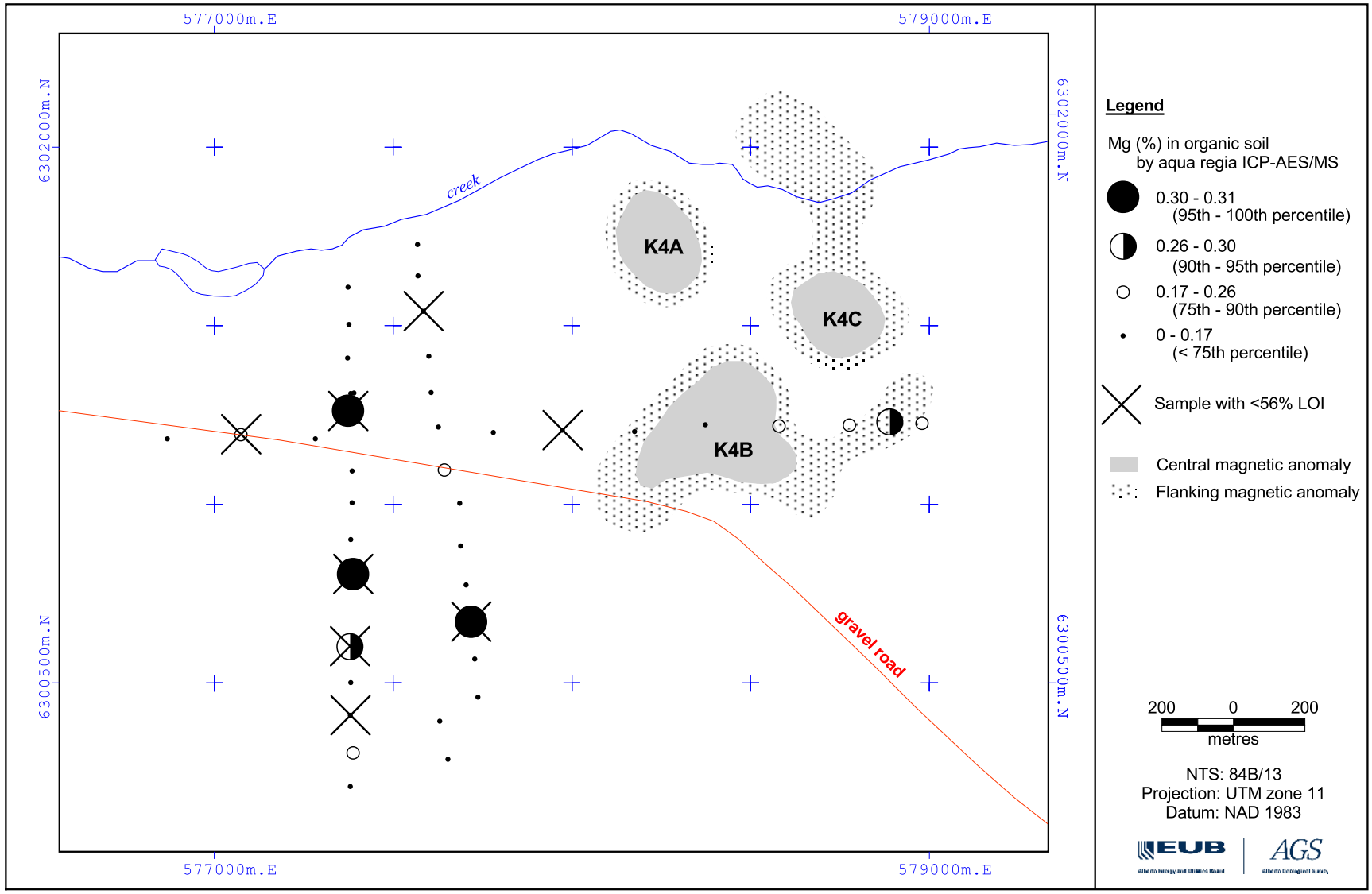

Figure 42. Mg (%) in organic soil, determined by aqua regia ICP-AES/MS.

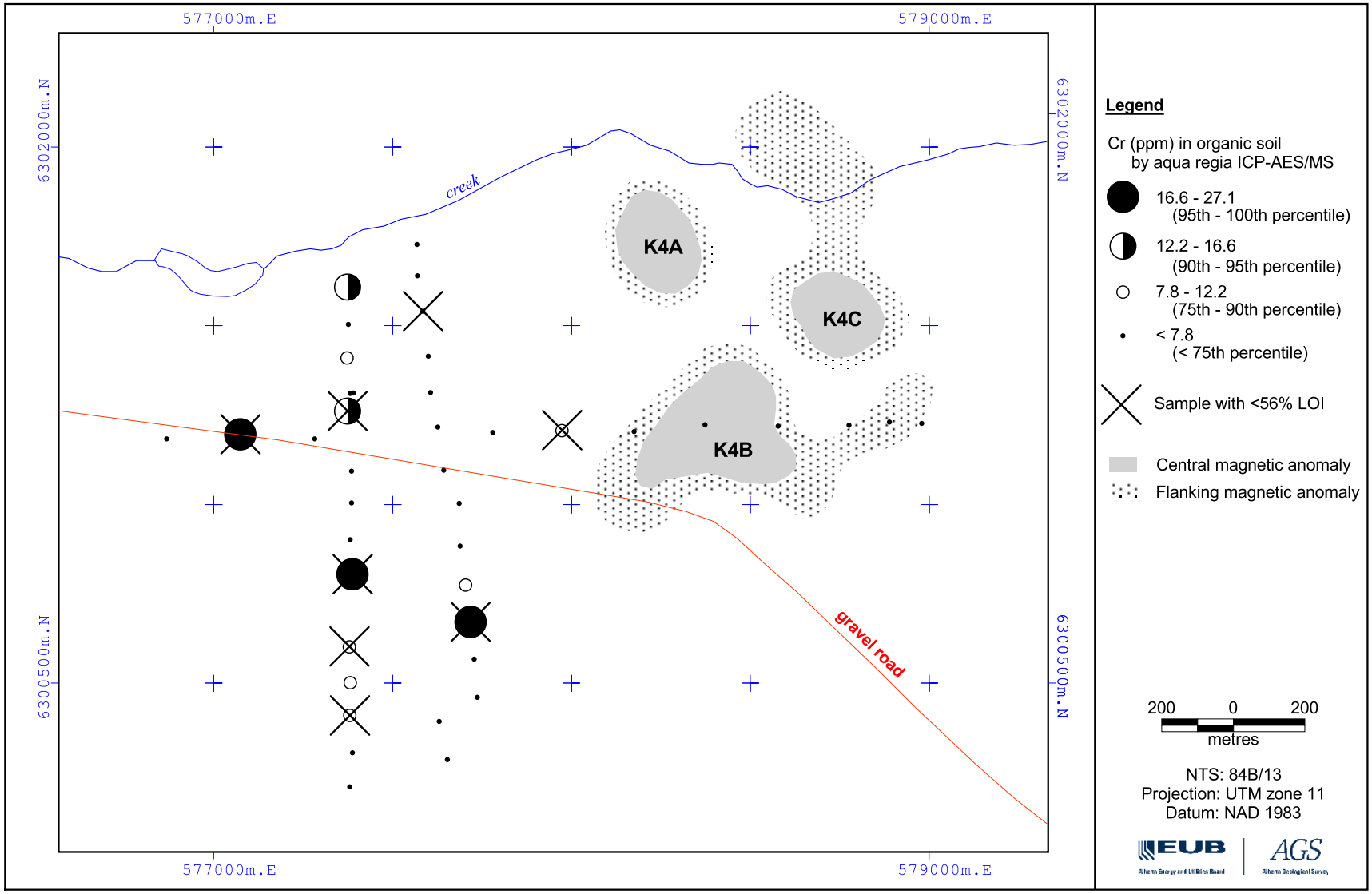

Figure 43. Cr (ppm) in organic soil, determined by aqua regia ICP-AES/MS.

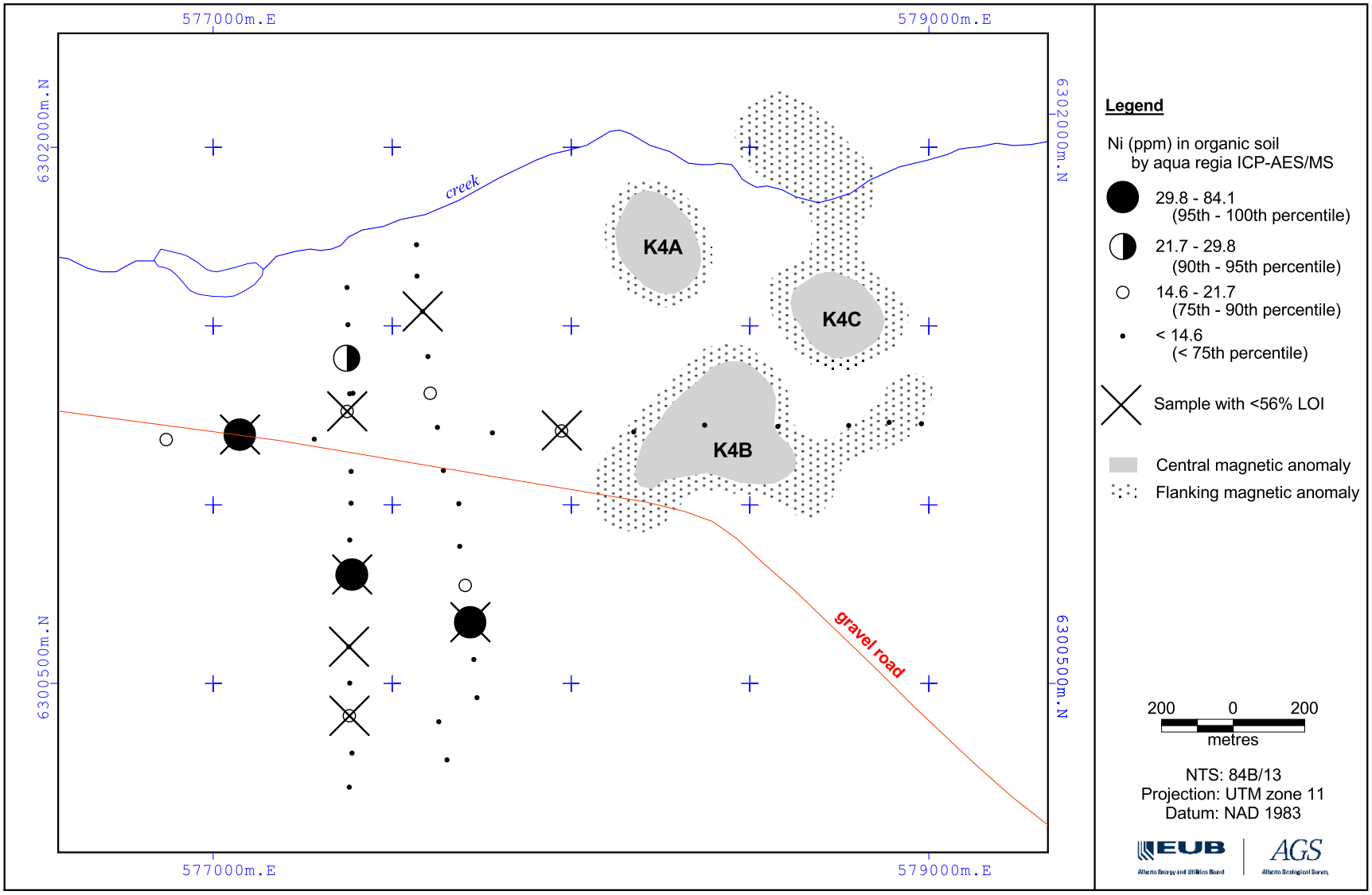

Figure 44. Ni (ppm) in organic soil, determined by aqua regia ICP-AES/MS.

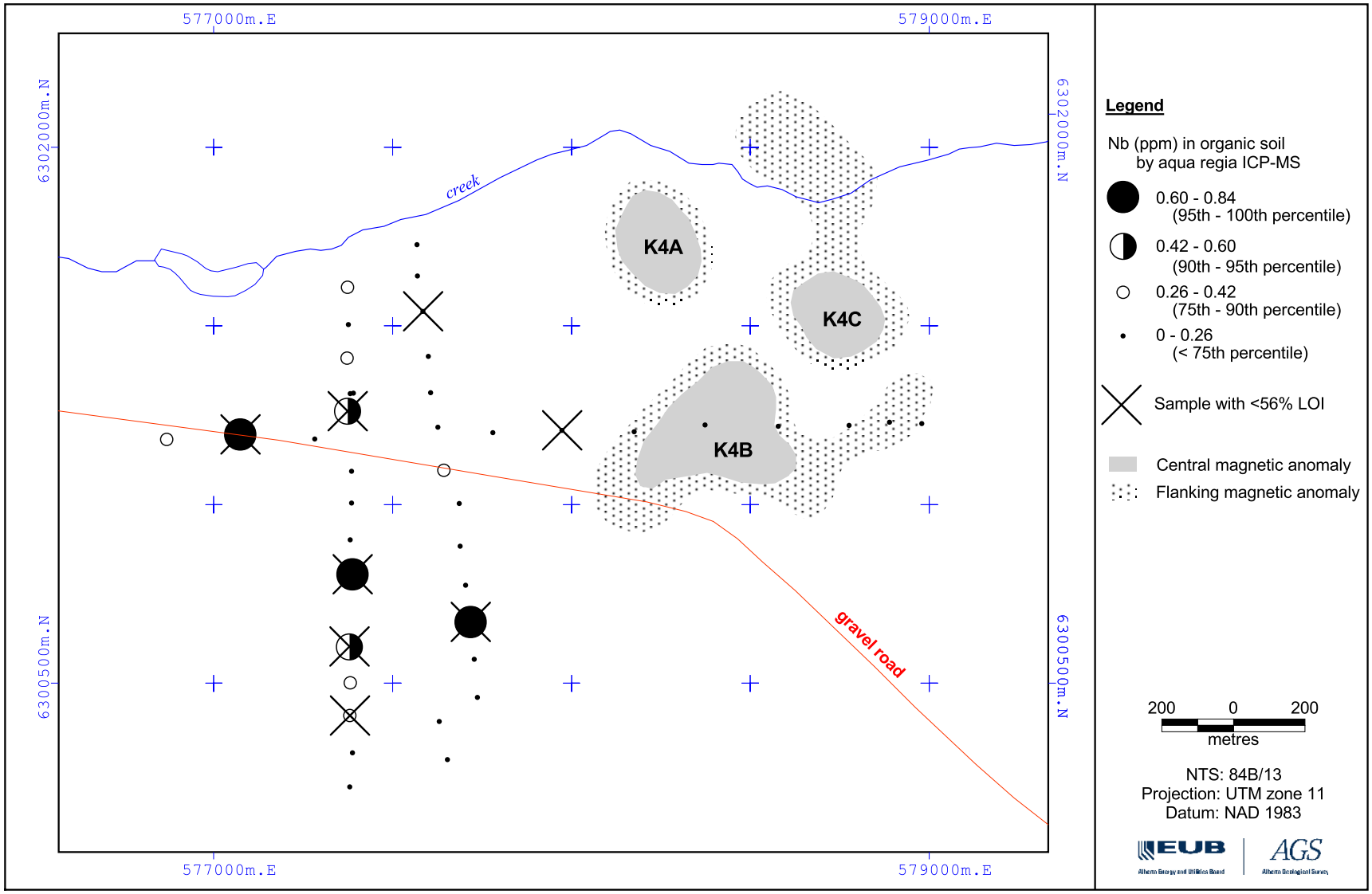

Figure 45. Nb (ppm) in organic soil, determined by aqua regia ICP-MS.

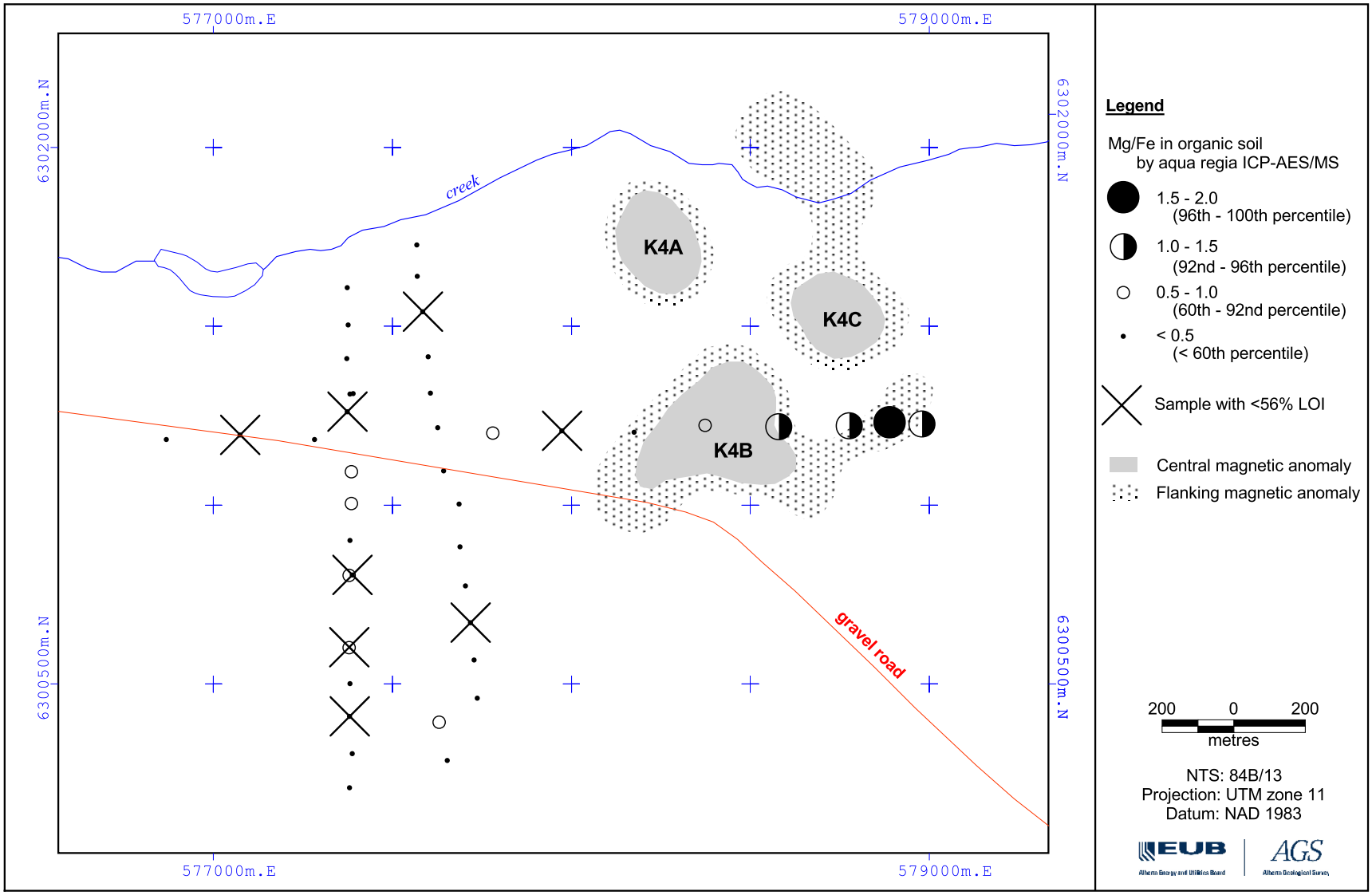

Figure 46. Mg/Fe in organic soil, determined by aqua regia ICP-AES/MS.

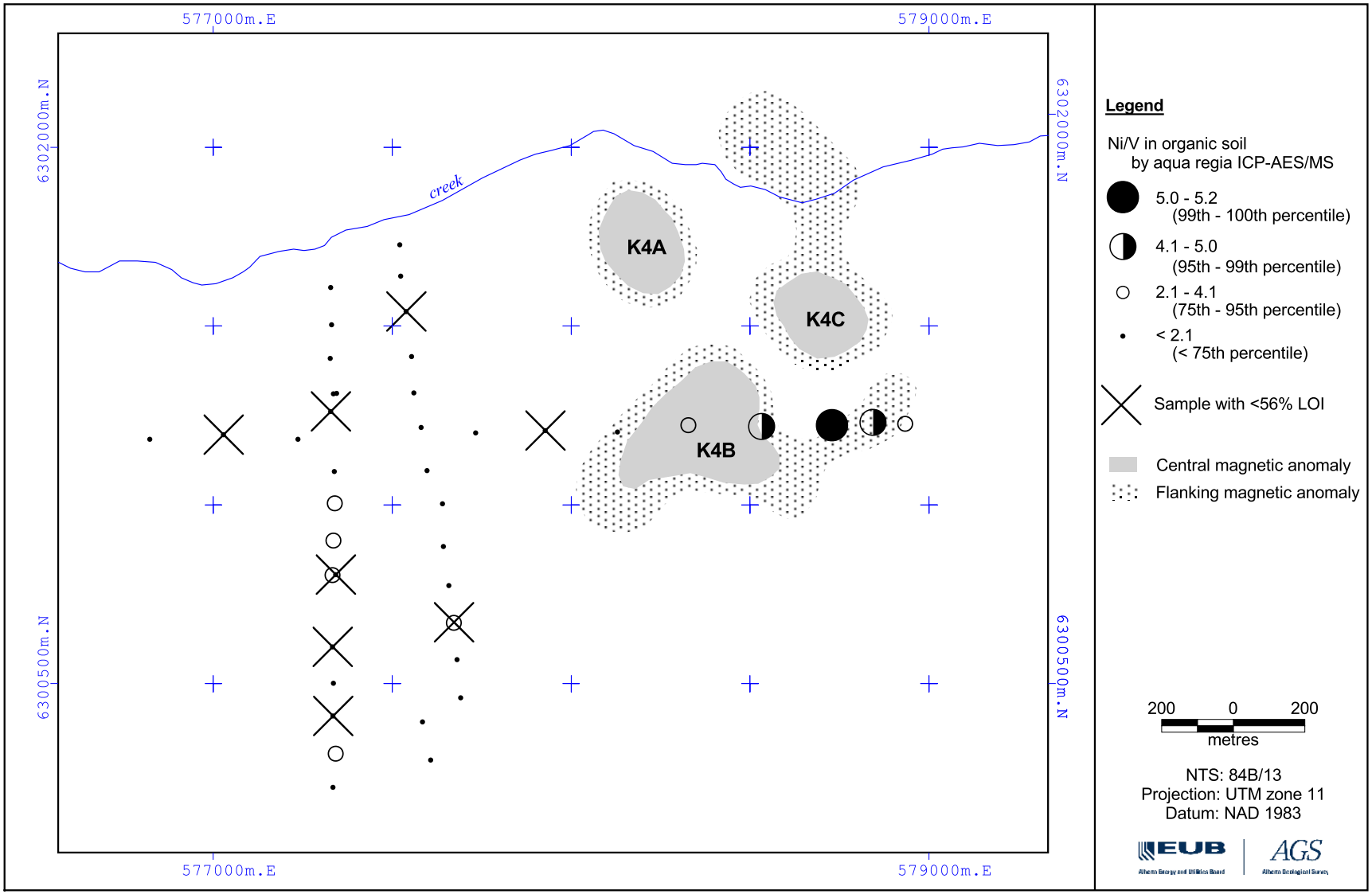

Figure 47. Ni/V in organic soil, determined by aqua regia ICP-AES/MS.

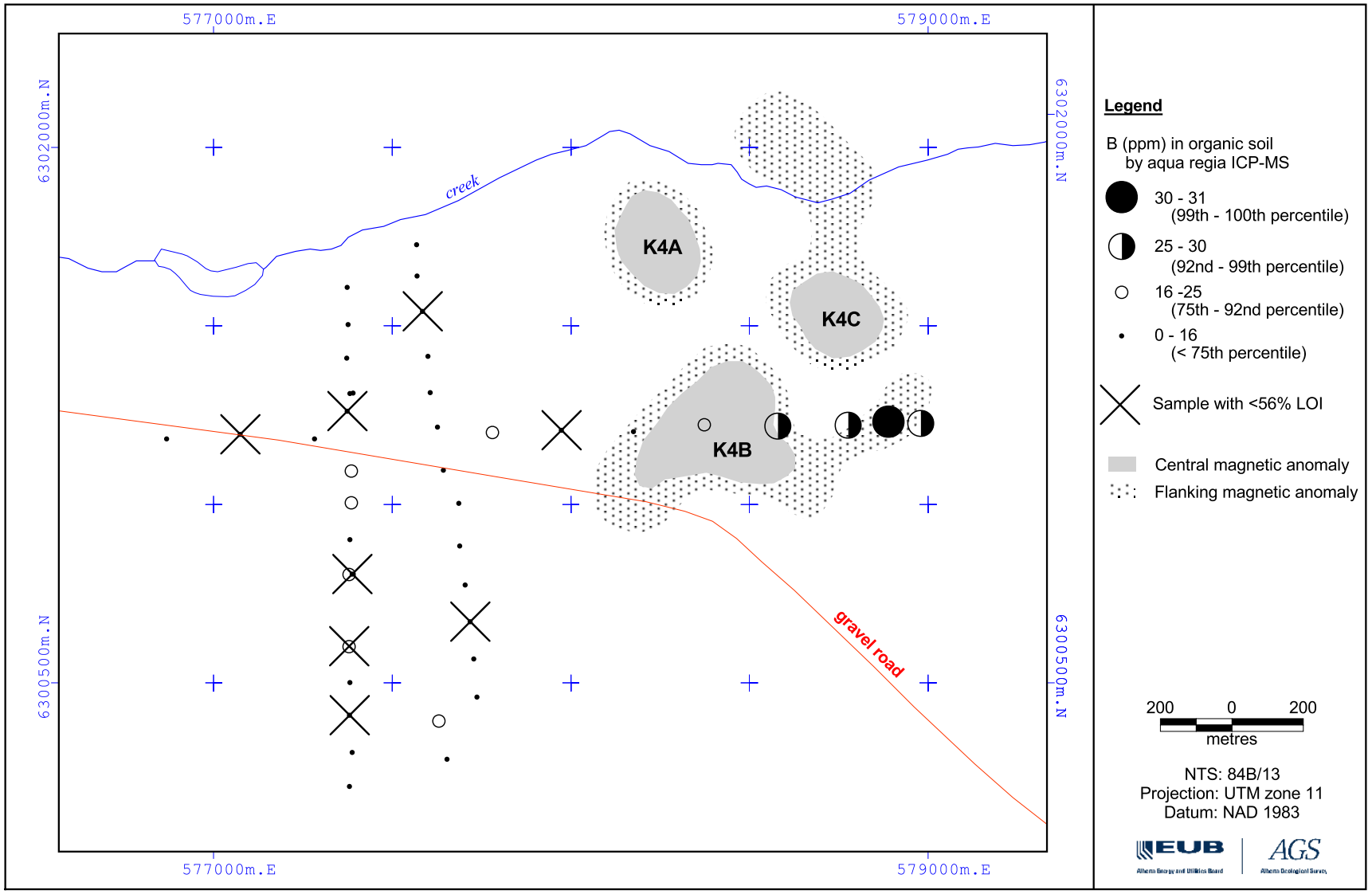

Figure 48. B (ppm) in organic soil, determined by aqua regia ICP-MS.

to moderate slopes to the east. It is possible that the east-sloping topography may influence the surface location of the geochemical response, which appears to lie east of the centre of the K4B kimberlite (based on magnetic interpretation).

11.2.2 B-Horizon Soil

The field locations of B-horizon soil samples (excluding duplicates), collected during the 2001 K4B soil survey, are shown in Figure 49. Maps showing the distribution of Mg, Cr, Ni and Nb by different analytical methods are presented in Figures 50 to 59. No spatial clustering of elevated Ni, Nb, Mg or Cr values (anomalous pattern) is evident in the 2001 K4B B-horizon soil survey results either over or down-ice (southwest) of the K4B kimberlite.

11.2.3 C-Horizon Soil

The field locations of routine (non-duplicate) C-horizon soil samples, collected near the K4B kimberlite in 2001, are shown in Figure 60. Maps showing the distribution of Mg, Cr, Ni and Nb by different analytical methods are presented in Figures 61 to 70. No spatial clustering of elevated Ni, Nb, Mg or Cr values (anomalous pattern) is evident in the 2001 K4B C-horizon soil survey results either over or down-ice (southwest) of the K4B kimberlite.

12 Discussion

The first soil geochemical investigation by the AGS over an ultramafic diatreme in northern Alberta was the 1997 B-horizon enzyme leach survey completed over the Mountain Lake diatreme northeast of Grande Prairie (Eccles, 1998). In 2000, the AGS completed soil geochemical surveys over five ultramafic diatremes in northern Alberta: the Mountain Lake diatreme, the K5 and TQ155 kimberlites in the Buffalo Head Hills, the K11 kimberlite in the Wabasca Lowland and the Legend kimberlite in the Birch Mountains (Seneshen et al., 2005). The 2000 surveys included humus, B- and C-horizon soil sampling and analyses by both enzyme leach and aqua regia ICP-AES/MS methods (the aqua regia ICP-AES/MS methods used for the 2000 program are the same as those used for the 2001 K4B survey). Similarities between bedrock targets, sample media and analytical methods allow comparisons to be made between the aqua regia ICP-AES/MS results for the 2000 and 2001 surveys. The following discussion follows Seneshen et al. (2005) by focusing on Ni and Nb results.

The maximum aqua regia ICP-AES/MS Ni and Nb values returned from the 2001 K4B organic soil survey are 84.1 ppm Ni and 0.84 ppm Nb. These maximum 2001 survey values are similar to or somewhat higher than the maximum values obtained over the K5, Legend, K11 and TQ155 kimberlites but are markedly lower than maximum values obtained over the Mountain Lake diatreme (Table 11; Seneshen et al., 2005).

Table 11. Summary of five humus soil surveys completed in 2000 over ultramafic diatremes in northern Alberta (Seneshen et al., 2005) listing maximum values for Ni and Nb determined by aqua regia ICP-AES/MS.

Diatreme	Approximate Overburden Depth (m)	Maximum	
		Ni (ppm)	Nb (ppm)
Mountain Lake	2	484.3	12.2
K5	0-14	44.5	0.81
Legend	12	89.7	0.7
K11	13	40.9	0.55
TQ155	34	46.4	0.58

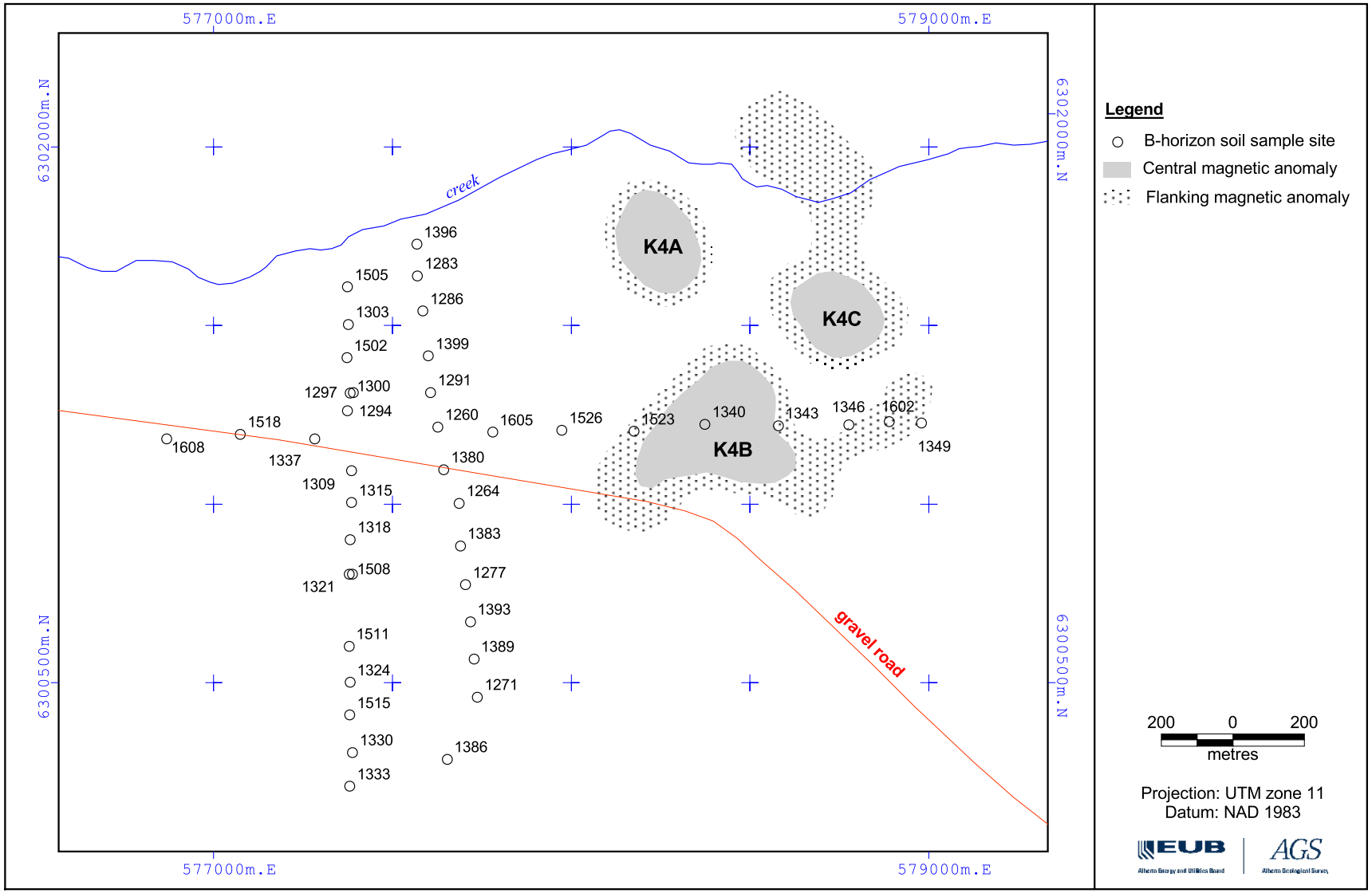

Figure 49. B-horizon soil sample sites.

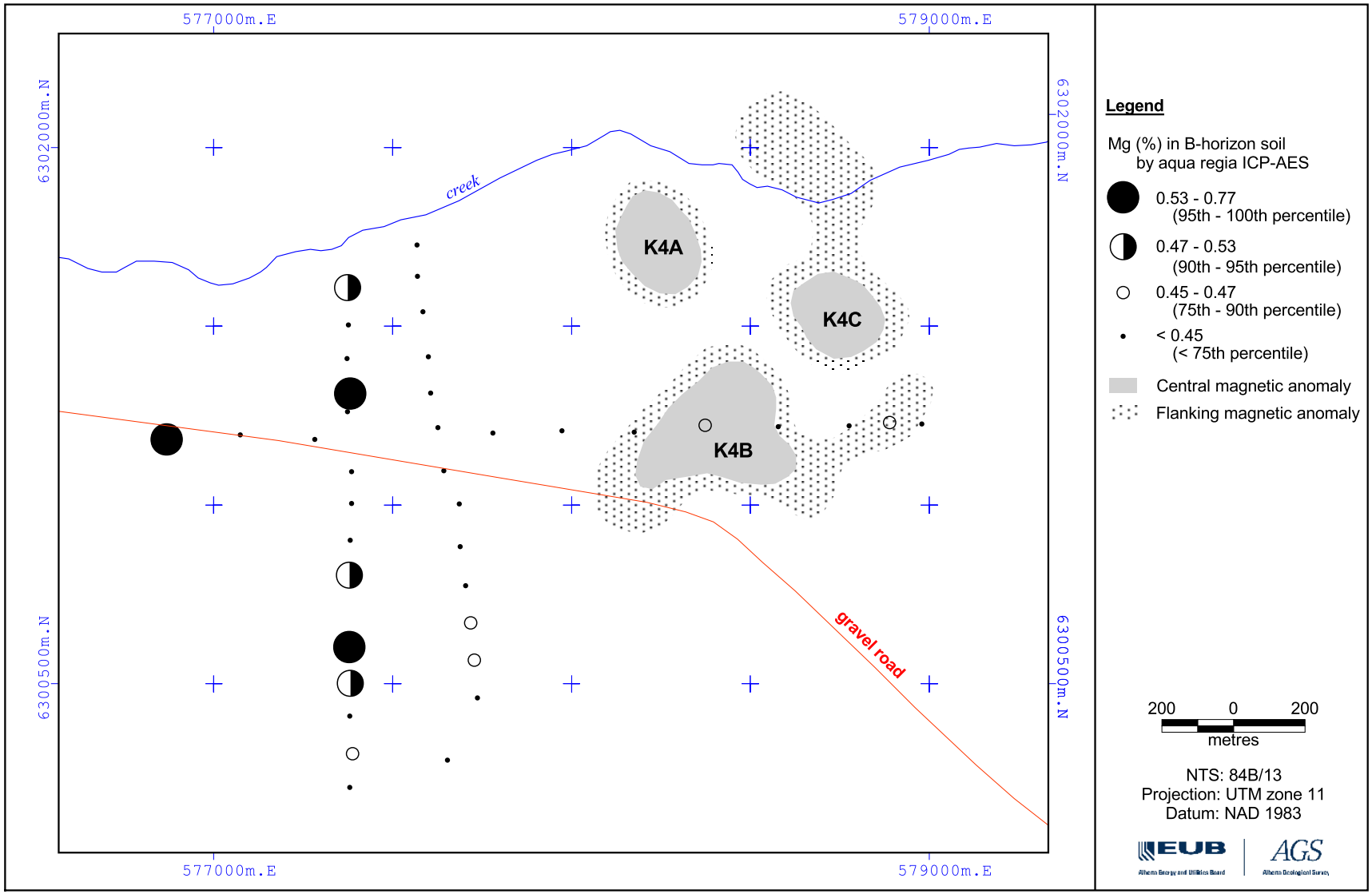

Figure 50. Mg (%) in B-horizon soil, determined by aqua regia ICP-AES.

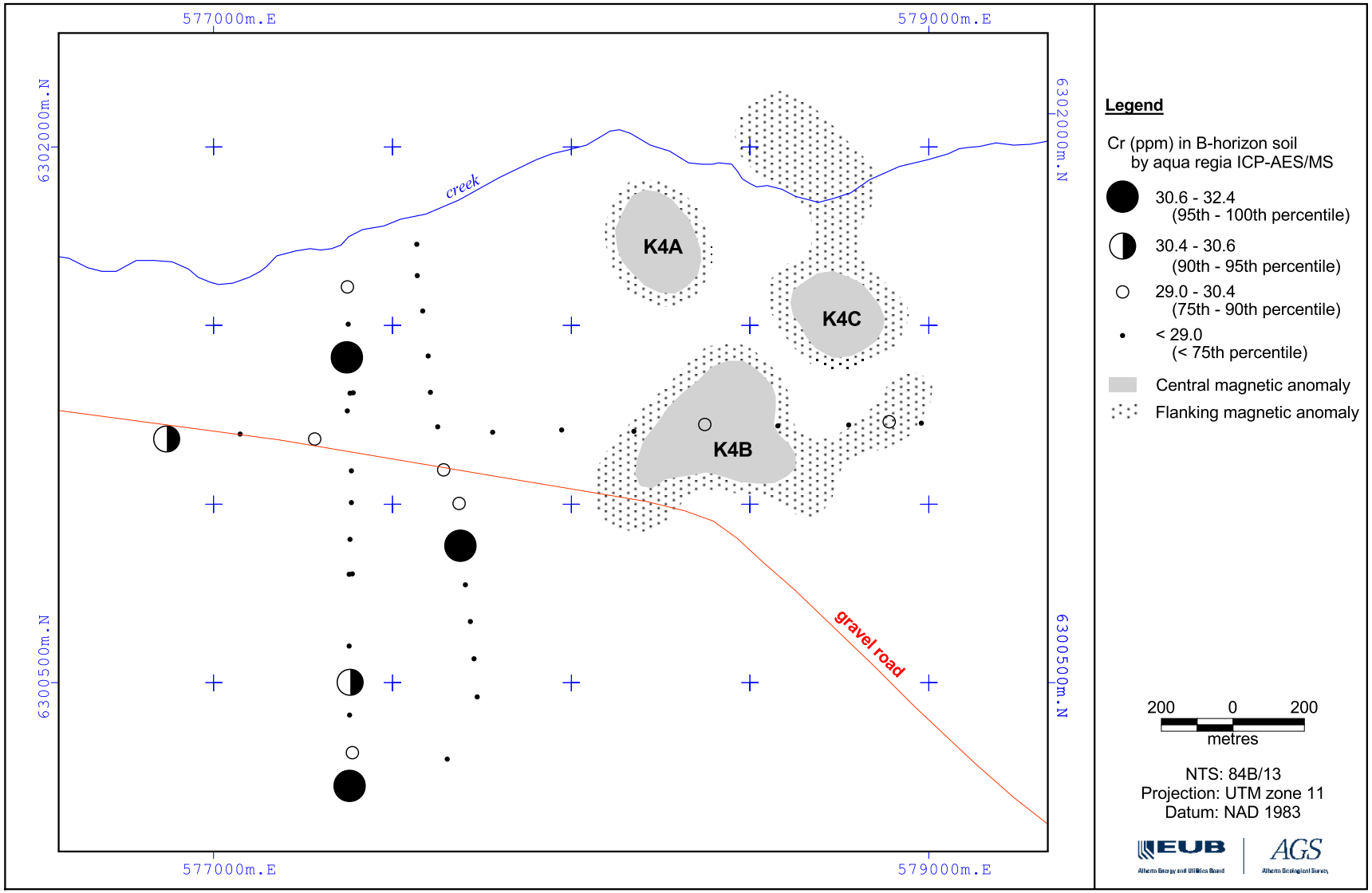

Figure 51. Cr (ppm) in B-horizon soil, determined by aqua regia ICP-AES/MS.

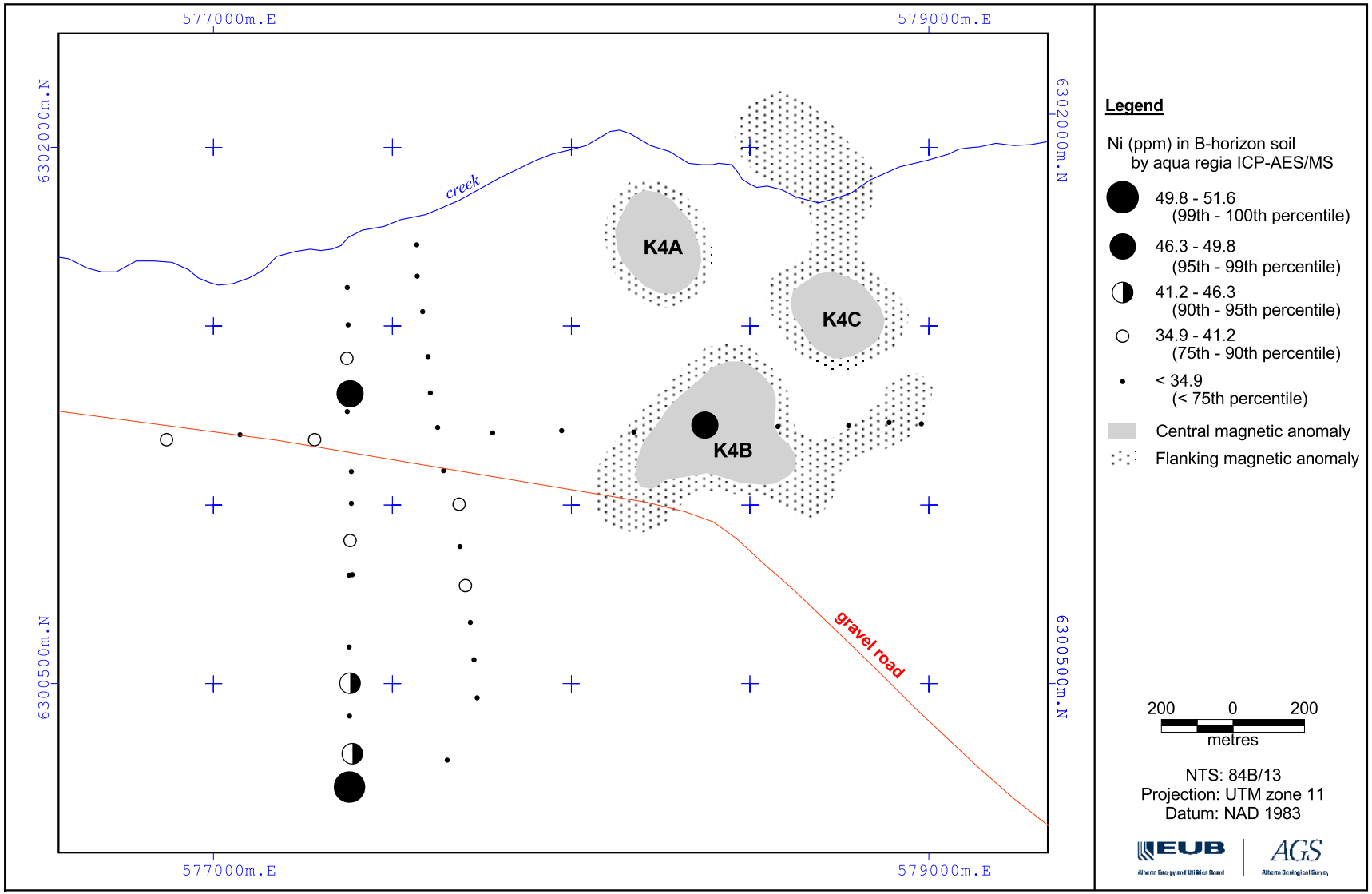

Figure 52. Ni (ppm) in B-horizon soil, determined by aqua regia ICP-AES/MS.

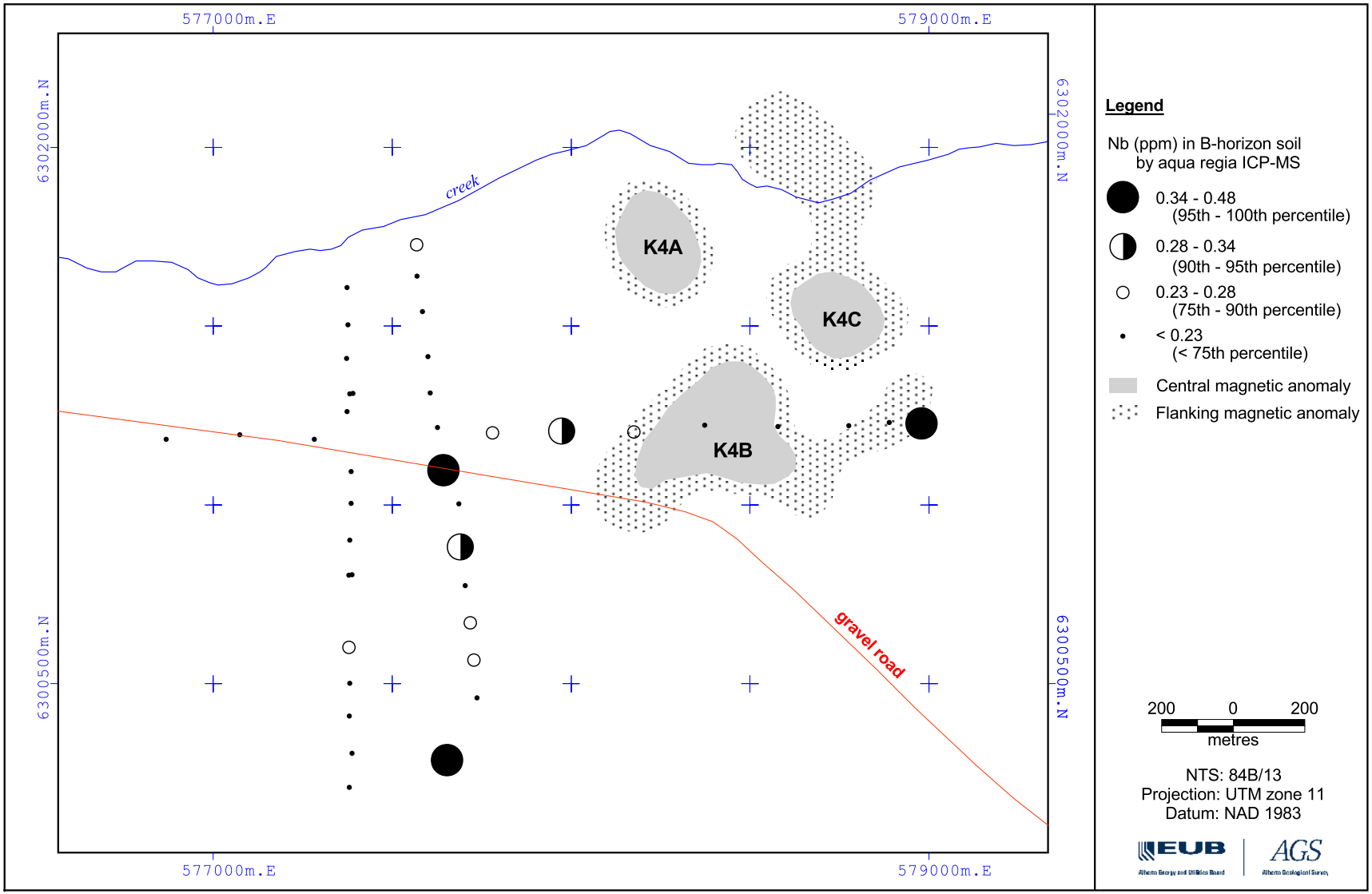

Figure 53. Nb (ppm) in B-horizon soil, determined by aqua regia ICP-MS.

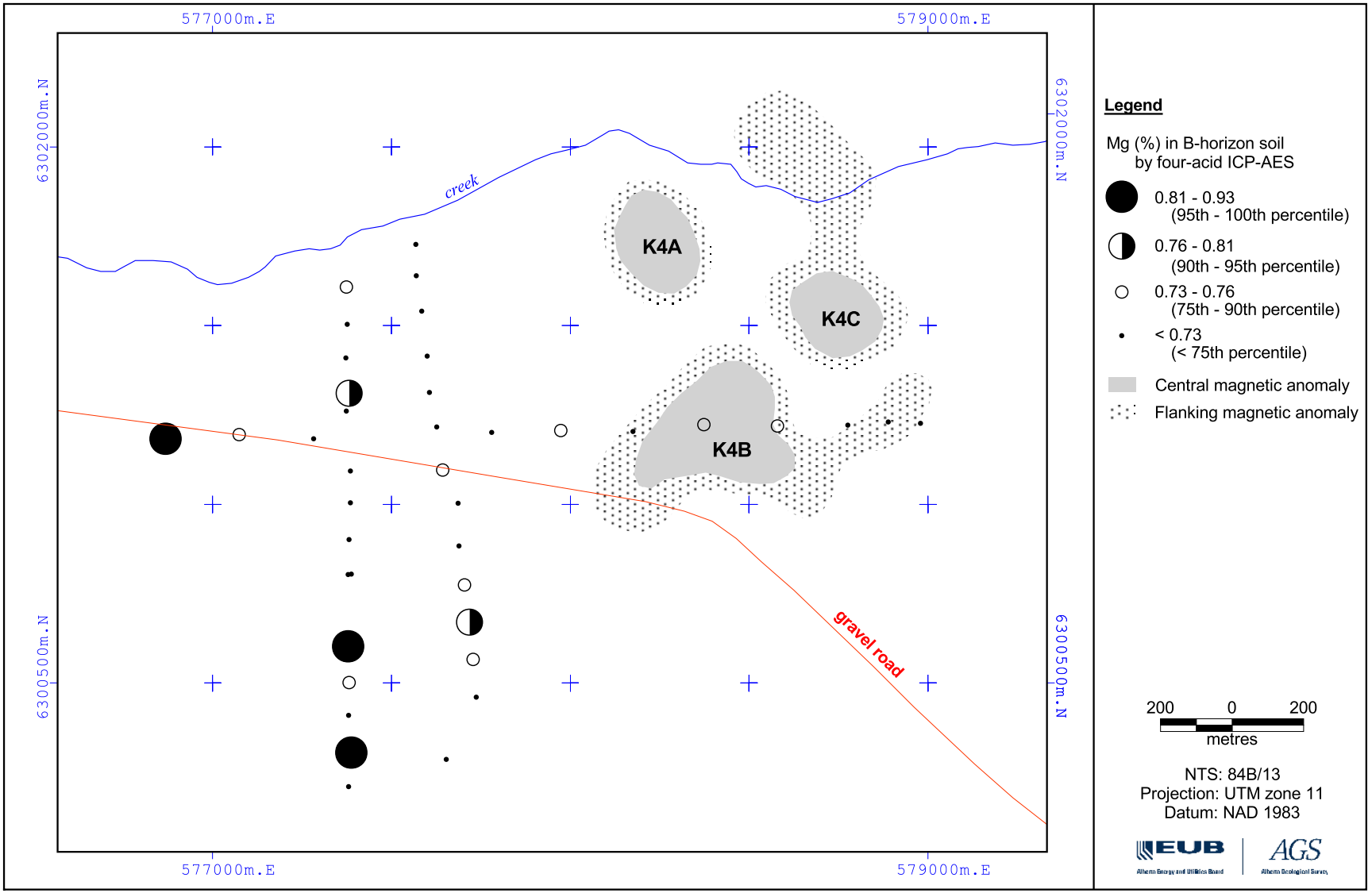

Figure 54. Mg (%) in B-horizon soil, determined by four-acid ICP-AES.

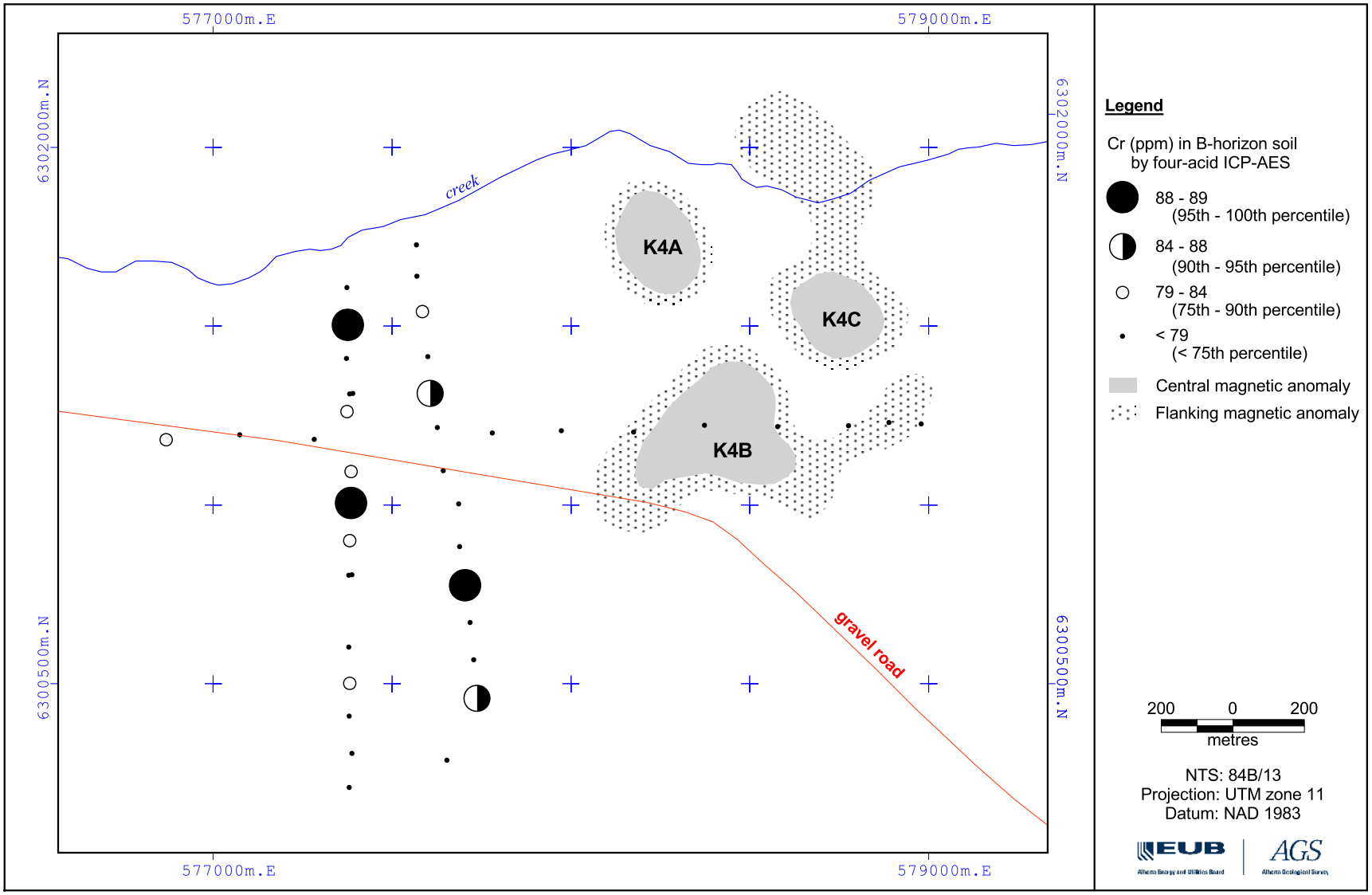

Figure 55. Cr (ppm) in B-horizon soil, determined by four-acid ICP-AES.

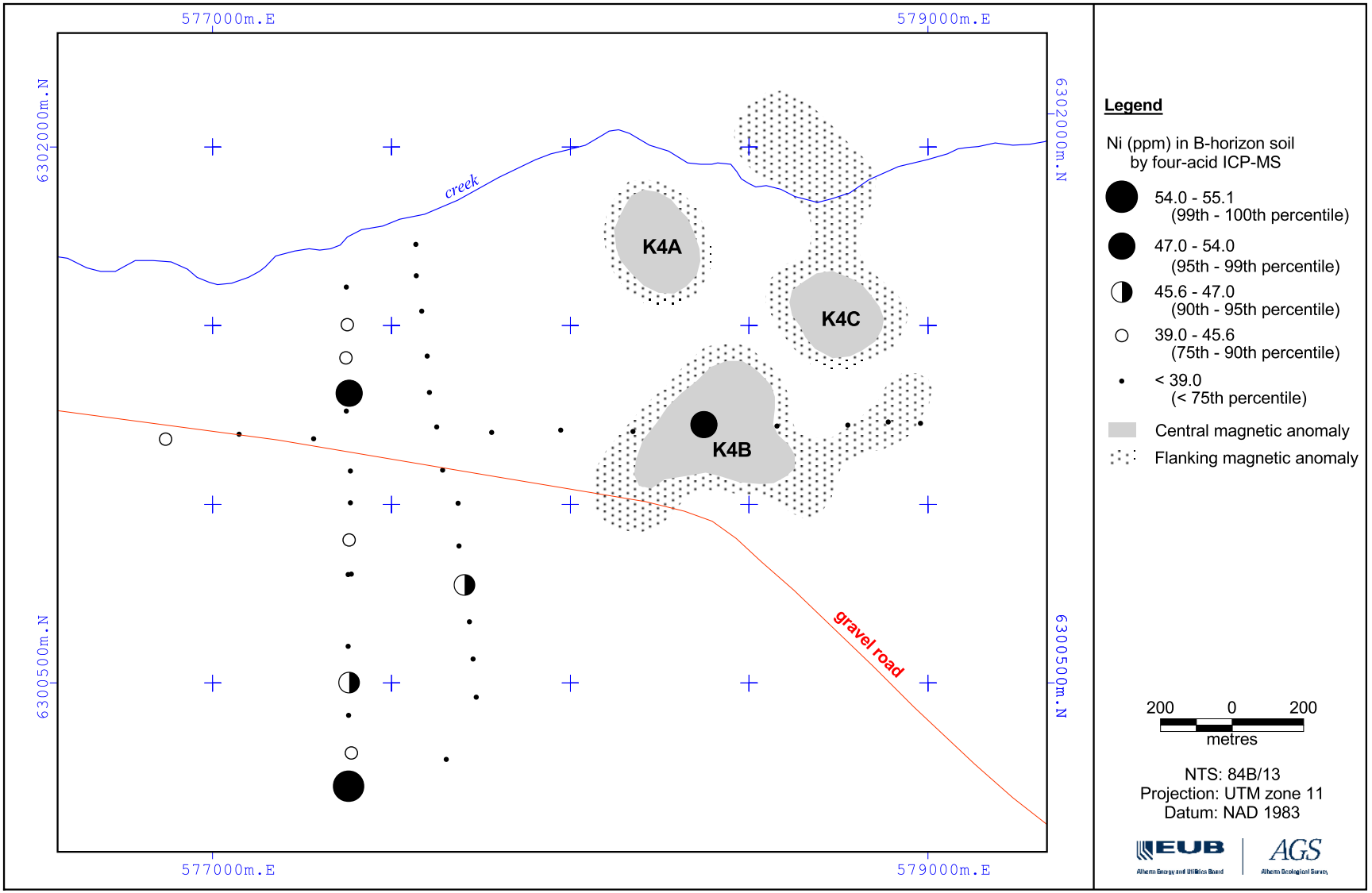

Figure 56. Ni (ppm) in B-horizon soil, determined by four-acid ICP-MS.

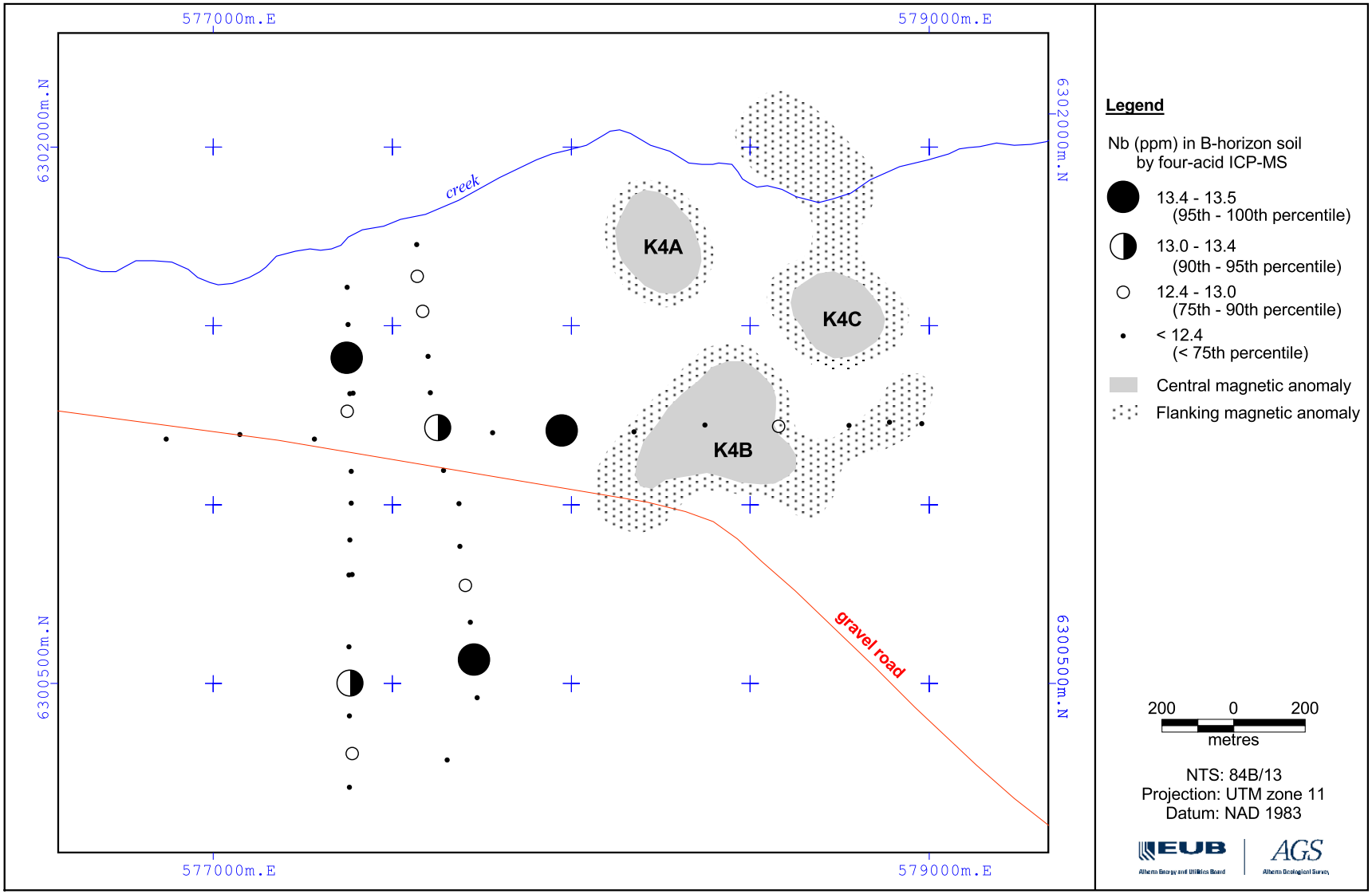

Figure 57. Nb (ppm) in B-horizon soil, determined by four-acid ICP-MS.

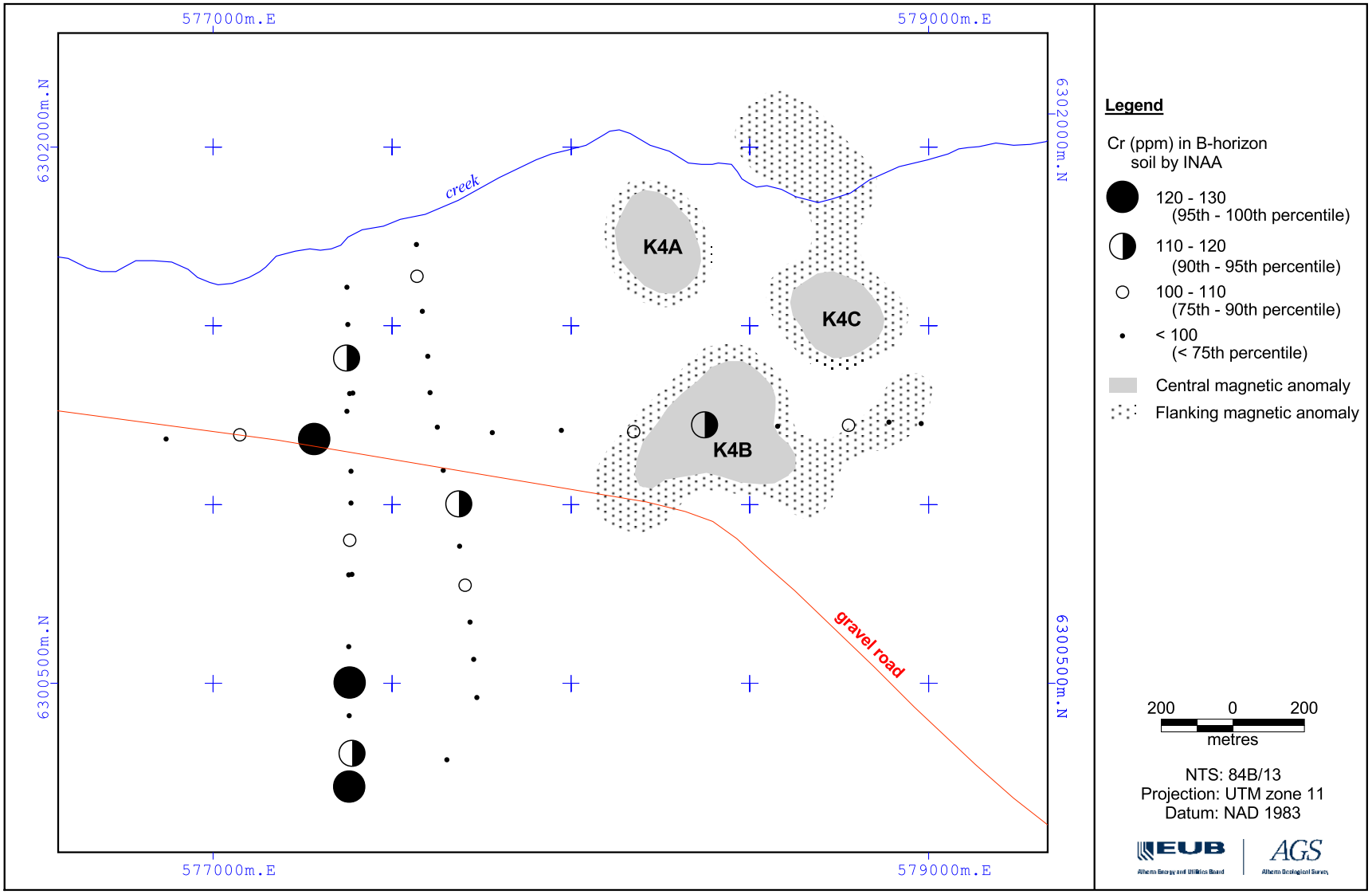

Figure 58. Cr (ppm) in B-horizon soil, determined by INAA.

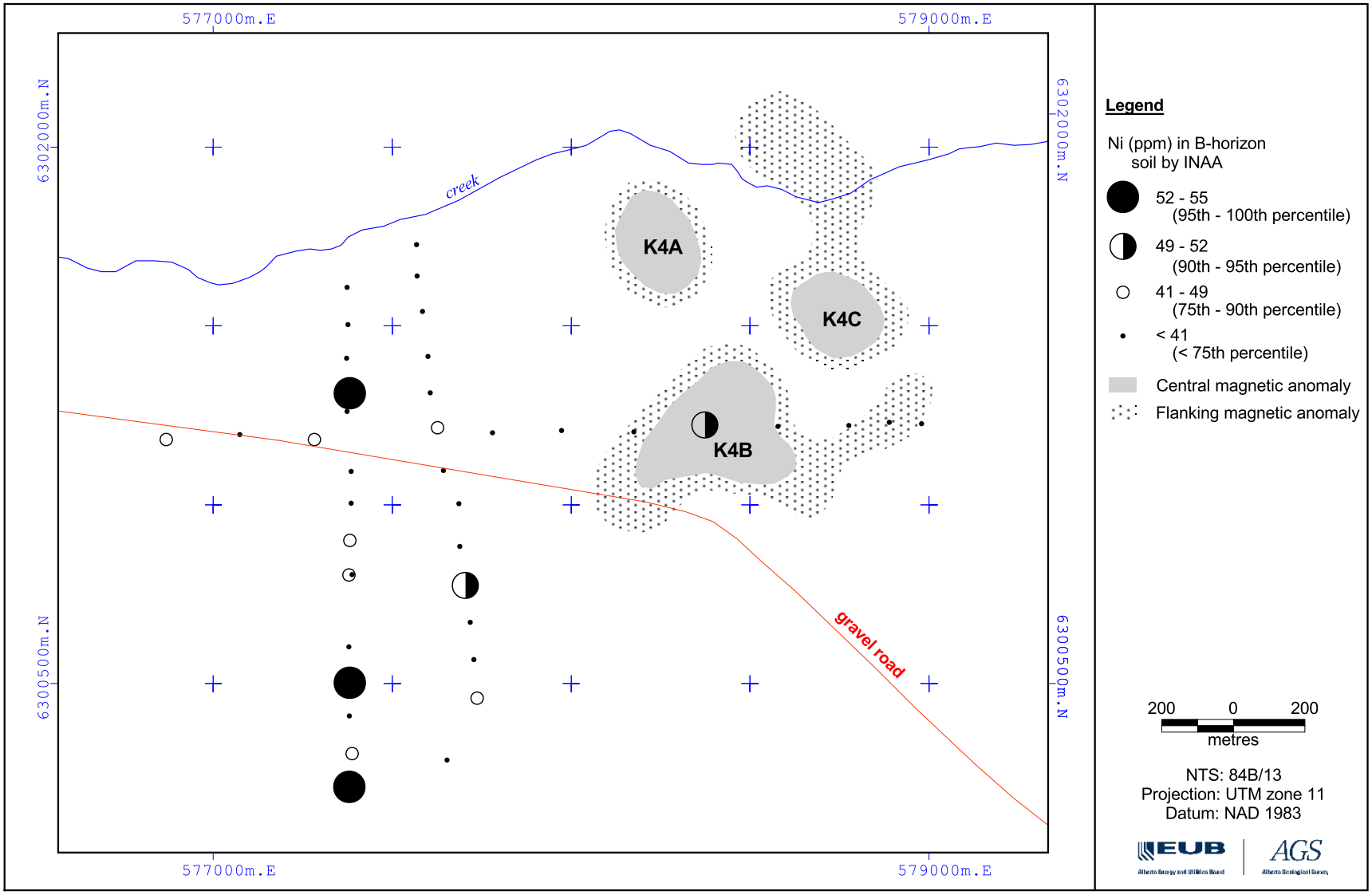

Figure 59. Ni (ppm) in B-horizon soil, determined by INAA.

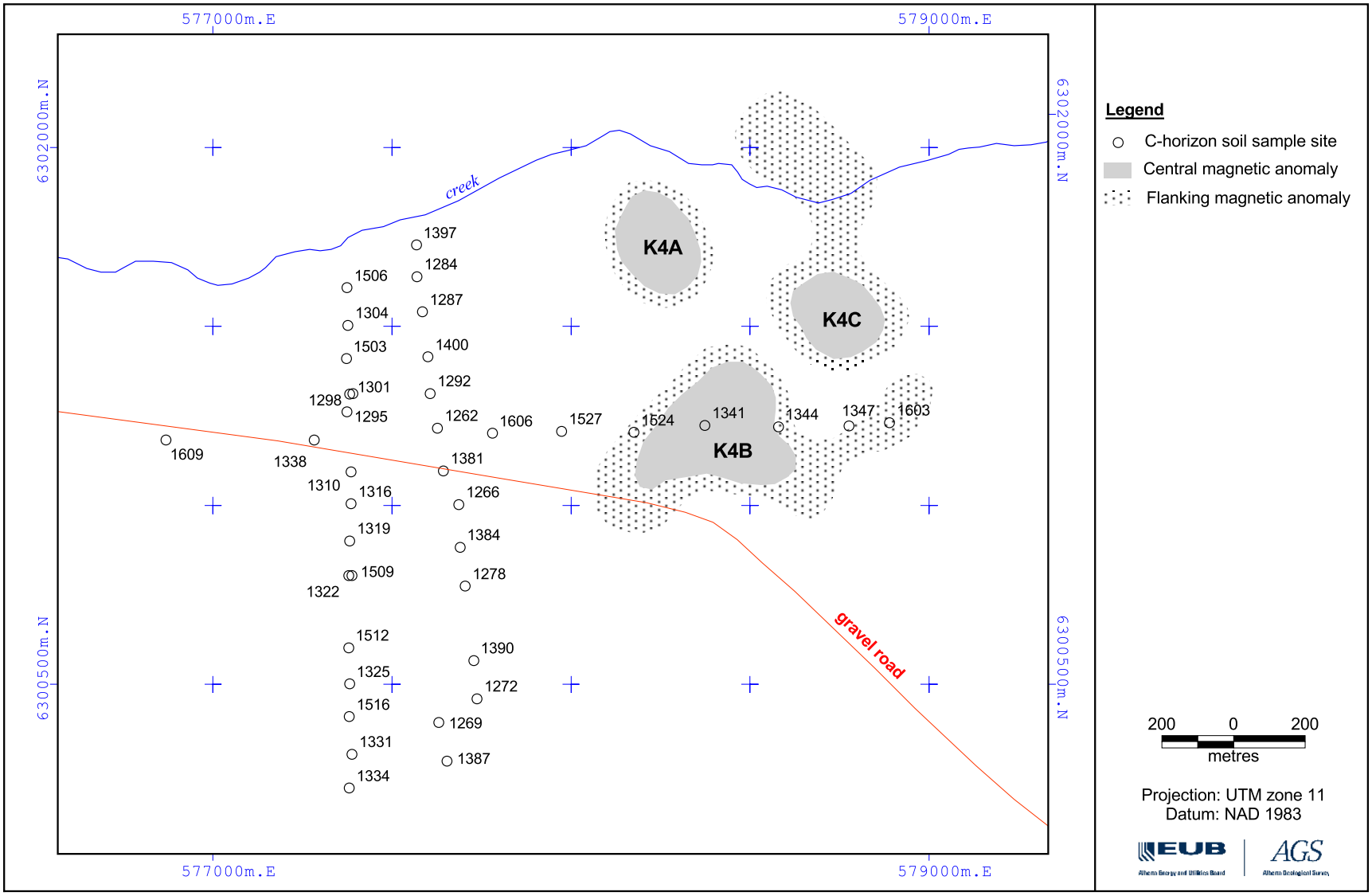

Figure 60. C-horizon soil sample sites.

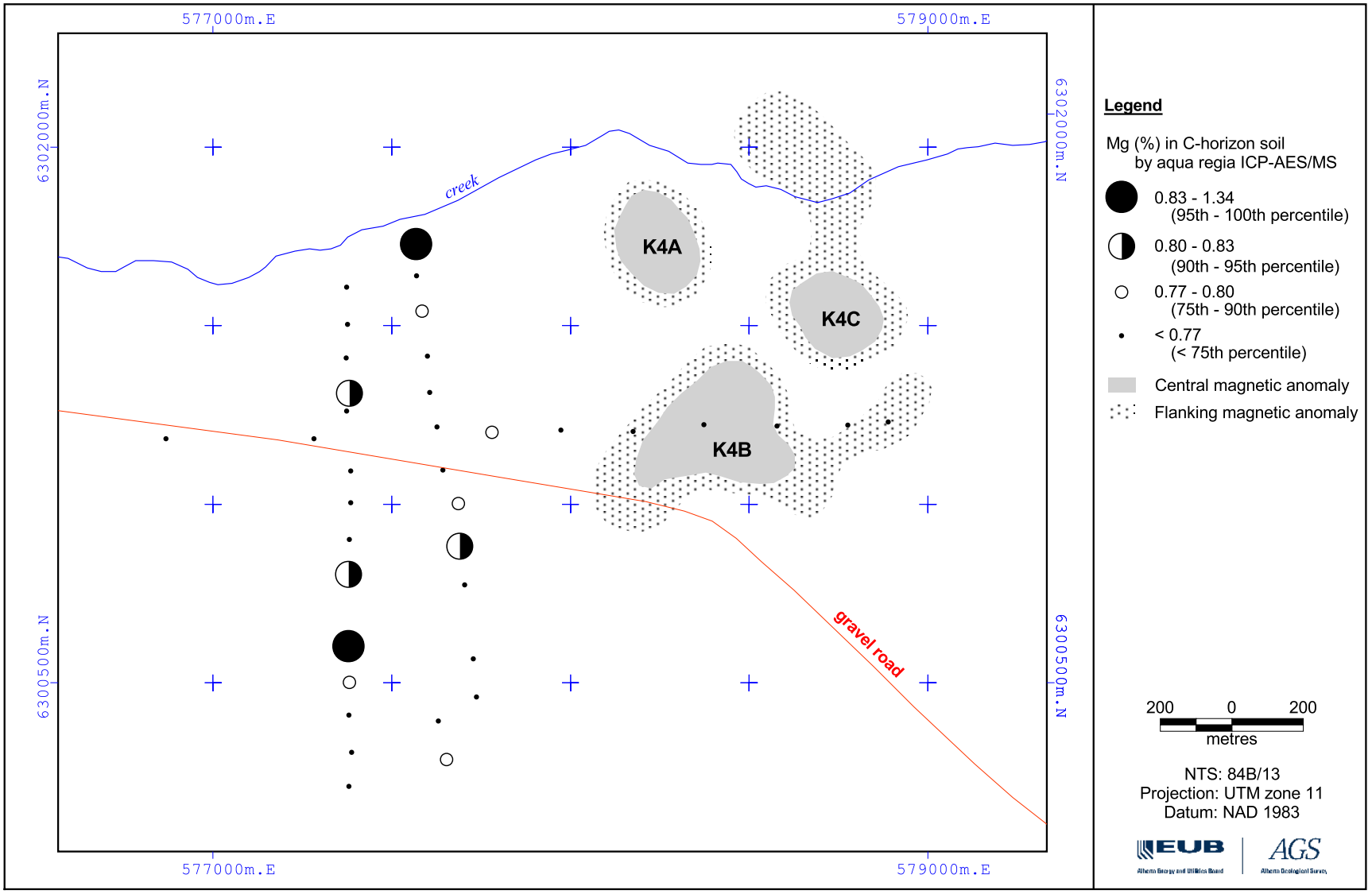

Figure 61. Mg (%) in C-horizon soil, determined by aqua regia ICP-AES/MS.

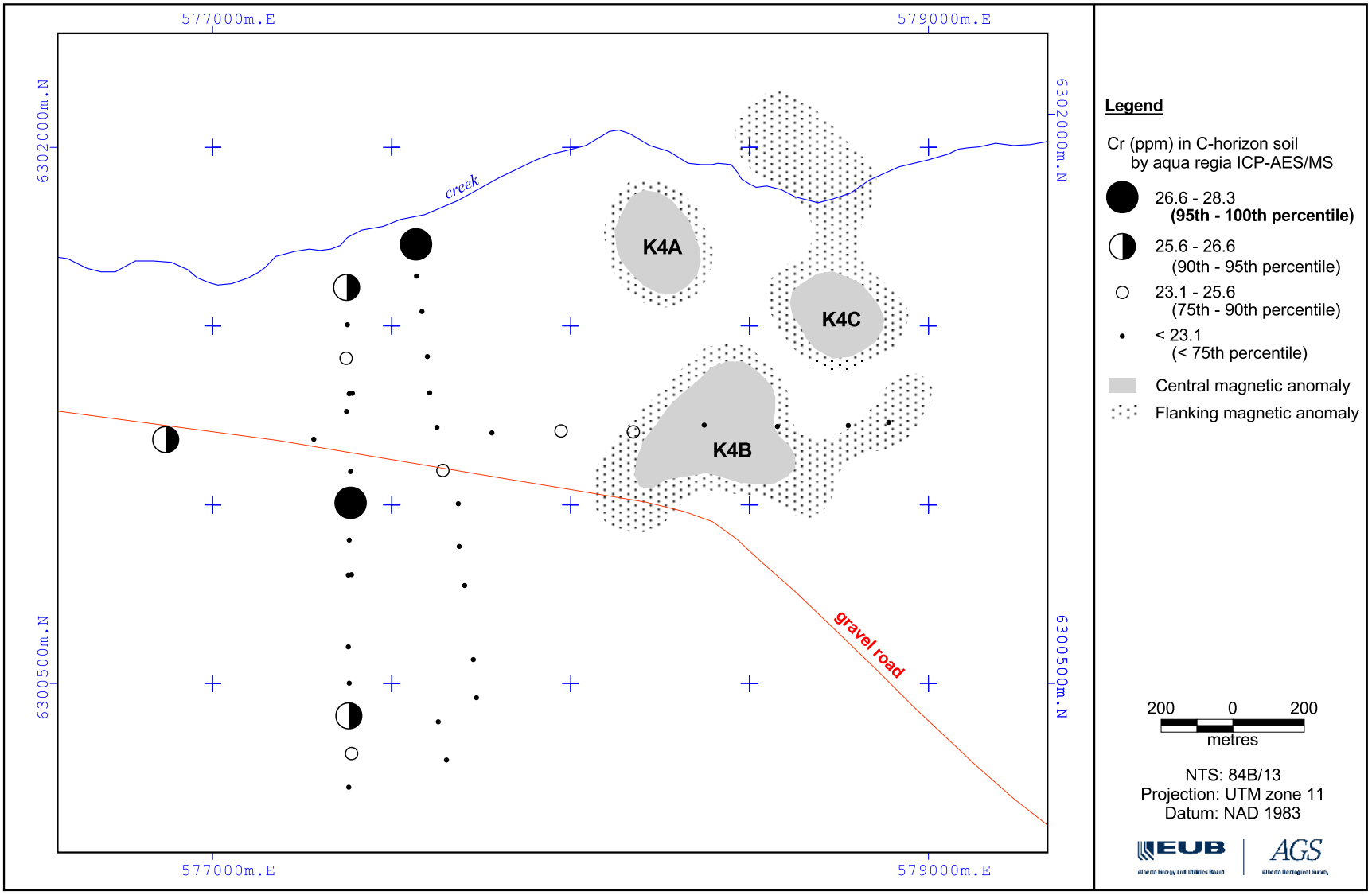

Figure 62. Cr (ppm) in C-horizon soil, determined by aqua regia ICP-AES/MS.

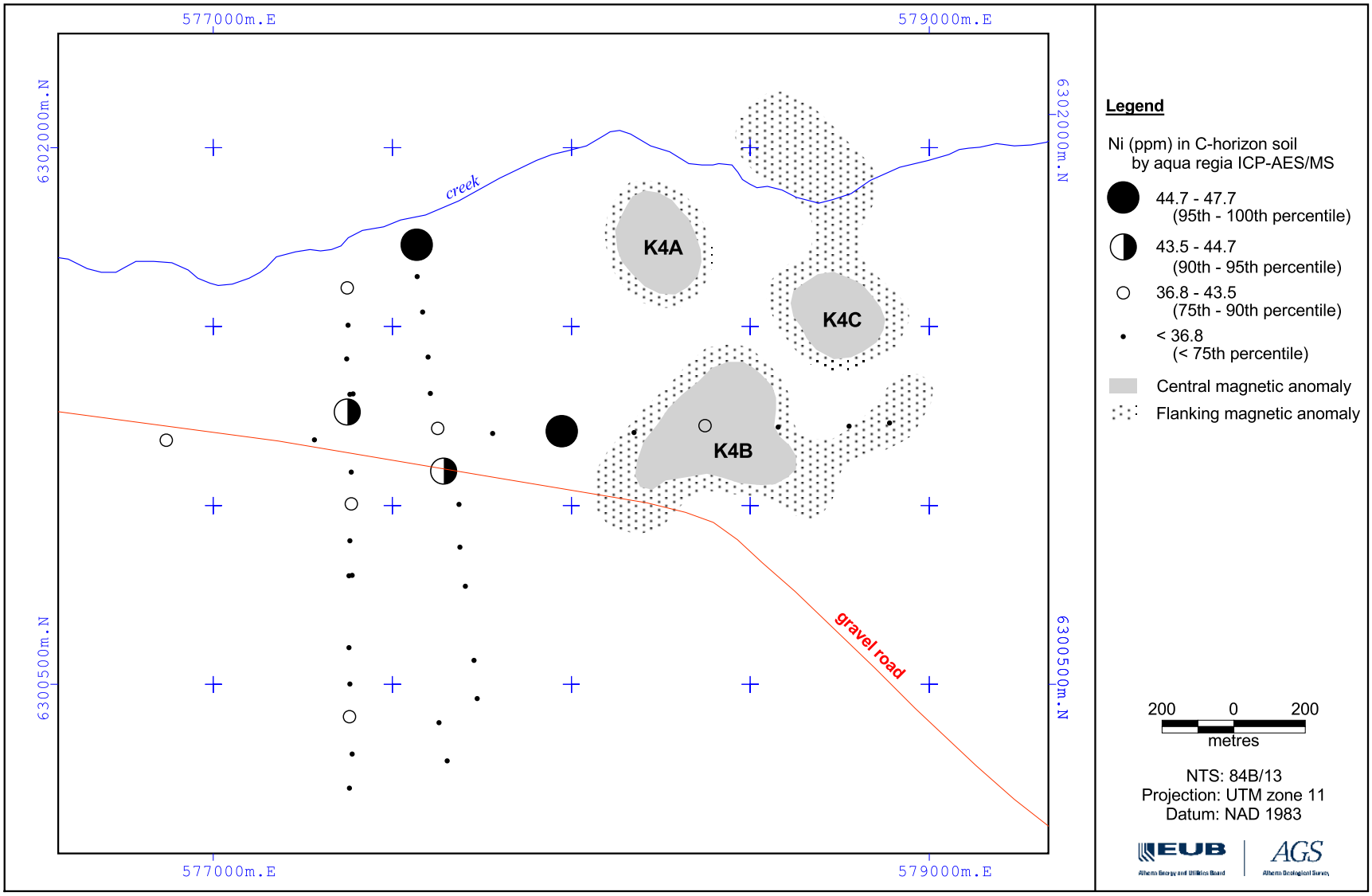

Figure 63. Ni (ppm) in C-horizon soil, determined by aqua regia ICP-AES/MS.

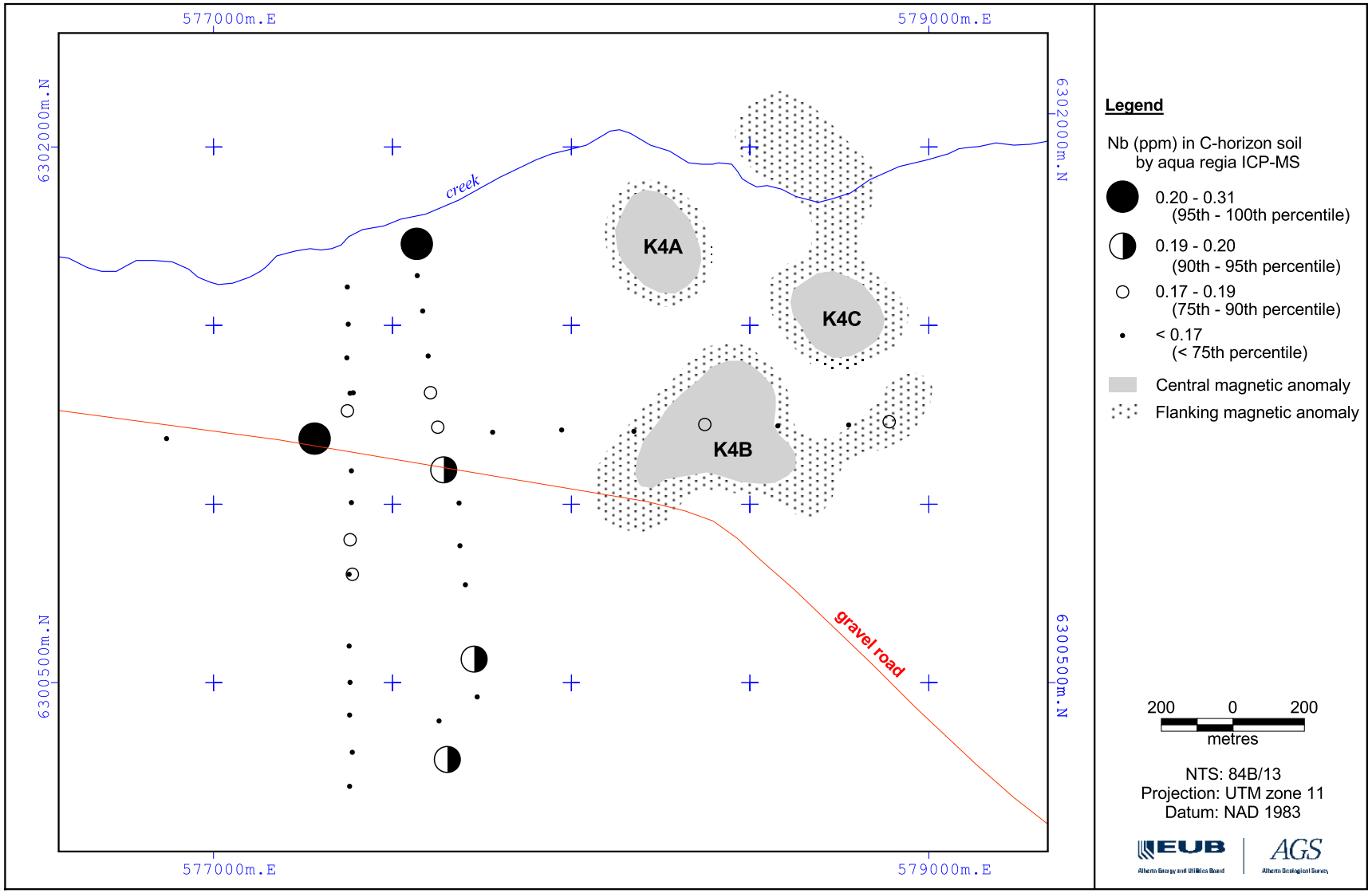

Figure 64. Nb (ppm) in C-horizon soil, determined by aqua regia ICP-MS.

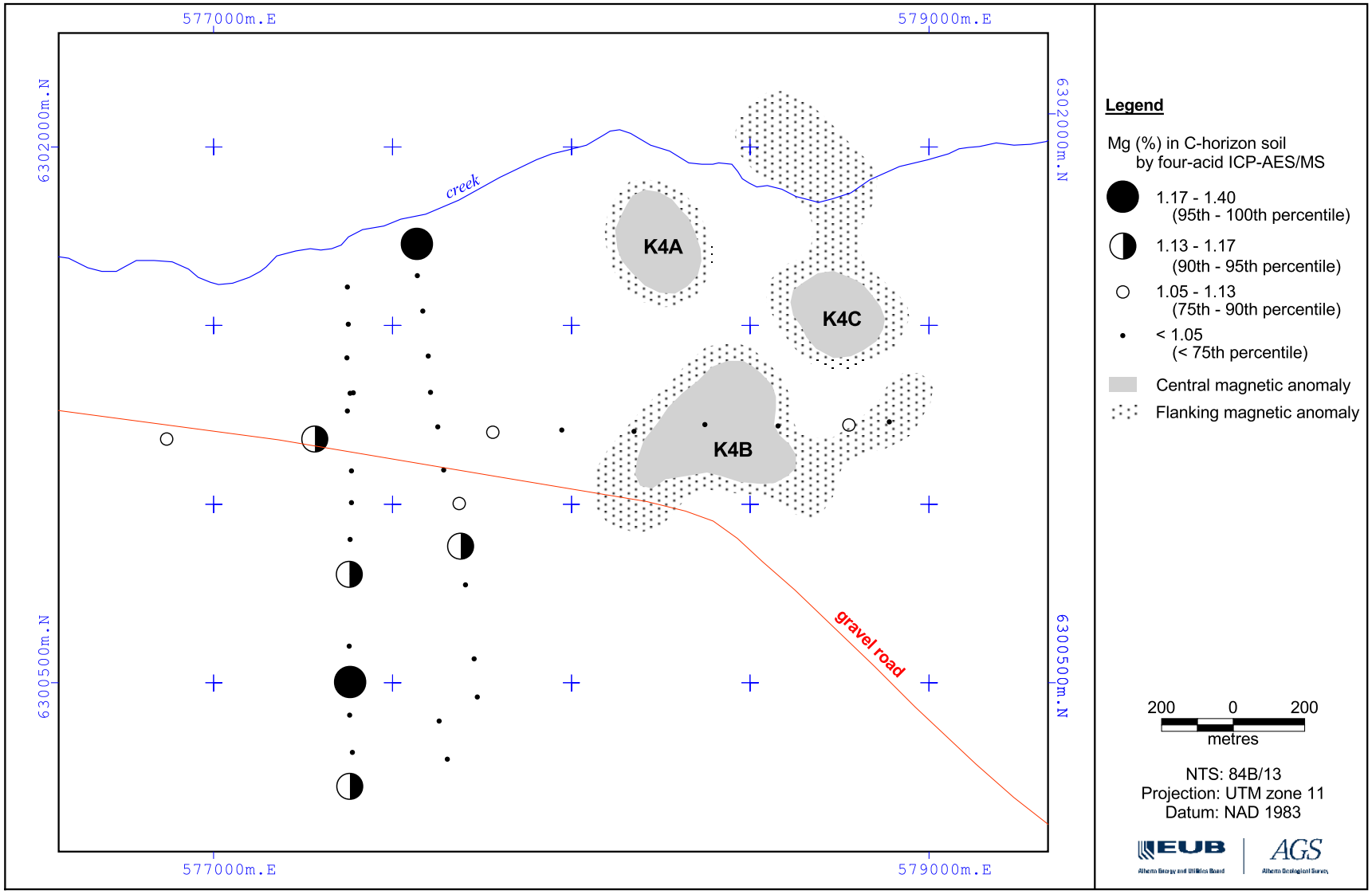

Figure 65. Mg (%) in C-horizon soil, determined by four-acid ICP-AES/MS.

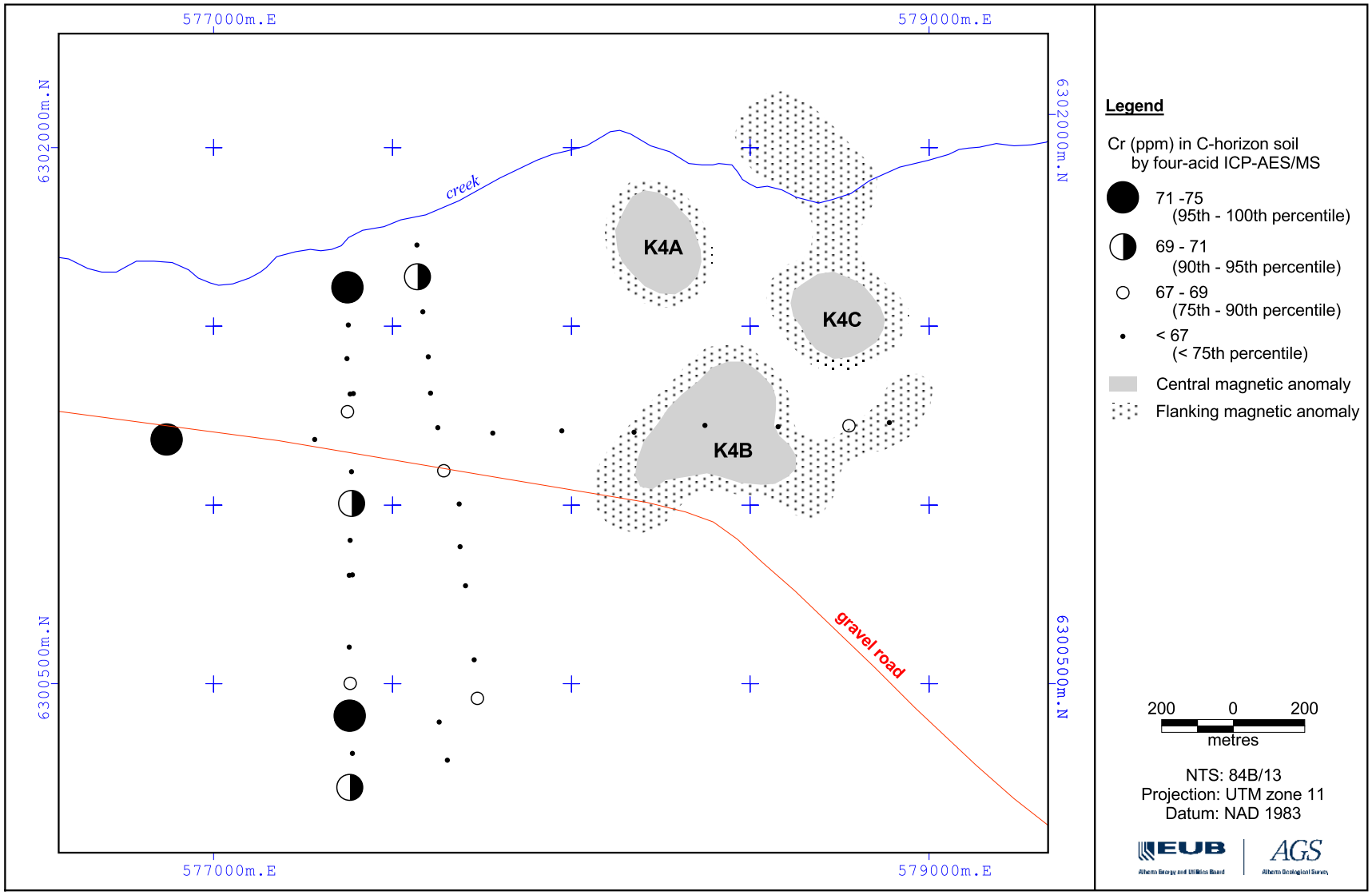

Figure 66. Cr (ppm) in C-horizon soil, determined by four-acid ICP-AES/MS.

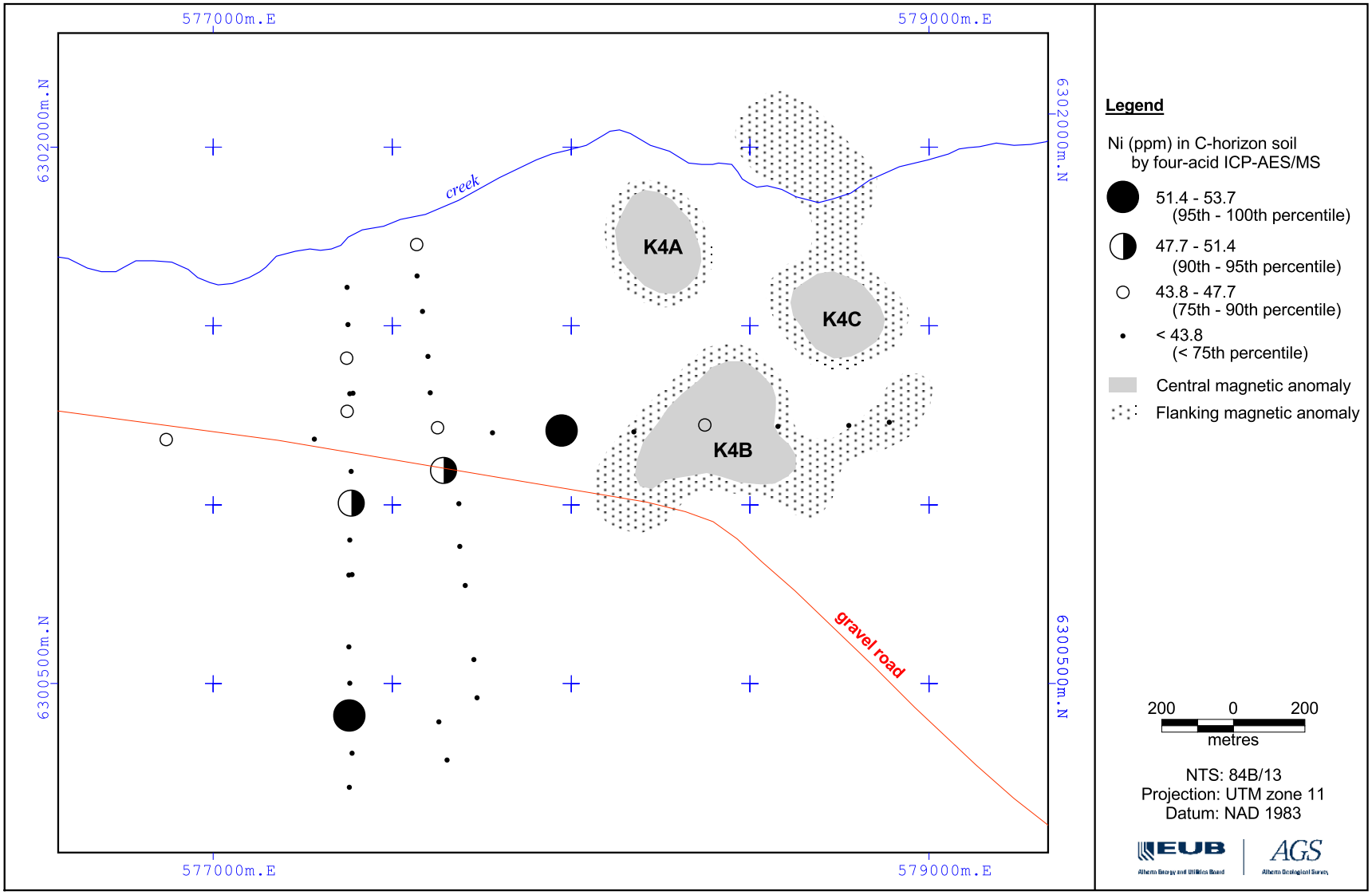

Figure 67. Ni (ppm) in C-horizon soil, determined by four-acid ICP-AES/MS.

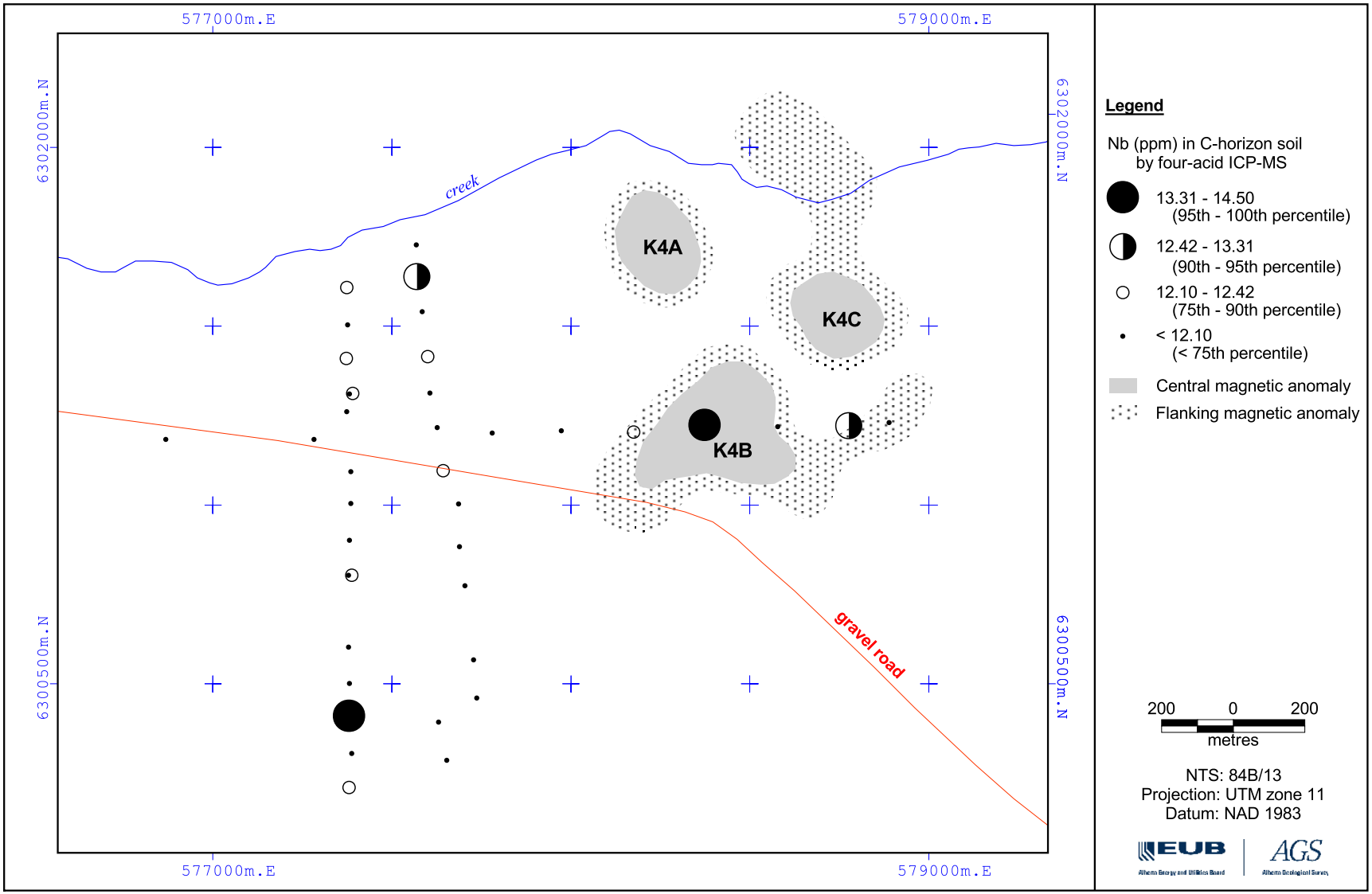

Figure 68. Nb (ppm) in C-horizon soil, determined by four-acid ICP-MS.

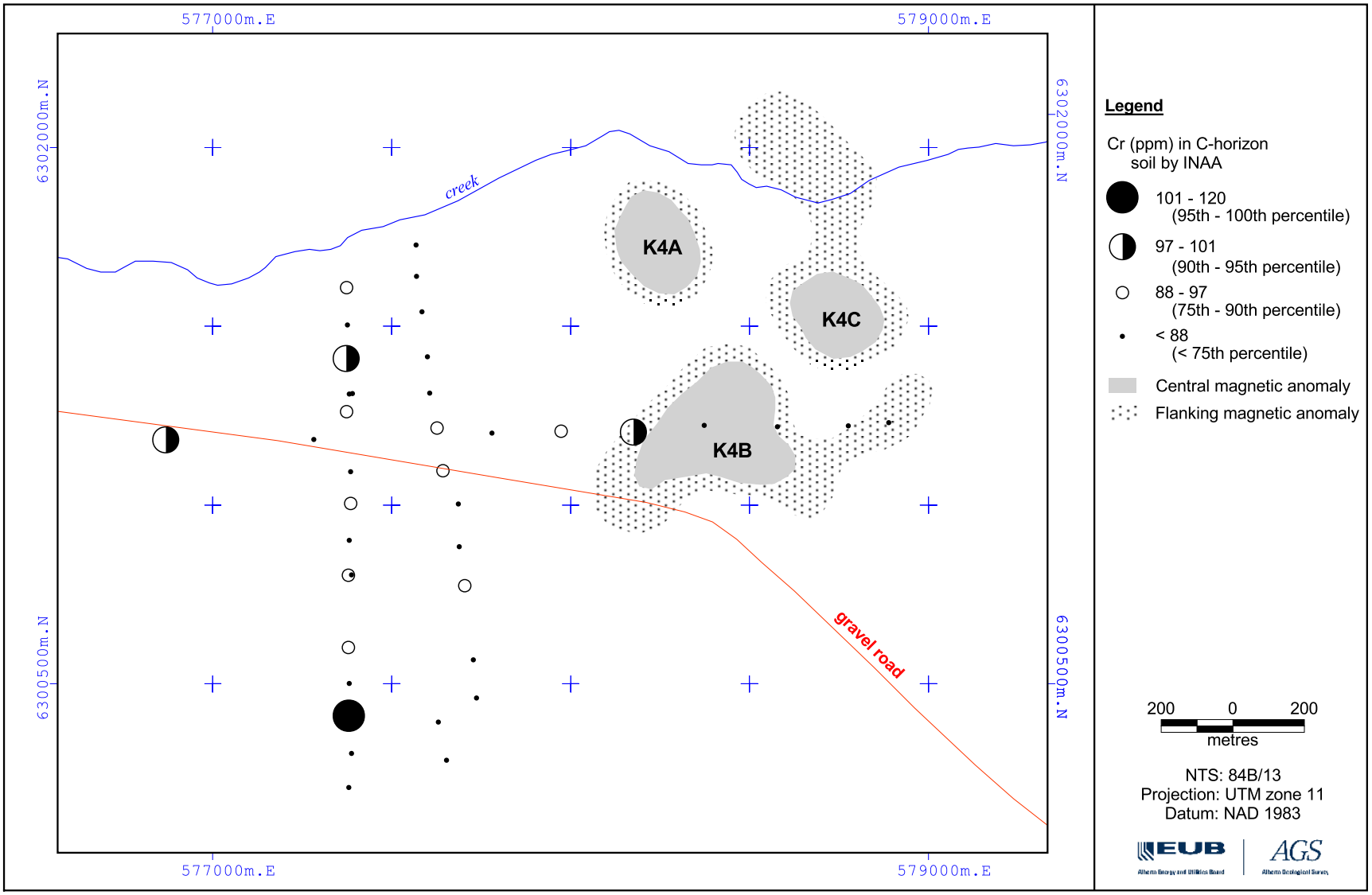

Figure 69. Cr (ppm) in C-horizon soil, determined by INAA.

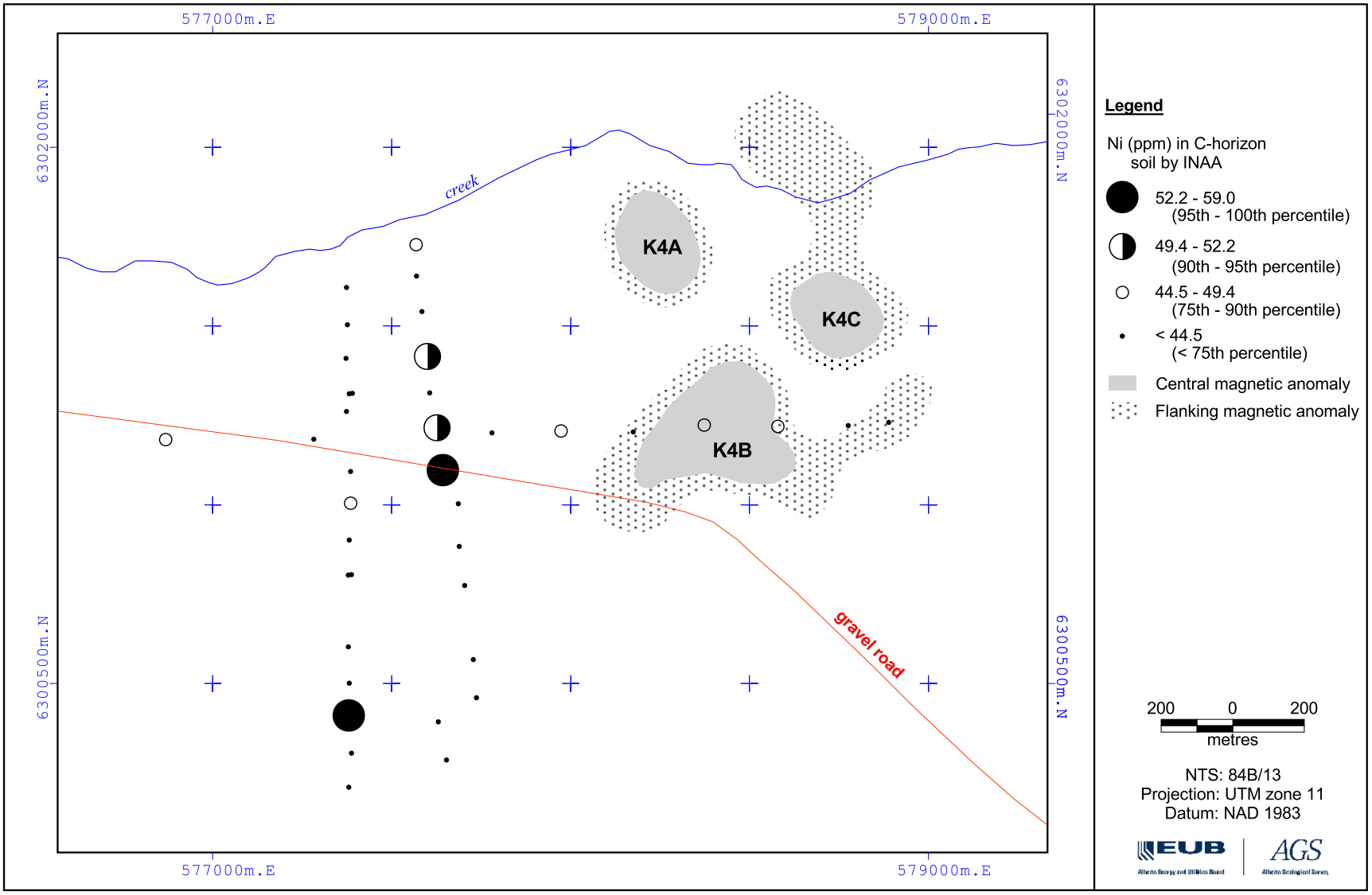

Figure 70. Ni (ppm) in C-horizon soil, determined by INAA.

The maximum aqua regia ICP-AES/MS Ni and Nb values returned from the 2001 K4B B-horizon soil survey are 51.6 ppm Ni and 0.48 ppm Nb. These maximum survey values are similar to or somewhat higher than the maximum B-horizon soil values obtained over the K5, Legend, K11 and TQ155 kimberlites but are markedly lower than maximum values obtained over the Mountain Lake diatreme (Table 12; Seneshen et al., 2005).

The results of the 2000 and 2001 B-horizon soil surveys are not entirely comparable as the samples were collected at different depths. The 2000 B-horizon soil samples were collected at depths of 15 to 25 cm below surface (Seneshen et al., 2005). In contrast, the 2001 B-horizon soil samples were collected, on average, between 41 and 79 cm below surface. The shallower sampling depth and narrower sampling range employed in 2000 is typical of many B-horizon surveys (e.g., the 1997 Mountain Lake survey by Eccles (1998) sampled the B-horizon at depths of 10 to 20 cm below the contact between organic soil and mineral soil, which typically occurs between 5 and 13 cm below surface in the Mountain Lake area).

Table 12. Summary of five B-horizon soil surveys completed in 2000 over ultramafic diatremes in northern Alberta (Seneshen et al., 2005) listing maximum values for Ni and Nb determined by aqua regia ICP-AES/MS.

Diatreme	Approximate overburden depth (m)	Maximum	
		Ni (ppm)	Nb (ppm)
Mountain Lake	2	745.8	3.94
K5	0-14	58.2	0.35
Legend	12	41.7	0.44
K11	13	25.7	0.33
TQ155	34	32.8	0.3

The maximum aqua regia ICP-AES/MS Ni and Nb values returned from the 2001 K4B C-horizon soil survey are 47.7 ppm Ni and 0.31 ppm Nb. These maximum survey values are similar to or somewhat lower than the maximum C-horizon soil values obtained over the K5, Legend, K11 and TQ155 kimberlites but are markedly lower than maximum values obtained over the Mountain Lake diatreme (Table 13; Seneshen et al., 2005).

Table 13. Summary of five C-horizon soil surveys completed in 2000 over ultramafic diatremes in northern Alberta (Seneshen et al., 2005) listing maximum values for Ni and Nb determined by aqua regia ICP-AES/MS.

Diatreme	Approximate overburden depth (m)	Maximum	
		Ni (ppm)	Nb (ppm)
Mountain Lake	2	786.6	8.94
K5	0-14	73.6	0.32
Legend	12	67.5	0.36
K11	13	34.7	0.45
TQ155	34	41.5	0.23

13 Conclusions

The results of the aqua regia ICP-AES/MS analyses indicate that most elements have much lower concentrations in the organic soil samples than in the C-horizon soil samples. Exceptions are K, Ca, Co, Zn, Sr, Nb, Mo and Ba, for which the median values are similar, and B, P, S, Mn, Se, Ag, Cd and Hg,

for which the median values in the organic soil samples exceed the median values in the C-horizon soil samples.

Total and near-total element concentrations, as determined by four-acid ICP-AES/MS and INAA, indicate B-horizon soil depletion relative to C-horizon soil of Mg, P, S, Ca, Mn, Co, Br, Sr and Cd, coupled with B-horizon enrichment of Cr, Fe, Rb, Y, Zr, Ag, Sn, Au, Hg, Bi, Th, U and the rare-earth elements. Aqua regia extractable results indicate B, Na, Mg, P, Ca, Mn, Co, Sr, Ag, Cd and Ba values are generally lower and Li, Be, Al, Sc, Ti, V, Cr, Fe, Ga, Se, Rb, Y, Nb, In, Sn, Te, Th, U and rare-earth element values are generally higher in B-horizon soil relative to C-horizon soil. Variability in Mg, P, Cr and Nb concentrations in mineral soil related to depth have implications for the use of soil geochemistry in diamond exploration as they may serve as kimberlite pathfinder elements.

Elevated Mg/Fe, Ni/V and B values in organic soil are spatially associated with the K4B kimberlite. The displacement of the geochemical response to the east of the interpreted centre of the K4B kimberlite may be controlled by easterly sloping topography.

No spatial clustering of elevated Ni, Nb, Mg or Cr values (anomalous pattern) is evident in either the B-horizon or C-horizon soil survey results over or down-ice (southwest) of the K4B kimberlite.

14 References

Dyke, A.S., Andrews, J.T, Clark, P.U., England, J.H., Miller, G.H., Shaw, J. and Veillette, J.J. (2002): The Laurentide and Innuitian ice sheets during the last glacial maximum; Quaternary Science Reviews: v. 21, p. 9-31.

Dyke, A.S., Moore, A. and Robertson, L. (2003): Deglaciation of North America; Geological Survey of Canada, Open File 1574, CD-ROM.

Eccles, D.R. (1998): Enzyme leach-based soil geochemistry of the Mountain Lake diatreme, Alberta; Alberta Energy and Utilities Board, EUB/AGS Open File Report 1998-01, 15 p.

Eccles, D.R. and Luth, R.W. (2003): Major- and trace-element geochemistry of kimberlitic rocks in northern Alberta; Alberta Energy and Utilities Board, EUB/AGS Earth Science Report 2001-05, 56 p.

Eccles, D.R., Pana, D.I., Paulen, R.C., Olson, R.A. and Magee, D. (2003): Discovery and geological setting of the northern Alberta kimberlite province; *in* VIIIth International Kimberlite Conference, Slave Province and Northern Alberta Field Trip Guidebook, B.A. Kjarsgaard (ed.), p. 1-10.

Fenton, M.M. (1984): Quaternary stratigraphy, Canadian Prairies; *in* Quaternary Stratigraphy of Canada - A Canadian Contribution to IGCP Project 24, R.J. Fulton (ed.), Geological Survey of Canada, Paper 84-10, p. 57-68.

Green, R., Mellon, G.B. and Carrigy, M.A. (1970): Bedrock geology of northern Alberta; Research Council of Alberta, scale 1:500 000.

Hamilton, W.N., Price, M.C. and Langenberg, C.W. (1999): Geological map of Alberta; Alberta Energy and Utilities Board, EUB/AGS Map No. 236, scale 1:1 000 000.

Krauskopf, K.B. (1979): Introduction to geochemistry; McGraw-Hill, New York, 617 p.

McClenaghan, M.B. and Kjarsgaard, B.A. (2001): Indicator mineral and geochemical methods for diamond exploration in glaciated terrain in Canada; *in* Drift Exploration in Glaciated Terrain, M.B. McClenaghan, P.T. Bobrowsky, G.E.M. Hall and S.J. Cook (ed.), Geological Society, London, Special Publication 185, p. 83–123.

Mitchell, R.H. (1986): Kimberlites: mineralogy, geochemistry and petrology; Plenum Press, New York, 441 p.

Paulen, R.C., Campbell, M.M., Fenton, M.M. and Pawlowicz, J.G. (2002a): Surficial geology of the southeast Buffalo Head Hills area, Alberta (NTS 84B/NW); Alberta Energy and Utilities Board, EUB/AGS Map 265, scale 1:100 000.

Paulen, R.C., Campbell, J.E., Fenton, M.M. and Pawlowicz, J.G. (2003): Surficial geology of the southeast Buffalo Head Hills area (NTS 84B/NW); Alberta Energy and Utilities Board, EUB/AGS Map 265, scale 1:100 000.

Paulen, R.C., Fenton, M.M. and Pawlowicz, J.G. (2002b): Late Wisconsin ice flow history in the Peerless Lake area (NTS 84B): implications for exploration; *in* The 11th Annual Calgary Mining Forum and Alberta Geological Survey Minerals Section Open House, Calgary, Alberta, Program with Abstracts, 63 p.

Pawlowicz, J.G., Prior, G.J., Dolby, G., Eccles, D.R. and Fenton, M.M. (2005): Early to Late Campanian palynological ages of mudstone and siltstone in the Sawn Lake area, southern Buffalo Head Hills, Alberta; Alberta Energy and Utilities Board, EUB/AGS Geo-note 2005-01, 19 p.

Pettapiece, W.W. (1986): Physiographic subdivisions of Alberta; Land Resource Research Centre, Research Branch, Agriculture Canada, Ottawa, map, scale 1:1 500 000.

Seneshen, D.M., Grunsky, E.C., Rencz, A., Hall, G.E.M. and Dunn, C.E. (2005): Geochemical orientation surveys (fiscal year 2000-2001) for kimberlites in northern Alberta; Alberta Energy and Utilities Board, EUB/AGS Earth Sciences Report 2005-01, 232 p.

Shields, J.A. and Lindsay, J.D. (1986): Soil landscapes of Canada, Alberta; Land Resource Research Centre, Research Branch, Agriculture Canada, Ottawa, Publication 5237/B, map, scale 1:1 000 000.

Skelton, D. and Bursey, T. (1998): Assessment report, Buffalo Hills Property (AL01), Ashton Mining of Canada Inc.; Alberta Geological Survey, Assessment File 19980015, 19 p.

Skelton, D. and Bursey, T. (1999): Assessment report, Buffalo Hills (AL01), Loon Lake (AL02), Birch Mountain (AL03), Rabbit Lake (AL04) and Muddy River (AL05) Properties, Ashton Mining of Canada Inc.; Alberta Geological Survey, Assessment File 19990011, 37 p.

Skelton, D.N., Clements, B., McCandles, T.E., Hood, C., Aulbach, S., Davies, R., and Boyer, L.P. (2003): The Buffalo Head Hills kimberlite province, Alberta; *in* VIIIth International Kimberlite Conference, Slave Province and Northern Alberta Field Trip Guidebook, B.A. Kjarsgaard (ed.). p. 11-19.

Soil Classification Working Group (1998): The Canadian system of soil classification; Agriculture and Agri-Food Canada, Publication 1646, NRC Research Press, Ottawa, 187 p.

Spectra Exploration Geoscience Corp. (1998): Alberta diamond play, participation survey – block 1; unpublished set of maps showing airborne magnetic data, scale 1:25 000.

Trommelen, M. (2004): Surficial Geology of the Sawn Lake region (84B/13); B.Sc. thesis, University of Alberta, 68 p.

Appendix 1 – Sample Descriptions

MF = Mark Fenton, JP = John Pawlowicz.

Clay, silt, sand, gravel and organic percentages listed are field estimates.

Relief is the estimated average vertical change in the direction of slope within a radius of approximately 50 m from the site.

Appendix 1 - Sample Descriptions

Field Number	Lab Number	Sample Material	East UTM NAD83	North UTM NAD83	Longitude NAD83 (°W)	Latitude NA83 (°N)	Site Number	Sample Control	Collector	Date Collected	From Depth (cm)	To Depth (cm)	Sample Size	Relief	Drainage
1259	1259	organic soil	577626	6301215	115.72730	56.84824	B-750	routine	MF	7/23/01	0	10	0.5-1 kg	0-2 m	good
1260	2001G 053	B-horizon till	577626	6301215	115.72730	56.84824	B-750	routine	MF	7/23/01	60	80	0.5-1 kg	0-2 m	good
1262	2001G 105	C-horizon till	577626	6301215	115.72730	56.84824	B-750	routine	MF	7/23/01	80	120	0.5-1 kg	0-2 m	good
1263	1263	organic soil	577686	6301001	115.72638	56.84631	1LS-200	routine	MF	7/24/01	2	10	0.5-1 kg	0-2 m	good
1264	2001G 054	B-horizon till	577686	6301001	115.72638	56.84631	1LS-200	routine	MF	7/24/01	40	75	0.5-1 kg	0-2 m	good
1266	2001G 106	C-horizon till	577686	6301001	115.72638	56.84631	1LS-200	routine	MF	7/24/01	90	120	0.5-1 kg	0-2 m	good
1267	1267	organic soil	577630	6300392	115.72748	56.84085	1LS-780	routine	MF	7/24/01	0	5	0.5-1 kg	0-2 m	poor
1269	2001G 107	C-horizon till	577630	6300392	115.72748	56.84085	1LS-780	routine	MF	7/24/01	80	120	0.5-1 kg	0-2 m	poor
1270	1270	organic soil	577737	6300459	115.72571	56.84143	1LS-700	routine	MF	7/24/01	1	5	0.5-1 kg	0-2 m	moderate
1271	2001G 055	B-horizon till	577737	6300459	115.72571	56.84143	1LS-700	routine	MF	7/24/01	40	90	0.5-1 kg	0-2 m	moderate
1272	2001G 108	C-horizon till	577737	6300459	115.72571	56.84143	1LS-700	routine	MF	7/24/01	90	120	0.5-1 kg	0-2 m	moderate
1273	1273	organic soil	577737	6300459	115.72571	56.84143	1LS-700	field duplicate	MF	7/24/01	1	5	0.5-1 kg	0-2 m	moderate
1274	2001G 056	B-horizon till	577737	6300459	115.72571	56.84143	1LS-700	field duplicate	MF	7/24/01	40	90	1-2 kg	0-2 m	moderate
1275	2001G 109	C-horizon till	577737	6300459	115.72571	56.84143	1LS-700	field duplicate	MF	7/24/01	90	120	1-2 kg	0-2 m	moderate
1276	1276	organic soil	577703	6300773	115.72616	56.84426	1LS-400	routine	MF	7/24/01	0	20	0.5-1 kg	0-2 m	moderate
1277	2001G 057	B-horizon till	577703	6300773	115.72616	56.84426	1LS-400	routine	MF	7/24/01	50	110	0.5-1 kg	0-2 m	moderate
1278	2001G 110	C-horizon till	577703	6300773	115.72616	56.84426	1LS-400	routine	MF	7/24/01	90	110	0.5-1 kg	0-2 m	moderate
1279	1279	organic soil	577703	6300773	115.72616	56.84426	1LS-400	field duplicate	MF	7/24/01	0	20	1-2 kg	0-2 m	moderate
1281	2001G 111	C-horizon till	577703	6300773	115.72616	56.84426	1LS-400	field duplicate	MF	7/24/01	90	120	0.5-1 kg	0-2 m	moderate
1282	1282	organic soil	577568	6301638	115.72811	56.85205	1LN-400	routine	MF	7/24/01	0	5	0.5-1 kg	0-2 m	good
1283	2001G 058	B-horizon till	577568	6301638	115.72811	56.85205	1LN-400	routine	MF	7/24/01	40	80	0.5-1 kg	0-2 m	good
1284	2001G 112	C-horizon till	577568	6301638	115.72811	56.85205	1LN-400	routine	MF	7/24/01	100	120	0.5-1 kg	0-2 m	good
1285	1285	organic soil	577584	6301539	115.72788	56.85116	1LN-300	routine	MF	7/24/01	0	3	0.5-1 kg	0-2 m	poor
1286	2001G 059	B-horizon till	577584	6301539	115.72788	56.85116	1LN-300	routine	MF	7/24/01	40	80	0.5-1 kg	0-2 m	poor
1287	2001G 113	C-horizon till	577584	6301539	115.72788	56.85116	1LN-300	routine	MF	7/24/01	100	120	0.5-1 kg	0-2 m	poor
1288	1288	organic soil	577584	6301539	115.72788	56.85116	1LN-300	field duplicate	MF	7/24/01	0	3	0.5-1 kg	0-2 m	poor
1289	2001G 060	B-horizon till	577584	6301539	115.72788	56.85116	1LN-300	field duplicate	MF	7/24/01	40	80	0.5-1 kg	0-2 m	poor
1290	1290	organic soil	577606	6301311	115.72760	56.84911	1LN-100	routine	MF	7/24/01	0	4	0.5-1 kg	0-2 m	good
1291	2001G 061	B-horizon till	577606	6301311	115.72760	56.84911	1LN-100	routine	MF	7/24/01	50	80	1-2 kg	0-2 m	good
1292	2001G 114	C-horizon till	577606	6301311	115.72760	56.84911	1LN-100	routine	MF	7/24/01	80	110	0.5-1 kg	0-2 m	good
1293	1293	organic soil	577373	6301260	115.73143	56.84869	2LN-015	routine	MF	7/24/01	0	1	0.5-1 kg	0-2 m	good
1294	2001G 062	B-horizon till	577373	6301260	115.73143	56.84869	2LN-015	routine	MF	7/24/01	40	90	0.5-1 kg	0-2 m	good
1295	2001G 115	C-horizon till	577373	6301260	115.73143	56.84869	2LN-015	routine	MF	7/24/01	90	100	0.5-1 kg	0-2 m	good
1296	1296	organic soil	577381	6301309	115.73129	56.84913	2LN-100	routine	MF	7/24/01	0	3	0.5-1 kg	2-5 m	good
1297	2001G 063	B-horizon till	577381	6301309	115.73129	56.84913	2LN-100	routine	MF	7/24/01	30	90	0.5-1 kg	2-5 m	good
1298	2001G 117	C-horizon till	577381	6301309	115.73129	56.84913	2LN-100	routine	MF	7/24/01	90	130	0.5-1 kg	2-5 m	good
1299	1299	organic soil	577390	6301311	115.73114	56.84914	2LN-125	routine	MF	7/24/01	1	5	0.5-1 kg	0-2 m	poor
1300	2001G 064	B-horizon till	577390	6301311	115.73114	56.84914	2LN-125	routine	MF	7/24/01	40	90	0.5-1 kg	0-2 m	poor
1301	2001G 119	C-horizon till	577390	6301311	115.73114	56.84914	2LN-125	routine	MF	7/24/01	90	200	1-2 kg	0-2 m	poor
1302	1302	organic soil	577376	6301502	115.73131	56.85086	2LN-300	routine	MF	7/24/01	1	4	0.5-1 kg	0-2 m	good

Appendix 1 - Sample Descriptions

Field Number	Lab Number	Sample Material	East UTM NAD83	North UTM NAD83	Longitude NAD83 (°W)	Latitude NA83 (°N)	Site Number	Sample Control	Collector	Date Collected	From Depth (cm)	To Depth (cm)	Sample Size	Relief	Drainage
1303	2001G 065	B-horizon till	577376	6301502	115.73131	56.85086	2LN-300	routine	MF	7/24/01	40	80	0.5-1 kg	0-2 m	good
1304	2001G 120	C-horizon till	577376	6301502	115.73131	56.85086	2LN-300	routine	MF	7/24/01	80	110	0.5-1 kg	0-2 m	good
1305	1305	organic soil	577376	6301502	115.73131	56.85086	2LN-300	field duplicate	MF	7/24/01	1	4	0.5-1 kg	0-2 m	good
1306	2001G 066	B-horizon till	577376	6301502	115.73131	56.85086	2LN-300	field duplicate	MF	7/24/01	40	80	0.5-1 kg	0-2 m	good
1307	2001G 121	C-horizon till	577376	6301502	115.73131	56.85086	2LN-300	field duplicate	MF	7/24/01	80	110	0.5-1 kg	0-2 m	good
1308	1308	organic soil	577384	6301092	115.73130	56.84718	2LS-100	routine	MF	7/24/01	1	10	0.5-1 kg	0-2 m	good
1309	2001G 067	B-horizon till	577384	6301092	115.73130	56.84718	2LS-100	routine	MF	7/24/01	30	90	0.5-1 kg	0-2 m	good
1310	2001G 122	C-horizon till	577384	6301092	115.73130	56.84718	2LS-100	routine	MF	7/24/01	90	110	0.5-1 kg	0-2 m	good
1311	1311	organic soil	577384	6301092	115.73130	56.84718	2LS-100	field duplicate	MF	7/24/01	0	10	0.5-1 kg	0-2 m	good
1312	2001G 068	B-horizon till	577384	6301092	115.73130	56.84718	2LS-100	field duplicate	MF	7/24/01	30	80	0.5-1 kg	0-2 m	good
1313	2001G 123	C-horizon till	577384	6301092	115.73130	56.84718	2LS-100	field duplicate	MF	7/24/01	90	110	0.5-1 kg	0-2 m	good
1314	1314	organic soil	577385	6301003	115.73131	56.84638	2LS-200	routine	MF	7/24/01	2	7	0.5-1 kg	0-2 m	good
1315	2001G 069	B-horizon till	577385	6301003	115.73131	56.84638	2LS-200	routine	MF	7/24/01	60	90	0.5-1 kg	0-2 m	good
1316	2001G 124	C-horizon till	577385	6301003	115.73131	56.84638	2LS-200	routine	MF	7/24/01	110	130	0.5-1 kg	0-2 m	good
1317	1317	organic soil	577381	6300900	115.73141	56.84545	2LS-300	routine	MF	7/24/01	0	6	0.5-1 kg	0-2 m	moderate
1318	2001G 070	B-horizon till	577381	6300900	115.73141	56.84545	2LS-300	routine	MF	7/24/01	60	90	0.5-1 kg	0-2 m	moderate
1319	2001G 125	C-horizon till	577381	6300900	115.73141	56.84545	2LS-300	routine	MF	7/24/01	100	120	0.5-1 kg	0-2 m	moderate
1320	1320	organic soil	577378	6300803	115.73149	56.84458	2LS-500	routine	MF	7/24/01	0	7	0.5-1 kg	0-2 m	moderate
1321	2001G 073	B-horizon till	577378	6300803	115.73149	56.84458	2LS-500	routine	MF	7/24/01	40	100	1-2 kg	0-2 m	moderate
1322	2001G 127	C-horizon till	577378	6300803	115.73149	56.84458	2LS-500	routine	MF	7/24/01	100	120	0.5-1 kg	0-2 m	moderate
1323	1323	organic soil	577380	6300500	115.73154	56.84186	2LS-700	routine	MF	7/24/01	1	5	0.5-1 kg	0-2 m	poor
1324	2001G 074	B-horizon till	577380	6300500	115.73154	56.84186	2LS-700	routine	MF	7/24/01	30	90	1-2 kg	0-2 m	poor
1325	2001G 128	C-horizon till	577380	6300500	115.73154	56.84186	2LS-700	routine	MF	7/24/01	90	110	0.5-1 kg	0-2 m	poor
1326	1326	organic soil	577380	6300500	115.73154	56.84186	2LS-700	field duplicate	MF	7/24/01	1	5	0.5-1 kg	0-2 m	poor
1327	2001G 075	B-horizon till	577380	6300500	115.73154	56.84186	2LS-700	field duplicate	MF	7/24/01	30	90	1-2 kg	0-2 m	poor
1328	2001G 129	C-horizon till	577380	6300500	115.73154	56.84186	2LS-700	field duplicate	MF	7/24/01	90	110	0.5-1 kg	0-2 m	poor
1329	1329	organic soil	577387	6300304	115.73149	56.84010	2LS-900	routine	MF	7/24/01	0	7	0.5-1 kg	0-2 m	moderate
1330	2001G 076	B-horizon till	577387	6300304	115.73149	56.84010	2LS-900	routine	MF	7/24/01	50	90	1-2 kg	0-2 m	moderate
1331	2001G 130	C-horizon till	577387	6300304	115.73149	56.84010	2LS-900	routine	MF	7/24/01	90	110	1-2 kg	0-2 m	moderate
1332	1332	organic soil	577380	6300209	115.73164	56.83925	2LS-1000	routine	MF	7/24/01	1	7	0.5-1 kg	0-2 m	good
1333	2001G 077	B-horizon till	577380	6300209	115.73164	56.83925	2LS-1000	routine	MF	7/24/01	50	90	1-2 kg	0-2 m	good
1334	2001G 131	C-horizon till	577380	6300209	115.73164	56.83925	2LS-1000	routine	MF	7/24/01	90	110	1-2 kg	0-2 m	good
1335	2001G 156	road dust	577350	6301150	115.73184	56.84770		routine	MF				0.5-1 kg		
1336	1336	organic soil	577282	6301182	115.73295	56.84800	B-1100	routine	MF	7/26/01	1	5	1-2 kg	0-2 m	moderate
1337	2001G 078	B-horizon till	577282	6301182	115.73295	56.84800	B-1100	routine	MF	7/26/01	20	80	0.5-1 kg	0-2 m	moderate
1338	2001G 132	C-horizon till	577282	6301182	115.73295	56.84800	B-1100	routine	MF	7/26/01	90	120	0.5-1 kg	0-2 m	moderate
1339	1339	organic soil	578373	6301222	115.71505	56.84818	B-000	routine	MF	7/26/01	5	10	0.5-1 kg	> 5 m	good
1340	2001G 079	B-horizon till	578373	6301222	115.71505	56.84818	B-000	routine	MF	7/26/01	30	90	0.5-1 kg	> 5 m	good
1341	2001G 133	C-horizon till	578373	6301222	115.71505	56.84818	B-000	routine	MF	7/26/01	90	120	1-2 kg	> 5 m	good
1342	1342	organic soil	578578	6301218	115.71169	56.84811	BE-200	routine	MF	7/26/01	0	7	0.5-1 kg	> 5 m	good

Appendix 1 - Sample Descriptions

Field Number	Lab Number	Sample Material	East UTM NAD83	North UTM NAD83	Longitude NAD83 (°W)	Latitude NA83 (°N)	Site Number	Sample Control	Collector	Date Collected	From Depth (cm)	To Depth (cm)	Sample Size	Relief	Drainage
1343	2001G 080	B-horizon till	578578	6301218	115.71169	56.84811	BE-200	routine	MF	7/26/01	40	100	1-2 kg	> 5 m	good
1344	2001G 134	C-horizon till	578578	6301218	115.71169	56.84811	BE-200	routine	MF	7/26/01	90	130	1-2 kg	> 5 m	good
1345	1345	organic soil	578775	6301221	115.70846	56.84810	BE-400	routine	MF	7/26/01	0	3	0.5-1 kg	0-2 m	good
1346	2001G 081	B-horizon till	578775	6301221	115.70846	56.84810	BE-400	routine	MF	7/26/01	40	90	1-2 kg	0-2 m	good
1347	2001G 135	C-horizon till	578775	6301221	115.70846	56.84810	BE-400	routine	MF	7/26/01	110	120	1-2 kg	0-2 m	good
1348	1348	organic soil	578979	6301226	115.70511	56.84811	BE-600	routine	MF	7/27/01	0	4	1-2 kg	0-2 m	moderate
1349	2001G 083	B-horizon till	578979	6301226	115.70511	56.84811	BE-600	routine	MF	7/27/01	30	100	1-2 kg	0-2 m	moderate
1379	1379	organic soil	577643	6301095	115.72706	56.84716	1LS-100	routine	MF	7/23/01	0	7	0.5-1 kg	0-2 m	good
1380	2001G 084	B-horizon till	577643	6301095	115.72706	56.84716	1LS-100	routine	MF	7/23/01	40	60	0.5-1 kg	0-2 m	good
1381	2001G 136	C-horizon till	577643	6301095	115.72706	56.84716	1LS-100	routine	MF	7/23/01	80	120	0.5-1 kg	0-2 m	good
1382	1382	organic soil	577689	6300882	115.72637	56.84524	1LS-300	routine	JP	7/24/01	2	5	0.5-1 kg	0-2 m	good
1383	2001G 085	B-horizon till	577689	6300882	115.72637	56.84524	1LS-300	routine	JP	7/24/01	40	60	0.5-1 kg	0-2 m	good
1384	2001G 137	C-horizon till	577689	6300882	115.72637	56.84524	1LS-300	routine	JP	7/24/01	85	110	0.5-1 kg	0-2 m	good
1385	1385	organic soil	577652	6300284	115.72715	56.83988	1LS-875	routine	JP	7/24/01	10	20	0.5-1 kg	0-2 m	poor
1386	2001G 086	B-horizon till	577652	6300284	115.72715	56.83988	1LS-875	routine	JP	7/24/01	30	40	1-2 kg	0-2 m	poor
1387	2001G 138	C-horizon till	577652	6300284	115.72715	56.83988	1LS-875	routine	JP	7/24/01	40	110	1-2 kg	0-2 m	poor
1388	1388	organic soil	577727	6300565	115.72584	56.84239	1LS-600	routine	JP	7/24/01	5	10	0.5-1 kg	0-2 m	moderate
1389	2001G 087	B-horizon till	577727	6300565	115.72584	56.84239	1LS-600	routine	JP	7/24/01	35	60	1-2 kg	0-2 m	moderate
1390	2001G 139	C-horizon till	577727	6300565	115.72584	56.84239	1LS-600	routine	JP	7/24/01	70	110	1-2 kg	0-2 m	moderate
1391	1391	organic soil	577717	6300670	115.72597	56.84333	1LS-500	routine	JP	7/24/01	15	25	0.5-1 kg	0-2 m	poor
1392	1392	organic soil	577717	6300670	115.72597	56.84333	1LS-500	field duplicate	JP	7/24/01	15	25	0.5-1 kg	0-2 m	poor
1393	2001G 088	B-horizon till	577717	6300670	115.72597	56.84333	1LS-500	routine	JP	7/24/01	30	60	1-2 kg	0-2 m	poor
1394	2001G 090	B-horizon till	577717	6300670	115.72597	56.84333	1LS-500	field duplicate	JP	7/24/01	30	60	1-2 kg	0-2 m	poor
1395	1395	organic soil	577567	6301726	115.72811	56.85284	1LN-500	routine	JP	7/25/01	10	15	0.5-1 kg	2-5 m	good
1396	2001G 091	B-horizon till	577567	6301726	115.72811	56.85284	1LN-500	routine	JP	7/25/01	35	60	1-2 kg	2-5 m	good
1397	2001G 141	C-horizon till	577567	6301726	115.72811	56.85284	1LN-500	routine	JP	7/25/01	80	90	1-2 kg	2-5 m	good
1398	1398	organic soil	577599	6301414	115.72767	56.85003	1LN-200	routine	JP	7/25/01	5	10	0.5-1 kg	0-2 m	moderate
1399	2001G 092	B-horizon till	577599	6301414	115.72767	56.85003	1LN-200	routine	JP	7/25/01	40	65	1-2 kg	0-2 m	moderate
1400	2001G 142	C-horizon till	577599	6301414	115.72767	56.85003	1LN-200	routine	JP	7/25/01	125	145	1-2 kg	0-2 m	moderate
1501	1501	organic soil	577371	6301408	115.73141	56.85002	2LN-200	routine	JP	7/25/01	10	15	0.5-1 kg	2-5 m	moderate
1502	2001G 093	B-horizon till	577371	6301408	115.73141	56.85002	2LN-200	routine	JP	7/25/01	45	65	0.5-1 kg	2-5 m	moderate
1503	2001G 143	C-horizon till	577371	6301408	115.73141	56.85002	2LN-200	routine	JP	7/25/01	190	205	0.5-1 kg	2-5 m	moderate
1504	1504	organic soil	577373	6301606	115.73132	56.85180	2LN-400	routine	JP	7/25/01	10	15	0.5-1 kg	0-2 m	moderate
1505	2001G 094	B-horizon till	577373	6301606	115.73132	56.85180	2LN-400	routine	JP	7/25/01	50	70	0.5-1 kg	0-2 m	moderate
1506	2001G 144	C-horizon till	577373	6301606	115.73132	56.85180	2LN-400	routine	JP	7/25/01	150	160	0.5-1 kg	0-2 m	moderate
1507	1507	organic soil	577387	6300803	115.73134	56.84458	2LS-400	routine	JP	7/26/01	15	20	0.5-1 kg	0-2 m	moderate
1508	2001G 095	B-horizon till	577387	6300803	115.73134	56.84458	2LS-400	routine	JP	7/26/01	50	80	0.5-1 kg	0-2 m	moderate
1509	2001G 145	C-horizon till	577387	6300803	115.73134	56.84458	2LS-400	routine	JP	7/26/01	100	120	0.5-1 kg	0-2 m	moderate
1510	1510	organic soil	577378	6300601	115.73155	56.84277	2LS-600	routine	JP	7/26/01	25	30	0.5-1 kg	0-2 m	poor
1511	2001G 096	B-horizon till	577378	6300601	115.73155	56.84277	2LS-600	routine	JP	7/26/01	35	50	0.5-1 kg	0-2 m	poor

Appendix 1 - Sample Descriptions

Field Number	Lab Number	Sample Material	East UTM NAD83	North UTM NAD83	Longitude NAD83 (°W)	Latitude NA83 (°N)	Site Number	Sample Control	Collector	Date Collected	From Depth (cm)	To Depth (cm)	Sample Size	Relief	Drainage
1512	2001G 146	C-horizon till	577378	6300601	115.73155	56.84277	2LS-600	routine	JP	7/26/01	70	110	0.5-1 kg	0-2 m	poor
1513	2001G 147	C-horizon till	577378	6300601	115.73155	56.84277	2LS-600	field duplicate	JP	7/26/01	70	110	0.5-1 kg	0-2 m	poor
1514	1514	organic soil	577380	6300409	115.73158	56.84104	2LS-800	routine	JP	7/26/01	10	15	0.5-1 kg	0-2 m	moderate
1515	2001G 097	B-horizon till	577380	6300409	115.73158	56.84104	2LS-800	routine	JP	7/26/01	55	75	0.5-1 kg	0-2 m	moderate
1516	2001G 148	C-horizon till	577380	6300409	115.73158	56.84104	2LS-800	routine	JP	7/26/01	130	150	0.5-1 kg	0-2 m	moderate
1517	1517	organic soil	577073	6301195	115.73636	56.84815	B-1300	routine	JP	7/26/01	10	20	0.5-1 kg	0-2 m	moderate
1518	2001G 098	B-horizon till	577073	6301195	115.73636	56.84815	B-1300	routine	JP	7/26/01	60	80	0.5-1 kg	0-2 m	moderate
1519	1519	organic soil	578767	6301234	115.70858	56.84822	BE-400	field duplicate	MF	7/26/01	10	15	0.5-1 kg	0-2 m	good
1520	2001G 099	B-horizon till	578775	6301221	115.70846	56.84810	BE-400	field duplicate	MF	7/26/01	50	70	0.5-1 kg	0-2 m	good
1521	2001G 150	C-horizon till	578775	6301221	115.70846	56.84810	BE-400	field duplicate	MF	7/26/01	100	120	0.5-1 kg	0-2 m	good
1522	1522	organic soil	578174	6301203	115.71831	56.84804	B-200	routine	JP	7/27/01	10	15	0.5-1 kg	0-2 m	poor
1523	2001G 100	B-horizon till	578174	6301203	115.71831	56.84804	B-200	routine	JP	7/27/01	65	95	0.5-1 kg	0-2 m	poor
1524	2001G 151	C-horizon till	578174	6301203	115.71831	56.84804	B-200	routine	JP	7/27/01	115	135	0.5-1 kg	0-2 m	poor
1525	1525	organic soil	577972	6301206	115.72162	56.84810	B-400	routine	JP	7/27/01	5	10	0.5-1 kg	2-5 m	good
1526	2001G 101	B-horizon till	577972	6301206	115.72162	56.84810	B-400	routine	JP	7/27/01	40	65	0.5-1 kg	2-5 m	good
1527	2001G 152	C-horizon till	577972	6301206	115.72162	56.84810	B-400	routine	JP	7/27/01	75	100	0.5-1 kg	2-5 m	good
1601	1601	organic soil	578889	6301230	115.70659	56.84816	BE-550	routine	MF	7/27/01	1	10	0.5-1 kg	0-2 m	moderate
1602	2001G 102	B-horizon till	578889	6301230	115.70659	56.84816	BE-550	routine	MF	7/27/01	30	70	1-2 kg	0-2 m	moderate
1603	2001G 153	C-horizon till	578889	6301230	115.70659	56.84816	BE-550	routine	MF	7/27/01	70	100	1-2 kg	0-2 m	moderate
1604	1604	organic soil	577779	6301200	115.72479	56.84808	B-600	routine	MF	7/27/01	1	10	0.5-1 kg	0-2 m	moderate
1605	2001G 103	B-horizon till	577779	6301200	115.72479	56.84808	B-600	routine	MF	7/27/01	30	80	1-2 kg	0-2 m	moderate
1606	2001G 154	C-horizon till	577779	6301200	115.72479	56.84808	B-600	routine	MF	7/27/01	90	120	1-2 kg	0-2 m	moderate
1607	1607	organic soil	576867	6301182	115.73974	56.84807	B-1500	routine	MF	7/27/01	5	10	0.5-1 kg	0-2 m	moderate
1608	2001G 104	B-horizon till	576867	6301182	115.73974	56.84807	B-1500	routine	MF	7/27/01	40	60	0.5-1 kg	0-2 m	moderate
1609	2001G 155	C-horizon till	576867	6301182	115.73974	56.84807	B-1500	routine	MF	7/27/01	150	170	0.5-1 kg	0-2 m	moderate

Appendix 1 - Sample Descriptions

Field Number	Slope Direction	Vegetation Intensity	White Spruce (%)	Black Spruce (%)	Aspen (%)	Alder (%)	Colour	Moisture	Structure	Features	10% HCl Reaction	Organic Material Decomposition	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Organic (%)
1259	W	forest	75		25		black	moist				very strong					
1260	W	forest	75		25		brown	moist	massive	iron	none		30	60	10	0	0
1262	W	forest	75		25		brown	moist	massive	lime; iron	strong		25	65	10	0	0
1263	S	forest	80		20		black	moist				very strong					
1264	S	forest	80		20		brown	moist	massive	iron	none		30	50	20	0	0
1266	S	forest	80		20		brown	moist	massive	lime; iron	strong		20	40	40	0	0
1267	S	forest	75		25		black	wet				strong					
1269	S	forest	75		25		brown	wet	massive	lime; iron	strong		40	50	10	0	0
1270	S	forest	25		75		black	moist				very strong					
1271	S	forest	25		75		brown	moist	massive	iron	none		40	50	10	0	0
1272	S	forest	25		75		brown	moist	massive	lime; iron	strong		30	60	10	0	0
1273	S	forest	25		75		black	moist				very strong					
1274	S	forest	25		75		brown	moist	massive	iron	none		40	50	10	0	0
1275	S	forest	25		75		brown	moist	massive	lime; iron	strong		30	60	10	0	0
1276	S	forest	50		20	30	black	moist				very strong					
1277	S	forest	50		20	30	brown	moist	massive	iron	none		30	60	10	0	0
1278	S	forest	50		20	30	brown	moist	massive	lime; iron	strong		50	30	20	0	0
1279	S	forest	50		20	30	black	moist				very strong					
1281	S	forest	50		20	30	brown	moist	massive	lime; iron	strong		50	30	20	0	0
1282	NW	forest			100		black	moist				strong					
1283	NW	forest			100		brown	moist	massive	iron	none		30	60	10	0	0
1284	NW	forest			100		brown	moist	massive	lime; iron	strong		30	60	10	0	0
1285	NW	forest	25		75		black	moist		30cm of sand below organic		moderate					
1286	NW	forest	25		75		brown	moist	massive	iron	none		30	50	20	0	0
1287	NW	forest	25		75		brown	moist	massive	iron; many limestone clasts	strong		0	0	0	0	0
1288	NW	forest	25		75		black	moist		30cm of sand below organic		moderate					
1289	NW	forest	25		75		brown	moist	massive	iron	none		30	50	20	0	0
1290	NW	forest	50		50		black	moist				strong					
1291	NW	forest	50		50		brown	moist	massive	iron	none		0	0	0	0	0
1292	NW	forest	50		50		brown	moist	massive	gravel lenses; iron; lime	strong		30	60	10	0	0
1293	S	forest	60		40		black	dry		high proportion min soil		weak					
1294	S	forest	60		40		brown	moist			not done		0	0	0	0	0
1295	S	forest	60		40		brown	dry	massive	iron	strong		0	0	0	0	0
1296	NW	forest	80		20		black	moist				moderate					
1297	NW	forest	80		20		brown	moist			not done		0	0	0	0	0
1298	NW	forest	80		20		brown	moist			not done		0	0	0	0	0
1299	S	parkland	90		10		black	wet				very strong					
1300	S	parkland	90		10		brown	moist		iron	not done		30	60	10	0	0
1301	S	parkland	90		10		dark brown	wet	massive	iron	strong		0	0	0	0	0

Appendix 1 - Sample Descriptions

Field Number	Slope Direction	Vegetation Intensity	White Spruce (%)	Black Spruce (%)	Aspen (%)	Alder (%)	Colour	Moisture	Structure	Features	10% HCl Reaction	Organic Material Decomposition	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Organic (%)
1302	SE	forest	30		70		black	moist				moderate					
1303	SE	forest	30		70		brown	moist	massive	iron	not done		25	50	25	0	0
1304	SE	forest	30		70		dark brown	moist	massive	iron	strong		30	60	10	0	0
1305	SE	forest	30		70		black	moist				moderate					
1306	SE	forest	30		70		brown	moist	massive	iron	not done		25	50	25	0	0
1307	SE	forest	30		70		dark brown	moist	massive	iron	strong		30	60	10	0	0
1308	SE	forest	100				black	moist				strong					
1309	SE	forest	100				brown	moist		iron	none		30	60	10	0	0
1310	SE	forest	100				brown	moist	massive	iron	strong		25	50	25	0	0
1311	SE	forest	100				black	moist				strong					
1312	SE	forest	100				brown	moist		iron	none		30	60	10	0	0
1313	SE	forest	100				brown	moist	massive	iron	strong		25	50	25	0	0
1314	S	forest	75		25		black	moist				very strong					
1315	S	forest	75		25		brown	moist	massive	iron	none		30	60	10	0	0
1316	S	forest	75		25		brown	moist	massive	iron; lime	strong		30	60	10	0	0
1317	NW	forest	50		50		black	moist				strong					
1318	NW	forest	50		50		brown	moist			not done		0	0	0	0	0
1319	NW	forest	50		50		brown	moist	massive	iron	strong		25	50	25	0	0
1320	S	forest	90		10		black	moist				very strong					
1321	S	forest	90		10		brown	moist	massive	iron	none		30	60	10	0	0
1322	S	forest	90		10		brown	wet	massive	iron	strong		30	60	10	0	0
1323	W	forest	100				black	moist				very strong					
1324	W	forest	100				brown	wet	massive	iron	none		30	60	10	0	0
1325	W	forest	100				brown	wet	massive	iron	strong		30	60	10	0	0
1326	W	forest	100				black	moist				very strong					
1327	W	forest	100				brown	wet	massive	iron	none		30	60	10	0	0
1328	W	forest	100				brown	wet	massive	iron	strong		30	60	10	0	0
1329	N	forest	25		75		black	moist				very strong					
1330	N	forest	25		75		brown	moist	massive	iron	none		30	60	10	0	0
1331	N	forest	25		75		brown	moist	massive	iron; abundant cca	strong		30	60	10	0	0
1332	E	forest	60		40		black	moist				strong					
1333	E	forest	60		40		brown	moist	massive	iron	not done		25	25	50	0	0
1334	E	forest	60		40		brown	moist	massive	iron	strong		30	10	60	0	0
1335																	
1336	E	forest	95		5		black	moist				moderate					
1337	E	forest	95		5		brown	moist	massive	iron	none		30	60	10	0	0
1338	E	forest	95		5		brown	moist	massive	iron	strong		30	60	10	0	0
1339	S	forest			100		black	moist				very strong					
1340	S	forest			100		brown	moist	massive	iron	none		25	50	25	0	0

Appendix 1 - Sample Descriptions

Field Number	Slope Direction	Vegetation Intensity	White Spruce (%)	Black Spruce (%)	Aspen (%)	Alder (%)	Colour	Moisture	Structure	Features	10% HCl Reaction	Organic Material Decomposition	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Organic (%)
1341	S	forest			100		brown	dry	massive	iron	strong		30	60	10	0	0
1342	S	forest			100		black	moist				strong					
1343	S	forest			100		brown	dry	massive	iron	none		30	60	10	0	0
1344	S	forest			100		brown	dry	massive	lime	strong		30	60	10	0	0
1345	E	forest			100		dark brown	moist	massive			strong					
1346	E	forest			100		brown	moist	massive		none		25	50	25	0	0
1347	E	forest			100		brown	moist	massive	lime; iron	strong		20	40	40	0	0
1348	E	forest			25	75	brown	moist				very strong					
1349	E	forest			25	75	brown	moist		gravely	none		20	20	60	0	0
1379	S	forest	75		25		black	moist									
1380	S	forest	75		25		brown	moist	massive	iron	none		30	60	10	0	0
1381	S	forest	75		25		brown	moist	massive	lime; iron	strong		25	65	10	0	0
1382	SE	forest	60		40		dark brown	moist	massive			strong					
1383	SE	forest	60		40		brown	moist	massive	iron	none		40	50	10	0	0
1384	SE	forest	60		40		brown	moist	massive	lime	strong		35	55	10	0	0
1385	flat	forest		100			dark brown	moist									
1386	flat	forest		100			brown	wet	massive		none		10	30	60	0	0
1387	flat	forest		100			brown	wet	massive	iron; lime	strong		20	20	60	0	0
1388	SE	forest	60		40		dark brown	moist	massive			very strong					
1389	SE	forest	60		40		brown	moist	massive	iron	none		35	40	25	0	0
1390	SE	forest	60		40		brown	moist	massive		strong		35	45	20	0	0
1391	SW	forest	40		60		black	moist	massive			very strong					
1392	SW	forest	40		60		black	moist	massive			very strong					
1393	SW	forest	40		60		brown	wet	massive		none		50	20	30	0	0
1394	SW	forest	40		60		brown	wet	massive		none		50	20	30	0	0
1395	N	forest			100		dark brown	moist	massive			very strong					
1396	N	forest			100		brown	moist	massive	iron	none		30	30	40	0	0
1397	N	forest			100		brown	moist	massive	lime; iron	weak		10	10	30	50	0
1398	flat	forest	40		60		dark brown	moist	massive			very strong					
1399	flat	forest	40		60		brown	moist	massive		none		40	50	10	0	0
1400	flat	forest	40		60		brown	moist	massive	lime	weak		30	50	20	0	0
1501	W	forest	70		20	10	dark brown	moist	massive			very strong					
1502	W	forest	70		20	10	brown	moist	massive	iron	none		50	40	10	0	0
1503	W	forest	70		20	10	brown	moist	massive		weak		50	30	20	0	0
1504	N	forest	40		60		dark brown	moist	massive			very strong					
1505	N	forest	40		60		brown	moist	massive		none		50	40	10	0	0
1506	N	forest	40		60		brown	moist	massive		none		50	40	10	0	0
1507	S	forest	70		30		black	moist	massive			very strong					
1508	S	forest	70		30		brown	moist	massive	iron	none		50	40	10	0	0

Appendix 1 - Sample Descriptions

Field Number	Slope Direction	Vegetation Intensity	White Spruce (%)	Black Spruce (%)	Aspen (%)	Alder (%)	Colour	Moisture	Structure	Features	10% HCl Reaction	Organic Material Decomposition	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Organic (%)
1509	S	forest	70		30		brown	moist	massive	lime	strong		40	40	20	0	0
1510	SW	forest	70		10	20	black	moist	massive			very strong					
1511	SW	forest	70		10	20	brown	moist	massive		none		50	40	10	0	0
1512	SW	forest	70		10	20	brown	wet	massive		strong		40	50	10	0	0
1513	SW	forest	70		10	20	brown	wet	massive		strong		40	50	10	0	0
1514	flat	forest	15		45	40	black	moist	massive			very strong					
1515	flat	forest	15		45	40	brown	moist	massive	iron	none		40	40	20	0	0
1516	flat	forest	15		45	40	brown	moist	massive	iron; lime	strong		50	40	10	0	0
1517	S	forest	50		40		dark brown	moist	massive			strong					
1518	S	forest	50		40		brown	moist	massive	iron	none		30	40	30	0	0
1519	E	forest			100		dark brown	moist	massive			strong					
1520	E	forest			100		brown	moist	massive		none		25	50	25	0	0
1521	E	forest			100		brown	moist	massive	lime; iron	strong		20	40	40	0	0
1522	N	forest	5		50	45	black	moist	massive			very strong					
1523	N	forest	5		50	45	brown	wet	massive	lime	none		40	40	20	0	0
1524	N	forest	5		50	45	brown	wet	massive		none		40	40	20	0	0
1525	W	forest	33		34	33	black	moist	massive			very strong					
1526	W	forest	33		34	33	brown	moist	massive		none		35	35	30	0	0
1527	W	forest	33		34	33	brown	moist	massive	lime	weak		30	40	30	0	0
1601	E	forest			100		brown	moist		iron; lime		very strong					
1602	E	forest			100		brown	moist	massive	iron	none		30	60	10	0	0
1603	E	forest			100		brown	moist	massive	iron; lime	strong		30	60	10	0	0
1604	W	cutblock					black	moist				strong					
1605	W	cutblock					brown	moist	massive	iron	none		30	60	10	0	0
1606	W	cutblock					brown	moist	massive	iron	not done		30	60	10	0	0
1607	SW	forest	80		20		brown	moist				strong					
1608	SW	forest	80		20		brown	moist	massive	iron	not done		50	50	0	0	0
1609	SW	forest	80		20		brown	moist	massive	lime	strong		50	40	10	0	0

Appendix 2 – Organic Soil Analytical Results

All geochemical analyses by Acme Analytical Laboratories Ltd.

LOI = loss on ignition at 475°C (1 g sample).

All other determinations by ICP-AES or ICP-MS.

Values below lower detection limit indicated by negative (-) sign.

Appendix 2 - Organic Soil Analytical Results

Field Number	East UTM NAD83	North UTM NAD83	Longitude NAD83 (°W)	Latitude NAD83 (°N)	Acme File	Acme LOI File	Site Number	Sample Control	Unit Type	Apparent Density (g/cm3)
1259	577625.69276	6301214.76750	115.7273	56.84824	104077	A104077R	B-750	routine	organic soil	0.474
1263	577685.80093	6301000.99954	115.72638	56.84631	104077	A104077R	1LS-200	routine	organic soil	0.489
1267	577630.01094	6300392.04504	115.72748	56.84085	104077	A104077R	1LS-780	routine	organic soil	0.419
1270	577736.78042	6300458.60910	115.72571	56.84143	104077	A104077R	1LS-700	routine	organic soil	0.469
1272b					104077	A104077R		AGS lab duplicate of 1267		0.419
1272c					104077	A104077R		AGS standard CANMET LKSD-4		0.241
1273	577736.78042	6300458.60910	115.72571	56.84143	104077	A104077R	1LS-700	field duplicate of 1270	organic soil	0.458
1276	577703.46680	6300773.08119	115.72616	56.84426	104077	A104077R	1LS-400	routine	organic soil	0.537
1279	577703.46680	6300773.08119	115.72616	56.84426	104077	A104077R	1LS-400	field duplicate of 1276	organic soil	0.437
1282	577568.40902	6301637.90816	115.72811	56.85205	104077	A104077R	1LN-400	routine	organic soil	0.561
1285	577584.27678	6301539.11044	115.72788	56.85116	104077	A104077R	1LN-300	routine	organic soil	0.694
1288	577584.27678	6301539.11044	115.72788	56.85116	104077	A104077R	1LN-300	field duplicate of 1285	organic soil	0.483
1290	577605.59541	6301311.25961	115.7276	56.84911	104077	A104077R	1LN-100	routine	organic soil	0.556
1293	577372.87996	6301260.17576	115.73143	56.84869	104077	A104077R	2LN-015	routine	organic soil	0.832
1295b					104077	A104077R		AGS lab duplicate of 1290		0.546
1295c					104077	A104077R		AGS standard CANMET LKSD-4		0.241
1296	577380.51025	6301309.30681	115.73129	56.84913	104077	A104077R	2LN-100	routine	organic soil	0.544
1299	577389.63774	6301310.58946	115.73114	56.84914	104077	A104077R	2LN-125	routine	organic soil	0.310
1302	577375.72022	6301501.83610	115.73131	56.85086	104077	A104077R	2LN-300	routine	organic soil	0.411
1305	577375.72022	6301501.83610	115.73131	56.85086	104077	A104077R	2LN-300	field duplicate of 1302	organic soil	0.387
1308	577383.92463	6301092.25727	115.7313	56.84718	104077	A104077R	2LS-100	routine	organic soil	0.392
1311	577383.92463	6301092.25727	115.7313	56.84718	104077	A104077R	2LS-100	field duplicate of 1308	organic soil	0.388
1314	577384.96566	6301003.20466	115.73131	56.84638	104077	A104077R	2LS-200	routine	organic soil	0.396
1317	577380.78551	6300899.58107	115.73141	56.84545	104077	A104077R	2LS-300	routine	organic soil	0.420
1320	577377.70114	6300802.65821	115.73149	56.84458	104077	A104077R	2LS-500	routine	organic soil	0.375
1323	577380.26333	6300499.86139	115.73154	56.84186	104077	A104077R	2LS-700	routine	organic soil	0.365
1326	577380.26333	6300499.86139	115.73154	56.84186	104077	A104077R	2LS-700	field duplicate of 1323	organic soil	0.343
1329	577386.94460	6300304.02723	115.73149	56.8401	104077	A104077R	2LS-900	routine	organic soil	0.419
1332	577379.54779	6300209.25133	115.73164	56.83925	104077	A104077R	2LS-1000	routine	organic soil	0.343

Appendix 2 - Organic Soil Analytical Results

Field Number	East UTM NAD83	North UTM NAD83	Longitude NAD83 (°W)	Latitude NAD83 (°N)	Acme File	Acme LOI File	Site Number	Sample Control	Unit Type	Apparent Density (g/cm3)
1336	577281.6	6301181.65995	115.73295	56.848	104077	A104077R	B-1100	routine	organic soil	0.413
1339	578372.93143	6301222.05277	115.71505	56.84818	104077	A104077R	B-000	routine	organic soil	0.518
1342	578578.00069	6301218.11500	115.71169	56.84811	104077	A104077R	BE-200	routine	organic soil	0.420
1344b					104077	A104077R		AGS lab duplicate of 1339		0.473
1344c					104077	A104077R		AGS standard CANMET LKSD-4		0.255
1345	578775.01598	6301220.71571	115.70846	56.8481	104077	A104077R	BE-400	routine	organic soil	0.423
1348	578979.30783	6301225.69027	115.70511	56.84811	104077	A104077R	BE-600	routine	organic soil	0.415
1379	577642.56635	6301094.83409	115.72706	56.84716	104077	A104077R	1LS-100	routine	organic soil	0.450
1382	577688.62755	6300881.91825	115.72637	56.84524	104077	A104077R	1LS-300	routine	organic soil	0.414
1385	577652.14942	6300284.45703	115.72715	56.83988	104077	A104077R	1LS-875	routine	organic soil	0.411
1388	577726.86087	6300565.31084	115.72584	56.84239	104077	A104077R	1LS-600	routine	organic soil	0.480
1391	577716.98315	6300669.78658	115.72597	56.84333	104077	A104077R	1LS-500	routine	organic soil	0.772
1392	577716.98315	6300669.78658	115.72597	56.84333	104077	A104077R	1LS-500	field duplicate of 1391	organic soil	0.800
1395	577566.77450	6301725.83648	115.72811	56.85284	104077	A104077R	1LN-500	routine	organic soil	0.566
1398	577599.4222	6301413.57772	115.72767	56.85003	104077	A104077R	1LN-200	routine	organic soil	0.450
1501	577371.35517	6301408.22962	115.73141	56.85002	104077	A104077R	2LN-200	routine	organic soil	0.495
1504	577373.17044	6301606.44840	115.73132	56.8518	104077	A104077R	2LN-400	routine	organic soil	0.501
1507	577386.85037	6300802.82784	115.73134	56.84458	104077	A104077R	2LS-400	routine	organic soil	0.722
1510	577377.77585	6300601.13451	115.73155	56.84277	104077	A104077R	2LS-600	routine	organic soil	0.746
1514	577379.51510	6300408.54889	115.73158	56.84104	104077	A104077R	2LS-800	routine	organic soil	0.669
1515b					104077	A104077R		AGS lab duplicate of 1510		0.738
1515c					104077	A104077R		AGS standard CANMET LKSD-4		0.245
1517	577073.31797	6301194.50923	115.73636	56.84815	104077	A104077R	B-1300	routine	organic soil	0.668
1519	578767	6301234	115.70858	56.84822	104077	A104077R	BE-400	field duplicate of 1345	organic soil	0.759
1522	578174.39952	6301202.74153	115.71831	56.84804	104077	A104077R	B-200	routine	organic soil	0.575
1525	577972.40066	6301205.6431	115.72162	56.8481	104077	A104077R	B-400	routine	organic soil	0.807
1601	578888.93905	6301229.54810	115.70659	56.84816	104077	A104077R	BE-550	routine	organic soil	0.467
1604	577779.10675	6301199.80943	115.72479	56.84808	104077	A104077R	B-600	routine	organic soil	0.481
1607	576867.33866	6301181.80319	115.73974	56.84807	104077	A104077R	B-1500	routine	organic soil	0.522

Appendix 2 - Organic Soil Analytical Results

Field Number	LOI (%)	Li (ppm)	Be (ppm)	B (ppm)	Na (%)	Mg (%)	Al (%)	P (%)	S (%)	K (%)	Ca (%)	Sc (ppm)	Ti (%)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)
1259	76.6	1.8	0.1	12	0.002	0.14	0.23	0.167	0.17	0.12	2	0.3	0.003	6	4.9	1861	0.36	9.5	10.9	9.5	93.1	0.8	-0.1
1263	85.3	1	0.1	12	0.002	0.13	0.16	0.189	0.2	0.13	2.29	0.2	0.002	5	3.8	1251	0.24	8	10	9.31	124.6	0.6	-0.1
1267	88.6	0.7	0.1	17	0.002	0.1	0.12	0.108	0.18	0.09	1.87	0.3	0.002	4	3.7	209	0.18	2.4	5	3.97	62.2	0.4	-0.1
1270	75	1.5	0.3	11	0.002	0.14	0.21	0.184	0.21	0.18	2.05	0.2	0.002	7	4.8	1783	0.33	14.4	12.9	9.29	152.8	0.8	-0.1
1272b	88.5	0.9	0.1	17	0.002	0.1	0.12	0.115	0.19	0.09	1.87	0.2	0.002	4	4	212	0.18	2.6	5.4	3.83	64.2	0.4	-0.1
1272c	40.3	11.6	0.4	8	0.015	0.37	1.2	0.15	0.89	0.1	0.82	2.6	0.045	33	23.1	466	2.41	11.3	35	30.74	193.3	4.4	0.1
1273	92	0.6	0.1	10	0.002	0.11	0.1	0.167	0.22	0.14	1.25	0.1	0.002	3	3.7	290	0.14	5.6	7.7	5.73	66.7	0.3	-0.1
1276	82	2.8	0.5	11	0.002	0.15	0.56	0.208	0.19	0.12	1.91	1.1	0.002	11	8	848	0.74	8.7	18.8	11.16	76.8	1.7	-0.1
1279	82.8	2.2	0.4	16	0.003	0.15	0.53	0.2	0.18	0.1	2.26	0.7	0.003	12	7.3	747	0.59	9	19.7	11.17	95.5	1.3	-0.1
1282	68.1	1.6	0.1	9	0.002	0.13	0.18	0.139	0.18	0.13	1.73	0.2	0.003	7	4.4	864	0.33	13.4	11.3	7.58	70	1	-0.1
1285	40.7	0.7	0.1	7	0.002	0.08	0.15	0.112	0.11	0.15	0.52	0.3	0.003	6	3.6	272	0.2	4	4.5	7.97	46	1	-0.1
1288	74.1	0.9	0.1	8	0.002	0.11	0.13	0.175	0.16	0.2	0.94	0.1	0.003	6	3.7	418	0.24	3.7	5.7	6.74	74.2	0.7	-0.1
1290	67.9	2.1	0.1	14	0.002	0.15	0.21	0.186	0.14	0.2	1.99	0.2	0.004	8	4.5	2011	0.36	13.7	14.9	10.94	121.9	0.9	-0.1
1293	29.7	9.5	0.4	10	0.003	0.31	0.54	0.121	0.09	0.17	1.39	1.4	0.003	18	12.9	517	1.31	9.3	19.6	16.59	91	2.3	-0.1
1295b	68.1	1.8	0.3	12	0.002	0.14	0.2	0.171	0.14	0.18	1.92	0.2	0.004	8	4.4	1936	0.36	12.4	14.3	10.91	118.1	0.9	-0.1
1295c	40.6	11.5	0.4	9	0.015	0.36	1.17	0.147	0.96	0.11	0.8	2.7	0.046	32	23.4	467	2.36	11.5	34.6	32.2	187.8	4.5	0.1
1296	70.4	1.6	0.1	6	0.003	0.12	0.17	0.187	0.13	0.21	0.74	0.3	0.004	7	4.5	1199	0.3	8.9	10.6	9.99	58.1	0.9	-0.1
1299	86	1.3	0.2	7	0.002	0.11	0.37	0.198	0.17	0.18	0.59	1.1	0.002	11	6.1	112	0.57	3.3	6.1	7.74	56.5	1.8	-0.1
1302	76.9	1	0.1	11	0.001	0.12	0.12	0.157	0.18	0.16	1.56	0.2	0.002	5	3.2	506	0.17	9.8	8.7	5.74	38.6	0.6	-0.1
1305	86.6	0.6	0.1	20	0.001	0.13	0.08	0.157	0.16	0.17	2.32	0.2	0.002	4	3	635	0.13	9	7.6	6.4	112	0.3	-0.1
1308	74.5	3.2	0.2	16	0.002	0.16	0.27	0.158	0.17	0.1	2.37	0.4	0.004	9	5.8	2871	0.58	9	11.8	10.75	242.9	1.1	-0.1
1311	75.8	3.3	0.2	13	0.002	0.16	0.24	0.171	0.22	0.13	1.95	0.5	0.004	9	6.2	3008	0.54	10.3	14.9	10.54	216.8	1.1	-0.1
1314	87.4	0.9	0.1	18	0.001	0.11	0.11	0.156	0.19	0.1	2.58	0.2	0.002	4	3.1	1078	0.17	5.1	8.9	7.22	223.2	0.4	-0.1
1317	87.8	0.5	0.1	15	0.001	0.13	0.09	0.157	0.22	0.1	2.87	0.2	0.002	3	3.1	920	0.14	4	8.1	10.27	213.6	0.3	-0.1
1320	86	1.2	0.1	17	0.002	0.17	0.42	0.213	0.2	0.23	2.68	0.7	0.002	6	4.1	543	0.31	2.1	21.8	8.77	139.5	0.4	0.1
1323	70.9	2.1	0.6	3	0.002	0.1	0.53	0.188	0.1	0.11	0.3	0.6	0.003	13	7.8	59	0.98	7	13.1	12.12	42.3	1.7	-0.1

Appendix 2 - Organic Soil Analytical Results

Field Number	LOI (%)	Li (ppm)	Be (ppm)	B (ppm)	Na (%)	Mg (%)	Al (%)	P (%)	S (%)	K (%)	Ca (%)	Sc (ppm)	Ti (%)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)
1326	81	1.5	0.3	4	0.002	0.09	0.25	0.188	0.15	0.14	0.45	0.4	0.002	9	5.9	123	0.37	3.4	7.2	7.72	29.2	1.1	-0.1
1329	71.7	1.5	0.1	12	0.001	0.17	0.18	0.164	0.18	0.13	2	0.3	0.003	6	4.3	2035	0.29	16.5	12.7	11.62	223.6	0.8	-0.1
1332	85	1.1	0.1	13	0.002	0.12	0.14	0.197	0.19	0.19	1.65	0.2	0.002	5	3.6	638	0.21	4.3	7.6	7.18	57.2	0.4	-0.1
1336	64.6	3.1	0.1	10	0.002	0.16	0.28	0.179	0.15	0.17	1.53	0.4	0.004	11	7.1	2198	0.59	9.7	10.4	10.42	140.2	1.3	-0.1
1339	61.1	1.6	0.1	18	0.001	0.16	0.19	0.141	0.17	0.13	1.95	0.2	0.003	6	4.2	1990	0.3	13.3	13.2	10.79	65.6	0.9	-0.1
1342	85	0.8	-0.1	27	0.001	0.2	0.11	0.17	0.24	0.16	2.84	0.1	0.003	3	2.8	1183	0.16	4.2	14.4	11.12	86	0.3	-0.1
1344b	64.4	1.4	0.1	18	0.001	0.17	0.18	0.138	0.15	0.13	2.04	0.2	0.003	6	4.1	2069	0.29	13.6	13.2	10.31	67.3	0.9	-0.1
1344c	40.6	9.8	0.3	9	0.017	0.35	1.25	0.156	0.92	0.11	0.85	2.8	0.046	36	22	460	2.42	10.8	36	31.28	185.4	4.2	0.1
1345	88	0.6	-0.1	28	0.001	0.2	0.08	0.193	0.22	0.16	3.18	0.1	0.002	2	2.7	586	0.12	4.6	10.4	14.46	137.9	0.2	-0.1
1348	84.3	0.8	0.1	27	0.002	0.21	0.13	0.164	0.25	0.08	3.63	0.2	0.001	4	3.1	523	0.18	6	9	10.4	47.8	0.4	-0.1
1379	60	3.2	0.1	12	0.003	0.18	0.3	0.158	0.16	0.15	1.91	0.5	-0.001	10	6.8	1522	0.6	9.6	10.8	10.47	109	1.2	-0.1
1382	80.7	0.9	-0.1	11	0.002	0.16	0.17	0.166	0.19	0.15	2.16	0.2	0.009	6	4.1	1589	0.27	14	10.3	10.59	56	0.6	-0.1
1385	82.9	0.6	0.1	12	0.003	0.15	0.18	0.11	0.17	0.04	2.99	0.2	0.006	5	3.8	387	0.23	2	4.7	7.6	113.6	0.5	-0.1
1388	57.9	1.8	0.1	10	0.002	0.13	0.32	0.11	0.13	0.09	1.28	0.4	0.003	16	6.1	623	0.55	7.7	8.5	9.68	47.8	1.3	-0.1
1391	23.2	20.2	1	3	0.008	0.3	1.89	0.183	0.06	0.18	1.05	3.4	0.002	33	27.1	1024	2.16	13.4	84.1	32.69	219.9	4.9	0.1
1392	20.3	18.7	1.1	4	0.009	0.29	1.98	0.255	0.04	0.19	0.91	4.2	0.003	36	26	1052	2.28	12.7	89	31.88	242.3	4.9	0.1
1395	67.4	0.9	-0.1	9	0.003	0.13	0.13	0.121	0.13	0.11	1.51	0.2	0.007	5	3.3	2012	0.2	12.5	9.5	12.4	65.7	0.6	-0.1
1398	70.7	2.1	0.3	7	0.003	0.14	0.55	0.218	0.12	0.18	1.25	0.8	-0.001	12	7.7	1320	0.77	20.4	13.9	7.39	43.2	2	-0.1
1501	66.8	2.7	0.3	7	0.002	0.12	0.58	0.165	0.12	0.13	0.98	0.8	-0.001	17	8.4	111	0.81	13.5	24.3	9.4	25.2	2	-0.1
1504	62	3.3	0.4	6	0.003	0.16	0.82	0.283	0.13	0.24	1.1	1.1	0.001	22	12.3	1373	1.24	20.5	13.3	10.26	55.3	3.7	-0.1
1507	32	8.7	0.6	8	0.007	0.3	1.19	0.146	0.08	0.18	1.72	2.2	-0.001	24	16.8	1387	1.38	9.7	30.1	22.48	247.5	3.7	-0.1
1510	54.8	7.3	0.3	20	0.007	0.29	0.6	0.126	0.3	0.06	3.63	0.7	0.002	13	10.9	150	0.67	2.3	14.3	11.91	92.2	1.6	-0.1
1514	34.2	2.8	0.3	4	0.003	0.11	0.68	0.112	0.07	0.09	0.6	1.1	-0.001	13	9.1	65	0.51	1.7	20.8	20.62	18.1	2.6	-0.1
1515b	54.4	7	0.2	21	0.007	0.28	0.58	0.119	0.27	0.05	3.52	0.7	-0.001	12	10.5	140	0.63	2.4	14.2	11.69	88.4	1.5	-0.1
1515c	40.4	10	0.3	10	0.017	0.35	1.23	0.145	0.84	0.1	0.87	2.7	0.047	34	21.5	455	2.38	9.9	32.5	29.63	180.3	4.3	0.1
1517	43.1	7.4	1.1	7	0.004	0.25	1.59	0.267	0.06	0.21	0.84	2.4	-0.001	44	24.7	4090	2.61	43.8	51.1	27.7	167.7	5.6	-0.1

Appendix 2 - Organic Soil Analytical Results

Field Number	LOI (%)	Li (ppm)	Be (ppm)	B (ppm)	Na (%)	Mg (%)	Al (%)	P (%)	S (%)	K (%)	Ca (%)	Sc (ppm)	Ti (%)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)
1519	49.9	3	0.5	8	0.002	0.17	0.6	0.16	0.12	0.16	1.39	0.8	-0.001	17	8.5	3112	0.93	22.5	33.4	18.47	54	2.2	-0.1
1522	67.8	0.9	0.1	8	0.002	0.13	0.21	0.122	0.17	0.07	1.69	0.3	-0.001	6	4.3	1613	0.31	18.1	12.4	7.55	58.9	0.8	-0.1
1525	21.2	2.7	0.2	4	0.002	0.12	0.51	0.089	0.04	0.09	0.83	0.5	-0.001	15	8.2	3217	0.74	21.6	19.3	12.16	40.9	2.1	-0.1
1601	85.8	0.7	-0.1	31	0.001	0.26	0.08	0.17	0.23	0.14	3.54	0.2	-0.001	3	2.6	813	0.13	5.9	12.4	11.02	134.9	0.2	-0.1
1604	84.3	0.9	0.1	22	0.002	0.12	0.11	0.139	0.21	0.11	3.29	0.3	-0.001	4	3.3	1148	0.18	4.2	6.9	10.88	220.8	0.4	-0.1
1607	64	2.6	0.2	9	0.002	0.14	0.32	0.14	0.13	0.12	1.37	0.4	0.002	11	6.2	1401	0.55	12.2	14.6	8.28	105.3	1.1	-0.1

Appendix 2 - Organic Soil Analytical Results

Field Number	As (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppb)	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)
1259	1.5	0.4	7.6	42.8	1.5	0.6	0.2	1.13	516	1.07	-0.02	0.7	0.12	-0.02	0.37	341.9	3.4	6.5	0.62	2.43	0.5	0.09	0.39
1263	1.1	0.5	6.3	44.4	1.15	0.4	0.14	1.01	327	1.87	-0.02	10	0.11	-0.02	0.4	379.1	2.3	4.4	0.41	1.58	0.31	0.05	0.29
1267	1.5	1.5	3.5	61.9	0.8	0.7	0.16	1.08	21	1.37	-0.02	0.5	0.17	-0.02	0.34	126.6	1.3	2.7	0.27	1.06	0.25	0.03	0.19
1270	1.3	0.5	8.4	57.3	1.25	0.4	0.16	1.03	235	1.58	-0.02	0.3	0.1	0.02	0.41	364.8	2.9	6	0.52	1.94	0.35	0.04	0.33
1272b	1.5	1.6	3.9	66.6	0.87	0.8	0.13	1.08	23	1.32	-0.02	0.8	0.17	-0.02	0.35	122	1.2	2.6	0.25	1.06	0.23	0.04	0.23
1272c	14.1	2.9	9.3	41.6	17.65	2.2	1.96	1.96	205	2	0.06	4.3	0.9	0.13	1.11	152.3	23.5	37	5.48	21.76	4.2	0.91	3.9
1273	0.8	0.8	6.2	47.2	0.58	0.4	0.11	1.09	111	0.85	-0.02	2.6	0.11	-0.02	0.25	130.4	1.1	2.1	0.21	0.86	0.21	0.05	0.21
1276	2.2	1.1	10.1	55.6	5.81	1.6	0.24	1.88	416	1.59	-0.02	1	0.2	0.02	0.42	353.3	11.2	24.7	2.31	8.82	1.85	0.41	1.7
1279	1.8	1	8	55.5	6.66	1	0.2	1.47	329	1.36	-0.02	0.3	0.19	0.02	0.37	404	13.2	27.9	2.71	10.43	2.25	0.47	2.06
1282	1	0.8	11.3	44.1	1.02	0.4	0.18	0.7	297	1.42	-0.02	0.3	0.09	0.02	0.3	299.6	2.7	5.2	0.5	1.77	0.36	0.06	0.32
1285	0.6	0.2	5.8	18.3	0.85	0.1	0.11	0.56	674	0.83	-0.02	0.5	0.06	-0.02	0.31	190.7	3.8	7	0.68	2.65	0.43	0.06	0.28
1288	0.9	0.2	5.7	25.4	0.65	0.2	0.11	0.65	586	0.64	-0.02	0.3	0.08	-0.02	0.31	206.7	1.9	3.5	0.33	1.31	0.24	0.02	0.17
1290	1.4	0.3	10.4	42.4	1.31	0.2	0.14	1.11	702	1.73	-0.02	0.3	0.13	0.02	0.46	387	3.7	7.7	0.66	2.31	0.4	0.07	0.34
1293	5.5	0.1	11.5	34.5	7.4	2.6	0.45	1.13	108	0.38	-0.02	0.5	0.22	0.02	0.48	228.8	11.2	22	2.41	9.93	2.19	0.46	2.03
1295b	1.4	0.4	10.5	42.2	1.26	0.4	0.13	1.08	682	1.61	-0.02	0.2	0.12	0.02	0.45	391.3	3.5	7.4	0.63	2.32	0.41	0.07	0.37
1295c	13.7	2.3	9.5	43.2	17.48	2.2	1.87	1.91	215	1.92	0.06	4.1	1	0.14	1.1	154.6	23.9	36.9	5.39	21.7	4.3	0.93	3.74
1296	1.2	0.5	10.3	24.9	0.96	0.4	0.13	1.17	733	1.29	-0.02	0.3	0.16	-0.02	0.55	266.2	3.2	6	0.57	2.06	0.44	0.07	0.38
1299	1	0.3	6.9	27.2	1.78	0.6	0.16	1.4	436	0.68	-0.02	2.4	0.1	0.02	0.54	167.6	4	7.4	0.75	2.69	0.57	0.11	0.49
1302	0.9	1.1	4.8	44.3	0.91	0.4	0.11	1.17	106	0.68	-0.02	0.2	0.07	-0.02	0.24	228.3	2.2	3.8	0.39	1.53	0.27	0.05	0.24
1305	1	1.6	3.9	50.1	0.64	0.4	0.06	1.1	101	1.04	-0.02	0.2	0.07	-0.02	0.18	279.7	1.4	2.5	0.26	0.95	0.2	0.03	0.2
1308	2.6	0.5	6.9	45.9	2.07	0.8	0.19	1.57	305	1.71	-0.02	0.3	0.16	0.02	0.43	377.9	3.7	7.7	0.74	2.85	0.61	0.11	0.55
1311	2.3	0.7	9.8	44.9	2.18	1	0.21	2.43	541	1.58	-0.02	0.3	0.18	0.02	0.58	353.1	3.7	7.2	0.76	2.82	0.59	0.1	0.54
1314	1.2	0.7	5.1	65.3	0.91	0.4	0.09	0.88	312	2.07	-0.02	0.2	0.1	-0.02	0.32	452.6	1.7	3	0.3	1.22	0.26	-0.02	0.24
1317	1	0.6	3.2	53	0.69	0.4	0.07	1.31	717	1.57	-0.02	0.1	0.09	-0.02	0.18	413.4	1.2	2.2	0.22	0.85	0.17	0.04	0.15
1320	1.2	0.7	3.4	67.6	14.07	1.2	0.1	0.97	177	1.95	-0.02	0.1	0.17	0.02	0.15	456.3	20.8	29.4	4.41	18.18	3.88	0.89	3.95
1323	1.8	0.5	7	24.5	3.11	0.4	0.27	1.04	386	0.83	-0.02	0.9	0.17	0.02	0.41	251.7	8.5	16.1	1.52	5.59	1.13	0.24	0.96
1326	1.4	0.5	6.9	33.5	1.41	0.1	0.19	1.51	845	0.55	-0.02	0.3	0.18	0.02	0.47	284.1	4	7.2	0.73	2.49	0.47	0.06	0.36

Appendix 2 - Organic Soil Analytical Results

Field Number	As (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppb)	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)
1329	1	0.9	7.7	57.1	1.05	0.2	0.12	0.96	322	1.84	-0.02	0.2	0.09	0.02	0.42	290.6	2.6	5.4	0.48	1.74	0.33	0.07	0.28
1332	0.9	0.3	4.8	49.7	0.77	0.4	0.09	0.53	175	0.97	-0.02	0.1	0.09	0.02	0.3	253.7	1.8	3.3	0.32	1.22	0.26	0.04	0.21
1336	2.1	0.4	10.7	42.3	2.19	0.6	0.23	1.42	493	1.95	-0.02	0.3	0.18	0.03	0.52	355.4	4.7	9.3	0.9	3.41	0.7	0.13	0.69
1339	1	0.8	8.3	48.9	1.27	0.4	0.14	1.65	493	1.12	-0.02	0.1	0.11	-0.02	0.32	344.4	3.4	6.9	0.6	2.14	0.42	0.07	0.37
1342	1.1	0.4	4.6	58.7	1	0.4	0.06	2.18	360	1.32	-0.02	0.2	0.08	0.02	0.24	428	1.9	3.1	0.34	1.23	0.26	0.05	0.23
1344b	1.1	0.7	7.6	47.2	1.18	0.4	0.13	1.61	497	1.12	-0.02	0.2	0.11	0.02	0.29	349.5	3.1	6.7	0.52	2.02	0.4	0.06	0.34
1344c	15.2	2.3	9.7	42.8	18	2.2	1.95	1.95	216	2.03	0.07	4.5	1.02	0.12	1.14	164.5	27.2	40.2	5.88	22.36	4.55	0.97	3.81
1345	0.8	0.4	4.7	65.2	0.8	0.2	0.13	0.76	508	1.67	-0.02	0.2	0.07	0.02	0.13	395.7	1.5	2.4	0.24	0.92	0.22	0.04	0.23
1348	1.2	1.1	4.6	68.1	0.88	0.5	0.17	0.79	169	1.18	-0.02	0.1	0.09	0.03	0.19	287.1	1.7	3	0.33	1.31	0.28	0.05	0.27
1379	2.2	0.9	13.7	40.9	2.24	0.8	0.35	1.18	552	1.24	-0.02	0.2	0.16	0.02	0.63	369.7	5.1	10	1.01	3.56	0.74	0.13	0.6
1382	1.1	0.9	5.9	45.5	0.98	0.4	0.15	2.11	2216	1.19	-0.02	0.2	0.13	0.02	0.35	300	2.3	4.8	0.42	1.55	0.31	0.05	0.28
1385	1.3	1.3	1.7	96.8	1.15	0.5	0.2	0.61	39	1.44	-0.02	0.2	0.14	0.04	0.18	246.5	1.9	3.9	0.38	1.49	0.3	0.04	0.25
1388	1.7	0.6	6.9	38.2	0.72	0.6	0.24	1.43	215	0.92	-0.02	0.3	0.15	0.02	0.6	175.4	2.9	5.2	0.5	1.76	0.34	0.05	0.19
1391	2.5	0.8	30.7	40.6	14.25	4.6	0.84	0.62	682	3.25	0.04	0.8	0.09	0.04	1.25	660.9	28.5	50.2	5.99	23.59	5.03	1	4.23
1392	3	0.9	31.3	41.3	16.6	6.1	0.87	0.58	728	3.61	0.04	0.7	0.09	0.04	1.31	671.7	30.3	61.8	7.19	26.77	5.79	1.23	5.19
1395	0.8	0.5	6.8	34.3	0.64	0.2	0.13	1.14	1467	1.29	-0.02	0.4	0.07	0.03	0.34	347.1	2.5	4.8	0.43	1.47	0.26	0.04	0.24
1398	1.1	0.5	11.9	39.2	2.72	0.4	0.23	1.19	770	0.68	0.02	0.5	0.13	0.03	0.46	417	8.8	16.4	1.42	5.05	1.01	0.18	0.83
1501	2.3	0.5	10.4	45.7	5.73	1.1	0.38	1.23	326	1.2	0.02	0.4	0.19	0.04	0.52	371.5	13.9	24.7	2.33	8.12	1.54	0.29	1.35
1504	2.4	0.7	20.5	39.8	3.32	0.6	0.39	1.28	838	0.86	0.02	0.6	0.16	0.03	0.59	308.5	9.9	18.8	1.78	6.32	1.25	0.24	1.01
1507	1.9	0.6	22.3	43.1	6.9	2.4	0.65	0.7	296	2.64	0.03	0.6	0.1	0.02	0.9	416.4	16.1	29.4	3.4	12.49	2.57	0.55	2.32
1510	1.5	1.7	6.7	125.3	4.92	2.6	0.42	0.26	145	1.23	-0.02	0.2	0.15	0.02	0.43	391.4	7.5	13.6	1.61	6	1.33	0.27	1.27
1514	0.7	0.3	7.5	24.5	3.3	0.8	0.27	0.68	797	0.6	0.03	0.4	0.06	0.02	0.47	375.3	12.6	19.9	2.13	7.23	1.34	0.23	1.03
1515b	1.5	1.5	6	112	4.5	2	0.4	0.26	134	1.18	-0.02	0.2	0.16	0.02	0.42	387.2	7.4	13.5	1.58	5.83	1.33	0.24	1.12
1515c	13.5	2.4	9.4	42.6	17.31	2	1.89	1.97	199	1.87	0.06	4.3	0.97	0.12	1.09	151.8	25.3	37.5	5.47	20.79	4.13	0.88	3.76
1517	4.9	0.9	35.7	38.7	6.51	2.4	0.61	2.09	859	2.11	0.04	0.9	0.19	0.05	1.08	475.8	18.8	42.9	3.38	11.98	2.48	0.5	2
1519	1.8	0.6	26.7	41.3	4.96	1	0.31	1.84	830	1.55	0.02	0.3	0.15	0.02	0.62	625.6	12.8	21.3	2.1	7.32	1.47	0.26	1.32
1522	1.3	0.9	5.2	44	1.02	0.5	0.15	2.35	831	1.53	-0.02	0.2	0.11	0.03	0.34	357.1	3.2	5.9	0.51	1.83	0.3	0.05	0.28

Appendix 2 - Organic Soil Analytical Results

Field Number	As (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppb)	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)
1525	1.1	0.4	22.2	25.8	1.68	0.2	0.23	0.84	488	0.76	-0.02	0.4	0.08	0.02	0.58	423	7.9	16	1.35	4.87	0.83	0.13	0.56
1601	1	0.5	3.6	78.5	0.56	0.2	0.05	0.81	153	1.66	-0.02	0.1	0.06	0.03	0.13	291.5	1	1.9	0.19	0.71	0.13	0.02	0.13
1604	1.1	0.9	5	53.3	0.85	0.5	0.09	1.21	390	3.06	-0.02	0.1	0.12	0.03	0.37	428.1	1.6	2.9	0.28	1.02	0.21	0.04	0.19
1607	1.4	0.7	9.7	44	1.89	0.6	0.28	1.39	400	1.54	-0.02	0.2	0.17	0.03	0.38	247.8	5.2	10.3	0.89	3.28	0.66	0.11	0.55

Appendix 2 - Organic Soil Analytical Results

Field Number	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Re (ppb)	Au (ppb)	Hg (ppb)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)
1259	0.06	0.31	0.05	0.1	0.02	0.13	-0.02	0.02	-0.05	0.3	1	5	178	0.04	11.36	0.06	0.2	0.1
1263	0.04	0.23	0.04	0.08	0.01	0.1	-0.02	-0.02	-0.05	0.3	-1	1.2	159	0.03	13.04	0.05	0.1	-0.1
1267	0.03	0.17	0.02	0.07	0.01	0.08	-0.02	0.02	-0.05	0.2	2	2.9	203	0.02	6.49	0.06	0.1	0.7
1270	0.05	0.23	0.04	0.09	0.01	0.1	-0.02	-0.02	-0.05	-0.2	2	2.6	147	0.04	11.87	0.06	0.1	0.1
1272b	0.03	0.17	0.03	0.09	0.01	0.08	-0.02	0.02	-0.05	-0.2	1	2.9	191	0.03	6.77	0.06	0.1	0.7
1272c	0.51	3.09	0.57	1.66	0.26	1.79	0.24	0.05	-0.05	0.2	5	2.3	175	0.35	97.99	0.53	2.3	27.1
1273	0.02	0.13	0.02	0.05	0.01	0.06	-0.02	0.02	-0.05	-0.2	-1	1.2	149	0.02	11.28	0.08	0.1	0.2
1276	0.24	1.28	0.21	0.53	0.07	0.45	0.05	0.06	-0.05	-0.2	-1	0.7	167	0.06	7.14	0.17	0.8	0.8
1279	0.26	1.47	0.23	0.6	0.07	0.56	0.06	0.04	-0.05	-0.2	-1	1.2	163	0.06	5.96	0.07	0.5	0.7
1282	0.04	0.24	0.03	0.08	0.01	0.09	-0.02	0.02	-0.05	-0.2	-1	0.7	142	0.03	8.03	0.05	0.1	0.1
1285	0.04	0.17	0.02	0.05	0.01	0.05	-0.02	-0.02	-0.05	-0.2	-1	2.6	108	0.04	6.87	0.04	0.1	0.1
1288	0.02	0.12	0.02	0.05	0.01	0.06	-0.02	-0.02	-0.05	-0.2	-1	5.1	162	0.03	8.17	0.04	-0.1	-0.1
1290	0.05	0.27	0.04	0.11	0.01	0.11	-0.02	-0.02	-0.05	-0.2	-1	1.4	152	0.04	12.79	0.07	0.1	0.1
1293	0.27	1.48	0.26	0.7	0.09	0.61	0.07	0.07	-0.05	-0.2	-1	5.6	67	0.1	9.31	0.11	1.9	0.6
1295b	0.04	0.28	0.05	0.11	0.01	0.14	-0.02	-0.02	-0.05	-0.2	-1	0.8	150	0.04	11.68	0.07	0.1	0.1
1295c	0.52	3.21	0.58	1.84	0.26	1.82	0.24	0.04	-0.05	-0.2	4	1.9	165	0.35	96.9	0.53	2.2	27.1
1296	0.04	0.22	0.03	0.09	0.01	0.1	-0.02	-0.02	-0.05	-0.2	-1	5.1	202	0.04	12.25	0.07	0.1	0.1
1299	0.07	0.38	0.06	0.16	0.02	0.12	-0.02	-0.02	-0.05	-0.2	-1	7.7	153	0.08	5.82	0.05	0.2	0.3
1302	0.03	0.16	0.02	0.06	0.01	0.06	-0.02	-0.02	-0.05	-0.2	-1	0.9	132	0.02	7.17	0.03	-0.1	-0.1
1305	0.02	0.13	0.02	0.05	-0.01	0.05	-0.02	-0.02	-0.05	-0.2	-1	1.8	156	0.02	7.18	0.03	-0.1	-0.1
1308	0.08	0.41	0.07	0.18	0.03	0.19	0.02	0.03	-0.05	-0.2	-1	1	220	0.06	13.61	0.1	0.3	0.1
1311	0.07	0.42	0.08	0.2	0.02	0.22	0.02	0.04	-0.05	-0.2	1	2.5	290	0.07	14.45	0.09	0.4	0.2
1314	0.03	0.15	0.03	0.06	0.01	0.08	-0.02	0.02	-0.05	-0.2	-1	1	198	0.03	9.46	0.04	0.1	-0.1
1317	0.02	0.11	0.02	0.04	0.01	0.06	-0.02	-0.02	-0.05	-0.2	-1	0.7	170	0.02	7.11	0.04	-0.1	-0.1
1320	0.5	2.69	0.45	1.17	0.15	0.98	0.11	0.03	-0.05	-0.2	1	3	141	0.04	3.74	0.03	0.5	2.5
1323	0.15	0.83	0.13	0.29	0.04	0.23	0.02	0.02	-0.05	-0.2	1	4.3	165	0.04	13.43	0.1	0.3	0.7
1326	0.05	0.29	0.05	0.12	0.02	0.13	-0.02	-0.02	-0.05	-0.2	-1	3.9	226	0.05	12.77	0.08	-0.1	0.3

Appendix 2 - Organic Soil Analytical Results

Field Number	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Re (ppb)	Au (ppb)	Hg (ppb)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)
1329	0.04	0.21	0.03	0.09	0.01	0.1	-0.02	-0.02	-0.05	-0.2	1	2.2	114	0.04	8.97	0.06	0.1	0.1
1332	0.03	0.15	0.02	0.06	0.01	0.08	-0.02	-0.02	-0.05	-0.2	2	0.7	187	0.02	7.89	0.04	-0.1	0.1
1336	0.08	0.45	0.07	0.19	0.03	0.18	0.02	0.02	-0.05	-0.2	-1	1.3	184	0.05	14.37	0.09	0.3	0.2
1339	0.05	0.22	0.04	0.07	0.01	0.1	-0.02	0.02	-0.05	-0.2	2	1.4	128	0.04	9.11	0.07	0.2	0.1
1342	0.03	0.17	0.02	0.06	0.01	0.09	-0.02	-0.02	-0.05	-0.2	-1	0.6	151	0.02	6.56	0.03	0.1	-0.1
1344b	0.04	0.22	0.03	0.09	0.01	0.11	-0.02	-0.02	-0.05	-0.2	-1	0.9	125	0.04	8.85	0.06	0.1	0.1
1344c	0.54	3.12	0.57	1.69	0.25	1.92	0.24	0.05	-0.05	0.3	3	1.7	174	0.38	103.42	0.57	2.2	26.7
1345	0.03	0.18	0.02	0.06	0.01	0.09	-0.02	-0.02	-0.05	-0.2	-1	1.7	127	0.02	4.36	0.03	-0.1	-0.1
1348	0.04	0.18	0.03	0.06	0.01	0.08	-0.02	-0.02	-0.05	-0.2	1	0.6	122	0.02	5.29	0.04	0.1	0.2
1379	0.09	0.46	0.07	0.21	0.03	0.22	0.03	0.03	-0.05	-0.2	2	1.7	155	0.06	11.55	0.09	0.4	0.2
1382	0.04	0.18	0.03	0.07	0.01	0.09	-0.02	-0.02	-0.05	-0.2	-1	1	175	0.05	10.7	0.07	0.1	0.1
1385	0.04	0.21	0.04	0.09	0.01	0.12	-0.02	-0.02	-0.05	-0.2	7	0.4	120	0.02	2.74	0.04	0.1	12.9
1388	0.03	0.14	0.02	0.05	0.01	0.07	-0.02	0.02	-0.05	-0.2	1	0.6	122	0.05	10.24	0.09	0.2	0.1
1391	0.61	3.24	0.48	1.28	0.16	1.13	0.13	0.16	-0.05	-0.2	3	0.9	43	0.14	10.52	0.2	4.9	10.2
1392	0.76	3.84	0.61	1.49	0.2	1.33	0.15	0.16	-0.05	-0.2	2	0.8	37	0.15	10.65	0.2	6.3	11.5
1395	0.03	0.17	0.03	0.06	0.01	0.09	-0.02	-0.02	-0.05	-0.2	-1	0.4	121	0.03	6.57	0.06	0.2	0.1
1398	0.12	0.59	0.09	0.24	0.03	0.24	0.02	-0.02	-0.05	-0.2	1	0.2	173	0.06	14.1	0.1	0.3	0.4
1501	0.19	1.02	0.16	0.38	0.05	0.34	0.04	0.03	-0.05	-0.2	-1	-0.2	152	0.05	13	0.11	0.4	0.3
1504	0.15	0.75	0.11	0.28	0.03	0.27	0.03	0.03	-0.05	-0.2	-1	0.3	170	0.09	12.96	0.13	0.5	0.6
1507	0.31	1.67	0.25	0.69	0.08	0.58	0.07	0.07	-0.05	-0.2	2	0.4	65	0.08	7.55	0.14	2.4	1.5
1510	0.17	1.01	0.17	0.42	0.06	0.46	0.05	0.05	-0.05	-0.2	6	0.4	52	0.06	4.05	0.05	0.5	8.2
1514	0.14	0.76	0.11	0.28	0.04	0.26	0.03	0.03	-0.05	-0.2	-1	-0.2	87	0.08	9.36	0.11	1.2	0.5
1515b	0.17	0.86	0.15	0.4	0.05	0.41	0.05	0.06	-0.05	-0.2	5	0.3	55	0.05	3.85	0.06	0.4	8.1
1515c	0.52	3.03	0.56	1.66	0.24	1.74	0.22	0.04	-0.05	-0.2	4	1.8	166	0.34	100.84	0.57	2.1	26.4
1517	0.28	1.55	0.25	0.59	0.08	0.5	0.06	0.09	-0.05	-0.2	1	0.5	110	0.15	17.37	0.24	2.9	1.5
1519	0.19	0.97	0.14	0.39	0.05	0.33	0.04	0.04	-0.05	-0.2	1	0.2	121	0.07	9.53	0.11	0.8	0.3
1522	0.04	0.19	0.02	0.07	0.01	0.08	-0.02	-0.02	-0.05	-0.2	-1	-0.2	139	0.04	7.28	0.06	0.2	0.1

Appendix 2 - Organic Soil Analytical Results

Field Number	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Re (ppb)	Au (ppb)	Hg (ppb)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)
1525	0.08	0.38	0.05	0.15	0.02	0.13	-0.02	-0.02	-0.05	-0.2	-1	-0.2	63	0.06	9.08	0.11	0.4	0.2
1601	0.02	0.09	-0.02	0.04	-0.01	0.06	-0.02	-0.02	-0.05	-0.2	1	1.5	135	-0.02	5.11	0.03	0.1	-0.1
1604	0.03	0.15	0.02	0.07	0.01	0.09	-0.02	-0.02	-0.05	-0.2	-1	2.4	232	0.03	8.02	0.07	0.1	0.1
1607	0.08	0.43	0.05	0.15	0.02	0.16	0.02	0.02	-0.05	-0.2	-1	2.4	165	0.05	9.3	0.09	0.3	0.2

Appendix 3 – B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Acme = Acme Analytical Laboratories Ltd. of Vancouver, British Columbia.

Chemex = ALS Chemex Analytical Laboratories Ltd. of North Vancouver, British Columbia.

Becquerel = Becquerel Laboratories of Mississauga, Ontario.

Values below lower detection limit indicated by negative (-) sign.

Texture analyses (sand, silt and clay) determined at AGS laboratory.

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Unit Type	Sample Depth Top(cm)	Sample Depth Bottom(cm)	Sample Control	East UTM NAD83	North UTM NAD83	Longitude NAD83 (°W)	Latitude NAD83 (°N)	Acme File	Becquerel File	ALS Chemex File	1-2mm Sand (%)AGS	Sand (%)>63-1000 microns AGS	Silt (%)4-63 microns AGS	Clay (%)<4 microns AGS	Sand (%)>50-1000 micronsAGS	Silt (%)2-50 microns AGS	Clay (%)<2 microns AGS	Li (ppm) Acmeaqua regia ICP AES/MS	Be (ppm) Acmeaqua regia ICP AES/MS	B (ppm) Acmeaqua regia ICP AES/MS
1260	2001G 053	B-horizon soil	60	80	routine	577626	6301215	115.72730	56.84824	A103867	T01-01187.0	A0128289	1.13	31.1	27.2	41.7	32.5	31.7	35.8	22.1	1	7
1262	2001G 105	C-horizon soil	80	120	routine	577626	6301215	115.72730	56.84824	A103867	T01-01187.0	A0128289	1.6	35	27.8	37.2	37.2	31.7	31.1	19.2	0.8	6
1264	2001G 054	B-horizon soil	40	75	routine	577686	6301001	115.72638	56.84631	A103867	T01-01187.0	A0128289	1.25	34.8	25.2	40	36.6	28.8	34.6	20.1	1.1	7
1266	2001G 106	C-horizon soil	90	120	routine	577686	6301001	115.72638	56.84631	A103867	T01-01187.0	A0128289	2.14	44	27.1	28.9	46.3	29.6	24.1	18	0.8	7
1269	2001G 107	C-horizon soil	80	120	routine	577630	6300392	115.72748	56.84085	A103867	T01-01187.0	A0128289	1.33	33.7	28.9	37.4	35.9	32.8	31.3	19.3	0.8	7
1271	2001G 055	B-horizon soil	40	90	routine	577737	6300459	115.72571	56.84143	A103867	T01-01187.0	A0128289	0.84	28.5	27.5	44	30.3	31.1	38.6	19.5	0.9	7
1272	2001G 108	C-horizon soil	90	120	routine	577737	6300459	115.72571	56.84143	A103867	T01-01187.0	A0128289	1.36	32.1	28.6	39.3	34.4	32.9	32.7	19.2	0.8	9
1274	2001G 056	B-horizon soil	40	90	field site duplicate of 1271	577737	6300459	115.72571	56.84143	A103867	T01-01187.0	A0128289	0.88	29.8	26.3	43.9	32	28.9	39.1	20.8	1.2	5
1275	2001G 109	C-horizon soil	90	120	field site duplicate of 1272	577737	6300459	115.72571	56.84143	A103867	T01-01187.0	A0128289	1.11	30.8	26.1	43.1	32.8	32.1	35.1	18.6	0.7	5
1277	2001G 057	B-horizon soil	50	110	routine	577703	6300773	115.72616	56.84426	A103867	T01-01187.0	A0128289	1.14	31.5	28.3	40.2	33.5	31.7	34.8	19.5	1	6
1278	2001G 110	C-horizon soil	90	110	routine	577703	6300773	115.72616	56.84426	A103867	T01-01187.0	A0128289	1.19	30.2	28.4	41.4	32.5	32.7	34.8	19.4	0.6	7
1281	2001G 111	C-horizon soil	90	120	field site duplicate of 1278	577703	6300773	115.72616	56.84426	A103867	T01-01187.0	A0128289	1.68	36.6	25.8	37.6	38.9	30.2	30.9	19.8	0.6	6
1283	2001G 058	B-horizon soil	40	80	routine	577568	6301638	115.72811	56.85205	A103867	T01-01187.0	A0128289	1.23	32.9	27.1	40	34.9	30.7	34.4	20.4	1	6
1284	2001G 112	C-horizon soil	100	120	routine	577568	6301638	115.72811	56.85205	A103867	T01-01187.0	A0128289	1.86	34.2	30.5	35.3	36.5	33.7	29.8	19.3	0.8	7
1286	2001G 059	B-horizon soil	40	80	routine	577584	6301539	115.72788	56.85116	A103867	T01-01187.0	A0128289	1.9	38.2	23.1	38.7	40	26.3	33.7	18.5	0.8	6
1287	2001G 113	C-horizon soil	100	120	routine	577584	6301539	115.72788	56.85116	A103867	T01-01187.0	A0128289	3.5	46	25.3	28.7	48.1	28.2	23.7	18.3	0.7	6
1289	2001G 060	B-horizon soil	40	80	field site duplicate of 1286	577584	6301539	115.72788	56.85116	A103867	T01-01187.0	A0128289	1.63	42.5	19.3	38.2	44.5	22.7	32.8	20	1	5
1291	2001G 061	B-horizon soil	50	80	routine	577606	6301311	115.72760	56.84911	A103867	T01-01187.0	A0128289	2.24	39.7	23.3	37	41.5	26.5	32	20.1	0.9	6
1291 lab dup	2001G 072	B-horizon soil	50	80	AGS lab duplicate of 1291 (2001G 061)	577606	6301311	115.72760	56.84911	A103867	T01-01187.0	A0128289								18.5	1	6
1292	2001G 114	C-horizon soil	80	110	routine	577606	6301311	115.72760	56.84911	A103867	T01-01187.0	A0128289	1.47	29.3	31.1	39.6	31.6	34.5	33.9	16.4	0.6	4
1294	2001G 062	B-horizon soil	40	90	routine	577373	6301260	115.73143	56.84869	A103867	T01-01187.0	A0128289	0.94	29.6	27.8	42.6	31.6	31.2	37.2	19.3	0.9	6
1295	2001G 115	C-horizon soil	90	100	routine	577373	6301260	115.73143	56.84869	A103867	T01-01187.0	A0128289	1.25	31.2	31.6	37.2	33.4	35.6	31	19.2	1	6
1297	2001G 063	B-horizon soil	30	90	routine	577381	6301309	115.73129	56.84913	A103867	T01-01187.0	A0128289	1.29	32.3	27.8	39.9	34.1	32.5	33.4	19	0.9	6
1298	2001G 117	C-horizon soil	90	130	routine	577381	6301309	115.73129	56.84913	A103867	T01-01187.0	A0128289	1.41	32	31.2	36.8	34.3	36.4	29.3	16.7	0.6	4
1300	2001G 064	B-horizon soil	40	90	routine	577390	6301311	115.73114	56.84914	A103867	T01-01187.0	A0128289	1	32.6	27.2	40.2	35.1	30.7	34.2	20.4	0.9	6
1301	2001G 119	C-horizon soil	90	200	routine	577390	6301311	115.73114	56.84914	A103867	T01-01187.0	A0128289	1.66	29.7	31.8	38.5	32	37.1	30.9	14.9	0.6	6
1303	2001G 065	B-horizon soil	40	80	routine	577376	6301502	115.73131	56.85086	A103867	T01-01187.0	A0128289	1.17	30.6	25.5	43.9	32	30.2	37.8	22.1	1.2	6
1304	2001G 120	C-horizon soil	80	110	routine	577376	6301502	115.73131	56.85086	A103867	T01-01187.0	A0128289	2.04	33	29	38	35.1	33.1	31.8	17	0.7	6
1306	2001G 066	B-horizon soil	40	80	field site duplicate of 1303	577376	6301502	115.73131	56.85086	A103867	T01-01187.0	A0128289	2.51	45.4	18.8	35.8	47.1	23	29.9	19.9	0.9	6
1307	2001G 121	C-horizon soil	80	110	field site duplicate of 1304	577376	6301502	115.73131	56.85086	A103867	T01-01187.0	A0128289	1.48	30.1	31	38.9	32.2	36	31.8	15.6	0.6	5
1307 lab dup	2001G 126	C-horizon soil	80	110	AGS lab duplicate of 1307 (2001G 121)	577376	6301502	115.73131	56.85086	A103867	T01-01187.0	A0128289								16.6	0.6	7
1309	2001G 067	B-horizon soil	30	90	routine	577384	6301092	115.73130	56.84718	A103867	T01-01187.0	A0128289	1.19	32.7	25.6	41.7	34.8	29.1	36.1	18.1	0.9	6
1310	2001G 122	C-horizon soil	90	110	routine	577384	6301092	115.73130	56.84718	A103867	T01-01187.0	A0128289	1.33	33.3	32.1	34.6	35.6	36.1	28.3	14.9	0.6	6
1312	2001G 068	B-horizon soil	30	80	field site duplicate of 1309	577384	6301092	115.73130	56.84718	A103867	T01-01187.0	A0128289	1.09	31.4	26	42.6	33.4	29.1	37.5	20.5	1	7

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Unit Type	Sample Depth Top(cm)	Sample Depth Bottom(cm)	Sample Control	East UTM NAD83	North UTM NAD83	Longitude NAD83 (°W)	Latitude NAD83 (°N)	Acme File	Becquerel File	ALS Chemex File	1-2mm Sand (%)AGS	Sand (%)>63-1000 microns AGS	Silt (%)4-63 microns AGS	Clay (%)<4 microns AGS	Sand (%)>50-1000 micronsAGS	Silt (%)2-50 microns AGS	Clay (%)<2 microns AGS	Li (ppm) Acmeaqua regia ICP AES/MS	Be (ppm) Acmeaqua regia ICP AES/MS	B (ppm) Acmeaqua regia ICP AES/MS
1313	2001G 123	C-horizon soil	90	110	field site duplicate of 1310	577384	6301092	115.73130	56.84718	A103867	T01-01187.0	A0128289	1.6	31.7	33.1	35.2	33.8	37.1	29.1	14.6	0.6	7
1315	2001G 069	B-horizon soil	60	90	routine	577385	6301003	115.73131	56.84638	A103867	T01-01187.0	A0128289	0.82	25.2	28.3	46.5	27.2	32.6	40.2	17.6	1	6
1316	2001G 124	C-horizon soil	110	130	routine	577385	6301003	115.73131	56.84638	A103867	T01-01187.0	A0128289	0.21	7.1	37	55.9	8.2	47.8	44	20.4	0.7	7
1318	2001G 070	B-horizon soil	60	90	routine	577381	6300900	115.73141	56.84545	A103867	T01-01187.0	A0128289	1.27	17.8	37.6	44.6	19.7	42	38.3	19.3	0.9	7
1319	2001G 125	C-horizon soil	100	120	routine	577381	6300900	115.73141	56.84545	A103867	T01-01187.0	A0128289	0.47	4.4	37.9	57.7	5.5	49.6	44.9	16.6	0.6	8
1321	2001G 073	B-horizon soil	40	100	routine	577378	6300803	115.73149	56.84458	A103867	T01-01187.0	A0128289	0.76	28.9	27.7	43.4	31.1	31.8	37.1	23.9	0.9	11
1322	2001G 127	C-horizon soil	100	120	routine	577378	6300803	115.73149	56.84458	A103867	T01-01187.0	A0128289	1.32	32.4	26.8	40.8	34.7	32.2	33.1	19	0.8	9
1324	2001G 074	B-horizon soil	30	90	routine	577380	6300500	115.73154	56.84186	A103867	T01-01187.0	A0128289	1.09	36.4	22.4	41.2	38.4	26.1	35.5	23.6	1.2	8
1325	2001G 128	C-horizon soil	90	110	routine	577380	6300500	115.73154	56.84186	A103867	T01-01187.0	A0128289	1.45	35.1	29.1	35.8	37.3	33.7	29	19.2	0.8	8
1327	2001G 075	B-horizon soil	30	90	field site duplicate of 1324	577380	6300500	115.73154	56.84186	A103867	T01-01187.0	A0128289	1.34	36.5	24.1	39.4	38.7	27.1	34.2	25.7	1.4	9
1328	2001G 129	C-horizon soil	90	110	field site duplicate of 1325	577380	6300500	115.73154	56.84186	A103867	T01-01187.0	A0128289	1.54	35.2	27.8	37	37.4	32.3	30.3	16.8	0.5	7
1330	2001G 076	B-horizon soil	50	90	routine	577387	6300304	115.73149	56.84010	A103867	T01-01187.0	A0128289	0.99	25.5	25.3	49.2	27	30.6	42.4	24.3	1.1	6
1331	2001G 130	C-horizon soil	90	110	routine	577387	6300304	115.73149	56.84010	A103867	T01-01187.0	A0128289	1.59	30.7	30	39.3	32.7	33.6	33.7	18.6	0.8	8
1333	2001G 077	B-horizon soil	50	90	routine	577380	6300209	115.73164	56.83925	A103867	T01-01187.0	A0128289	1.98	36.5	22.2	41.3	38.5	25.7	35.8	21.9	1.1	8
1334	2001G 131	C-horizon soil	90	110	routine	577380	6300209	115.73164	56.83925	A103867	T01-01187.0	A0128289	1.56	32.7	32.8	34.5	35.3	35.3	29.4	15.9	0.7	9
1335	2001G 156	road dust			road dust	577350	6301150	115.73184	56.84770	A103867	T01-01187.0	A0128289	7.36	55.8	24.5	19.7	57.5	29	13.5	15.6	0.5	4
1337	2001G 078	B-horizon soil	20	80	routine	577282	6301182	115.73295	56.84800	A103867	T01-01187.0	A0128289	1.75	33.9	23	43.1	35.7	28	36.3	21.4	1.1	7
1338	2001G 132	C-horizon soil	90	120	routine	577282	6301182	115.73295	56.84800	A103867	T01-01187.0	A0128289	1.72	33.5	29.4	37.1	35.5	32.9	31.6	15.5	0.6	6
1340	2001G 079	B-horizon soil	30	90	routine	578373	6301222	115.71505	56.84818	A103867	T01-01187.0	A0128289	0.96	27.3	26.8	45.9	29.3	31.6	39.1	21.7	1.4	7
1341	2001G 133	C-horizon soil	90	120	routine	578373	6301222	115.71505	56.84818	A103867	T01-01187.0	A0128289	1.27	30.6	31.6	37.8	32.8	36.2	31	16.6	0.8	9
1343	2001G 080	B-horizon soil	40	100	routine	578578	6301218	115.71169	56.84811	A103867	T01-01187.0	A0128289	1.03	31.8	26.6	41.6	34	30.1	35.9	19.6	0.7	5
1344	2001G 134	C-horizon soil	90	130	routine	578578	6301218	115.71169	56.84811	A103867	T01-01187.0	A0128289	1.29	31.8	33	35.2	34.5	37.1	28.4	15.4	0.7	8
1346	2001G 081	B-horizon soil	40	90	routine	578775	6301221	115.70846	56.84810	A103867	T01-01187.0	A0128289	1.17	36.7	22.4	40.9	38.8	25.8	35.4	19.4	1	5
1346 lab dup	2001G 089	B-horizon soil	40	90	AGS lab duplicate of 1346 (2001G 081)	578775	6301221	115.70846	56.84810	A103867	T01-01187.0	A0128289								20.2	0.8	8
1347	2001G 135	C-horizon soil	110	120	routine	578775	6301221	115.70846	56.84810	A103867	T01-01187.0	A0128289	1.4	30.6	28.4	41	32.5	32.8	34.7	17.2	0.8	8
1349	2001G 083	B-horizon soil	30	100	routine	578979	6301226	115.70511	56.84811	A103867	T01-01187.0	A0128289	5.75	37.6	38.8	23.6	40	41.4	18.6	22.2	0.7	4
1380	2001G 084	B-horizon soil	40	60	routine	577643	6301095	115.72706	56.84716	A103867	T01-01187.0	A0128289	1	30.6	28.2	41.2	32.7	31.9	35.4	21.9	0.8	6
1381	2001G 136	C-horizon soil	80	120	routine	577643	6301095	115.72706	56.84716	A103867	T01-01187.0	A0128289	1.56	33.4	30.1	36.5	35.7	33.5	30.8	16.7	0.8	7
1383	2001G 085	B-horizon soil	40	60	routine	577689	6300882	115.72637	56.84524	A103867	T01-01187.0	A0128289	0.78	30.9	24.6	44.5	32.8	27.3	39.9	22.9	1.1	6
1384	2001G 137	C-horizon soil	85	110	routine	577689	6300882	115.72637	56.84524	A103867	T01-01187.0	A0128289	1.2	33.7	29.5	36.8	35.9	32.9	31.2	17.1	0.7	8
1386	2001G 086	B-horizon soil	30	40	routine	577652	6300284	115.72715	56.83988	A103867	T01-01187.0	A0128289	1.59	58.9	22.3	18.8	61.2	25.9	12.9	19.6	0.5	5
1387	2001G 138	C-horizon soil	40	110	routine	577652	6300284	115.72715	56.83988	A103867	T01-01187.0	A0128289	4.39	39.8	33.3	26.9	43.3	34.4	22.3	16.4	0.6	7
1389	2001G 087	B-horizon soil	35	60	routine	577727	6300565	115.72584	56.84239	A103867	T01-01187.0	A0128289	1.86	30.8	26.8	42.4	33.1	31	35.9	21.3	1.1	4
1390	2001G 139	C-horizon soil	70	110	routine	577727	6300565	115.72584	56.84239	A103867	T01-01187.0	A0128289	1.03	28.4	28.4	43.2	30.5	33.1	36.4	14.9	0.6	8
1393	2001G 088	B-horizon soil	30	60	routine	577717	6300670	115.72597	56.84333	A103867	T01-01187.0	A0128289	3.51	39	31.9	29.1	41	35.3	23.7	23.2	0.5	7
1394	2001G 090	B-horizon soil	30	60	field site duplicate of 1393	577717	6300670	115.72597	56.84333	A103867	T01-01187.0	A0128289	1.01	25.3	41.4	33.3	27.5	44.8	27.7	24.5	0.6	7

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Unit Type	Sample Depth Top(cm)	Sample Depth Bottom(cm)	Sample Control	East UTM NAD83	North UTM NAD83	Longitude NAD83 (°W)	Latitude NAD83 (°N)	Acme File	Becquerel File	ALS Chemex File	1-2mm Sand (%)AGS	Sand (%)>63-1000 microns AGS	Silt (%)4-63 microns AGS	Clay (%)<4 microns AGS	Sand (%)>50-1000 micronsAGS	Silt (%)2-50 microns AGS	Clay (%)<2 microns AGS	Li (ppm) Acmeaqua regia ICP AES/MS	Be (ppm) Acmeaqua regia ICP AES/MS	B (ppm) Acmeaqua regia ICP AES/MS
1396	2001G 091	B-horizon soil	35	60	routine	577567	6301726	115.72811	56.85284	A103867	T01-01187.0	A0128289	3.23	50	23	27	52.2	26.7	21.1	18.7	0.6	3
1397	2001G 141	C-horizon soil	80	90	routine	577567	6301726	115.72811	56.85284	A103867	T01-01187.0	A0128289	4.37	43.4	26.9	29.7	45.7	29.7	24.6	21.6	0.9	9
1397 lab dup	2001G 157	C-horizon soil	80	90	AGS lab duplicate of 1397 (2001G 141)	577567	6301726	115.72811	56.85284	A103867	T01-01187.0	A0128289								21	0.8	4
1399	2001G 092	B-horizon soil	40	65	routine	577599	6301414	115.72767	56.85003	A103867	T01-01187.0	A0128289	0.94	25.7	27.2	47.1	27.7	31.5	40.8	19.6	0.8	7
1400	2001G 142	C-horizon soil	125	145	routine	577599	6301414	115.72767	56.85003	A103867	T01-01187.0	A0128289	1.31	30.3	29.4	40.3	32.4	33.4	34.2	17.1	0.8	7
1502	2001G 093	B-horizon soil	45	65	routine	577371	6301408	115.73141	56.85002	A103867	T01-01187.0	A0128289	0.82	23.6	25.8	50.6	25.4	30.5	44.1	22.4	1.1	7
1503	2001G 143	C-horizon soil	190	205	routine	577371	6301408	115.73141	56.85002	A103867	T01-01187.0	A0128289	1.11	29	28.4	42.6	31.2	32.5	36.3	17.2	1	9
1505	2001G 094	B-horizon soil	50	70	routine	577373	6301606	115.73132	56.85180	A103867	T01-01187.0	A0128289	0.43	17.2	36.1	46.7	19.5	40.9	39.6	21.3	0.7	6
1506	2001G 144	C-horizon soil	150	160	routine	577373	6301606	115.73132	56.85180	A103867	T01-01187.0	A0128289	1.11	31.7	25.3	43	33.7	29.5	36.8	19.4	0.9	8
1508	2001G 095	B-horizon soil	50	80	routine	577387	6300803	115.73134	56.84458	A103867	T01-01187.0	A0128289	0.76	17.7	46.9	35.4	21.9	50.3	27.8	18.3	0.6	6
1509	2001G 145	C-horizon soil	100	120	routine	577387	6300803	115.73134	56.84458	A103867	T01-01187.0	A0128289	1.24	29.3	32.1	38.6	32	35.9	32.1	16.8	0.7	9
1511	2001G 096	B-horizon soil	35	50	routine	577378	6300601	115.73155	56.84277	A103867	T01-01187.0	A0128289	0.7	27.1	42.4	30.5	30.9	44.4	24.7	22.2	0.8	7
1512	2001G 146	C-horizon soil	70	110	routine	577378	6300601	115.73155	56.84277	A103867	T01-01187.0	A0128289	0.1	10.2	56.8	33	13.7	60.3	26	17	0.8	6
1513	2001G 147	C-horizon soil	70	110	field site duplicate of 1512	577378	6300601	115.73155	56.84277	A103867	T01-01187.0	A0128289	0.31	11.9	47.8	40.3	13.8	54.4	31.8	18.6	0.7	7
1515	2001G 097	B-horizon soil	55	75	routine	577380	6300409	115.73158	56.84104	A103867	T01-01187.0	A0128289	0.84	30.4	29.6	40	32.6	33.2	34.2	19.9	0.9	4
1516	2001G 148	C-horizon soil	130	150	routine	577380	6300409	115.73158	56.84104	A103867	T01-01187.0	A0128289	0.45	17.4	30.6	52	18.8	39.9	41.3	27	0.9	9
1518	2001G 098	B-horizon soil	60	80	routine	577073	6301195	115.73636	56.84815	A103867	T01-01187.0	A0128289	1.05	29	28	43	31.1	32.2	36.7	19.3	0.9	4
1520	2001G 099	B-horizon soil	50	70	field site duplicate of 1346	578775	6301221	115.70846	56.84810	A103867	T01-01187.0	A0128289	1.11	30.5	27.1	42.4	32.6	30	37.4	18.9	0.9	5
1521	2001G 150	C-horizon soil	100	120	field site duplicate of 1347	578775	6301221	115.70846	56.84810	A103867	T01-01187.0	A0128289	2.82	45.4	22.5	32.1	47.3	27	25.7	16.7	0.9	9
1523	2001G 100	B-horizon soil	65	95	routine	578174	6301203	115.71831	56.84804	A103867	T01-01187.0	A0128289	1.62	34.2	25.6	40.2	36.6	28.3	35.1	20.2	0.7	7
1524	2001G 151	C-horizon soil	115	135	routine	578174	6301203	115.71831	56.84804	A103867	T01-01187.0	A0128289	1.32	33.5	27	39.5	35.7	32.3	32	18.4	0.9	7
1526	2001G 101	B-horizon soil	40	65	routine	577972	6301206	115.72162	56.84810	A103867	T01-01187.0	A0128289	1.66	29.6	26.6	43.8	31.7	30.1	38.2	21.8	0.7	4
1526 lab dup	2001G 116	B-horizon soil	40	65	AGS lab duplicate of 1526 (2001G 101)	577972	6301206	115.72162	56.84810	A103867	T01-01187.0	A0128289								21	0.9	4
1527	2001G 152	C-horizon soil	75	100	routine	577972	6301206	115.72162	56.84810	A103867	T01-01187.0	A0128289	1.43	32.1	31.4	36.5	34.3	36.1	29.6	19.7	0.9	6
1602	2001G 102	B-horizon soil	30	70	routine	578889	6301230	115.70659	56.84816	A103867	T01-01187.0	A0128289	1.82	31.5	27.1	41.4	33.8	29.5	36.7	23	1.1	7
1603	2001G 153	C-horizon soil	70	100	routine	578889	6301230	115.70659	56.84816	A103867	T01-01187.0	A0128289	1.31	34.6	27.3	38.1	36.7	32.2	31.1	17.8	0.7	7
1605	2001G 103	B-horizon soil	30	80	routine	577779	6301200	115.72479	56.84808	A103867	T01-01187.0	A0128289	1.8	32.3	25.3	42.4	34.3	28.3	37.4	20.8	0.9	7
1606	2001G 154	C-horizon soil	90	120	routine	577779	6301200	115.72479	56.84808	A103867	T01-01187.0	A0128289	1.8	32.4	32.8	34.8	34.6	37.7	27.7	16.9	0.5	5
1608	2001G 104	B-horizon soil	40	60	routine	576867	6301182	115.73974	56.84807	A103867	T01-01187.0	A0128289	0.21	4	29.7	66.3	5	41.4	53.6	23.6	0.9	3
1609	2001G 155	C-horizon soil	150	170	routine	576867	6301182	115.73974	56.84807	A103867	T01-01187.0	A0128289	1.17	13.3	33.4	53.3	14.7	42.4	42.9	26	0.9	7
NAT98-282	2001G 071	till standard			standard NAT98-282					A103867	T01-01187.0	A0128289								19.8	0.8	11
NAT98-282	2001G 082	till standard			standard NAT98-282					A103867	T01-01187.0	A0128289								19.6	0.7	10
NAT98-282	2001G 118	till standard			standard NAT98-282					A103867	T01-01187.0	A0128289								18.3	0.5	7
NAT98-282	2001G 140	till standard			standard NAT98-282					A103867	T01-01187.0	A0128289								14	0.6	10
NAT98-282	2001G 149	till standard			standard NAT98-282					A103867	T01-01187.0	A0128289								17.5	0.5	9

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Na (%) Acme aqua regia ICP AES/MS	Mg (%) Acme aqua regia ICP AES/MS	Al (%) Acme aqua regia ICP AES/MS	P (%) Acme aqua regia ICP AES/MS	S (%) Acme aqua regia ICP AES/MS	K (%) Acme aqua regia ICP AES/MS	Ca (%) Acme aqua regia ICP AES/MS	Sc (ppm) Acme aqua regia ICP AES/MS	Ti (%) Acme aqua regia ICP AES/MS	V (ppm) Acme aqua regia ICP AES/MS	Cr (ppm) Acme aqua regia ICP AES/MS	Mn (ppm) Acme aqua regia ICP AES/MS	Fe (%) Acme aqua regia ICP AES/MS	Co (ppm) Acme aqua regia ICP AES/MS	Ni (ppm) Acme aqua regia ICP AES/MS	Cu (ppm) Acme aqua regia ICP AES/MS	Zn (ppm) Acme aqua regia ICP AES/MS	Ga (ppm) Acme aqua regia ICP AES/MS	Ge (ppm) Acme aqua regia ICP AES/MS	As (ppm) Acme aqua regia ICP AES/MS	Se (ppm) Acme aqua regia ICP AES/MS	Rb (ppm) Acme aqua regia ICP AES/MS	Sr (ppm) Acme aqua regia ICP AES/MS	Y (ppm) Acme aqua regia ICP AES/MS	Zr (ppm) Acme aqua regia ICP AES/MS	Nb (ppm) Acme aqua regia ICP AES/MS	Mo (ppm) Acme aqua regia ICP AES/MS	Ag (ppb) Acme aqua regia ICP AES/MS
1260	2001G 053	0.006	0.43	1.6	0.047	0.01	0.18	0.39	4.7	0.013	46	28.5	310	3	10.1	31.4	30.47	81.7	5.3	0.1	12	0.4	17.2	27.3	19.82	8.2	0.22	1.48	80
1262	2001G 105	0.006	0.74	1.25	0.078	0.03	0.14	2.17	3.3	0.01	37	21.5	396	2.49	10.6	38.5	26.1	76.2	4.4	0.1	10.1	0.3	15.1	47.4	16.41	8.2	0.18	1.37	130
1264	2001G 054	0.007	0.43	1.63	0.055	0.04	0.17	0.4	4.8	0.015	49	29	256	3.02	9.4	34.9	29.2	79.3	5.5	0.1	11.6	0.3	18.1	28.1	24.98	9	0.22	1.53	98
1266	2001G 106	0.007	0.77	1.13	0.074	0.03	0.15	3.17	3	0.012	34	21.8	333	2.42	9.2	26.6	24.03	70.5	3.8	0.1	10.8	0.4	15.5	52.1	14.04	7.9	0.15	1.33	97
1269	2001G 107	0.007	0.74	1.2	0.071	0.03	0.15	2.86	2.9	0.011	36	20.7	319	2.31	9.6	26	23.97	72.1	4.2	0.1	10	0.3	17.2	55.7	13.77	7.9	0.12	1.46	120
1271	2001G 055	0.006	0.4	1.53	0.039	0.01	0.14	0.33	4.5	0.012	48	27.1	240	2.82	8.2	27.6	28.71	69.7	4.9	0.1	11.3	0.4	15.6	25.4	15.14	9.1	0.16	1.6	64
1272	2001G 108	0.007	0.7	1.27	0.074	0.02	0.15	1.8	3.5	0.014	41	23	356	2.53	10.9	35.1	26.15	75.8	4.6	0.1	10.6	0.3	15.3	48	16.43	7.9	0.12	1.53	122
1274	2001G 056	0.006	0.43	1.64	0.045	0.02	0.16	0.38	4.9	0.011	50	27.8	258	3.07	9.5	30.3	32.08	76.7	5.5	0.1	13	0.4	16	28.2	16.42	10	0.16	1.86	90
1275	2001G 109	0.006	0.62	1.18	0.079	0.03	0.13	1.41	3.2	0.012	37	21	369	2.6	11.4	40	26.66	78.2	4.2	0.1	10.9	0.3	13.3	43.2	16.97	8.8	0.1	2.07	122
1277	2001G 057	0.007	0.44	1.52	0.057	0.03	0.14	0.5	3.9	0.01	45	26.2	279	3.1	9	36.7	30.9	71.2	5	0.1	12	0.2	14.8	30.8	23.65	9.5	0.17	1.6	160
1278	2001G 110	0.006	0.66	1.25	0.082	-0.01	0.13	1.54	3.2	0.011	39	21.6	312	2.43	9.5	32.2	26.51	71.8	4.3	-0.1	10.2	0.2	13.6	73.8	15.41	7.8	0.13	1.38	124
1281	2001G 111	0.008	0.69	1.21	0.075	0.01	0.13	1.85	3.2	0.011	37	21.2	378	2.46	9.7	30.9	25.83	71.7	4	-0.1	10.3	0.2	13.4	41.8	14.79	7.3	0.13	1.25	129
1283	2001G 058	0.005	0.42	1.52	0.05	0.01	0.13	0.35	4.1	0.01	43	26.1	276	2.99	10.2	30.8	30.06	75.9	4.8	0.1	11.2	0.2	15.3	26	20.07	8.7	0.18	1.34	83
1284	2001G 112	0.008	0.7	1.24	0.075	0.02	0.15	1.71	3.4	0.012	39	22.2	338	2.6	10.4	29.4	25.28	77.2	4.4	0.1	11.2	0.3	13.6	41.9	15.75	7.6	0.16	1.56	142
1286	2001G 059	0.004	0.43	1.53	0.054	0.02	0.15	0.32	4.1	0.012	42	27.8	236	3.07	10.1	30.4	30.85	79.6	5	0.1	11.5	0.5	16.8	24.8	14.41	7.6	0.17	1.29	46
1287	2001G 113	0.007	0.77	1.24	0.08	0.05	0.16	2.42	3.5	0.012	36	22.6	387	3	10.6	33	30.1	79.1	4.4	-0.1	11.9	0.4	14.3	46.5	15.66	8	0.14	1.48	141
1289	2001G 060	0.004	0.43	1.65	0.044	0.03	0.17	0.34	4.7	0.013	46	27.3	452	3.28	10.1	30.5	26.17	93	5.3	0.1	12.6	0.4	17.5	24.1	15.37	8.1	0.15	1.45	76
1291	2001G 061	0.006	0.42	1.52	0.056	0.02	0.14	0.36	4.5	0.011	44	28.1	349	3.11	10.4	34.6	27.89	81.7	5	0.1	12.6	0.3	16.9	25.6	20	7.8	0.19	1.57	113
1291 lab dup	2001G 072	0.005	0.42	1.54	0.053	0.01	0.14	0.36	4.4	0.011	44	27.8	349	3.12	10	33.8	27.53	80.2	5	0.1	11.9	0.4	17	25.8	19.78	7.5	0.19	1.49	104
1292	2001G 114	0.007	0.7	1.08	0.077	0.03	0.12	2	2.9	0.007	33	18.9	348	2.41	10.6	31.3	26.4	77.1	3.9	0.1	10.4	0.5	12.3	41.9	14.97	7.7	0.17	1.67	160
1294	2001G 062	0.006	0.41	1.47	0.039	-0.01	0.15	0.33	4.4	0.012	43	26.7	282	2.83	9.3	27.5	27.46	76.3	5.1	0.1	11.3	0.4	16.8	24.4	15.76	8.3	0.2	1.49	63
1295	2001G 115	0.007	0.69	1.21	0.072	0.03	0.14	1.68	3.4	0.013	37	22.3	372	2.52	11.8	43.8	25.94	76.1	4.3	0.1	10.2	0.4	14.2	38.8	20.44	7.9	0.18	1.36	144
1297	2001G 063	0.009	0.53	1.41	0.066	0.03	0.15	0.79	4	0.013	40	25.4	354	2.73	11.1	46.3	29.7	79.3	4.7	0.1	10.6	0.2	15.8	32.8	29.3	9	0.16	1.26	151
1298	2001G 117	0.007	0.8	1.06	0.076	0.04	0.12	2.69	2.8	0.006	31	18.3	355	2.35	10.3	29.4	24.75	72.1	3.7	0.1	9.5	0.3	12	45.1	13.96	7.6	0.09	1.21	127
1300	2001G 064	0.006	0.39	1.38	0.071	0.02	0.18	0.39	4	0.011	40	25.5	228	2.78	7.6	32.7	28.81	76.7	4.8	0.1	10.9	0.2	16.4	27.4	20.77	9.2	0.19	1.4	104
1301	2001G 119	0.007	0.71	1.05	0.077	0.03	0.16	1.91	3	0.008	33	21.6	233	2.34	8.8	25.1	25.32	81.4	4	-0.1	9.8	0.3	15.9	41.8	13.36	10	0.06	1.59	130
1303	2001G 065	0.005	0.44	1.6	0.051	-0.01	0.14	0.45	4.7	0.01	48	28.8	208	2.94	9.1	33.4	29.24	75.9	5.1	0.1	11.1	0.1	16	27.7	22.18	8.3	0.14	1.2	112
1304	2001G 120	0.006	0.76	1.05	0.074	0.02	0.12	2.93	3	0.007	32	21	389	2.35	11.2	28.5	24.26	71.2	3.6	-0.1	10	0.3	12.2	52.8	12.9	9	0.04	1.48	123
1306	2001G 066	0.006	0.42	1.59	0.059	0.03	0.16	0.45	4.6	0.011	47	27.6	307	3.07	9.2	38.5	29.1	76.1	5.3	0.1	11.7	0.1	16.4	29.2	25.9	8.7	0.15	1.46	97
1307	2001G 121	0.007	0.75	1.01	0.068	-0.01	0.11	3.38	2.9	0.005	30	19.4	427	2.37	10.1	30.3	25.94	72.6	3.3	-0.1	10.1	0.2	11.2	52.4	12.26	9.1	0.03	1.3	117
1307 lab dup	2001G 126	0.005	0.76	1.18	0.072	0.02	0.14	3.35	3	0.007	35	21.1	432	2.43	10.4	30.4	25.16	72.8	4	-0.1	9.7	0.1	13.1	54.3	12.52	8.4	0.13	1.45	116
1309	2001G 067	0.005	0.4	1.47	0.048	0.01	0.14	0.33	4.2	0.011	44	26.7	221	2.81	8.5	27.9	30.01	79.3	4.9	0.1	11	0.3	15.9	25.4	16.89	8.9	0.16	1.34	82
1310	2001G 122	0.007	0.75	0.98	0.07	0.02	0.12	2.29	3	0.007	30	19.4	340	2.2	9.9	25.6	23.59	70.3	3.6	-0.1	10.2	0.3	11.9	43.2	12.46	9.4	0.09	1.29	105
1312	2001G 068	0.005	0.42	1.57	0.049	0.01	0.16	0.35	4.6	0.011	46	28.5	220	2.89	8.3	28.4	29.67	80.7	5.5	0.1	11.4	0.4	16.3	26.4	17.07	8.4	0.22	1.44	86
1313	2001G 123	0.007	0.79	1.08	0.071	0.02	0.14	2.67	2.9	0.008	33	20.7	351	2.37	9.9	26.2	25.71	74.7	3.8	-0.1	9.2	0.3	13.4	46.8	12.58	8.2	0.16	1.33	107
1315	2001G 069	0.006	0.43	1.51	0.046	0.01	0.14	0.32	4.4	0.012	45	28	211	3.01	8.5	29.5	31.7	81	5.2	0.1	12	0.4	17	27.1	15.7	8.4	0.19	1.53	61
1316	2001G 124	0.007	0.74	1.32	0.082	-0.01	0.13	1.69	4.5	0.009	43	27.3	395	2.74	13.5	39.5	34.15	96	4.5	0.1	11.2	0.2	13.8	43.8	12.88	8.6	0.1	1.17	102

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Na (%) Acme aqua regia ICP AES/MS	Mg (%) Acme aqua regia ICP AES/MS	Al (%) Acme aqua regia ICP AES/MS	P (%) Acme aqua regia ICP AES/MS	S (%) Acme aqua regia ICP AES/MS	K (%) Acme aqua regia ICP AES/MS	Ca (%) Acme aqua regia ICP AES/MS	Sc (ppm) Acme aqua regia ICP AES/MS	Ti (%) Acme aqua regia ICP AES/MS	V (ppm) Acme aqua regia ICP AES/MS	Cr (ppm) Acme aqua regia ICP AES/MS	Mn (ppm) Acme aqua regia ICP AES/MS	Fe (%) Acme aqua regia ICP AES/MS	Co (ppm) Acme aqua regia ICP AES/MS	Ni (ppm) Acme aqua regia ICP AES/MS	Cu (ppm) Acme aqua regia ICP AES/MS	Zn (ppm) Acme aqua regia ICP AES/MS	Ga (ppm) Acme aqua regia ICP AES/MS	Ge (ppm) Acme aqua regia ICP AES/MS	As (ppm) Acme aqua regia ICP AES/MS	Se (ppm) Acme aqua regia ICP AES/MS	Rb (ppm) Acme aqua regia ICP AES/MS	Sr (ppm) Acme aqua regia ICP AES/MS	Y (ppm) Acme aqua regia ICP AES/MS	Zr (ppm) Acme aqua regia ICP AES/MS	Nb (ppm) Acme aqua regia ICP AES/MS	Mo (ppm) Acme aqua regia ICP AES/MS	Ag (ppb) Acme aqua regia ICP AES/MS
1318	2001G 070	0.006	0.42	1.51	0.058	-0.01	0.14	0.49	4.8	0.012	47	28.2	261	2.9	8.9	38.5	30.05	72.9	4.9	0.1	12.1	0.2	15.7	27.4	30.51	8.9	0.19	1.09	129
1319	2001G 125	0.006	0.75	1.12	0.071	-0.01	0.14	3.63	3.1	0.007	34	20.4	283	2.24	9.3	24.7	23.75	64	3.9	-0.1	9.8	0.1	12	48	11.93	7.5	0.17	0.98	84
1321	2001G 073	0.007	0.48	1.37	0.069	0.01	0.21	0.54	3.7	0.012	41	23.9	218	2.72	8.3	27.6	26.9	68.7	4.9	0.1	11.4	-0.1	18.2	48.7	16.66	8	0.15	1.05	123
1322	2001G 127	0.008	0.82	1.11	0.077	0.01	0.15	2.17	3	0.007	34	21.8	285	2.43	8.9	24.5	25.06	67.5	3.7	0.1	9.9	0.1	14.9	62.2	13.29	8.8	0.08	1.05	115
1324	2001G 074	0.007	0.47	1.69	0.076	0.02	0.17	0.52	4.4	0.013	55	30.5	302	3.11	10.7	41.9	34.34	81.1	5.8	0.1	13.1	0.3	18.6	35.8	21.8	7.8	0.16	2.33	160
1325	2001G 128	0.007	0.79	1.18	0.079	0.01	0.15	2.47	3.3	0.008	40	21.9	344	2.54	10.3	27.3	27.29	79.8	4	-0.1	11.6	0.3	13.6	47.7	13.24	9.1	0.1	1.85	118
1327	2001G 075	0.005	0.48	1.78	0.062	-0.01	0.17	0.51	4.8	0.013	57	31.3	276	3.1	9.7	44.6	34.3	78.9	5.8	0.1	12.5	0.1	17.7	34.6	26.68	8.2	0.18	1.72	148
1328	2001G 129	0.007	0.74	1.09	0.071	0.02	0.14	2.88	3.1	0.007	35	20.7	337	2.32	10.2	26.8	24.28	73.1	3.9	0.1	10.4	0.4	12.2	51	13.23	8.7	0.1	1.92	122
1330	2001G 076	0.006	0.46	1.6	0.061	0.02	0.18	0.47	5	0.01	54	29.6	272	3.03	10.2	41.2	33.92	89.9	5.6	0.1	13.6	0.4	16.8	36.8	28.18	9.5	0.16	1.96	114
1331	2001G 130	0.008	0.74	1.23	0.086	0.01	0.14	2.01	3.4	0.008	41	23.1	385	2.5	11.2	32.3	27.11	79.2	4.3	0.1	11.1	0.2	14.1	52	15.72	7.6	0.14	1.61	136
1333	2001G 077	0.006	0.44	1.7	0.058	-0.01	0.16	0.39	4.9	0.012	54	32.4	308	3.56	10.1	51.6	29.88	83.7	5.5	0.1	14.8	0.5	18	32.3	20.92	8.8	0.2	3.27	85
1334	2001G 131	0.007	0.71	1.08	0.071	0.01	0.14	2.43	3.2	0.008	34	20.4	366	2.3	10.5	29.6	25.34	73.9	3.8	-0.1	10.7	0.4	12.3	53.6	12.69	8.3	0.12	1.85	117
1335	2001G 156	0.007	0.7	0.94	0.074	0.04	0.14	2.2	2.5	0.006	29	20.3	456	2.38	10.4	28.2	22.26	64.5	3.5	0.1	10.1	0.3	12	40.6	12.45	4.7	0.15	1.52	101
1337	2001G 078	0.006	0.44	1.69	0.05	0.01	0.2	0.38	5.3	0.014	50	29.7	383	3.25	10.6	35.5	29.6	86	5.8	0.1	12.7	0.3	19.3	29.2	24.08	8.8	0.2	1.55	90
1338	2001G 132	0.007	0.75	1.09	0.073	0.02	0.14	2.67	3	0.006	33	20	430	2.4	11.9	31.9	24.7	72.6	3.8	0.1	10.1	0.3	13	45.8	13.39	7.8	0.26	1.29	114
1340	2001G 079	0.006	0.45	1.61	0.05	-0.01	0.15	0.45	4.6	0.012	46	29.6	334	2.92	10.8	47	29.25	84.2	5.2	0.1	11.6	0.2	16.9	29.4	29.61	8.9	0.2	1.27	182
1341	2001G 133	0.008	0.66	1.18	0.078	0.01	0.14	1.62	3.4	0.008	36	21.9	422	2.53	12.5	38.9	27.41	77.6	4.1	0.1	10.4	0.3	14.8	42.2	16	7.7	0.18	1.49	176
1343	2001G 080	0.004	0.4	1.46	0.036	0.01	0.16	0.32	3.6	0.009	41	26.2	206	2.73	8.2	26.3	21.56	78.1	5.3	0.1	11	0.5	16.5	23.8	6.76	7	0.22	1.37	70
1344	2001G 134	0.006	0.74	1.05	0.073	0.01	0.13	2.59	3	0.008	33	19.7	456	2.33	11.7	30.8	24.92	70.9	3.6	-0.1	10.5	0.1	13.9	44	13.2	7.3	0.14	1.21	121
1346	2001G 081	0.004	0.41	1.46	0.056	0.02	0.17	0.36	4.3	0.01	42	27.5	270	2.94	9.9	32.3	30.08	80.8	5.3	0.1	12.3	0.3	18.5	27.9	18.35	9.5	0.22	1.59	68
1346 lab dup	2001G 089	0.005	0.41	1.53	0.053	0.01	0.17	0.34	4	0.011	46	28.8	263	2.8	8.6	28	28.89	74.7	5.2	0.1	11	0.5	18.4	27	16.14	7.1	0.16	1.34	59
1347	2001G 135	0.007	0.7	1.13	0.075	0.02	0.16	2.55	3.3	0.007	35	20.3	396	2.42	11.5	29.6	26.35	76.7	4.1	0.1	10.8	0.2	14.5	49.3	13.59	9.6	0.09	1.61	125
1349	2001G 083	0.005	0.39	1.27	0.076	0.02	0.15	0.45	2.7	0.015	36	25	323	2.34	8.3	24.3	11.76	72.8	4.7	0.1	6.7	0.2	19.2	22.6	10.84	3.2	0.48	0.86	107
1380	2001G 084	0.005	0.41	1.53	0.038	-0.01	0.15	0.3	2.9	0.01	44	29	177	2.77	9	26.8	21.92	75.8	5.4	-0.1	11.5	0.3	20.8	24.9	5.63	5.1	0.34	1.42	81
1381	2001G 136	0.008	0.59	1.29	0.079	0.01	0.16	1.02	3.6	0.01	39	23.6	411	2.68	11.5	44.6	27.9	79.7	4.4	0.1	10.3	0.3	16	35.4	19.13	8.3	0.19	1.34	150
1383	2001G 085	0.005	0.44	1.61	0.043	0.02	0.2	0.39	4.6	0.01	47	30.8	262	2.98	10.1	31	26.32	81.1	5.8	0.1	11.9	0.2	17.8	27.4	13.41	6.3	0.28	1.33	63
1384	2001G 137	0.007	0.8	1.17	0.067	-0.01	0.15	3.12	3.2	0.008	35	21.3	403	2.42	11	27.5	27.27	69.6	3.9	-0.1	10	0.3	13.5	52.2	12.88	7.8	0.12	1.15	106
1386	2001G 086	0.003	0.31	1.12	0.032	0.04	0.12	1.3	2.1	0.009	32	19.7	231	2.2	6.4	15.6	8.56	62.2	3.8	-0.1	6.4	0.5	12.2	32.2	8.77	3.3	0.46	0.86	54
1387	2001G 138	0.007	0.77	1.11	0.074	0.03	0.13	8.22	2.9	0.009	33	20.8	707	3.27	8.2	26.5	22.66	63.3	3.8	-0.1	12	0.2	11.1	115.5	11.61	4.7	0.19	1.61	113
1389	2001G 087	0.004	0.46	1.56	0.043	0.02	0.14	0.45	3.6	0.01	49	27	357	3.58	9.5	29.9	25.55	77	5.4	0.1	9.7	0.6	15.9	29	15.06	6.4	0.25	1.69	66
1390	2001G 139	0.007	0.75	1.25	0.078	0.03	0.13	4.52	3.6	0.007	36	21.6	374	2.45	9.7	27.9	26.44	64.2	4.1	0.1	12	0.7	13	67.3	14.39	8.7	0.19	1.38	137
1393	2001G 088	0.005	0.45	1.39	0.084	0.01	0.15	0.56	3.4	0.013	42	25.2	311	3	8	29.5	19.88	66.1	4.7	0.1	10.7	0.3	16.4	31.7	18.36	6.3	0.25	0.99	172
1394	2001G 090	0.006	0.41	1.42	0.068	0.03	0.16	0.47	3.3	0.015	42	25.3	300	2.46	7	27.5	15.62	56.8	4.8	0.1	8.2	0.3	15.9	28.3	16.84	6.1	0.26	0.7	133
1396	2001G 091	0.005	0.37	1.33	0.045	0.04	0.13	0.27	2	0.014	38	23	259	2.69	8.5	22.7	15.72	63.1	4.4	-0.1	9.7	0.5	17.9	19.1	5.11	4.2	0.27	1.37	38
1397	2001G 141	0.01	1.34	1.71	0.078	0.09	0.21	2.84	4.7	0.015	46	28.3	921	5	13.8	45.8	42.72	87	5.3	0.1	18.8	0.6	20.2	45.8	25.41	6.9	0.31	3.44	144
1397 lab dup	2001G 157	0.01	1.25	1.31	0.068	0.07	0.15	2.64	3.8	0.011	35	25.9	803	4.55	13.2	44.9	38.87	75.8	4.4	0.1	17.3	0.4	14.9	39.1	25.08	6.7	0.18	3.15	141
1399	2001G 092	0.005	0.44	1.58	0.063	0.02	0.19	0.32	3.6	0.008	46	28.1	224	2.87	8.5	31.8	28.78	80.7	5.4	0.1	10.5	0.6	21.2	28.9	11.1	6.6	0.2	1.38	88

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Na (%) Acme aqua regia ICP AES/MS	Mg (%) Acme aqua regia ICP AES/MS	Al (%) Acme aqua regia ICP AES/MS	P (%) Acme aqua regia ICP AES/MS	S (%) Acme aqua regia ICP AES/MS	K (%) Acme aqua regia ICP AES/MS	Ca (%) Acme aqua regia ICP AES/MS	Sc (ppm) Acme aqua regia ICP AES/MS	Ti (%) Acme aqua regia ICP AES/MS	V (ppm) Acme aqua regia ICP AES/MS	Cr (ppm) Acme aqua regia ICP AES/MS	Mn (ppm) Acme aqua regia ICP AES/MS	Fe (%) Acme aqua regia ICP AES/MS	Co (ppm) Acme aqua regia ICP AES/MS	Ni (ppm) Acme aqua regia ICP AES/MS	Cu (ppm) Acme aqua regia ICP AES/MS	Zn (ppm) Acme aqua regia ICP AES/MS	Ga (ppm) Acme aqua regia ICP AES/MS	Ge (ppm) Acme aqua regia ICP AES/MS	As (ppm) Acme aqua regia ICP AES/MS	Se (ppm) Acme aqua regia ICP AES/MS	Rb (ppm) Acme aqua regia ICP AES/MS	Sr (ppm) Acme aqua regia ICP AES/MS	Y (ppm) Acme aqua regia ICP AES/MS	Zr (ppm) Acme aqua regia ICP AES/MS	Nb (ppm) Acme aqua regia ICP AES/MS	Mo (ppm) Acme aqua regia ICP AES/MS	Ag (ppb) Acme aqua regia ICP AES/MS
1400	2001G 142	0.007	0.73	1.19	0.075	0.02	0.18	1.96	3.3	0.008	36	21.2	368	2.49	10.5	33.6	26.61	78.1	4.3	0.1	10.1	0.2	16	45.7	14.07	9.3	0.09	1.56	124
1502	2001G 093	0.005	0.43	1.63	0.037	0.02	0.18	0.36	4	0.006	48	30.6	222	2.82	8.8	36	26.83	81.5	5.4	0.1	11	0.8	20.2	31.6	20.09	5.9	0.15	1.71	102
1503	2001G 143	0.007	0.46	1.23	0.079	-0.01	0.17	0.67	3.6	0.009	38	23.4	372	2.61	10.7	35.1	28.31	82.7	4.4	0.1	11.1	0.4	14.4	34.2	14.92	9.9	0.09	1.76	152
1505	2001G 094	0.005	0.47	1.64	0.066	0.01	0.18	0.31	4.2	0.014	47	29.7	254	2.7	8.8	28.1	27.09	72.8	5.7	0.1	9.1	0.5	19	25.3	11.82	5.1	0.19	1.14	56
1506	2001G 144	0.007	0.44	1.46	0.079	-0.01	0.2	0.41	4.3	0.01	43	25.6	353	2.86	11	37.2	31.07	90.4	5.1	0.1	11.7	0.4	16.9	29.9	19.54	8.3	0.08	1.5	132
1508	2001G 095	0.005	0.37	1.28	0.064	0.02	0.17	0.45	3.1	0.011	38	22.9	273	2.31	7.4	28.5	20.84	60.3	4.4	-0.1	8.7	0.2	14.8	25	14.5	6.1	0.16	0.95	119
1509	2001G 145	0.006	0.69	1.21	0.069	0.01	0.17	1.8	3.2	0.009	36	21.1	323	2.35	9	26.3	24.13	67.5	4.2	0.1	8.9	0.1	14	38.1	12.4	7.9	0.17	1.11	122
1511	2001G 096	0.005	0.77	1.29	0.088	0.02	0.16	1.23	2.9	0.009	40	23.8	334	2.49	9.1	25.5	18.49	68.6	4.2	0.1	9.6	0.3	15.5	42.4	13.55	5.4	0.24	0.93	124
1512	2001G 146	0.009	0.87	1.06	0.079	-0.01	0.14	1.87	2.8	0.012	35	19.4	244	2.29	9.1	23.7	21.45	67.1	3.4	0.1	9.2	0.1	11.3	46	11.49	8.5	0.09	1.05	109
1513	2001G 147	0.007	0.82	1.11	0.076	0.01	0.16	1.47	3	0.012	36	19.1	276	2.34	9	25.3	22.73	67.7	3.8	0.1	9.8	0.1	11.9	40.7	12.03	9.2	0.15	1.32	114
1515	2001G 097	0.005	0.41	1.66	0.045	0.03	0.15	0.35	3.7	0.013	47	28	194	2.63	6.1	24.5	26.67	58.6	5.6	-0.1	9.1	0.6	16.8	25.6	10.1	7.4	0.17	1.55	80
1516	2001G 148	0.008	0.62	1.38	0.075	0.02	0.18	1.26	3.7	0.006	65	25.7	355	2.8	13.9	43.4	32.03	104.1	5	0.1	14.5	0.4	16.2	44.5	15.56	11.2	0.03	2.94	122
1518	2001G 098	0.006	0.42	1.55	0.055	0.04	0.16	0.34	4.1	0.011	47	26.3	239	2.94	7.8	31.2	30.31	75.3	5.5	0.1	11	0.5	15.4	27	17.6	7.8	0.19	1.62	87
1520	2001G 099	0.005	0.41	1.5	0.053	0.03	0.15	0.35	3.4	0.009	44	25.4	305	2.82	8.9	27.4	26.65	73.2	5.1	0.1	10.6	0.5	17.2	27.1	13.98	5.8	0.16	1.57	64
1521	2001G 150	0.009	0.74	1.23	0.078	0.04	0.15	1.88	3.3	0.009	38	21.5	391	3.07	11.2	32.3	30.72	78.7	4.1	0.1	15.3	0.3	14.8	41.4	14.32	8.6	0.08	1.84	148
1523	2001G 100	0.004	0.39	1.53	0.045	0.01	0.18	0.28	3.3	0.013	44	27.9	193	2.65	7.8	25	20.08	70.6	5	0.1	9.8	0.6	19.8	26.5	10.41	5.7	0.25	1.39	47
1524	2001G 151	0.007	0.4	1.38	0.071	-0.01	0.17	0.4	4.4	0.007	42	24.4	258	2.88	8	36.4	32.51	81.7	4.9	0.1	11.9	0.3	15	29.6	24.01	10.5	0.11	1.94	109
1526	2001G 101	0.005	0.4	1.51	0.029	0.02	0.15	0.28	3.1	0.009	43	26	190	2.61	8	24.7	20.35	70	5.2	0.1	10.4	0.6	17.1	23.5	7.39	6	0.3	1.49	55
1526 lab dup	2001G 116	0.004	0.39	1.4	0.033	0.02	0.14	0.29	3.1	0.001	40	24.1	199	2.6	8.5	26	21.6	68.2	5.3	-0.1	11.1	0.6	16.9	23.5	7.75	6.8	0.28	1.55	62
1527	2001G 152	0.006	0.6	1.23	0.068	-0.01	0.14	1.27	3.5	0.008	37	24.7	423	2.66	11.6	47.7	29.54	79.6	4.2	0.1	11.1	0.3	14	37.3	25.65	8.6	0.12	1.57	150
1602	2001G 102	0.004	0.46	1.66	0.05	0.02	0.19	0.45	4.1	0.014	51	29.7	308	2.96	9.7	31.1	25.25	77.9	5.4	-0.1	11.5	0.5	17.6	34.4	17.77	6.7	0.22	1.37	98
1603	2001G 153	0.007	0.72	1.03	0.068	0.03	0.12	4.19	2.8	0.008	32	21.1	316	2.18	9.7	26	25.05	63.5	3.7	0.1	10.5	0.2	11.5	60.3	13.27	7.2	0.17	1.29	132
1605	2001G 103	0.005	0.43	1.62	0.04	-0.01	0.17	0.37	3.9	0.011	47	28.5	236	2.79	8	27.2	24.24	71.4	5.5	0.1	10.9	0.5	16	25.9	12.02	6.9	0.23	1.38	67
1606	2001G 154	0.009	0.77	0.98	0.073	0.01	0.12	3.52	2.8	0.011	30	21.2	383	2.19	10.8	31	23.95	68.6	3.6	0.1	10	0.2	12.7	52.8	14.09	8.5	0.14	1.31	124
1608	2001G 104	0.006	0.58	1.73	0.059	0.03	0.15	0.44	5	0.011	54	30.4	271	3.22	10.3	38.1	37.7	89.4	6	0.1	11.5	0.5	14.7	31.3	18.99	7.7	0.14	1.02	80
1609	2001G 155	0.007	0.67	1.28	0.077	-0.01	0.14	1.67	4.2	0.015	39	26.5	360	2.77	12.6	37.6	32.39	93	4.5	0.1	12.3	0.2	13.7	47.5	14.08	8.7	0.1	1.31	100
NAT98-282	2001G 071	0.007	0.79	1.15	0.064	0.03	0.17	3.1	3	0.014	34	19.8	617	2.45	16.3	32.9	22.8	70.3	3.8	0.1	12.6	0.2	15	57.9	13.15	9.6	0.14	1.79	92
NAT98-282	2001G 082	0.008	0.83	1.13	0.067	-0.01	0.15	3.25	3	0.011	33	20	643	2.52	16.6	33.4	23.27	72.8	3.7	0.1	13	0.1	15	60.9	13.66	10.6	0.14	1.78	92
NAT98-282	2001G 118	0.008	0.79	0.98	0.072	0.03	0.13	3.05	2.6	0.013	32	17.5	612	2.41	16.3	34.6	22.76	72.1	3.4	-0.1	11.7	0.3	13.7	60.5	13.13	9.3	0.13	1.67	84
NAT98-282	2001G 140	0.008	0.81	1.08	0.078	0.01	0.14	3	3	0.009	34	18.7	650	2.56	15.8	30.8	23.65	74.1	3.3	0.1	13.2	0.6	14.6	61.8	12.88	9.4	0.11	1.86	91
NAT98-282	2001G 149	0.009	0.81	1.06	0.072	0.04	0.16	3	2.8	0.008	34	18.6	647	2.56	16.9	33.2	23.81	75.4	3.6	0.1	11.9	0.2	14.2	60.2	12.24	10.3	0.07	1.78	91

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Cd (ppm) Acme aqua regia ICP AES/MS	In (ppm) Acme aqua regia ICP AES/MS	Sn (ppm) Acme aqua regia ICP AES/MS	Sb (ppm) Acme aqua regia ICP AES/MS	Te (ppm) Acme aqua regia ICP AES/MS	Cs (ppm) Acme aqua regia ICP AES/MS	Ba (ppm) Acme aqua regia ICP AES/MS	La (ppm) Acme aqua regia ICP AES/MS	Ce (ppm) Acme aqua regia ICP AES/MS	Pr (ppm) Acme aqua regia ICP AES/MS	Nd (ppm) Acme aqua regia ICP AES/MS	Sm (ppm) Acme aqua regia ICP AES/MS	Eu (ppm) Acme aqua regia ICP AES/MS	Gd (ppm) Acme aqua regia ICP AES/MS	Tb (ppm) Acme aqua regia ICP AES/MS	Dy (ppm) Acme aqua regia ICP AES/MS	Ho (ppm) Acme aqua regia ICP AES/MS	Er (ppm) Acme aqua regia ICP AES/MS	Tm (ppm) Acme aqua regia ICP AES/MS	Yb (ppm) Acme aqua regia ICP AES/MS	Lu (ppm) Acme aqua regia ICP AES/MS	Hf (ppm) Acme aqua regia ICP AES/MS	Ta (ppm) Acme aqua regia ICP AES/MS	W (ppm) Acme aqua regia ICP AES/MS	Re (ppb) Acme aqua regia ICP AES/MS	Au (ppb) Acme aqua regia ICP AES/MS	Hg (ppb) Acme aqua regia ICP AES/MS	Tl (ppm) Acme aqua regia ICP AES/MS
1260	2001G 053	0.08	0.04	1.1	0.5	0.05	1.63	228.5	28.1	52.6	7.97	30.5	7.01	1.43	6.47	0.83	4.77	0.71	1.98	0.27	1.99	0.24	0.15	-0.05	-0.2	1	4.1	101	0.19
1262	2001G 105	0.16	0.04	0.8	0.4	0.04	1.34	302.9	22.2	37.5	5.32	19.89	4.42	0.88	4.28	0.57	3.27	0.56	1.53	0.21	1.56	0.18	0.14	-0.05	-0.2	1	1.3	73	0.2
1264	2001G 054	0.06	0.04	0.9	0.46	0.07	1.59	235	31.1	54.9	8.75	34.75	8.28	1.71	8.44	1.05	6.02	0.91	2.6	0.34	2.33	0.3	0.16	-0.05	-0.2	1	3.8	101	0.22
1266	2001G 106	0.22	0.03	0.8	0.43	0.04	1.39	261.1	20.2	36.1	5.13	18.62	4.11	0.83	3.98	0.51	2.84	0.45	1.16	0.18	1.17	0.15	0.14	-0.05	-0.2	-1	1.8	75	0.21
1269	2001G 107	0.14	0.03	0.7	0.37	0.04	1.34	185.4	20.5	34.9	4.73	17.45	3.65	0.81	3.58	0.5	2.98	0.46	1.28	0.18	1.2	0.14	0.16	-0.05	-0.2	2	1.1	65	0.2
1271	2001G 055	0.06	0.03	0.9	0.5	0.06	1.24	198.9	22.1	43	6.63	24.98	6.03	1.27	5.9	0.71	3.94	0.57	1.55	0.22	1.41	0.17	0.16	-0.05	-0.2	1	3.7	78	0.18
1272	2001G 108	0.14	0.04	0.8	0.46	0.04	1.34	253.4	20.7	37.1	5.32	19.91	4.62	0.98	4.66	0.63	3.34	0.59	1.65	0.21	1.46	0.18	0.15	-0.05	-0.2	1	2.8	72	0.2
1274	2001G 056	0.19	0.05	1	0.64	0.07	1.37	222.4	23.8	48.9	6.87	26.27	6.3	1.27	5.52	0.76	4.25	0.62	1.87	0.25	1.7	0.22	0.18	-0.05	-0.2	1	42.1	165	0.19
1275	2001G 109	0.11	0.04	0.8	0.45	0.04	1.11	270.4	21.8	35.6	5.1	19.09	4.51	0.87	4.64	0.61	3.26	0.55	1.63	0.22	1.46	0.17	0.18	-0.05	-0.2	1	2.2	67	0.19
1277	2001G 057	0.06	0.04	0.8	0.48	0.06	1.19	308.2	25.5	37.5	6.65	26.07	5.89	1.29	6.38	0.76	4.61	0.77	2.07	0.27	1.85	0.24	0.18	-0.05	-0.2	-1	3.4	84	0.17
1278	2001G 110	0.11	0.04	0.8	0.48	0.04	1.16	277.4	20.7	36.3	5.25	19.17	4.41	0.89	4.23	0.56	3.28	0.52	1.41	0.19	1.23	0.16	0.15	-0.05	-0.2	1	2	66	0.18
1281	2001G 111	0.12	0.04	0.8	0.46	0.04	1.17	258	21.3	35.5	5.17	19.24	4.26	0.84	4.31	0.54	3.01	0.48	1.29	0.18	1.2	0.16	0.12	-0.05	-0.2	2	2.1	65	0.18
1283	2001G 058	0.06	0.04	0.9	0.4	0.06	1.18	552.6	26.7	48.7	7.45	28.24	6.53	1.32	6.25	0.81	4.6	0.68	1.81	0.25	1.68	0.2	0.16	-0.05	-0.2	-1	3.1	81	0.17
1284	2001G 112	0.16	0.04	0.8	0.45	0.04	1.32	312.1	22.2	38.3	5.45	20.29	4.61	0.89	4.18	0.56	2.98	0.51	1.41	0.2	1.34	0.16	0.15	-0.05	-0.2	1	1.6	74	0.16
1286	2001G 059	0.06	0.03	0.9	0.37	0.06	1.19	217.8	23.2	45.2	6.42	23.68	5.53	1.13	5.46	0.66	3.78	0.55	1.43	0.19	1.2	0.14	0.13	-0.05	-0.2	-1	3.7	74	0.2
1287	2001G 113	0.15	0.03	0.8	0.4	0.04	1.23	354.1	21.2	35.6	5.13	19.04	4.23	0.83	3.82	0.54	3.06	0.52	1.45	0.2	1.33	0.17	0.14	-0.05	-0.2	1	3.4	105	0.21
1289	2001G 060	0.11	0.04	0.9	0.39	0.06	1.3	296.2	24.7	46.7	6.62	25.22	5.75	1.14	5.05	0.66	3.64	0.58	1.52	0.21	1.51	0.19	0.17	-0.05	-0.2	1	2.9	86	0.19
1291	2001G 061	0.09	0.04	0.9	0.43	0.06	1.13	261.4	30.5	56.5	8.32	31.49	6.99	1.4	6.53	0.85	4.78	0.72	1.92	0.26	1.68	0.21	0.13	-0.05	-0.2	-1	2.8	90	0.2
1291 lab dup	2001G 072	0.09	0.04	0.9	0.35	0.05	1.03	262.6	28.2	53.7	7.78	29.33	6.53	1.36	6.38	0.81	4.66	0.71	1.89	0.24	1.68	0.19	0.13	-0.05	-0.2	1	2.7	76	0.18
1292	2001G 114	0.15	0.04	0.7	0.42	0.05	1.07	291.2	19.2	33.4	4.73	17.99	3.89	0.82	4.08	0.53	2.95	0.51	1.42	0.19	1.25	0.16	0.15	-0.05	-0.2	5	1.7	77	0.17
1294	2001G 062	0.07	0.04	0.9	0.41	0.07	1.41	199.8	24.4	45.3	6.64	25.5	5.76	1.12	5.23	0.68	3.65	0.55	1.45	0.2	1.43	0.17	0.17	-0.05	-0.2	1	3.3	86	0.19
1295	2001G 115	0.11	0.03	0.8	0.43	0.03	1.24	275.3	24.5	41.4	6.15	23.4	5.18	1.08	5.13	0.73	3.91	0.64	1.75	0.24	1.6	0.19	0.14	-0.05	-0.2	1	1.6	74	0.19
1297	2001G 063	0.11	0.03	0.8	0.4	0.06	1.28	320.2	29	44.7	7.67	30.14	6.71	1.49	7.53	0.94	5.54	0.91	2.55	0.34	2.29	0.31	0.15	-0.05	-0.2	-1	2.3	81	0.18
1298	2001G 117	0.16	0.03	0.7	0.36	0.04	0.99	274.2	18.4	31.9	4.64	17.29	4.03	0.82	3.93	0.55	2.93	0.49	1.36	0.18	1.25	0.15	0.15	-0.05	-0.2	2	1.8	63	0.16
1300	2001G 064	0.06	0.04	0.8	0.43	0.05	1.24	232.5	26.2	44.9	7.05	26.87	5.96	1.21	5.77	0.74	4.27	0.68	1.95	0.25	1.9	0.23	0.17	-0.05	-0.2	1	4.9	71	0.16
1301	2001G 119	0.2	0.04	0.6	0.42	0.07	1.38	217.6	18.5	33.9	4.61	17.94	4.05	0.76	3.82	0.51	2.74	0.47	1.25	0.18	1.15	0.14	0.18	-0.05	-0.2	1	2.8	51	0.18
1303	2001G 065	0.06	0.04	0.9	0.36	0.05	1.18	328.4	25.9	44.8	7.49	29.59	7.13	1.52	6.91	0.86	4.95	0.75	2.08	0.28	1.87	0.23	0.16	-0.05	-0.2	1	3.1	69	0.17
1304	2001G 120	0.18	0.03	0.6	0.39	0.04	1.1	264.8	17.2	32.3	4.58	17.02	3.97	0.78	4.04	0.47	2.68	0.46	1.12	0.16	1.12	0.13	0.15	-0.05	-0.2	1	2.9	47	0.18

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Cd (ppm) Acme aqua regia ICP AES/MS	In (ppm) Acme aqua regia ICP AES/MS	Sn (ppm) Acme aqua regia ICP AES/MS	Sb (ppm) Acme aqua regia ICP AES/MS	Te (ppm) Acme aqua regia ICP AES/MS	Cs (ppm) Acme aqua regia ICP AES/MS	Ba (ppm) Acme aqua regia ICP AES/MS	La (ppm) Acme aqua regia ICP AES/MS	Ce (ppm) Acme aqua regia ICP AES/MS	Pr (ppm) Acme aqua regia ICP AES/MS	Nd (ppm) Acme aqua regia ICP AES/MS	Sm (ppm) Acme aqua regia ICP AES/MS	Eu (ppm) Acme aqua regia ICP AES/MS	Gd (ppm) Acme aqua regia ICP AES/MS	Tb (ppm) Acme aqua regia ICP AES/MS	Dy (ppm) Acme aqua regia ICP AES/MS	Ho (ppm) Acme aqua regia ICP AES/MS	Er (ppm) Acme aqua regia ICP AES/MS	Tm (ppm) Acme aqua regia ICP AES/MS	Yb (ppm) Acme aqua regia ICP AES/MS	Lu (ppm) Acme aqua regia ICP AES/MS	Hf (ppm) Acme aqua regia ICP AES/MS	Ta (ppm) Acme aqua regia ICP AES/MS	W (ppm) Acme aqua regia ICP AES/MS	Re (ppb) Acme aqua regia ICP AES/MS	Au (ppb) Acme aqua regia ICP AES/MS	Hg (ppb) Acme aqua regia ICP AES/MS	Tl (ppm) Acme aqua regia ICP AES/MS
1306	2001G 066	0.08	0.04	0.9	0.4	0.07	1.34	326.5	29.5	48.8	8.15	31.69	7.25	1.53	7.53	0.96	5.65	0.91	2.55	0.34	2.22	0.29	0.19	-0.05	-0.2	-1	2.9	86	0.2
1307	2001G 121	0.25	0.03	0.7	0.38	0.07	0.93	260.2	16.2	30.8	4.36	16.62	3.81	0.75	3.61	0.45	2.59	0.45	1.09	0.15	1.02	0.11	0.14	-0.05	-0.2	2	2	52	0.16
1307 lab dup	2001G 126	0.22	0.04	0.6	0.4	0.04	1.33	264.5	17.5	32.3	4.47	16.67	3.78	0.71	3.87	0.46	2.55	0.44	1.2	0.16	1.11	0.13	0.15	-0.05	-0.2	2	2.3	61	0.19
1309	2001G 067	0.06	0.04	0.9	0.4	0.05	1.24	214	24.1	44.1	6.96	26.45	6.43	1.31	6.11	0.74	4.28	0.66	1.71	0.22	1.6	0.18	0.17	-0.05	-0.2	1	2	77	0.18
1310	2001G 122	0.17	0.03	0.6	0.39	0.03	1.23	241.9	18.2	34	4.61	17.27	3.92	0.76	3.64	0.45	2.42	0.43	1.16	0.15	1.04	0.13	0.14	-0.05	-0.2	1	2.5	59	0.17
1312	2001G 068	0.08	0.04	0.9	0.38	0.06	1.3	227.8	26.1	48.9	7.42	27.58	6.33	1.26	5.63	0.69	3.89	0.6	1.65	0.21	1.52	0.18	0.16	-0.05	-0.2	-1	2.4	75	0.17
1313	2001G 123	0.18	0.03	0.6	0.38	0.04	1.32	258.8	17.1	31.2	4.42	16.01	3.87	0.73	4.01	0.45	2.58	0.45	1.17	0.17	1.06	0.12	0.13	-0.05	-0.2	2	1.3	50	0.18
1315	2001G 069	0.06	0.04	0.8	0.47	0.05	1.31	187.1	22.1	41.1	6.15	23.39	5.52	1.15	5.51	0.66	3.76	0.58	1.53	0.19	1.31	0.15	0.14	-0.05	-0.2	-1	3.1	82	0.18
1316	2001G 124	0.11	0.03	0.6	0.64	0.03	1.65	228.5	15.4	28.8	4.07	15.69	3.83	0.81	3.88	0.47	2.59	0.47	1.25	0.16	1.17	0.14	0.15	-0.05	-0.2	2	2.5	69	0.16
1318	2001G 070	0.08	0.04	0.8	0.42	0.04	1.3	261.2	31.7	49	8.79	34.28	7.68	1.67	7.67	0.95	5.51	0.88	2.46	0.33	2.32	0.3	0.14	-0.05	-0.2	1	3.2	86	0.18
1319	2001G 125	0.18	0.03	0.7	0.43	0.03	1.36	258.1	18	33.3	4.52	17.19	3.96	0.71	3.44	0.44	2.49	0.43	1.17	0.16	1.07	0.13	0.13	-0.05	-0.2	1	2.3	53	0.16
1321	2001G 073	0.11	0.04	0.8	0.35	0.06	1.46	200.3	22.9	39.2	5.87	21.93	4.75	0.91	4.57	0.57	3.28	0.53	1.54	0.21	1.41	0.18	0.19	-0.05	-0.2	1	2	55	0.19
1322	2001G 127	0.12	0.03	0.6	0.35	0.03	1.22	159	18.1	33.7	4.75	18.23	4.13	0.82	3.64	0.47	2.78	0.47	1.16	0.17	1.1	0.13	0.16	-0.05	-0.2	1	3	56	0.19
1324	2001G 074	0.12	0.04	0.9	0.51	0.06	1.33	395.3	26.7	44.8	7.14	27.3	6.34	1.33	6.32	0.79	4.65	0.72	1.98	0.27	1.82	0.23	0.14	-0.05	-0.2	1	2.8	87	0.21
1325	2001G 128	0.2	0.03	0.8	0.51	0.06	1.37	290.6	18.7	35	4.89	18.77	4.26	0.78	4.12	0.48	2.63	0.45	1.22	0.17	1.11	0.14	0.17	-0.05	-0.2	2	2.4	69	0.2
1327	2001G 075	0.1	0.04	1	0.46	0.05	1.41	401.7	30.9	50.8	8.69	32.79	7.79	1.6	7.77	0.98	5.78	0.92	2.54	0.33	2.22	0.29	0.15	-0.05	-0.2	1	2.8	82	0.21
1328	2001G 129	0.21	0.03	0.7	0.43	0.03	1.19	270.8	18.3	34.8	4.7	17.67	3.94	0.75	3.72	0.48	2.58	0.46	1.31	0.17	1.11	0.14	0.16	-0.05	-0.2	-1	2.8	49	0.18
1330	2001G 076	0.08	0.05	0.9	0.49	0.07	1.42	290.4	30.3	51.3	8.27	31.38	7.39	1.63	7.62	0.97	5.74	0.93	2.62	0.36	2.44	0.31	0.16	-0.05	-0.2	-1	2	95	0.19
1331	2001G 130	0.13	0.04	0.7	0.43	0.02	1.35	313.9	19	36.1	5.07	19.49	4.86	0.94	4.7	0.61	3.21	0.58	1.45	0.21	1.42	0.16	0.11	-0.05	-0.2	2	5	54	0.2
1333	2001G 077	0.09	0.04	0.9	0.51	0.08	1.24	271.4	28.2	49.7	7.72	30.25	6.77	1.37	7.07	0.83	4.77	0.72	1.9	0.26	1.77	0.22	0.15	-0.05	-0.2	1	3.7	83	0.23
1334	2001G 131	0.21	0.04	0.8	0.45	0.03	1.26	327.6	18.3	34.8	4.77	17.62	4.33	0.76	3.77	0.47	2.5	0.44	1.15	0.15	1.12	0.13	0.15	-0.05	-0.2	1	2.6	67	0.18
1335	2001G 156	0.17	0.03	0.8	0.37	0.04	0.72	244.8	17.6	32.3	4.27	16.06	3.81	0.75	3.43	0.48	2.6	0.42	1.27	0.18	1.12	0.14	0.09	-0.05	-0.2	2	1.5	45	0.16
1337	2001G 078	0.1	0.05	1	0.41	0.06	1.54	250.6	31.7	59	9.13	34.78	7.92	1.63	7.26	0.95	5.55	0.84	2.35	0.31	2.22	0.29	0.17	-0.05	-0.2	1	3.1	98	0.21
1338	2001G 132	0.2	0.04	0.7	0.36	0.04	1.23	260.9	17.8	34.7	4.54	16.83	4.1	0.73	3.87	0.46	2.66	0.44	1.32	0.18	1.11	0.13	0.14	-0.05	-0.2	2	2	60	0.2
1340	2001G 079	0.09	0.04	0.9	0.38	0.06	1.12	265.4	32.5	82	9.53	36.87	8.89	1.85	8.81	1.17	6.73	1.05	2.95	0.38	2.49	0.31	0.14	-0.05	-0.2	-1	2.2	85	0.2
1341	2001G 133	0.16	0.03	0.8	0.42	0.06	1.36	274.1	20.1	36.9	5.28	19.85	4.74	0.9	4.53	0.56	3.13	0.54	1.51	0.21	1.38	0.17	0.12	-0.05	-0.2	2	2.4	67	0.21
1343	2001G 080	0.08	0.04	0.9	0.34	0.05	1.05	190.9	18.1	32.6	3.78	13.37	2.56	0.44	2.13	0.29	1.57	0.24	0.62	0.08	0.57	0.07	0.12	-0.05	-0.2	1	2.1	51	0.17
1344	2001G 134	0.18	0.04	0.7	0.4	0.04	1.34	239.8	19.6	37.2	4.94	18.43	4.37	0.83	4.16	0.49	2.66	0.46	1.18	0.17	1.08	0.14	0.12	-0.05	-0.2	-1	1.6	66	0.2
1346	2001G 081	0.08	0.05	0.9	0.43	0.05	1.34	196.7	25.5	46.6	7.01	26.84	6.11	1.24	6.34	0.73	4.44	0.67	1.85	0.25	1.6	0.19	0.14	-0.05	-0.2	2	2	92	0.23

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Cd (ppm) Acme aqua regia ICP AES/MS	In (ppm) Acme aqua regia ICP AES/MS	Sn (ppm) Acme aqua regia ICP AES/MS	Sb (ppm) Acme aqua regia ICP AES/MS	Te (ppm) Acme aqua regia ICP AES/MS	Cs (ppm) Acme aqua regia ICP AES/MS	Ba (ppm) Acme aqua regia ICP AES/MS	La (ppm) Acme aqua regia ICP AES/MS	Ce (ppm) Acme aqua regia ICP AES/MS	Pr (ppm) Acme aqua regia ICP AES/MS	Nd (ppm) Acme aqua regia ICP AES/MS	Sm (ppm) Acme aqua regia ICP AES/MS	Eu (ppm) Acme aqua regia ICP AES/MS	Gd (ppm) Acme aqua regia ICP AES/MS	Tb (ppm) Acme aqua regia ICP AES/MS	Dy (ppm) Acme aqua regia ICP AES/MS	Ho (ppm) Acme aqua regia ICP AES/MS	Er (ppm) Acme aqua regia ICP AES/MS	Tm (ppm) Acme aqua regia ICP AES/MS	Yb (ppm) Acme aqua regia ICP AES/MS	Lu (ppm) Acme aqua regia ICP AES/MS	Hf (ppm) Acme aqua regia ICP AES/MS	Ta (ppm) Acme aqua regia ICP AES/MS	W (ppm) Acme aqua regia ICP AES/MS	Re (ppb) Acme aqua regia ICP AES/MS	Au (ppb) Acme aqua regia ICP AES/MS	Hg (ppb) Acme aqua regia ICP AES/MS	Tl (ppm) Acme aqua regia ICP AES/MS
1346 lab dup	2001G 089	0.05	0.04	0.8	0.42	0.04	1.49	180.8	25.6	46.5	6.71	24.94	5.6	1.15	5.02	0.73	3.88	0.59	1.55	0.21	1.35	0.17	0.13	-0.05	-0.2	1	2.2	86	0.23
1347	2001G 135	0.2	0.03	0.8	0.41	0.06	1.53	250.6	19.9	36.1	4.87	17.7	4.33	0.8	4.08	0.49	2.71	0.49	1.29	0.18	1.24	0.15	0.16	-0.05	-0.2	-1	3	61	0.2
1349	2001G 083	0.14	0.03	0.8	0.18	0.03	0.76	236.6	21.8	38.6	5.3	19.39	4.01	0.74	3.61	0.45	2.51	0.36	0.97	0.14	0.91	0.1	0.08	-0.05	-0.2	-1	3.5	20	0.15
1380	2001G 084	0.08	0.04	0.9	0.34	0.04	1.25	185.1	16.9	29.4	3.63	12.66	2.42	0.45	1.98	0.26	1.33	0.19	0.5	0.07	0.44	0.05	0.08	-0.05	-0.2	1	1.5	32	0.21
1381	2001G 136	0.13	0.03	0.7	0.45	0.07	1.52	291.9	24	39.4	5.71	21.65	5.28	0.98	5.01	0.64	3.47	0.62	1.66	0.23	1.55	0.18	0.13	-0.05	-0.2	-1	2.2	86	0.21
1383	2001G 085	0.11	0.05	1	0.39	0.07	1.26	200.6	24.1	46.9	6.45	23.6	5.2	1.01	4.55	0.61	3.4	0.51	1.33	0.18	1.28	0.14	0.11	-0.05	-0.2	-1	2.4	63	0.2
1384	2001G 137	0.18	0.03	0.8	0.37	0.03	1.33	264.3	19.3	36	4.94	18.04	4.19	0.81	4.14	0.49	2.66	0.46	1.16	0.16	1.17	0.13	0.14	-0.05	-0.2	2	1.7	55	0.18
1386	2001G 086	0.18	0.02	0.5	0.18	-0.02	0.52	240.1	16.6	29.5	3.8	13.35	2.81	0.49	2.38	0.32	1.77	0.29	0.85	0.12	0.68	0.09	0.08	-0.05	-0.2	-1	0.5	17	0.11
1387	2001G 138	0.16	0.02	0.6	0.4	0.04	0.95	399.1	15.5	27	3.89	14.4	3.23	0.58	3.1	0.41	2.34	0.39	1.08	0.15	1.04	0.13	0.11	-0.05	-0.2	2	2.6	78	0.17
1389	2001G 087	0.05	0.04	0.8	0.38	0.03	1.04	193	31.4	58.1	7.71	27.05	5.53	1.13	4.7	0.67	3.77	0.59	1.58	0.23	1.55	0.18	0.11	-0.05	-0.2	1	2.8	53	0.17
1390	2001G 139	0.19	0.04	0.7	0.39	0.03	1.42	253.1	18.4	33.4	4.53	16.47	4.09	0.71	3.86	0.48	2.78	0.47	1.32	0.18	1.22	0.14	0.16	-0.05	-0.2	2	1.8	69	0.16
1393	2001G 088	0.1	0.03	0.7	0.28	0.02	1.02	294.5	24.4	37.3	6.14	23.14	5.05	1.08	5.05	0.69	3.75	0.63	1.58	0.22	1.49	0.18	0.15	-0.05	-0.2	1	2	60	0.2
1394	2001G 090	0.08	0.04	0.7	0.23	0.02	1.15	262	25	36	5.79	21.01	4.49	0.91	4.36	0.58	3.24	0.54	1.51	0.22	1.54	0.18	0.14	-0.05	-0.2	-1	2	47	0.17
1396	2001G 091	0.06	0.02	0.6	0.31	0.04	1.03	174	15.3	26.2	3.25	11.25	1.99	0.36	1.67	0.26	1.23	0.2	0.54	0.07	0.52	0.05	0.08	-0.05	-0.2	-1	1.4	20	0.17
1397	2001G 141	0.14	0.03	0.8	0.67	0.07	1.33	485.9	32.4	48.6	8.09	30.88	6.83	1.36	6.74	0.8	4.59	0.79	2.18	0.3	1.95	0.24	0.09	-0.05	-0.2	1	2.6	125	0.36
1397 lab dup	2001G 157	0.15	0.04	1	0.58	0.06	0.78	427.2	31	46.9	7.66	29.92	6.82	1.37	5.78	0.79	4.7	0.74	2.31	0.33	2	0.25	0.1	-0.05	-0.2	1	2.6	128	0.31
1399	2001G 092	0.05	0.04	0.8	0.43	0.03	1.39	181.4	19.9	35	4.76	17.03	3.82	0.78	3.39	0.48	2.54	0.4	1.05	0.14	0.86	0.1	0.11	-0.05	-0.2	1	2.1	63	0.22
1400	2001G 142	0.19	0.03	0.8	0.38	0.03	1.5	253.5	19.9	36.4	4.9	18.04	4.14	0.76	4.08	0.49	2.96	0.52	1.4	0.19	1.22	0.16	0.18	-0.05	-0.2	-1	1.9	63	0.19
1502	2001G 093	0.08	0.05	1	0.44	0.04	1.4	228.2	28.3	45.3	7.36	27.89	6.29	1.31	6.1	0.83	4.4	0.73	1.89	0.25	1.81	0.22	0.08	-0.05	-0.2	2	1.5	89	0.21
1503	2001G 143	0.19	0.04	0.9	0.5	0.07	1.54	274.5	22.1	39.8	5.62	20.57	4.89	0.84	4.35	0.54	2.91	0.52	1.44	0.19	1.18	0.15	0.17	-0.05	-0.2	2	2	71	0.21
1505	2001G 094	0.07	0.03	0.8	0.42	0.03	1.58	169.3	21.5	38.3	5.17	18.91	3.87	0.84	3.58	0.49	2.67	0.42	1.08	0.16	1.05	0.13	0.11	-0.05	-0.2	1	1.6	46	0.18
1506	2001G 144	0.1	0.04	0.9	0.5	0.04	1.75	245.7	25.9	46.3	6.71	25.23	6.04	1.13	5.22	0.67	3.66	0.63	1.71	0.24	1.67	0.2	0.14	-0.05	-0.2	2	1.9	79	0.22
1508	2001G 095	0.06	0.03	0.7	0.29	-0.02	1.16	216.9	21.5	33.5	5.11	18.66	4.01	0.81	3.92	0.52	2.85	0.49	1.33	0.19	1.33	0.15	0.12	-0.05	-0.2	3	2.8	49	0.17
1509	2001G 145	0.14	0.02	0.7	0.38	0.06	1.38	230.2	18.9	33.6	4.62	17.01	3.87	0.71	3.7	0.47	2.67	0.43	1.23	0.17	1.13	0.13	0.15	-0.05	-0.2	1	2.1	56	0.18
1511	2001G 096	0.15	0.03	0.6	0.33	0.02	1.13	195.5	21.7	36.2	5.13	19.3	4.2	0.85	3.91	0.51	2.8	0.45	1.15	0.17	1.12	0.13	0.13	-0.05	-0.2	-1	1.1	38	0.19
1512	2001G 146	0.11	0.03	0.6	0.38	0.03	1.01	189.3	18.4	33.3	4.64	16.83	3.92	0.74	3.95	0.44	2.41	0.41	1.06	0.15	0.9	0.12	0.15	-0.05	-0.2	1	4	32	0.17
1513	2001G 147	0.15	0.02	0.6	0.41	0.04	1.09	176.5	20.1	35.8	4.81	17.54	4.15	0.72	3.55	0.45	2.48	0.43	1.08	0.17	1.14	0.14	0.18	-0.05	-0.2	1	3.3	35	0.18
1515	2001G 097	0.04	0.04	1	0.31	0.04	1.43	222.3	21.7	37.2	4.99	17.45	3.41	0.66	2.75	0.41	2.22	0.35	0.9	0.12	0.85	0.09	0.14	-0.05	-0.2	2	2.3	50	0.2

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Cd (ppm) Acme aqua regia ICP AES/MS	In (ppm) Acme aqua regia ICP AES/MS	Sn (ppm) Acme aqua regia ICP AES/MS	Sb (ppm) Acme aqua regia ICP AES/MS	Te (ppm) Acme aqua regia ICP AES/MS	Cs (ppm) Acme aqua regia ICP AES/MS	Ba (ppm) Acme aqua regia ICP AES/MS	La (ppm) Acme aqua regia ICP AES/MS	Ce (ppm) Acme aqua regia ICP AES/MS	Pr (ppm) Acme aqua regia ICP AES/MS	Nd (ppm) Acme aqua regia ICP AES/MS	Sm (ppm) Acme aqua regia ICP AES/MS	Eu (ppm) Acme aqua regia ICP AES/MS	Gd (ppm) Acme aqua regia ICP AES/MS	Tb (ppm) Acme aqua regia ICP AES/MS	Dy (ppm) Acme aqua regia ICP AES/MS	Ho (ppm) Acme aqua regia ICP AES/MS	Er (ppm) Acme aqua regia ICP AES/MS	Tm (ppm) Acme aqua regia ICP AES/MS	Yb (ppm) Acme aqua regia ICP AES/MS	Lu (ppm) Acme aqua regia ICP AES/MS	Hf (ppm) Acme aqua regia ICP AES/MS	Ta (ppm) Acme aqua regia ICP AES/MS	W (ppm) Acme aqua regia ICP AES/MS	Re (ppb) Acme aqua regia ICP AES/MS	Au (ppb) Acme aqua regia ICP AES/MS	Hg (ppb) Acme aqua regia ICP AES/MS	Tl (ppm) Acme aqua regia ICP AES/MS
1516	2001G 148	0.18	0.05	0.8	0.59	0.08	1.67	486.3	18.6	33.5	4.7	18.22	4.43	0.9	4.64	0.59	3.34	0.57	1.52	0.22	1.48	0.17	0.2	-0.05	-0.2	3	2.5	74	0.22
1518	2001G 098	0.08	0.04	1	0.44	0.04	1.46	213.7	25.7	45.1	6.76	25.36	5.76	1.22	4.93	0.72	3.93	0.68	1.89	0.25	1.77	0.21	0.13	-0.05	-0.2	2	2.2	88	0.21
1520	2001G 099	0.07	0.04	0.9	0.39	0.04	1.39	200.9	24.1	43	6.02	22.26	4.74	0.98	4.42	0.64	3.45	0.54	1.36	0.18	1.14	0.13	0.1	-0.05	-0.2	3	2.2	71	0.23
1521	2001G 150	0.19	0.03	0.8	0.48	0.03	1.4	331.1	19.8	35.7	5	18.73	4.51	0.85	4.25	0.55	3.11	0.53	1.37	0.18	1.25	0.16	0.15	-0.05	-0.2	3	2.5	79	0.25
1523	2001G 100	0.05	0.03	0.9	0.33	0.04	1.51	187.1	25.2	44.1	5.71	20.01	4.13	0.81	3.61	0.49	2.52	0.38	0.86	0.11	0.73	0.08	0.11	-0.05	-0.2	-1	1.3	42	0.22
1524	2001G 151	0.07	0.04	0.9	0.49	0.07	1.8	262.2	29.7	51.3	7.7	29.24	7.14	1.35	6.58	0.81	4.59	0.83	2.19	0.32	2.23	0.28	0.17	-0.05	-0.2	2	1.8	98	0.23
1526	2001G 101	0.07	0.03	1	0.34	0.05	1.24	178.7	19.6	34.3	4.14	14.22	2.74	0.55	2.36	0.31	1.8	0.28	0.67	0.1	0.69	0.08	0.14	-0.05	-0.2	1	1.4	34	0.18
1526 lab dup	2001G 116	0.08	0.04	1	0.4	0.03	1.15	177.7	20.4	35.4	4.32	14.89	2.96	0.53	2.3	0.33	1.8	0.28	0.77	0.09	0.65	0.07	0.15	-0.05	-0.2	1	1.5	47	0.18
1527	2001G 152	0.16	0.04	0.9	0.42	0.06	1.33	324	31	44.6	7.07	27.49	6.32	1.22	5.46	0.74	4.31	0.7	2.13	0.3	1.86	0.23	0.15	-0.05	-0.2	2	1.9	80	0.18
1602	2001G 102	0.1	0.04	1	0.39	0.04	1.11	227.5	26.1	48.4	7.07	26.63	6	1.28	5.69	0.81	4.32	0.7	1.78	0.25	1.59	0.18	0.12	-0.05	-0.2	2	3.1	69	0.22
1603	2001G 153	0.2	0.03	0.7	0.45	0.04	1.19	263.8	18.5	34	4.48	16.66	3.97	0.83	3.37	0.49	2.88	0.46	1.35	0.2	1.16	0.14	0.14	-0.05	-0.2	2	2.9	67	0.18
1605	2001G 103	0.06	0.05	0.9	0.38	0.04	1.3	186.2	24.7	43.5	5.91	21.9	4.43	0.93	4.02	0.57	2.91	0.49	1.08	0.17	0.99	0.12	0.12	-0.05	-0.2	1	2.7	64	0.18
1606	2001G 154	0.21	0.03	0.7	0.39	0.04	1.18	255.6	19	34.3	4.63	17.85	4.18	0.86	3.82	0.53	3.01	0.46	1.38	0.2	1.23	0.15	0.15	-0.05	-0.2	1	1.6	60	0.16
1608	2001G 104	0.04	0.04	0.8	0.57	0.04	1.4	223.6	21.2	34.9	5.29	19.9	4.47	1.1	4.65	0.68	3.79	0.64	1.93	0.25	1.85	0.22	0.16	-0.05	-0.2	-1	2.2	89	0.16
1609	2001G 155	0.12	0.04	0.6	0.56	0.05	1.65	237.5	17.2	31.3	4.25	16.49	3.97	0.91	3.56	0.49	2.82	0.46	1.41	0.21	1.37	0.17	0.18	-0.05	-0.2	1	2.2	72	0.15
NAT98-282	2001G 071	0.3	0.04	0.8	0.46	0.04	1.35	301.9	19.5	38	4.82	18.66	3.94	0.8	3.77	0.47	2.83	0.43	1.2	0.17	1.12	0.15	0.18	-0.05	-0.2	2	1.4	51	0.18
NAT98-282	2001G 082	0.29	0.03	0.8	0.45	0.06	1.22	309.1	19.4	39.5	5.28	19.28	4.36	0.88	4.18	0.53	3.01	0.46	1.18	0.16	1.12	0.14	0.19	-0.05	-0.2	2	0.9	50	0.19
NAT98-282	2001G 118	0.26	0.03	0.7	0.44	0.03	1.18	274.2	18.8	36.2	4.76	17.19	4	0.8	3.76	0.5	2.82	0.44	1.2	0.16	1.1	0.12	0.18	-0.05	-0.2	3	1.4	55	0.19
NAT98-282	2001G 140	0.22	0.03	0.6	0.42	0.04	1.41	289.8	17.4	35	4.37	16.5	3.99	0.74	3.91	0.47	2.72	0.44	1.21	0.17	1.14	0.13	0.16	-0.05	-0.2	2	1.5	55	0.21
NAT98-282	2001G 149	0.25	0.03	0.7	0.43	0.06	1.37	290.6	18.2	36.6	4.56	17.02	3.98	0.71	3.87	0.48	2.72	0.47	1.25	0.16	1.13	0.13	0.2	-0.05	-0.2	2	1	49	0.22

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Pb (ppm) Acme aqua regia ICP AES/MS	Bi (ppm) Acme aqua regia ICP AES/MS	Th (ppm) Acme aqua regia ICP AES/MS	U (ppm) Acme aqua regia ICP AES/MS	Hg (ppb) Chemex CVAA	Li (ppm) Chemex four-acid ICP AES/MS	Be (ppm) Chemex four-acid ICP AES/MS	Na (%) Chemex four-acid ICP AES/MS	Mg (%) Chemex four-acid ICP AES/MS	Al (%) Chemex four-acid ICP AES/MS	P (ppm) Chemex four-acid ICP AES/MS	S (%) Chemex four-acid ICP AES/MS	K (%) Chemex four-acid ICP AES/MS	Ca (%) Chemex four-acid ICP AES/MS	Ti (%) Chemex four-acid ICP AES/MS	V (ppm) Chemex four-acid ICP AES/MS	Cr (ppm) Chemex four-acid ICP AES/MS	Mn (ppm) Chemex four-acid ICP AES/MS	Fe (%) Chemex four-acid ICP AES/MS	Co (ppm) Chemex four-acid ICP AES/MS	Ni (ppm) Chemex four-acid ICP AES/MS	Cu (ppm) Chemex four-acid ICP AES/MS	Zn (ppm) Chemex four-acid ICP AES/MS	Ga (ppm) Chemex four-acid ICP AES/MS	Ge (ppm) Chemex four-acid ICP AES/MS	As (ppm) Chemex four-acid ICP AES/MS	Se (ppm) Chemex four-acid ICP AES/MS	Rb (ppm) Chemex four-acid ICP AES/MS
1260	2001G 053	16.3	0.28	11.5	1.6	80	42.8	1.9	0.44	0.64	6.22	480	0.01	1.59	0.48	0.31	134	77	295	3.5	11	37.6	40.6	86	17.6	0.25	15.2	1	96.3
1262	2001G 105	15.99	0.25	7.7	1	70	44.2	1.75	0.47	1	6.18	750	0.03	1.59	2.2	0.31	139	65	385	3.34	12.8	45	33	90	15.05	0.25	12.8	-1	73.7
1264	2001G 054	17.5	0.29	11.9	1.6	90	37.8	1.8	0.43	0.61	5.87	490	0.01	1.47	0.48	0.3	125	73	235	3.36	9.1	36.2	35.8	78	15.65	0.25	13.4	-1	87
1266	2001G 106	16.08	0.23	7	1	70	36.2	1.55	0.48	1.08	5.62	710	0.04	1.53	3.3	0.3	125	58	355	3.24	10.7	32.6	28.8	82	13.15	0.3	11.8	-1	68.8
1269	2001G 107	13.98	0.23	6.8	1.1	70	41.8	1.7	0.48	1.01	5.85	680	0.04	1.58	2.9	0.31	127	57	320	3.09	11.7	33.6	31.2	78	14.3	0.3	12.2	-1	75.4
1271	2001G 055	14.18	0.23	9.6	1.5	90	38	1.8	0.47	0.71	6.83	500	0.01	1.64	0.48	0.34	152	84	275	3.83	9	33.4	37.6	88	15.7	0.25	13.8	-1	86.3
1272	2001G 108	15.36	0.25	6.9	0.9	70	43	1.75	0.47	1.02	6.35	760	0.03	1.62	1.95	0.32	148	67	380	3.48	12.2	42.4	34.2	90	15.2	0.3	13.6	-1	78
1274	2001G 056	16.6	0.37	11.3	1.9	80	41.8	2	0.41	0.66	6.28	470	0.01	1.52	0.45	0.31	142	80	245	3.54	10.4	37.2	40.8	82	17.2	0.3	15.4	-1	91.5
1275	2001G 109	16.15	0.26	7.3	1	80	47	1.9	0.48	0.94	6.48	760	0.03	1.64	1.5	0.32	146	66	375	3.57	13.5	47.6	35	90	15.9	0.25	14.2	-1	84.5
1277	2001G 057	14.31	0.24	8.7	0.9	90	44.6	1.95	0.45	0.74	6.39	650	0.02	1.62	0.61	0.33	144	89	305	3.88	10.7	45.6	42.4	88	17.6	0.25	16.6	1	100
1278	2001G 110	15.07	0.24	6.5	0.9	70	42.6	1.85	0.47	0.98	6.24	780	0.03	1.56	1.65	0.32	140	64	335	3.31	11	36.8	33	84	14.7	0.25	12.6	-1	75.5
1281	2001G 111	14.05	0.22	6.8	0.9	70	40.8	1.65	0.48	0.97	5.93	730	0.03	1.54	1.85	0.3	131	62	380	3.21	10.8	35.8	32.6	80	14.3	0.2	12.2	-1	73.6
1283	2001G 058	14.12	0.24	9.8	1.4	80	43.4	1.85	0.43	0.66	6.27	520	0.02	1.59	0.43	0.33	136	78	265	3.55	10.9	36.8	39.4	80	16.9	0.25	14.2	1	97.2
1284	2001G 112	15.05	0.26	7.7	1.1	70	43.6	1.75	0.49	0.97	6.51	760	0.03	1.66	1.85	0.33	142	69	340	3.63	12.1	37.4	33.4	88	15.25	0.25	13.2	-1	75.2
1286	2001G 059	15.23	0.27	10.7	1.5	80	45.2	2.2	0.44	0.64	6.31	540	0.01	1.69	0.42	0.33	137	81	230	3.67	11.7	38	42.6	86	17.65	0.25	15.2	-1	105
1287	2001G 113	18.64	0.26	7.4	1	100	39.6	1.8	0.48	0.94	6.16	750	0.04	1.7	2.1	0.33	127	57	360	3.78	11.2	37	33.6	84	13.55	0.2	13	-1	74.8
1289	2001G 060	16.88	0.27	11.1	1.5	80	42.2	2	0.43	0.68	6.38	500	0.01	1.64	0.45	0.32	144	84	420	3.87	11.5	39.2	36.8	106	17.6	0.25	16.4	1	105.5
1291	2001G 061	15.72	0.26	10.3	1.6	90	40.4	1.75	0.44	0.67	6.23	570	0.01	1.59	0.47	0.32	138	84	335	3.65	10.7	38.4	36.8	90	16.3	0.3	15	-1	98.8
1291 lab dup	2001G 072	14.83	0.25	9.3	1.4	80	40	1.9	0.43	0.63	6.14	520	0.01	1.54	0.46	0.31	128	80	310	3.5	10.5	38.4	36	84	16.4	0.25	14.8	-1	94.7
1292	2001G 114	15.7	0.27	6.7	1	80	42	1.8	0.47	0.98	6.4	790	0.04	1.7	1.9	0.34	139	62	345	3.36	12.1	37.6	33	90	14.2	0.25	12.8	-1	70.3
1294	2001G 062	15.03	0.26	10.3	1.5	80	42	1.95	0.45	0.68	6.49	480	0.01	1.68	0.45	0.33	139	83	280	3.53	10.8	35.2	39.2	86	17.2	0.3	14.6	-1	98.9
1295	2001G 115	16.03	0.24	7	1	70	41.6	1.75	0.5	0.96	6.44	740	0.03	1.74	1.65	0.33	135	67	370	3.44	12.3	47.6	31.4	86	14.45	0.25	12	-1	75.2
1297	2001G 063	15.44	0.26	9.3	1.1	80	42	2	0.46	0.76	6.09	670	0.01	1.65	0.86	0.31	127	73	340	3.34	12.3	52.3	39.4	86	16.6	0.3	14.2	1	95.2
1298	2001G 117	15.13	0.23	6.6	0.9	70	39.6	1.85	0.5	1.04	6.15	750	0.04	1.7	2.5	0.34	130	58	355	3.22	11.5	34.2	29	82	13.5	0.25	11	-1	70.2
1300	2001G 064	13.5	0.26	9.3	1.2	100	41.2	1.95	0.43	0.67	6.11	750	0.01	1.69	0.47	0.32	133	77	235	3.3	8.9	39	37.6	84	16.3	0.25	13.6	-1	99.5
1301	2001G 119	13.83	0.24	7.2	0.8	60	41.8	1.65	0.5	0.99	6.44	770	0.03	1.85	1.9	0.35	136	64	245	3.26	10.2	32.6	30.4	94	14.5	0.25	12	-1	79.4
1303	2001G 065	13.62	0.24	9.3	1.4	70	42.6	1.95	0.42	0.69	6.32	560	0.01	1.53	0.54	0.31	138	88	215	3.5	10.4	40.4	38.6	86	17.05	0.25	14.6	-1	95
1304	2001G 120	13.79	0.22	6.3	0.9	60	41.2	1.6	0.49	1.04	6.16	740	0.03	1.71	2.9	0.34	134	62	380	3.2	12.2	36.4	29	84	13.9	0.25	11.8	-1	65.2
1306	2001G 066	15.11	0.27	9.9	1.3	90	45	2.3	0.45	0.72	6.46	620	0.01	1.62	0.58	0.33	147	89	320	3.85	11.4	48.2	42	90	18.45	0.3	17.2	1	104.5
1307	2001G 121	12.95	0.21	6.1	0.8	60	39.6	1.55	0.46	1.09	5.88	720	0.04	1.65	3.2	0.33	132	62	405	3.08	11.9	37.2	29.2	84	13.55	0.25	11.4	-1	60.7

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Pb (ppm) Acme aqua regia ICP AES/MS	Bi (ppm) Acme aqua regia ICP AES/MS	Th (ppm) Acme aqua regia ICP AES/MS	U (ppm) Acme aqua regia ICP AES/MS	Hg (ppb) Chemex CVAA	Li (ppm) Chemex four-acid ICP AES/MS	Be (ppm) Chemex four-acid ICP AES/MS	Na (%) Chemex four-acid ICP AES/MS	Mg (%) Chemex four-acid ICP AES/MS	Al (%) Chemex four-acid ICP AES/MS	P (ppm) Chemex four-acid ICP AES/MS	S (%) Chemex four-acid ICP AES/MS	K (%) Chemex four-acid ICP AES/MS	Ca (%) Chemex four-acid ICP AES/MS	Ti (%) Chemex four-acid ICP AES/MS	V (ppm) Chemex four-acid ICP AES/MS	Cr (ppm) Chemex four-acid ICP AES/MS	Mn (ppm) Chemex four-acid ICP AES/MS	Fe (%) Chemex four-acid ICP AES/MS	Co (ppm) Chemex four-acid ICP AES/MS	Ni (ppm) Chemex four-acid ICP AES/MS	Cu (ppm) Chemex four-acid ICP AES/MS	Zn (ppm) Chemex four-acid ICP AES/MS	Ga (ppm) Chemex four-acid ICP AES/MS	Ge (ppm) Chemex four-acid ICP AES/MS	As (ppm) Chemex four-acid ICP AES/MS	Se (ppm) Chemex four-acid ICP AES/MS	Rb (ppm) Chemex four-acid ICP AES/MS
1307 lab dup	2001G 126	14.06	0.22	6.7	0.9	50	38.2	1.5	0.51	1.12	6.51	660	0.04	1.87	3.5	0.39	117	58	405	3.14	11.9	37	29.6	86	13.5	0.3	11.6	-1	62.3
1309	2001G 067	14.38	0.25	9.2	1.4	80	40.8	1.75	0.43	0.67	6.16	510	0.01	1.56	0.42	0.32	134	80	230	3.34	9.4	34.6	39	88	16.8	0.25	14	-1	91.8
1310	2001G 122	14.12	0.23	7.4	0.9	60	39	1.55	0.48	1	5.69	690	0.03	1.59	2.2	0.32	121	55	340	2.93	11.2	32.6	29.4	78	13.25	0.2	11.2	-1	59.4
1312	2001G 068	14.35	0.27	11.1	1.5	70	43.6	1.85	0.43	0.68	6.15	520	0.01	1.57	0.43	0.32	139	85	230	3.34	9.8	35.8	40.6	92	17.85	0.3	14	-1	101
1313	2001G 123	13.31	0.22	6.5	0.8	60	40.8	1.65	0.5	1.2	6.3	800	0.04	1.78	2.7	0.35	141	78	390	3.3	12.1	39.2	31.6	92	14.15	0.25	12.2	-1	68.6
1315	2001G 069	15.59	0.26	8.9	1.2	80	42.2	1.7	0.41	0.69	6.37	490	0.01	1.6	0.39	0.33	148	88	220	3.63	9.6	35.4	42	92	17.35	0.35	15.2	-1	99.3
1316	2001G 124	14.13	0.22	5.4	0.6	80	43.2	1.7	0.46	0.94	6.97	790	0.01	1.68	1.5	0.37	166	69	340	3.68	14.9	48.2	40.4	102	15.95	0.3	13	-1	52.2
1318	2001G 070	13.36	0.24	9.2	1.3	80	38.2	1.75	0.48	0.65	6.02	610	0.01	1.52	0.6	0.3	128	81	260	3.44	10.2	45	40	80	16.3	0.3	14.6	-1	87.6
1319	2001G 125	12.67	0.22	6.7	0.8	50	39.2	1.55	0.52	1.04	6.05	740	0.04	1.65	3.7	0.34	130	56	285	3	11.1	32.4	29.8	76	13.85	0.25	11.2	-1	63.5
1321	2001G 073	14.41	0.27	8.5	1	60	45.2	1.85	0.44	0.72	6.34	720	0.01	1.74	0.62	0.32	128	75	210	3.29	9.6	34.2	35.4	74	16.05	0.25	14.8	-1	95.2
1322	2001G 127	13.96	0.22	6.2	0.9	60	43	1.6	0.52	1.13	6.79	750	0.03	1.99	2.2	0.4	128	62	245	3.13	10.2	31.4	30	86	14.45	0.3	11.8	-1	73.4
1324	2001G 074	15.31	0.27	8.7	1.2	80	49.2	2.05	0.49	0.75	7.01	740	0.02	1.67	0.67	0.34	159	79	300	3.94	11.5	46.2	41.6	98	16	0.2	16.2	-1	86.9
1325	2001G 128	13.53	0.23	7.1	1	60	44.8	1.65	0.54	1.21	6.97	840	0.03	2	2.7	0.42	142	67	330	3.33	12.6	36.6	32.8	102	14.75	0.25	13.4	-1	70.5
1327	2001G 075	14.55	0.28	9.4	1.7	90	50.2	2.05	0.46	0.83	7.23	690	0.02	1.64	0.65	0.35	170	78	300	4	10.9	50.3	40.2	98	17	0.25	15.2	-1	87.6
1328	2001G 129	13.69	0.23	7.1	1	60	41.2	1.65	0.53	1.13	6.6	770	0.04	1.86	3.1	0.39	131	65	330	3.13	11.6	34	30	94	13.85	0.25	11.8	-1	69
1330	2001G 076	16.83	0.33	10.1	1.8	90	47.4	1.9	0.42	0.81	6.91	620	0.02	1.59	0.53	0.33	182	75	285	3.71	10.3	43.4	36.8	102	15.8	0.2	14.6	-1	80.7
1331	2001G 130	15.03	0.24	6.9	1	60	36.2	1.35	0.46	0.92	6.04	770	0.03	1.63	1.95	0.34	124	63	310	2.99	10.5	35	27.6	86	12.95	0.2	11.8	-1	64.4
1333	2001G 077	14.98	0.26	10.3	2.3	90	43.6	1.9	0.43	0.69	6.36	570	0.01	1.45	0.48	0.3	145	77	300	4.07	10.5	55.1	34.2	92	15.3	0.25	16	-1	78.1
1334	2001G 131	12.93	0.3	6.7	0.9	60	45.2	1.7	0.55	1.16	6.83	800	0.04	1.89	2.9	0.4	141	69	395	3.34	13.2	40.6	32.6	100	15.1	0.25	13.2	-1	70.7
1335	2001G 156	14.01	0.21	6.1	1	40	32.4	1.3	0.61	0.99	5.2	720	0.04	1.51	2.3	0.29	112	57	440	3.19	11.2	32	25	76	12.1	0.2	11.4	-1	64.3
1337	2001G 078	16.56	0.32	11.1	1.6	100	41	1.8	0.42	0.68	6.18	490	0.02	1.48	0.43	0.3	142	67	345	3.54	10.2	35.6	31.8	92	14.6	0.25	12.8	-1	76.7
1338	2001G 132	14.95	0.24	7.4	0.9	60	43.4	1.75	0.5	1.14	6.43	760	0.03	1.79	2.8	0.36	133	66	410	3.22	14.2	41	32.2	90	14.75	0.3	12.4	-1	70.4
1340	2001G 079	15.27	0.27	9.2	1.4	90	44.2	2.2	0.44	0.73	6.46	500	0.02	1.52	0.51	0.31	144	70	320	3.47	10.8	47	33.4	92	15.5	0.2	12.8	-1	80.6
1341	2001G 133	15.64	0.25	6.9	1	70	44.4	1.75	0.51	1	6.99	830	0.03	1.86	2.1	0.37	128	66	400	3.72	14.4	47.2	35.2	106	15.65	0.25	14.2	-1	75.9
1343	2001G 080	13.61	0.27	9.4	1.2	50	45	1.85	0.48	0.75	7.05	460	0.01	1.7	0.44	0.35	159	76	235	3.61	9.4	32.4	26	98	15.85	0.2	12.4	-1	89.5
1344	2001G 134	13.3	0.21	6.6	1	60	36.8	1.6	0.5	1.04	5.83	770	0.04	1.62	2.9	0.32	116	57	410	3.19	13	37.8	28.6	92	13.1	0.2	11.6	-1	65.7
1346	2001G 081	16.69	0.31	9.9	1.5	90	43.2	1.8	0.42	0.69	6.57	530	0.01	1.58	0.42	0.32	145	68	255	3.52	9.6	33	34	88	15.6	0.2	13.2	-1	83.4
1346 lab dup	2001G 089	15.27	0.26	8	1.5	80	45	2.05	0.43	0.72	6.65	580	0.01	1.59	0.44	0.32	152	77	270	3.62	10.3	36.8	38.6	92	16.25	0.2	14	-1	84
1347	2001G 135	14.88	0.25	7.5	1	60	43.2	1.65	0.46	1.05	6.64	840	0.03	1.79	3.1	0.35	143	67	370	3.67	13.2	37	32.4	108	15.35	0.25	13.6	-1	69.7
1349	2001G 083	11.52	0.29	5.9	1.2	10	38	1.25	0.66	0.57	5.62	670	0.01	1.5	0.65	0.32	104	58	325	2.86	8.4	26	16.2	86	12.4	0.2	7.6	-1	84.1
1380	2001G 084	15.23	0.26	7.1	0.9	30	43.2	1.75	0.46	0.74	6.84	390	0.01	1.66	0.42	0.34	145	72	205	3.48	9.2	29.8	25.2	88	15.4	0.15	12	-1	91.4

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Pb (ppm) Acme aqua regia ICP AES/MS	Bi (ppm) Acme aqua regia ICP AES/MS	Th (ppm) Acme aqua regia ICP AES/MS	U (ppm) Acme aqua regia ICP AES/MS	Hg (ppb) Chemex CVAA	Li (ppm) Chemex four-acid ICP AES/MS	Be (ppm) Chemex four-acid ICP AES/MS	Na (%) Chemex four-acid ICP AES/MS	Mg (%) Chemex four-acid ICP AES/MS	Al (%) Chemex four-acid ICP AES/MS	P (ppm) Chemex four-acid ICP AES/MS	S (%) Chemex four-acid ICP AES/MS	K (%) Chemex four-acid ICP AES/MS	Ca (%) Chemex four-acid ICP AES/MS	Ti (%) Chemex four-acid ICP AES/MS	V (ppm) Chemex four-acid ICP AES/MS	Cr (ppm) Chemex four-acid ICP AES/MS	Mn (ppm) Chemex four-acid ICP AES/MS	Fe (%) Chemex four-acid ICP AES/MS	Co (ppm) Chemex four-acid ICP AES/MS	Ni (ppm) Chemex four-acid ICP AES/MS	Cu (ppm) Chemex four-acid ICP AES/MS	Zn (ppm) Chemex four-acid ICP AES/MS	Ga (ppm) Chemex four-acid ICP AES/MS	Ge (ppm) Chemex four-acid ICP AES/MS	As (ppm) Chemex four-acid ICP AES/MS	Se (ppm) Chemex four-acid ICP AES/MS	Rb (ppm) Chemex four-acid ICP AES/MS
1381	2001G 136	15.47	0.26	7.7	1	70	44.4	1.75	0.51	0.89	6.64	830	0.02	1.77	1.3	0.33	130	68	400	3.8	13	51.2	35.6	102	15.75	0.25	14	-1	84.3
1383	2001G 085	16.57	0.32	9.6	1.4	60	44.4	1.9	0.44	0.71	6.67	460	0.01	1.6	0.47	0.32	152	77	260	3.61	10.4	34.8	31.4	94	16	0.2	12.8	-1	85.7
1384	2001G 137	12.73	0.21	6.9	0.9	60	41.8	1.85	0.5	1.13	6.1	770	0.04	1.68	3.7	0.33	124	59	380	3.43	13.4	38	35.8	92	14.7	0.25	12.6	-1	66.6
1386	2001G 086	9.32	0.15	4.4	0.7	10	36.6	1.25	0.65	0.51	5.01	360	0.04	1.3	1.5	0.3	93	54	265	2.81	7.8	20.8	14.8	82	10.85	0.25	7.4	-1	68.4
1387	2001G 138	10.62	0.17	5.1	1	70	31.4	1.3	0.5	1.04	5.25	810	0.08	1.35	8.9	0.29	103	55	595	3.95	10.1	33.8	25.6	80	11.4	0.15	12.2	-1	66.4
1389	2001G 087	15.25	0.26	8.3	1.2	60	44	2	0.44	0.75	6.55	470	0.01	1.5	0.56	0.35	156	75	350	4.26	10.4	33.8	28.6	90	15.35	0.25	11.8	-1	81.9
1390	2001G 139	12.35	0.22	7.1	1	60	35.2	1.35	0.43	0.93	5.37	670	0.05	1.41	4.8	0.29	108	54	305	2.97	10.7	33	30	74	13.05	0.2	10	-1	62.8
1393	2001G 088	12.99	0.21	6.4	1	70	40.8	1.7	0.59	0.76	6.06	860	0.03	1.55	0.74	0.33	130	71	350	3.8	9.2	33.8	25	84	13.85	0.25	13.6	-1	77.4
1394	2001G 090	11.27	0.2	6.5	1	20	39.4	1.5	0.6	0.65	5.77	700	0.02	1.48	0.63	0.32	118	63	315	3.07	8.1	30.2	20.4	68	12.95	0.2	9.6	-1	75.1
1396	2001G 091	14.35	0.24	5.5	0.6	40	38	1.5	0.54	0.57	5.8	440	0.02	1.55	0.42	0.33	113	61	255	3.32	9.5	27.6	20.2	76	13	0.2	12.2	-1	86.6
1397	2001G 141	19.99	0.25	8.6	1.4	120	35.2	1.45	0.4	1.4	5.66	770	0.1	1.46	2.7	0.28	120	65	700	5.82	13.3	46.2	41.4	96	13.75	0.25	20	-1	79.9
1397 lab dup	2001G 157	20.11	0.23	8.7	1.3	120	44.4	1.8	0.46	1.5	6.32	750	0.1	1.65	2.2	0.33	141	67	760	5.9	16.1	53.9	45.8	102	15.4	0.3	21.8	1	81.2
1399	2001G 092	15	0.27	8	1.3	60	45.4	1.95	0.43	0.71	6.76	620	0.01	1.72	0.41	0.33	148	72	215	3.57	9.6	37	35	90	16.15	0.25	13	-1	90.1
1400	2001G 142	14.49	0.25	8	1	60	40.4	1.7	0.46	0.96	6.23	770	0.02	1.72	2.1	0.31	125	60	360	3.63	11.6	40.6	31.2	90	14.9	0.2	12	-1	78.9
1502	2001G 093	14.92	0.27	8.3	1.2	80	48	2.1	0.42	0.71	7.29	410	0.01	1.74	0.47	0.35	159	78	215	3.83	9.9	41.2	31.6	92	16.35	0.25	13.4	-1	93.8
1503	2001G 143	14.4	0.24	8	1	60	47.6	1.95	0.49	0.72	6.46	810	0.02	1.72	0.83	0.31	137	66	355	3.7	13.3	45.8	38.4	98	17.2	0.25	14.2	-1	89.4
1505	2001G 094	12.45	0.22	6.9	1.2	40	42.6	1.7	0.57	0.73	6.73	660	0.01	1.65	0.44	0.34	138	73	250	3.44	10.3	35.2	34.4	82	15.7	0.2	11.4	-1	81.9
1506	2001G 144	14.57	0.28	8.7	1.2	70	44.6	1.95	0.46	0.76	6.74	860	0.01	1.73	0.53	0.31	147	71	355	3.97	11.7	42.6	35.2	104	17.05	0.25	13.8	-1	92
1508	2001G 095	11.73	0.2	6.4	0.7	50	37.2	1.55	0.59	0.66	5.76	690	0.01	1.59	0.63	0.3	123	64	305	3.01	8.9	34.4	27.8	74	13.25	0.25	11.2	-1	79.2
1509	2001G 145	12.63	0.22	6.9	0.8	50	44	1.7	0.51	0.94	6.12	780	0.03	1.69	2.1	0.3	128	64	345	3.53	11.5	36.8	32.2	88	15.45	0.2	12	-1	84.1
1511	2001G 096	12.18	0.19	5.8	1	40	38.2	1.45	0.62	0.93	5.53	790	0.02	1.49	1.35	0.3	113	58	325	3.04	10.4	30.2	23.2	72	12.85	0.25	11	-1	72.5
1512	2001G 146	12.1	0.16	5.8	0.9	50	36.4	1.45	0.61	0.95	5.17	790	0.02	1.46	2	0.27	108	56	245	3.09	10.3	30	26.8	76	12.6	0.2	10.8	-1	68.5
1513	2001G 147	12.63	0.2	7	1	30	36.4	1.4	0.54	0.88	4.94	730	0.02	1.37	1.45	0.25	105	51	270	2.98	9.8	30.4	27	72	12.5	0.2	11	-1	65.3
1515	2001G 097	12.25	0.25	8.8	1.3	50	43	1.55	0.45	0.72	6.69	480	0.01	1.52	0.45	0.32	147	72	215	3.38	7.7	29.8	32.4	72	15.5	0.2	11.4	-1	79.1
1516	2001G 148	18.44	0.31	7.6	1	70	63	2.2	0.39	0.84	6.76	780	0.03	1.76	1.25	0.31	205	75	330	3.84	15.5	53.7	40	114	18.45	0.25	18.2	-1	84.5
1518	2001G 098	16.17	0.29	8.9	1.5	90	42.8	1.85	0.43	0.73	6.7	580	0.02	1.58	0.43	0.31	153	73	235	3.68	8.9	35.8	34.8	84	15.8	0.2	13.2	-1	81.6
1520	2001G 099	16.4	0.28	7.7	1.4	70	44.6	1.95	0.45	0.75	6.7	560	0.01	1.6	0.44	0.33	152	75	320	3.61	10.3	33.8	32.2	86	15.8	0.2	13.8	-1	86.6
1521	2001G 150	15.18	0.23	7.1	1	80	40.8	1.7	0.43	0.85	5.64	760	0.05	1.48	1.85	0.26	126	54	370	4.15	12.7	39	35.8	80	14.7	0.25	17.2	-1	71
1523	2001G 100	11.64	0.24	7.8	1.1	40	39.8	1.7	0.47	0.64	6.34	440	0.01	1.64	0.4	0.32	136	66	195	3.31	8.5	28.4	24.4	78	14.75	0.25	11.4	-1	84.1
1524	2001G 151	13.9	0.27	9.6	1.3	80	42.4	1.85	0.44	0.6	6.19	720	0.01	1.55	0.48	0.27	140	60	245	3.83	8.9	41.6	36.8	84	16	0.3	13.4	-1	79.3
1526	2001G 101	14.82	0.28	8	1.1	30	45.6	1.8	0.46	0.73	6.82	350	0.01	1.6	0.4	0.34	148	72	210	3.46	9.7	31.4	26.8	82	16.05	0.2	12.6	-1	93.6

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Pb (ppm) Acme aqua regia ICP AES/MS	Bi (ppm) Acme aqua regia ICP AES/MS	Th (ppm) Acme aqua regia ICP AES/MS	U (ppm) Acme aqua regia ICP AES/MS	Hg (ppb) Chemex CVAA	Li (ppm) Chemex four-acid ICP AES/MS	Be (ppm) Chemex four-acid ICP AES/MS	Na (%) Chemex four-acid ICP AES/MS	Mg (%) Chemex four-acid ICP AES/MS	Al (%) Chemex four-acid ICP AES/MS	P (ppm) Chemex four-acid ICP AES/MS	S (%) Chemex four-acid ICP AES/MS	K (%) Chemex four-acid ICP AES/MS	Ca (%) Chemex four-acid ICP AES/MS	Ti (%) Chemex four-acid ICP AES/MS	V (ppm) Chemex four-acid ICP AES/MS	Cr (ppm) Chemex four-acid ICP AES/MS	Mn (ppm) Chemex four-acid ICP AES/MS	Fe (%) Chemex four-acid ICP AES/MS	Co (ppm) Chemex four-acid ICP AES/MS	Ni (ppm) Chemex four-acid ICP AES/MS	Cu (ppm) Chemex four-acid ICP AES/MS	Zn (ppm) Chemex four-acid ICP AES/MS	Ga (ppm) Chemex four-acid ICP AES/MS	Ge (ppm) Chemex four-acid ICP AES/MS	As (ppm) Chemex four-acid ICP AES/MS	Se (ppm) Chemex four-acid ICP AES/MS	Rb (ppm) Chemex four-acid ICP AES/MS
1526 lab dup	2001G 116	15.19	0.28	8.1	1.1	40	44.4	1.8	0.46	0.72	6.88	370	0.01	1.69	0.37	0.36	152	72	210	3.44	9.2	31.8	25.6	86	15.55	0.2	12.2	-1	89.5
1527	2001G 152	15.6	0.28	9.2	1.2	70	43.8	1.85	0.42	0.75	5.81	730	0.03	1.52	1.25	0.25	132	53	385	3.6	12.6	52.8	34.8	82	15.65	0.35	13.2	-1	76.4
1602	2001G 102	16.12	0.26	8.3	1	60	45.8	1.8	0.45	0.72	6.72	500	0.01	1.62	0.6	0.33	150	78	300	3.71	10.4	36.6	29.6	86	16.05	0.2	14	-1	89.3
1603	2001G 153	14.16	0.23	7.7	1.1	60	38.4	1.65	0.46	1.02	5.61	690	0.06	1.52	4.2	0.31	129	50	275	3.02	11	31.2	29.4	80	13	0.2	12	-1	66.9
1605	2001G 103	15.32	0.27	8.6	1.2	60	45	2.05	0.46	0.69	6.87	440	0.01	1.62	0.51	0.34	147	75	230	3.68	9.5	34	30.6	82	16.4	0.25	13.2	-1	89.8
1606	2001G 154	15.13	0.25	7.7	0.9	60	38.8	1.4	0.46	1.12	5.66	710	0.05	1.58	3.5	0.31	133	57	355	3.07	12	36.2	31.2	86	13.65	0.2	12	-1	67.9
1608	2001G 104	16.1	0.27	6.1	0.8	90	44.4	1.6	0.45	0.91	7.2	590	0.01	1.52	0.48	0.35	183	80	265	3.99	11.4	44.4	44.6	100	17.15	0.2	14.8	-1	71.1
1609	2001G 155	15.33	0.25	7.4	0.8	70	48.4	1.7	0.51	1.11	7.48	820	0.03	1.8	1.95	0.39	186	74	365	4.21	14.5	47.4	40.2	116	17.35	0.25	15.8	-1	73.8
NAT98-282	2001G 071	15.83	0.23	7.7	1.1	40	40	1.55	0.48	1.02	5.62	670	0.03	1.65	3	0.3	116	67	550	3.19	17.4	40.6	32.6	84	14.85	0.25	14.2	-1	86.5
NAT98-282	2001G 082	15.9	0.23	6.8	1	50	42	1.55	0.49	1.14	5.88	700	0.05	1.62	3	0.31	132	58	570	3.29	16.5	37.4	27.6	90	13.2	0.2	11.8	-1	69.7
NAT98-282	2001G 118	16.79	0.22	6.1	1	60	39.2	1.5	0.5	0.98	5.9	700	0.04	1.71	2.8	0.33	122	53	550	3.25	15.5	35.6	26.2	80	12.5	0.25	11.6	-1	69.2
NAT98-282	2001G 140	14.35	0.21	6.4	0.9	50	39.6	1.45	0.46	1.01	5.54	690	0.04	1.57	3	0.29	112	54	510	3.32	16.1	37.2	28.8	84	13.35	0.2	12.4	-1	71.8
NAT98-282	2001G 149	16.56	0.24	6.8	0.9	50	44.4	1.7	0.46	0.95	5.39	720	0.05	1.53	2.9	0.25	118	48	550	3.42	17.4	39.8	31	80	14.45	0.2	13	-1	71.1

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Sr (ppm) Chemex four-acid ICP AES/MS	Y (ppm) Chemex four-acid ICP AES/MS	Zr (ppm) Chemex four-acid ICP AES/MS	Nb (ppm) Chemex four-acid ICP AES/MS	Mo (ppm) Chemex four-acid ICP AES/MS	Ag (ppm) Chemex four-acid ICP AES/MS	Cd (ppm) Chemex four-acid ICP AES/MS	In (ppm) Chemex four-acid ICP AES/MS	Sn (ppm) Chemex four-acid ICP AES/MS	Sb (ppm) Chemex four-acid ICP AES/MS	Te (ppm) Chemex four-acid ICP AES/MS	Cs (ppm) Chemex four-acid ICP AES/MS	Ba (ppm) Chemex four-acid ICP AES/MS	La (ppm) Chemex four-acid ICP AES/MS	Ce (ppm) Chemex four-acid ICP AES/MS	Ta (ppm) Chemex four-acid ICP AES/MS	W (ppm) Chemex four-acid ICP AES/MS	Re (ppm) Chemex four-acid ICP AES/MS	Tl (ppm) Chemex four-acid ICP AES/MS	Pb (ppm) Chemex four-acid ICP AES/MS	Bi (ppm) Chemex four-acid ICP AES/MS	Th (ppm) Chemex four-acid ICP AES/MS	U (ppm) Chemex four-acid ICP AES/MS	Na (%) Becquerel INAA	Sc (ppm) Becquerel INAA	Cr (ppm) Becquerel INAA	Fe (%) Becquerel INAA	Co (ppm) Becquerel INAA
1260	2001G 053	108	24.4	119	13	2	1.58	0.1	0.055	1.4	0.9	0.15	6.45	840.8	45	87	1.05	1.3	-0.002	0.64	27.5	0.31	21	3.1	0.46	13	86	3.6	11
1262	2001G 105	122.5	19.4	65	11.4	1.7	0.76	0.2	0.05	1.2	0.8	0.1	5.65	606.6	35	64.4	0.95	1.1	-0.002	0.62	27.5	0.25	12.6	2.7	0.5	12	88	3.3	13
1264	2001G 054	103.5	26.5	108	11.7	1.9	1.16	0.08	0.05	1.2	0.8	0.05	5.95	789.6	48	88.2	0.95	1.2	-0.002	0.64	25	0.25	17.6	3.1	0.51	15	110	3.9	11
1266	2001G 106	126	17.8	71.5	10.7	1.7	0.76	0.26	0.045	1.2	0.7	0.05	5.15	571.4	32	58.7	0.85	1.1	-0.002	0.62	28.5	0.22	12.2	2.6	0.49	11	79	3.2	12
1269	2001G 107	95.3	17.9	65.5	11.3	1.9	0.8	0.18	0.05	1.2	0.7	0.05	5.7	785.2	33	62	0.9	1.1	0.002	0.64	25.5	0.21	12.2	2.8	0.5	13	77	3.5	13
1271	2001G 055	104	19.6	107	11.4	2.1	0.86	0.08	0.065	1.2	0.9	0.1	6.1	765.2	39	77.9	1.05	1.2	-0.002	0.62	23.5	0.31	16.2	3.2	0.53	15	87	3.9	10
1272	2001G 108	124.5	19.9	64.5	11.8	2.05	0.8	0.18	0.05	1.2	0.8	0.05	5.9	590.4	34	64.3	0.95	1.1	-0.002	0.64	27.5	0.24	13	2.6	0.51	11	84	3.1	12
1274	2001G 056	100.5	20.7	115	11.9	2.35	1.02	0.08	0.06	1.4	0.9	0.05	6.7	816.4	44.5	87.7	1.05	1.2	-0.002	0.66	26.5	0.28	16.8	3.4	0.48	15	99	3.7	11
1275	2001G 109	120.5	21.3	68	11.6	2.45	0.72	0.18	0.065	1.2	0.9	0.05	6.2	614.8	37.5	68.8	0.95	1.1	-0.002	0.66	28	0.34	13	2.8	0.53	13	78	3.5	13
1277	2001G 057	117	30.7	119.5	12.9	2.25	1.04	0.08	0.06	1.4	0.95	0.1	7.2	977.1	54.5	88.6	1.05	1.3	-0.002	0.7	27.5	0.27	17	2.9	0.52	14	100	4	12
1278	2001G 110	147	18.7	66.5	11.5	1.85	0.72	0.12	0.055	1.2	0.9	0.05	5.5	578.9	34	61.5	0.95	1.1	-0.002	0.62	26	0.24	13	2.6	0.51	13	88	3.4	11
1281	2001G 111	117.5	18.4	66	10.9	1.75	0.72	0.18	0.05	1.2	0.8	0.05	5.3	832.8	34	61.8	0.9	1	-0.002	0.56	25	0.23	12.2	2.5	0.54	13	88	3.4	13
1283	2001G 058	106	25.4	110.5	12.7	1.9	0.98	0.08	0.055	1.4	0.8	0.1	6.75	873.2	49.5	91.6	1	1.3	-0.002	0.66	26	0.28	16	3.3	0.5	14	100	3.8	12
1284	2001G 112	124.5	19.9	73	13.3	1.95	0.8	0.2	0.05	1.4	0.9	0.05	5.85	636.6	33.5	63.7	1.7	1.3	0.002	0.66	27.5	0.25	14.4	2.8	0.52	13	81	3.5	12
1286	2001G 059	107	21.3	116	12.7	1.9	0.98	0.1	0.06	1.4	0.75	0.1	7	858.9	48.5	93.8	1.05	1.3	-0.002	0.72	27.5	0.28	18.6	3.5	0.52	14	96	3.9	12
1287	2001G 113	116	18.9	63.5	10.7	2	1.12	0.14	0.045	1.2	0.75	0.05	5.4	619.3	34	60.8	1.15	1.2	-0.002	0.62	30	0.23	12	2.6	0.49	13	82	3.7	13
1289	2001G 060	106.5	21.8	115	12.5	1.95	0.92	0.12	0.06	1.4	0.75	0.1	6.95	918.3	47	91	1.05	1.2	-0.002	0.68	28	0.26	17.4	3.2	0.51	15	95	4	13
1291	2001G 061	107	24.6	112	12	2.15	1.34	0.12	0.055	1.4	0.8	0.05	6.45	859.6	51	95.4	1	1.2	0.002	0.66	26.5	0.25	16.4	3.4	0.54	15	97	4.1	11
1291 lab dup	2001G 072	105	23.4	108.5	11.2	2.05	1	0.1	0.055	1.4	0.7	0.05	6.4	838.5	48	91.1	0.85	1.1	0.002	0.68	26	0.29	14.2	3.2	0.55	16	97	4	11
1292	2001G 114	114	17.4	62.5	10	2.25	0.62	0.18	0.05	1.4	0.95	0.1	5.85	604.9	31.5	58.8	0.75	1.1	-0.002	0.6	26.5	0.23	12.6	2.6	0.51	13	78	3.2	13
1294	2001G 062	108	21.2	112	12.4	2.05	1.02	0.08	0.055	1.4	0.85	0.1	6.75	838	46.5	86.5	1.05	1.3	-0.002	0.68	27.5	0.26	16.8	3.2	0.53	15	89	3.8	13
1295	2001G 115	109.5	21.7	65	11.5	2.25	1	0.16	0.045	1.2	0.7	0.05	5.55	569.1	36	65.1	1.4	1.2	0.002	0.58	26	0.23	12.6	2.5	0.52	13	88	3.5	13
1297	2001G 063	115.5	34	107	11.8	1.75	1.06	0.12	0.055	1.2	0.85	0.1	6.6	952.2	55.5	91.8	0.95	1.2	-0.002	0.66	27.5	0.25	14.8	2.9	0.54	14	92	3.7	13
1298	2001G 117	121.5	18	64	11	1.7	0.88	0.2	0.05	1.2	0.75	0.05	5.15	834.4	32.5	59.2	0.95	1.1	-0.002	0.58	25	0.21	11.6	2.4	0.52	12	77	3.3	13
1300	2001G 064	105.5	25.5	106.5	11.9	1.9	1.04	0.08	0.05	1.4	0.75	0.05	6.45	845.6	46.5	83.4	1.05	1.2	-0.002	0.64	24	0.24	14	2.8	0.51	14	85	3.6	9
1301	2001G 119	119.5	17.9	66.5	12.1	2.2	0.9	0.26	0.05	1.4	0.85	0.05	5.7	816.4	32.5	60.7	3.75	1.2	0.002	0.62	25.5	0.23	12.4	2.5	0.51	12	75	3.2	10
1303	2001G 065	107.5	26.4	108	12.3	1.8	1.1	0.08	0.055	1.4	0.85	0.05	6.6	914.3	48.5	85.6	1.15	1.3	-0.002	0.68	26	0.25	16.6	3.1	0.51	15	92	3.8	11
1304	2001G 120	125	16.9	63	11.2	2.2	0.8	0.24	0.045	1.2	0.8	0.05	5.35	845.6	31	58.8	1	1.2	0.002	0.56	25.5	0.21	11.4	2.5	0.49	12	83	3.2	13
1306	2001G 066	115.5	33.8	121	12.4	2.1	0.92	0.1	0.065	1.6	0.85	0.1	7.25	992.8	60	102	1.05	1.3	-0.002	0.74	28	0.27	17.2	3.4	0.51	15	96	3.9	12
1307	2001G 121	123	16.5	61	8.6	2.05	0.5	0.28	0.045	1.4	0.9	0.05	5.3	828.4	30	56.1	0.55	1	-0.002	0.6	25.5	0.21	11.4	2.4	0.46	12	91	3.1	13
1307 lab dup	2001G 126	130.5	17.1	62.5	11.4	1.95	0.78	0.28	0.045	1.2	0.75	0.1	5.3	825.6	30.5	57.1	1.05	1.3	0.002	0.58	25.5	0.21	11	2.6	0.47	12	89	3.1	14
1309	2001G 067	102.5	22.5	110.5	11.7	1.9	0.82	0.1	0.055	1.4	0.8	0.05	6.6	842.8	45.5	84.2	0.9	1.2	-0.002	0.64	25	0.27	14.2	3.2	0.52	15	84	3.7	12

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Sr (ppm) Chemex four-acid ICP AES/MS	Y (ppm) Chemex four-acid ICP AES/MS	Zr (ppm) Chemex four-acid ICP AES/MS	Nb (ppm) Chemex four-acid ICP AES/MS	Mo (ppm) Chemex four-acid ICP AES/MS	Ag (ppm) Chemex four-acid ICP AES/MS	Cd (ppm) Chemex four-acid ICP AES/MS	In (ppm) Chemex four-acid ICP AES/MS	Sn (ppm) Chemex four-acid ICP AES/MS	Sb (ppm) Chemex four-acid ICP AES/MS	Te (ppm) Chemex four-acid ICP AES/MS	Cs (ppm) Chemex four-acid ICP AES/MS	Ba (ppm) Chemex four-acid ICP AES/MS	La (ppm) Chemex four-acid ICP AES/MS	Ce (ppm) Chemex four-acid ICP AES/MS	Ta (ppm) Chemex four-acid ICP AES/MS	W (ppm) Chemex four-acid ICP AES/MS	Re (ppm) Chemex four-acid ICP AES/MS	Tl (ppm) Chemex four-acid ICP AES/MS	Pb (ppm) Chemex four-acid ICP AES/MS	Bi (ppm) Chemex four-acid ICP AES/MS	Th (ppm) Chemex four-acid ICP AES/MS	U (ppm) Chemex four-acid ICP AES/MS	Na (%) Becquerel INAA	Sc (ppm) Becquerel INAA	Cr (ppm) Becquerel INAA	Fe (%) Becquerel INAA	Co (ppm) Becquerel INAA
1310	2001G 122	112	16	61.5	11.4	1.65	0.78	0.16	0.045	1	0.7	0.05	4.85	783.2	27.5	53.1	1.3	1.2	-0.002	0.5	24.5	0.19	10.4	2.3	0.54	12	87	3.3	12
1312	2001G 068	108.5	23.4	122	12.5	1.95	0.86	0.08	0.055	1.4	0.8	0.1	6.95	852.5	48.5	90.7	1	1.3	0.002	0.7	26.5	0.26	16.8	3.2	0.51	15	87	3.6	13
1313	2001G 123	126	17.9	65	11.7	1.95	0.78	0.24	0.045	1.2	0.8	0.05	5.5	579.6	32	59.7	1.55	1.2	-0.002	0.56	26	0.21	11.4	2.5	0.56	12	81	3.4	14
1315	2001G 069	102	20.8	107.5	11.7	2	0.8	0.08	0.055	1.4	0.85	0.1	6.95	834.7	44	81.9	0.9	1.2	-0.002	0.66	25.5	0.25	15.4	3	0.51	16	84	4.1	9
1316	2001G 124	104	14.2	53.5	10.3	1.8	0.7	0.12	0.055	1.2	1.35	0.05	5.6	585.8	18	37.5	1.3	1.3	-0.002	0.54	24	0.2	9.8	2	0.51	16	94	3.9	16
1318	2001G 070	106	34.4	107	10.9	1.6	1.04	0.08	0.055	1.2	0.8	0.1	6	864	52	85.5	0.9	1.2	-0.002	0.66	24.5	0.24	15	2.9	0.55	15	100	3.7	10
1319	2001G 125	124.5	17.1	60.5	10.9	1.45	0.74	0.18	0.05	1.2	0.75	0.1	5.15	580.2	31.5	57.3	0.95	1.1	-0.002	0.58	24	0.2	9.8	2.3	0.46	10	80	2.6	8
1321	2001G 073	120.5	21	105	11.1	1.55	1.44	0.1	0.055	1.4	0.75	0.05	6.6	834.8	42.5	75	0.85	1.3	-0.002	0.6	25	0.23	13.2	2.5	0.55	14	94	3.6	13
1322	2001G 127	151	17.7	62.5	11.2	1.55	0.72	0.16	0.05	1.2	0.7	0.05	5.55	718	32.5	59.8	0.95	1.1	-0.002	0.56	25	0.2	11	2.5	0.52	13	88	3.1	13
1324	2001G 074	115	23.9	108	13.3	3.2	0.9	0.14	0.06	1.4	1.05	0.15	6.2	665.3	37	68.4	1.5	1.7	-0.002	0.7	28.5	0.29	33	3	0.56	16	120	4	13
1325	2001G 128	135	18.5	66.5	12	2.5	0.82	0.22	0.045	1.2	0.95	0.05	5.85	603.1	31.5	59.3	1.15	1.2	-0.002	0.64	26.5	0.23	12	2.6	0.51	12	74	3.3	13
1327	2001G 075	118	30	96.5	13.4	2.7	0.96	0.1	0.06	1.4	1.6	0.1	6.45	670.5	41.5	74.2	1.45	1.4	0.002	0.76	28.5	0.3	27	3.6	0.52	17	110	4.2	14
1328	2001G 129	129	18.1	67	12.4	2.45	0.82	0.26	0.045	1.8	0.95	0.05	5.45	583.4	33.5	61	7.55	1.2	-0.002	0.58	25.5	0.21	11.6	2.6	0.5	12	80	3.1	11
1330	2001G 076	106.5	26.8	84.5	12.7	2.6	1.3	0.1	0.06	1.4	0.95	0.1	6.55	575.7	35	66.5	1.45	1.3	0.002	0.72	28.5	0.3	21.2	3.4	0.46	16	110	3.8	12
1331	2001G 130	117	17.5	60	9.6	1.85	0.6	0.18	0.06	1.2	0.8	0.05	5	774.8	29	57	1	1	0.002	0.54	23	0.29	10.2	2.3	0.49	13	87	3.2	12
1333	2001G 077	100.5	20.9	76	11.7	4.45	1.08	0.08	0.055	4.6	1.05	0.05	5.65	762	31.5	61.5	1.25	1.4	-0.002	0.74	26	0.27	18.6	3.8	0.53	18	130	5.2	11
1334	2001G 131	142	18.8	73	12.1	2.45	0.72	0.26	0.05	1.4	0.9	0.1	5.6	658.6	33	62.5	1.15	1.3	-0.002	0.62	26.5	0.26	12.6	2.7	0.53	12	83	3.3	14
1335	2001G 156	129.5	16.9	62.5	10	2.3	0.92	0.2	0.04	1	0.75	0.1	4.25	822.4	31	57.6	0.85	1.6	-0.002	0.52	24	0.18	9.8	2.4	0.63	11	74	3.4	13
1337	2001G 078	95	22.1	74.5	11.1	1.95	0.94	0.1	0.05	1.2	0.75	0.15	5.6	632.1	33.5	68.7	1.15	1.2	-0.002	0.62	26	0.26	16	2.9	0.65	19	120	5	13
1338	2001G 132	127.5	18.2	75.5	11.6	1.8	0.7	0.22	0.045	1.2	0.85	0.05	5.55	853.4	33.5	62.8	1.1	1.2	-0.002	0.6	27	0.22	12.2	2.5	0.51	12	76	3.2	14
1340	2001G 079	102.5	28.6	77.5	12	1.85	1	0.12	0.05	1.4	0.8	0.05	5.95	574	39.5	63.7	1.2	1.2	-0.002	0.66	26	0.27	16.6	3	0.59	17	110	4.2	12
1341	2001G 133	131	21.1	77.5	13.4	2.15	1.36	0.22	0.05	1.4	0.9	0.05	6.35	607.9	35.5	66.7	1.9	1.4	-0.002	0.66	30	0.25	14.6	2.9	0.51	13	81	3.3	14
1343	2001G 080	105	11.7	76.5	12.7	2.15	0.94	0.08	0.055	1.4	1.8	0.05	6.25	553.7	28	56.4	1.25	1.7	-0.002	0.7	26.5	0.26	16.2	3	0.54	14	92	3.8	12
1344	2001G 134	128.5	18.1	60.5	11.5	1.7	1.14	0.2	0.045	1.2	0.75	0.1	5	802.4	30.5	58	2.55	1.3	-0.002	0.58	26	0.21	12	2.5	0.54	12	73	3	15
1346	2001G 081	99.5	18.8	73.5	11.8	2.05	0.86	0.1	0.055	1.2	0.75	0.05	5.8	712.4	31	61.7	1.15	1.2	-0.002	0.7	26	0.26	15.4	3.1	0.5	15	100	3.9	11
1346 lab dup	2001G 089	100	19.8	77	12.2	2.15	0.78	0.08	0.055	1.4	0.8	0.1	6.05	736	32.5	65.2	1.15	1.2	-0.002	0.7	28	0.27	17	3.4	0.47	14	98	4	12
1347	2001G 135	129	18.7	59.5	12.5	2.2	1.02	0.24	0.05	1.4	0.85	0.05	5.95	853.2	31.5	59.9	1.75	1.4	-0.002	0.62	28	0.23	12.8	2.7	0.49	13	79	3.4	15
1349	2001G 083	114.5	14.3	58.5	10.7	1.2	0.76	0.14	0.035	1	0.45	0.05	3.9	543.5	34.5	41.2	0.9	1	-0.002	0.56	21.5	0.25	11.4	2.7	0.73	11	77	2.9	9
1380	2001G 084	100	10.6	70	12.2	2	0.84	0.12	0.05	1.4	0.75	0.05	6	782.4	28	51.5	1.1	1.3	-0.002	0.68	26.5	0.24	13.6	2.5	0.5	12	85	3.4	9
1381	2001G 136	119.5	24.3	66.5	12.1	1.9	1.02	0.18	0.055	1.2	0.85	0.05	5.9	606	39	68.7	1.2	1.4	-0.002	0.66	28	0.24	13.4	2.9	0.53	13	93	3.4	11
1383	2001G 085	99.8	15.9	72.5	12.1	1.85	0.76	0.1	0.05	1.4	0.75	0.05	5.85	724.8	30.5	62	1.15	1.2	-0.002	0.7	27	0.26	15.8	2.9	0.51	14	88	3.7	11
1384	2001G 137	138	18.6	61.5	8.1	1.7	0.46	0.18	0.04	2	0.9	0.1	5.35	854.8	33	62.1	0.4	1.8	-0.002	0.58	26	0.21	12	2.5	0.51	12	72	3.2	13

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Sr (ppm) Chemex four-acid ICP AES/MS	Y (ppm) Chemex four-acid ICP AES/MS	Zr (ppm) Chemex four-acid ICP AES/MS	Nb (ppm) Chemex four-acid ICP AES/MS	Mo (ppm) Chemex four-acid ICP AES/MS	Ag (ppm) Chemex four-acid ICP AES/MS	Cd (ppm) Chemex four-acid ICP AES/MS	In (ppm) Chemex four-acid ICP AES/MS	Sn (ppm) Chemex four-acid ICP AES/MS	Sb (ppm) Chemex four-acid ICP AES/MS	Te (ppm) Chemex four-acid ICP AES/MS	Cs (ppm) Chemex four-acid ICP AES/MS	Ba (ppm) Chemex four-acid ICP AES/MS	La (ppm) Chemex four-acid ICP AES/MS	Ce (ppm) Chemex four-acid ICP AES/MS	Ta (ppm) Chemex four-acid ICP AES/MS	W (ppm) Chemex four-acid ICP AES/MS	Re (ppm) Chemex four-acid ICP AES/MS	Tl (ppm) Chemex four-acid ICP AES/MS	Pb (ppm) Chemex four-acid ICP AES/MS	Bi (ppm) Chemex four-acid ICP AES/MS	Th (ppm) Chemex four-acid ICP AES/MS	U (ppm) Chemex four-acid ICP AES/MS	Na (%) Becquerel INAA	Sc (ppm) Becquerel INAA	Cr (ppm) Becquerel INAA	Fe (%) Becquerel INAA	Co (ppm) Becquerel INAA
1386	2001G 086	117.5	13.5	60.5	9	1.35	0.66	0.22	0.03	0.8	0.4	-0.05	3.45	763.2	32	59.7	0.7	0.8	0.002	0.5	19	0.14	10	2.2	0.69	10	79	3	9
1387	2001G 138	209	17.8	53	9.8	2.15	0.78	0.2	0.04	1.2	0.85	0.05	4.3	680.4	33.5	57	2.2	1.1	0.002	0.58	21.5	0.2	10.6	2.5	0.52	11	70	3.8	11
1389	2001G 087	111.5	18.6	68	13.4	2.25	0.8	0.08	0.055	1.2	0.65	0.05	5.9	771.6	40	53.9	1.15	1.2	-0.002	0.66	26	0.25	16.2	2.9	0.49	14	94	4.4	13
1390	2001G 139	134	16.9	59	10.6	1.65	0.82	0.22	0.045	1.2	0.8	0.05	4.8	746	31	55.7	2	1.1	-0.002	0.52	22	0.19	10.4	2.2	0.48	12	75	3.2	12
1393	2001G 088	121.5	21.6	78	11	1.5	0.76	0.14	0.065	1	0.55	0.05	4.65	625.2	37.5	66.5	0.95	1	-0.002	0.64	24	0.32	14.6	2.8	0.62	13	87	3.8	10
1394	2001G 090	114	20.2	68.5	10.6	1.15	0.72	0.1	0.045	1	0.55	0.05	4.5	597.8	36.5	61.2	0.9	1	-0.002	0.6	21	0.19	12	2.6	0.66	12	79	3.3	9
1396	2001G 091	100.5	10.9	70.5	11.4	1.9	0.7	0.08	0.04	1	0.55	0.05	4.5	742	29	51.9	0.95	1.1	-0.002	0.6	24.5	0.22	12.2	2.4	0.55	10	81	3.5	10
1397	2001G 141	114	28.3	74	10.4	3.8	0.84	0.18	0.05	1.2	0.95	0.05	5.15	657.9	46	74	1.15	1	0.002	0.76	32	0.21	16.2	2.9	0.49	15	82	6.1	16
1397 lab dup	2001G 157	126	29.5	78.5	11.5	3.75	1.06	0.22	0.055	1.2	1.05	0.05	5.75	736	46.5	79	1.1	1.7	-0.002	0.8	35.5	0.24	16.6	3.2	0.47	15	88	6.1	18
1399	2001G 092	99.7	14.4	74.5	12.3	2	0.76	0.08	0.055	1.4	0.8	0.05	6.1	756	28.5	56.2	1.1	1.2	-0.002	0.66	26.5	0.26	15	3.1	0.51	15	93	3.8	10
1400	2001G 142	122.5	19	65	12.1	2.15	0.82	0.2	0.05	1.2	0.8	0.05	5.9	567.2	34	62.2	2.05	1.3	-0.002	0.62	26	0.23	12.4	2.6	0.51	13	81	3.6	13
1502	2001G 093	105	22.2	73.5	13.5	2.25	1.2	0.1	0.055	1.4	0.85	0.05	6.45	783.6	32	59.6	1.2	1.4	-0.002	0.7	28	0.29	16.2	2.9	0.45	15	110	3.8	9
1503	2001G 143	113	21.3	70	12.4	2.4	0.78	0.2	0.055	1.2	1.3	0.1	6.2	608.2	38	69.4	1.25	1.4	0.002	0.68	28	0.25	13.2	3	0.58	14	100	3.8	12
1505	2001G 094	106.5	15.2	64.5	11	2	0.98	0.1	0.05	1.2	0.8	0.05	5.35	775.6	27.5	54.1	0.95	1.2	-0.002	0.58	23.5	0.22	12.4	2.8	0.64	15	90	3.6	12
1506	2001G 144	109	24.3	65.5	12.1	2.2	0.82	0.12	0.06	1.4	0.85	0.05	6.55	573.5	37.5	69.3	1.1	1.2	-0.002	0.72	28.5	0.27	13.8	3	0.54	16	96	4	12
1508	2001G 095	112.5	19.2	70	10.5	1.5	0.96	0.1	0.045	1	0.6	0.05	4.65	573.2	34	58.7	0.85	1.1	-0.002	0.56	23.5	0.19	11.8	2.4	0.63	12	62	3.2	9
1509	2001G 145	126.5	20.1	67	12.4	1.85	0.8	0.18	0.05	1.2	0.85	0.1	5.75	583.9	36.5	65.4	1.1	1.3	-0.002	0.64	26.5	0.23	13	2.7	0.58	12	76	3.5	12
1511	2001G 096	92.8	17.2	62	10.2	1.45	0.94	0.18	0.04	1	0.6	0.05	4.2	764.8	34	60.6	0.8	1	-0.002	0.54	23	0.18	12.2	2.6	0.72	11	90	3.3	10
1512	2001G 146	129.5	17.4	51	9.8	1.6	0.68	0.16	0.045	1	0.8	0.1	4.15	787.6	36	65.3	1.2	1	-0.002	0.52	23	0.17	10.2	2.4	0.75	13	88	3.4	11
1513	2001G 147	117	16.4	52.5	10.2	1.7	0.72	0.18	0.045	1	0.7	0.05	4.15	735.2	32	58.7	0.9	1	-0.002	0.54	22.5	0.18	11.4	2.3	0.72	13	89	3.6	13
1515	2001G 097	102	13.3	66	11.8	1.85	0.9	0.06	0.055	1.2	0.65	0.05	5.85	784.4	26	52.2	1.05	1.1	-0.002	0.66	22.5	0.22	14.4	2.9	0.52	14	88	3.7	9
1516	2001G 148	114	19.8	72.5	14.5	3.85	0.94	0.22	0.065	1.6	1.25	0.1	8.05	851.6	31	62	1.4	1.4	-0.002	0.78	31	0.29	14.6	2.9	0.48	16	120	4.1	18
1518	2001G 098	98.8	20.2	67	11.5	1.95	0.88	0.06	0.055	1.4	0.85	0.1	6.05	766.8	36.5	70.8	1	1.2	-0.002	0.68	27	0.26	15.2	3.1	0.52	16	100	4.1	11
1520	2001G 099	101.5	17.6	66	12	2.15	0.9	0.1	0.055	1.2	0.8	0.05	6.2	799.2	35	67.2	1	1.2	-0.002	0.72	28	0.26	14.6	3.3	0.49	14	100	3.6	10
1521	2001G 150	113.5	19.1	63.5	11.3	2.4	0.78	0.2	0.05	1.2	0.85	0.15	5.75	616.7	33.5	62.9	1.1	1.1	-0.002	0.66	27.5	0.22	12.4	2.7	0.52	14	95	4.4	13
1523	2001G 100	99.7	14.4	66	11.6	1.85	0.76	0.06	0.05	1.2	0.6	0.05	5.65	786.4	35.5	65	1	1.2	-0.002	0.66	22.5	0.23	13.6	2.7	0.52	12	100	3.3	10
1524	2001G 151	108	26.5	72	12.2	2.4	0.7	0.08	0.065	1.2	0.85	0.05	6.1	848	36.5	72.2	1.15	1.2	-0.002	0.64	25.5	0.34	13	2.9	0.54	15	100	3.9	10
1526	2001G 101	102	12.9	69	13.5	2.05	0.88	0.1	0.05	1.4	0.75	0.05	6.15	780.8	31.5	58.3	1.3	1.3	-0.002	0.7	27	0.26	15.2	2.8	0.43	11	81	3.2	9
1526 lab dup	2001G 116	99.2	12.3	66	12.2	2.35	0.9	0.08	0.05	1.4	0.65	0.05	6	764.8	30	55.6	1.3	1.2	-0.002	0.66	25	0.23	12.2	2.6	0.48	13	86	3.5	10
1527	2001G 152	115.5	27.6	67	11.4	2.1	0.72	0.16	0.055	1.2	0.75	0.05	5.8	591.7	40	67	1	1.1	0.002	0.62	27.5	0.26	13	2.8	0.52	13	95	3.6	14
1602	2001G 102	111	20.8	75.5	12.1	1.9	0.78	0.12	0.06	1.4	0.8	0.05	6	807.2	36.5	72.7	1.05	1.2	-0.002	0.7	26	0.23	14.4	2.6	0.49	14	91	3.8	11
1603	2001G 153	132	17.7	60	10.7	1.75	1.34	0.24	0.045	1	0.8	0.1	5.1	798.4	33	60.6	0.85	1.1	0.002	0.56	24.5	0.21	11	2.5	0.47	11	74	3.1	13

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Sr (ppm) Chemex four-acid ICP AES/MS	Y (ppm) Chemex four-acid ICP AES/MS	Zr (ppm) Chemex four-acid ICP AES/MS	Nb (ppm) Chemex four-acid ICP AES/MS	Mo (ppm) Chemex four-acid ICP AES/MS	Ag (ppm) Chemex four-acid ICP AES/MS	Cd (ppm) Chemex four-acid ICP AES/MS	In (ppm) Chemex four-acid ICP AES/MS	Sn (ppm) Chemex four-acid ICP AES/MS	Sb (ppm) Chemex four-acid ICP AES/MS	Te (ppm) Chemex four-acid ICP AES/MS	Cs (ppm) Chemex four-acid ICP AES/MS	Ba (ppm) Chemex four-acid ICP AES/MS	La (ppm) Chemex four-acid ICP AES/MS	Ce (ppm) Chemex four-acid ICP AES/MS	Ta (ppm) Chemex four-acid ICP AES/MS	W (ppm) Chemex four-acid ICP AES/MS	Re (ppm) Chemex four-acid ICP AES/MS	Tl (ppm) Chemex four-acid ICP AES/MS	Pb (ppm) Chemex four-acid ICP AES/MS	Bi (ppm) Chemex four-acid ICP AES/MS	Th (ppm) Chemex four-acid ICP AES/MS	U (ppm) Chemex four-acid ICP AES/MS	Na (%) Becquerel INAA	Sc (ppm) Becquerel INAA	Cr (ppm) Becquerel INAA	Fe (%) Becquerel INAA	Co (ppm) Becquerel INAA
1605	2001G 103	103.5	16.9	69.5	12.3	1.8	0.76	0.1	0.06	1.4	0.75	0.15	6.1	737.6	35	66.3	1	1.2	-0.002	0.7	27	0.26	14.6	2.9	0.48	13	91	3.7	11
1606	2001G 154	128.5	17.5	63.5	11.2	1.9	1.22	0.26	0.05	1.2	0.8	0.05	5.25	826.8	31.5	58.1	0.95	1.2	0.002	0.58	25.5	0.22	11.6	2.5	0.49	12	83	3.1	13
1608	2001G 104	93.5	18.2	54	10	1.6	0.74	0.08	0.06	1.2	1.15	0.1	6.45	630.2	21.5	44.5	0.9	1.1	-0.002	0.56	24	0.23	11.6	2.2	0.52	17	98	4.2	12
1609	2001G 155	125.5	17.6	64	11.8	2.05	1.1	0.18	0.055	1.2	1.15	0.05	6.75	663.3	26.5	51.5	1.15	1.2	0.002	0.64	26.5	0.23	12.2	2.3	0.51	16	100	3.9	17
NAT98-282	2001G 071	139.5	19.4	103	10.4	2.2	0.84	0.32	0.045	1.4	0.75	0.1	5.8	906	42.5	79	0.8	1	0.002	0.62	27	0.23	12.8	2.6	0.54	12	80	3.4	19
NAT98-282	2001G 082	142	17.2	69	10.8	2.25	0.84	0.32	0.045	1.2	0.9	0.1	5	572.3	32	61.8	1	1.1	0.002	0.62	28	0.22	13.2	2.5	0.52	12	76	3.1	19
NAT98-282	2001G 118	126	16.7	61	10.3	2.15	0.82	0.32	0.045	1.6	0.75	0.05	4.8	787.6	31	59.5	0.95	1.7	0.002	0.58	27	0.21	11.8	2.5	0.51	12	62	3.3	17
NAT98-282	2001G 140	135	17.2	74	10.3	2.1	0.78	0.3	0.045	1.2	0.75	0.1	4.65	762	30.5	58.5	1.2	1	0.002	0.58	26	0.2	11.4	2.4	0.52	12	85	3.2	18
NAT98-282	2001G 149	96.4	17.7	62.5	11.2	2.25	0.84	0.32	0.05	1.4	0.8	0.05	5.3	587.6	34	65.7	2.15	1.1	0.002	0.62	31	0.28	11.4	2.6	0.59	14	100	3.9	20

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Ni (ppm) Becquerel INAA	Zn (ppm) Becquerel INAA	As (ppm) Becquerel INAA	Br (ppm) Becquerel INAA	Rb (ppm) Becquerel INAA	Zr (ppm) Becquerel INAA	Mo (ppm) Becquerel INAA	Ag (ppm) Becquerel INAA	Cd (ppm) Becquerel INAA	Sn (ppm) Becquerel INAA	Sb (ppm) Becquerel INAA	Te (ppm) Becquerel INAA	Cs (ppm) Becquerel INAA	Ba (ppm) Becquerel INAA	La (ppm) Becquerel INAA	Ce (ppm) Becquerel INAA	Sm (ppm) Becquerel INAA	Eu (ppm) Becquerel INAA	Tb (ppm) Becquerel INAA	Yb (ppm) Becquerel INAA	Lu (ppm) Becquerel INAA	Hf (ppm) Becquerel INAA	Ta (ppm) Becquerel INAA	W (ppm) Becquerel INAA	Ir (ppb) Becquerel INAA	Au (ppb) Becquerel INAA	Th (ppm) Becquerel INAA	U (ppm) Becquerel INAA
1260	2001G 053	42	-100	13	1.2	83	520	2	-2	-5	-100	0.9	-10	5	620	40	89	7.4	2	0.8	3	0.8	8	1.2	1	-50	6	12	3.2
1262	2001G 105	52	110	12	1.8	87	-200	3	-2	-5	-100	0.9	-10	5.1	720	36	70	5.9	2	0.9	4	0.8	7	1.2	-1	-50	-2	10	2.8
1264	2001G 054	36	120	14	1.1	95	-200	2	-2	-5	-100	0.9	-10	5.5	640	44	88	9	2	1.2	4	0.8	9	1.4	1	-50	5	13	3.5
1266	2001G 106	41	100	12	1.9	79	350	2	-2	-5	-100	0.9	-10	4.4	700	34	70	5.6	2	0.7	3	0.7	8	1.2	1	-50	-2	10	2.9
1269	2001G 107	43	120	13	1.1	84	240	2	2	-5	-100	1	-10	5.2	690	36	72	6	1	0.8	3	0.6	8	1	-1	-50	3	10	2.8
1271	2001G 055	41	110	14	1	90	-200	2	-2	-5	-100	1	-10	5.1	680	42	84	7.7	2	1.1	4	0.8	8	1.3	-1	-50	5	13	3.7
1272	2001G 108	25	-100	12	1	90	-200	2	-2	-5	-100	0.8	-10	5	620	34	65	5.5	2	0.7	3	0.5	8	1.2	-1	-50	4	10	3
1274	2001G 056	37	130	16	1	93	340	2	2	-5	-100	1	-10	5.9	630	41	80	7.8	2	1	4	0.8	8	1.2	2	-50	6	12	3.9
1275	2001G 109	47	-100	13	1.3	84	250	4	-2	-5	-100	1	-10	5.2	720	38	71	6.1	2	0.7	4	0.7	8	1.3	-1	-50	5	11	3.1
1277	2001G 057	51	-100	16	1.4	93	230	2	-2	-5	-100	1	-10	5.8	720	45	78	7.8	2	1.1	5	0.9	8	1.1	2	-50	3	12	3.1
1278	2001G 110	40	-100	12	1.5	80	-200	2	-2	-5	-100	0.9	-10	5.1	720	37	75	5.9	2	0.7	3	0.8	8	1.3	-1	-50	-2	10	2.8
1281	2001G 111	39	-100	13	1.6	83	440	2	-2	-5	-100	0.9	-10	5	670	37	72	5.8	2	0.7	4	0.7	8	1.3	-1	-50	-2	10	2.9
1283	2001G 058	38	-100	14	1.3	98	510	2	-2	-5	-100	0.9	-10	6	1000	46	96	7.9	2	1	4	0.7	8	1.2	2	-50	4	12	3.5
1284	2001G 112	33	130	13	1.3	90	340	2	-2	-5	-100	0.9	-10	5.2	780	38	73	6	2	0.8	4	0.7	8	1.2	-1	-50	3	10	3.1
1286	2001G 059	37	-100	14	1	97	270	2	-2	-5	-100	0.8	-10	5.5	660	43	91	7	2	0.9	3	0.7	8	1.3	2	-50	4	13	3.6
1287	2001G 113	37	-100	14	1.5	86	380	3	-2	-5	-100	0.9	-10	5.2	780	36	72	5.8	2	0.8	4	0.7	8	1.2	-1	-50	4	10	2.8
1289	2001G 060	33	130	16	1	96	290	-1	-2	-5	-100	0.8	-10	5.5	740	43	87	7.4	2	1	4	0.7	9	1.2	2	-50	3	13	3.4
1291	2001G 061	40	-100	15	1.1	99	300	3	-2	-5	-100	0.9	-10	5.4	720	48	100	8.3	3	1.2	4	0.8	9	1.3	1	-50	6	13	3.7
1291 lab dup	2001G 072	33	-100	15	1	96	400	2	-2	-5	-100	0.9	-10	5.3	710	50	100	8.4	3	0.9	4	0.9	9	1.2	-1	-50	-2	13	3.7
1292	2001G 114	31	-100	13	2	82	220	3	-2	-5	-100	0.9	-10	5	740	36	74	5.7	2	0.7	3	0.7	7	1.2	-1	-50	4	10	2.9
1294	2001G 062	28	130	14	1	85	250	2	2	-5	-100	0.9	-10	5.8	630	42	89	7.2	2	0.9	3	0.8	8	1.2	1	-50	4	12	3.5
1295	2001G 115	39	-100	12	1.7	82	-200	1	-2	-5	-100	0.9	-10	5.1	720	40	77	6.6	3	0.9	4	0.8	7	1.3	-1	-50	-2	11	2.9
1297	2001G 063	55	160	13	1.4	97	-200	-1	-2	-5	-100	1	-10	5.2	730	48	86	8.6	3	1.1	5	0.9	8	1.3	-1	-50	3	12	3.1
1298	2001G 117	35	-100	12	1.6	83	390	-1	-2	-5	-100	0.9	-10	4.5	710	36	64	5.7	2	0.6	4	0.6	7	1.3	-1	-50	5	10	2.8
1300	2001G 064	36	-100	13	1.1	98	290	2	-2	-5	-100	0.9	-10	5.5	680	43	85	7.3	2	0.9	5	0.9	8	1.1	1	-50	8	11	3.1
1301	2001G 119	29	110	12	0.8	81	320	2	-2	-5	-100	0.9	-10	5	620	35	69	5.5	1	0.8	3	0.6	6	1	2	-50	5	10	2.8
1303	2001G 065	33	110	13	1.1	86	270	1	-2	-5	-100	0.8	-10	5.1	680	45	82	8.5	3	1	5	0.8	8	1.2	1	-50	4	12	3.4
1304	2001G 120	42	-100	12	1.4	71	-200	3	-2	-5	-100	0.9	-10	5.5	720	36	72	5.6	1	0.7	3	0.6	7	1.2	-1	-50	-2	10	2.9
1306	2001G 066	38	110	15	1.2	87	440	2	-2	-5	-100	0.9	-10	5.5	710	49	93	8.8	2	1.1	5	0.9	8	1.2	1	-50	4	12	3.4
1307	2001G 121	48	-100	12	1.4	86	-200	2	-2	-5	-100	0.9	-10	5.3	680	34	66	5.5	1	0.8	3	0.7	7	1.1	2	-50	4	10	2.8
1307 lab dup	2001G 126	32	-100	12	1.5	88	340	1	-2	-5	-100	0.9	-10	4.9	680	34	68	5.5	2	0.8	4	0.7	7	1.1	1	-50	4	10	2.8
1309	2001G 067	32	-100	13	0.7	96	-200	1	-2	-5	-100	0.9	-10	5.8	640	42	81	7.6	2	0.9	4	0.8	8	1.1	2	-50	3	12	3.4

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Ni (ppm) Becquerel INAA	Zn (ppm) Becquerel INAA	As (ppm) Becquerel INAA	Br (ppm) Becquerel INAA	Rb (ppm) Becquerel INAA	Zr (ppm) Becquerel INAA	Mo (ppm) Becquerel INAA	Ag (ppm) Becquerel INAA	Cd (ppm) Becquerel INAA	Sn (ppm) Becquerel INAA	Sb (ppm) Becquerel INAA	Te (ppm) Becquerel INAA	Cs (ppm) Becquerel INAA	Ba (ppm) Becquerel INAA	La (ppm) Becquerel INAA	Ce (ppm) Becquerel INAA	Sm (ppm) Becquerel INAA	Eu (ppm) Becquerel INAA	Tb (ppm) Becquerel INAA	Yb (ppm) Becquerel INAA	Lu (ppm) Becquerel INAA	Hf (ppm) Becquerel INAA	Ta (ppm) Becquerel INAA	W (ppm) Becquerel INAA	Ir (ppb) Becquerel INAA	Au (ppb) Becquerel INAA	Th (ppm) Becquerel INAA	U (ppm) Becquerel INAA
1310	2001G 122	36	100	12	1.5	87	-200	2	-2	-5	-100	0.8	-10	4.7	680	35	77	5.5	1	0.6	3	0.6	8	1.1	-1	-50	-2	10	2.7
1312	2001G 068	32	-100	13	0.9	87	280	2	-2	-5	-100	0.9	-10	5.6	660	43	90	7.4	2	1.1	3	0.8	8	1	2	-50	3	13	3.5
1313	2001G 123	35	-100	12	1.8	88	-200	2	-2	-5	-100	0.8	-10	4.5	690	34	67	5.4	2	0.8	4	0.6	7	0.9	-1	-50	-2	10	2.7
1315	2001G 069	29	170	15	0.7	97	-200	2	-2	-5	-100	1	-10	6.1	660	41	81	7	3	0.9	4	0.8	7	1.3	-1	-50	4	12	3.4
1316	2001G 124	47	140	13	0.9	80	-200	3	-2	-5	-100	1.1	-10	4.9	730	30	67	4.6	1	0.7	3	0.7	5	1	-1	-50	4	7.4	2
1318	2001G 070	41	140	14	1.6	83	350	1	-2	-5	-100	0.9	-10	5	670	48	85	8.9	2	0.9	5	1	8	1.3	1	-50	5	12	3.3
1319	2001G 125	39	-100	10	2.1	81	-200	1	-2	-5	-100	0.8	-10	4.3	620	29	64	4.9	1	0.7	2	0.7	7	1	1	-50	3	8.6	2.5
1321	2001G 073	44	-100	14	1.3	110	-200	1	-2	-5	-100	0.8	-10	5.9	690	39	77	6.4	1	0.8	4	0.8	8	0.9	2	-50	4	11	3
1322	2001G 127	30	-100	12	1.2	89	290	2	-2	-5	-100	0.8	-10	5.1	610	35	71	5.7	2	0.8	3	0.8	7	1.3	1	-50	5	10	2.9
1324	2001G 074	55	-100	15	1.4	90	-200	4	-2	-5	-100	1.1	-10	5.4	840	46	96	7.8	2	0.8	5	0.9	9	1.2	2	-50	5	12	3.4
1325	2001G 128	29	120	13	1.4	80	-200	4	-2	-5	-100	1	-10	5.2	730	36	69	5.7	2	0.7	3	0.7	7	1.3	2	-50	3	10	3
1327	2001G 075	47	120	15	1.2	90	-200	3	-2	-5	-100	1	-10	5.7	850	53	110	9	3	1.2	6	1.1	9	1.1	2	-50	5	13	3.7
1328	2001G 129	28	-100	12	1.3	78	230	3	-2	-5	-100	0.9	-10	4.6	700	35	70	5.7	2	0.7	3	0.7	7	1.4	1	-50	3	9.3	2.9
1330	2001G 076	48	-100	15	1.4	99	-200	3	-2	-5	-100	1.1	-10	5.9	710	48	110	8.5	-1	1.1	5	1.1	9	1.3	2	-50	4	12	3.6
1331	2001G 130	34	-100	13	1.8	86	330	2	-2	-5	-100	0.9	-10	5.4	720	35	68	6	2	0.8	3	0.7	7	1	-1	-50	4	10	2.8
1333	2001G 077	52	110	16	1.1	87	410	5	-2	-5	-100	0.9	-10	5.1	600	50	110	7.2	3	0.8	4	1	9	0.8	1	-50	5	12	3.9
1334	2001G 131	35	-100	12	1.5	79	260	2	-2	-5	-100	0.9	-10	4.7	790	35	68	5.6	2	0.7	4	0.6	8	1.2	-1	-50	5	10	2.9
1335	2001G 156	37	-100	12	1.4	75	230	3	-2	-5	-100	0.8	-10	4.1	720	34	72	5.4	3	0.8	3	0.7	9	1	1	-50	-2	9	2.9
1337	2001G 078	41	100	15	1.3	110	440	3	-2	-5	-100	0.9	-10	5.8	710	57	130	9.4	4	1	6	1.1	10	1.4	1	-50	-2	14	3.6
1338	2001G 132	29	-100	12	1.6	79	260	1	-2	-5	-100	0.9	-10	4.9	680	37	69	5.7	2	0.8	4	0.7	7	0.9	1	-50	5	10	2.8
1340	2001G 079	49	130	15	1.1	100	290	1	-2	-5	-100	1	-10	5.9	780	56	140	10	3	1.4	6	1.1	9	1.4	2	-50	-2	13	3.6
1341	2001G 133	49	-100	13	2.3	87	210	2	-2	-5	-100	1	-10	5.1	690	39	74	6.1	1	0.9	3	0.8	8	0.8	2	-50	4	10	3
1343	2001G 080	23	-100	14	0.7	96	280	2	-2	-5	-100	0.9	-10	5.7	670	36	72	4.4	2	0.6	3	0.6	9	1.4	2	-50	4	11	3.3
1344	2001G 134	48	-100	12	1.6	79	240	2	3	-5	-100	0.8	-10	4.6	640	35	67	5.6	1	0.6	4	0.7	8	1.2	-1	-50	3	10	2.8
1346	2001G 081	32	-100	14	1.6	100	290	1	-2	-5	-100	1	-10	5.9	630	43	84	7.4	2	0.8	3	0.8	8	1.2	-1	-50	-2	12	3.7
1346 lab dup	2001G 089	30	120	13	1.3	100	-200	2	-2	-5	-100	0.9	-10	5.4	620	42	89	7.3	3	0.8	3	0.9	8	1.1	-1	-50	-2	12	3.5
1347	2001G 135	32	110	13	1.6	88	-200	2	-2	-5	-100	0.9	-10	5.4	680	37	72	5.8	1	0.7	4	0.6	7	1.2	2	-50	5	10	2.8
1349	2001G 083	30	100	7.8	1.6	89	400	-1	-2	-5	-100	0.5	-10	4	700	40	80	5.8	2	0.8	3	0.8	9	1.3	1	-50	3	10	3.2
1380	2001G 084	35	-100	12	0.6	95	230	-1	-2	-5	-100	0.8	-10	5.4	630	33	59	3.6	2	-0.5	2	0.4	8	1.2	2	-50	-2	10	2.7
1381	2001G 136	54	110	13	1.5	84	270	2	-2	-5	-100	0.9	-10	5	740	41	77	6.5	2	0.8	4	0.8	8	1.1	1	-50	3	11	3
1383	2001G 085	30	120	13	1.1	100	-200	2	-2	-5	-100	0.9	-10	4.9	580	38	75	6.1	1	0.8	3	0.7	8	1.1	-1	-50	6	11	3.1
1384	2001G 137	34	100	11	2.1	82	-200	1	-2	-5	-100	0.8	-10	4.8	640	34	70	5.7	2	0.8	3	0.7	7	1.1	1	-50	-2	10	2.8

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Ni (ppm) Becquerel INAA	Zn (ppm) Becquerel INAA	As (ppm) Becquerel INAA	Br (ppm) Becquerel INAA	Rb (ppm) Becquerel INAA	Zr (ppm) Becquerel INAA	Mo (ppm) Becquerel INAA	Ag (ppm) Becquerel INAA	Cd (ppm) Becquerel INAA	Sn (ppm) Becquerel INAA	Sb (ppm) Becquerel INAA	Te (ppm) Becquerel INAA	Cs (ppm) Becquerel INAA	Ba (ppm) Becquerel INAA	La (ppm) Becquerel INAA	Ce (ppm) Becquerel INAA	Sm (ppm) Becquerel INAA	Eu (ppm) Becquerel INAA	Tb (ppm) Becquerel INAA	Yb (ppm) Becquerel INAA	Lu (ppm) Becquerel INAA	Hf (ppm) Becquerel INAA	Ta (ppm) Becquerel INAA	W (ppm) Becquerel INAA	Ir (ppb) Becquerel INAA	Au (ppb) Becquerel INAA	Th (ppm) Becquerel INAA	U (ppm) Becquerel INAA
1386	2001G 086	20	-100	8.4	3.6	83	300	-1	-2	-5	-100	0.5	-10	3.1	650	35	69	5.1	1	0.6	4	0.7	12	1.1	-1	-50	3	9.1	2.9
1387	2001G 138	31	-100	13	2.4	70	380	3	-2	-5	-100	0.9	-10	3.4	830	30	59	4.9	2	0.8	3	0.7	7	0.8	-1	-50	3	8.3	2.7
1389	2001G 087	39	120	13	1.3	92	-200	2	-2	-5	-100	0.8	-10	5.4	640	51	110	7.7	2	1	4	0.8	8	1.3	-1	-50	-2	12	3
1390	2001G 139	29	-100	11	2.1	78	310	2	-2	-5	-100	0.9	-10	4.4	650	34	67	5.4	2	0.7	3	0.6	7	1.2	-1	-50	-2	9.2	2.7
1393	2001G 088	38	-100	14	2.3	89	-200	2	-2	-5	-100	0.7	-10	4.5	720	41	79	6.7	1	0.8	4	0.8	11	1.3	-1	-50	-2	11	3.1
1394	2001G 090	40	-100	10	1.9	77	-200	1	-2	-5	-100	0.6	-10	4.3	740	38	71	6.4	2	1	5	0.7	10	1.3	-1	-50	-2	10	3
1396	2001G 091	22	110	12	0.9	86	290	3	-2	-5	-100	0.7	-10	4.2	650	32	62	3.9	-1	-0.5	3	0.6	9	1	2	-50	4	8.9	2.7
1397	2001G 141	49	-100	21	2.6	92	270	5	-2	-5	-100	1.2	-10	4.7	860	50	90	8.4	2	1.1	4	0.9	9	1.3	1	-50	5	13	3.5
1397 lab dup	2001G 157	62	-100	20	2.4	82	-200	5	-2	-5	-100	1.1	-10	4.8	850	48	93	8	2	1.2	4	1	10	1	2	-50	5	13	3.4
1399	2001G 092	37	120	13	0.9	100	290	-1	-2	-5	-100	0.9	-10	6.5	650	38	76	5.5	2	0.7	3	0.6	7	1.1	1	-50	-2	12	3.5
1400	2001G 142	51	130	13	1.4	99	290	2	-2	-5	-100	0.9	-10	5.2	710	38	76	6.1	-1	0.8	4	0.7	8	1.1	-1	-50	4	10	3
1502	2001G 093	38	120	15	1.1	100	420	3	-2	-5	-100	1	-10	6	690	45	83	7.8	2	0.9	4	0.7	8	1	1	-50	-2	12	3.2
1503	2001G 143	40	110	14	1.2	94	320	2	-2	-5	-100	1.1	-10	5.6	740	40	84	6.4	2	0.9	3	0.8	8	1.6	1	-50	4	11	3.2
1505	2001G 094	40	100	11	1	100	-200	2	-2	-5	-100	0.9	-10	5.2	680	35	74	5.6	1	0.7	3	0.6	7	1.1	2	-50	-2	10	3.2
1506	2001G 144	40	140	15	1.1	99	-200	2	3	-5	-100	1	-10	5.9	750	45	87	7.4	3	0.8	5	0.8	8	1.2	-1	-50	-2	12	3.5
1508	2001G 095	25	-100	12	1.6	79	340	2	-2	-5	-100	0.7	-10	4	700	37	74	6	2	0.7	4	0.7	9	1.2	-1	-50	10	10	2.8
1509	2001G 145	43	-100	12	1.9	84	390	2	-2	-5	-100	0.9	-10	5.2	750	38	78	6.1	2	0.9	3	0.7	8	1.1	2	-50	-2	11	3.1
1511	2001G 096	22	120	12	1.5	72	330	-1	-2	-5	-100	0.7	-10	4	670	37	71	5.9	3	0.9	3	0.6	10	1.1	2	-50	-2	10	3.1
1512	2001G 146	29	110	13	1.1	76	-200	2	-2	-5	-100	0.9	-10	4.3	680	40	80	6.3	2	0.9	4	0.7	11	1.1	-1	-50	-2	10	3.2
1513	2001G 147	26	-100	13	1.4	94	430	-1	-2	-5	-100	1	-10	4.3	650	39	89	6.2	2	0.9	4	0.8	10	1.3	2	-50	-2	10	3.2
1515	2001G 097	23	-100	11	1.2	90	-200	3	5	-5	-100	0.9	-10	5.2	660	39	73	5.3	2	0.6	2	0.6	9	1.1	-1	-50	-2	12	3.4
1516	2001G 148	59	200	18	1.2	110	-200	5	-2	-5	-100	1.4	-10	7	990	42	91	6.3	2	0.8	4	0.8	8	1.1	1	-50	-2	11	3.3
1518	2001G 098	40	110	14	0.9	89	-200	3	-2	-5	-100	1	-10	6.1	640	44	93	7.7	3	1.1	4	0.9	9	1.2	-1	-50	-2	12	3.8
1520	2001G 099	34	-100	14	1.3	95	-200	5	-2	-5	-100	0.9	-10	5.5	640	43	84	6.1	3	0.8	3	0.7	9	1.4	-1	-50	4	11	3.5
1521	2001G 150	39	100	18	2	83	360	-1	-2	-5	-100	1	-10	5	790	40	77	6.1	1	0.8	4	0.8	9	1.2	-1	-50	4	11	3.2
1523	2001G 100	33	-100	11	0.7	89	-200	3	-2	-5	-100	0.7	-10	4.4	570	36	75	4.9	2	0.6	2	0.6	8	1.4	-1	-50	-2	11	2.9
1524	2001G 151	41	100	13	0.8	95	-200	3	-2	-5	-100	1	-10	5.8	700	45	90	7.9	2	1.1	4	1	8	1.2	-1	-50	5	12	3.2
1526	2001G 101	33	-100	12	0.7	95	220	2	3	-5	-100	0.8	-10	5.1	630	30	60	4.1	1	0.6	2	0.5	8	1.4	-1	-50	3	10	2.9
1526 lab dup	2001G 116	32	100	12	0.6	100	250	3	3	-5	-100	0.8	-10	5	650	35	69	4.4	1	0.7	2	0.6	8	1.5	-1	-50	-2	11	3
1527	2001G 152	49	-100	14	1.6	100	420	2	-2	-5	-100	1	-10	5.6	780	47	80	7.4	2	0.9	5	0.9	8	1.2	2	-50	3	11	3.2
1602	2001G 102	38	-100	15	1.3	97	230	-1	-2	-5	-100	0.8	-10	5.1	650	42	86	7.3	2	1	4	0.8	9	1.2	-1	-50	4	12	2.9
1603	2001G 153	33	-100	12	2.8	76	260	2	-2	-5	-100	0.9	-10	5.1	670	34	69	5.5	2	0.7	3	0.6	7	1.2	-1	-50	4	10	2.9

Appendix 3 - B-Horizon Soil, C-Horizon Soil and Road Dust Analytical Results

Field Number	AGS Lab Number	Ni (ppm) Becquerel INAA	Zn (ppm) Becquerel INAA	As (ppm) Becquerel INAA	Br (ppm) Becquerel INAA	Rb (ppm) Becquerel INAA	Zr (ppm) Becquerel INAA	Mo (ppm) Becquerel INAA	Ag (ppm) Becquerel INAA	Cd (ppm) Becquerel INAA	Sn (ppm) Becquerel INAA	Sb (ppm) Becquerel INAA	Te (ppm) Becquerel INAA	Cs (ppm) Becquerel INAA	Ba (ppm) Becquerel INAA	La (ppm) Becquerel INAA	Ce (ppm) Becquerel INAA	Sm (ppm) Becquerel INAA	Eu (ppm) Becquerel INAA	Tb (ppm) Becquerel INAA	Yb (ppm) Becquerel INAA	Lu (ppm) Becquerel INAA	Hf (ppm) Becquerel INAA	Ta (ppm) Becquerel INAA	W (ppm) Becquerel INAA	Ir (ppb) Becquerel INAA	Au (ppb) Becquerel INAA	Th (ppm) Becquerel INAA	U (ppm) Becquerel INAA
1605	2001G 103	30	110	13	1.2	94	290	2	-2	-5	-100	0.9	-10	5.7	610	38	79	5.9	1	0.8	3	0.7	8	1.4	3	-50	5	12	3.2
1606	2001G 154	37	110	11	1.8	83	-200	2	-2	-5	-100	0.9	-10	5	670	34	69	5.5	1	0.7	3	0.6	7	1.3	-1	-50	4	10	2.8
1608	2001G 104	41	100	16	1.4	84	-200	2	2	-5	-100	1.4	-10	6.2	820	32	61	6.2	2	0.9	4	0.7	5	1	-1	-50	-2	8.6	2.5
1609	2001G 155	46	-100	16	1.3	86	310	2	-2	-5	-100	1.2	-10	5.8	810	31	63	5.3	2	0.8	3	0.6	5	1.1	-1	-50	4	8.5	2.5
NAT98-282	2001G 071	34	-100	13	1.4	96	-200	2	-2	-5	-100	0.9	-10	5.2	720	35	78	5.7	2	0.7	4	0.7	9	1	-1	-50	-2	9	2.8
NAT98-282	2001G 082	35	100	13	1.1	79	300	2	-2	-5	-100	0.8	-10	4.4	700	34	69	5.4	2	0.8	3	0.7	8	1.2	1	-50	3	9.3	2.8
NAT98-282	2001G 118	38	-100	13	1.5	83	390	2	2	-5	-100	0.9	-10	4.2	700	34	66	5.5	3	0.7	3	0.7	8	1	-1	-50	-2	9.2	2.8
NAT98-282	2001G 140	36	-100	13	1.5	86	350	3	-2	-5	-100	0.9	-10	4.9	730	34	75	5.7	1	0.7	3	0.7	9	1.4	2	-50	3	9.5	2.9
NAT98-282	2001G 149	39	120	12	1.5	84	470	2	-2	-5	-100	0.8	-10	4.6	660	38	89	5.4	2	0.8	3	0.8	11	1.1	-1	-50	-2	10	2.7

Appendix 4 – ICP-MS/AES Crossover Values for the Acme ICP-AES/MS Method (Acme Analytical Group 1F)

Elements with concentrations greater than these values are generally reported by ICP-AES, those with concentrations less than these values are generally reported by ICP-MS.

Element	Approximate crossover value
Mo	33 ppm
Cu	200 ppm
Pb	100 ppm
Zn	50 ppm
Ag	10000 ppb
Ni	20 ppm
Co	20 ppm
Mn	100 ppm
Fe	0.1%
As	50 ppm
Th	10 ppm
Sr	10 ppm
Cd	50 ppm
Sb	50 ppm
Bi	100 ppm
V	10 ppm
Ca	0.1%
P	0.1%
La	20 ppm
Cr	20 ppm
Mg	0.1%
Ba	5 ppm
Ti	0.1%
B	50 ppm
Al	0.1%
Na	0.1%
K	0.1%
W	200 ppm

Appendix 5 – Summary Statistics for Routine (Non-Duplicate) Organic, B-Horizon and C-Horizon Soil Samples

Acme = Acme Analytical Laboratories Ltd. of Vancouver, British Columbia.

Chem = ALS Chemex Analytical Laboratories Ltd. of North Vancouver, British Columbia.

Becq = Becquerel Laboratories of Mississauga, Ontario.

V_Q (coefficient of quartile deviation) = $(Q_3-Q_1)/(Q_3+Q_1)$

Q_3 = third quartile

Q_1 = first quartile

RSD (relative standard deviation) = standard deviation/mean

na = not available

nc = not calculated

Appendix 5 - Summary Statistics for Routine (Non-Duplicate) Organic, B-Horizon and C-Horizon Soil Samples

Units Laboratory Lower Detection Limit		Li ppm Acme 0.1	Be ppm Acme 0.1	B ppm Acme 1	Na % Acme 0.001	Mg % Acme 0.01	Al % Acme 0.01	P % Acme 0.001	S % Acme 0.02	K % Acme 0.01	Ca % Acme 0.01	Sc ppm Acme 0.1	Ti % Acme 0.001	V ppm Acme 2	Cr ppm Acme 0.5	Mn ppm Acme 1	Fe % Acme 0.01	Co ppm Acme 0.1	Ni ppm Acme 0.1	Cu ppm Acme 0.01	Zn ppm Acme 0.1	Ga ppm Acme 0.1	Ge ppm Acme 0.1
C-Horizon	Count	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
C-Horizon	Number <LDL	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	11
C-Horizon	Maximum	27.0	1.0	9	0.010	1.34	1.71	0.086	0.09	0.21	8.22	4.7	0.015	65	28.3	921	5.00	13.9	47.7	42.72	104.1	5.3	0.1
C-Horizon	99th Percentile	26.6	1.0	9	0.010	1.16	1.62	0.084	0.07	0.21	6.81	4.6	0.015	58	27.9	840	4.34	13.9	47.0	39.46	101.0	5.2	0.1
C-Horizon	95th Percentile	22.0	0.9	9	0.009	0.83	1.39	0.082	0.04	0.18	4.22	4.4	0.014	43	26.6	481	3.03	13.5	44.7	32.67	93.3	5.0	0.1
C-Horizon	90th Percentile	19.8	0.9	9	0.008	0.80	1.33	0.079	0.03	0.17	3.54	4.2	0.012	42	25.6	424	2.86	12.5	43.5	32.10	87.7	4.7	0.1
C-Horizon	75th Percentile	19.2	0.8	8	0.007	0.77	1.25	0.078	0.03	0.16	2.77	3.5	0.011	39	23.1	396	2.64	11.5	36.8	27.66	79.7	4.4	0.1
C-Horizon	Median	17.2	0.8	7	0.007	0.74	1.19	0.075	0.02	0.14	2.17	3.3	0.008	36	21.6	366	2.45	10.6	31.0	26.15	76.1	4.1	0.1
C-Horizon	25th Percentile	16.7	0.7	6	0.007	0.69	1.09	0.073	0.01	0.13	1.69	3.0	0.007	34	20.8	336	2.35	9.7	27.0	24.73	70.4	3.8	0.1
C-Horizon	Minimum	14.9	0.5	4	0.006	0.40	0.98	0.067	0.01	0.12	0.40	2.8	0.006	30	18.3	233	2.18	8.0	23.7	21.45	63.3	3.4	0.1
C-Horizon	Interquartile Range	2.6	0.2	2	0.000	0.08	0.17	0.006	0.02	0.03	1.08	0.5	0.004	6	2.3	60	0.29	1.9	9.9	2.93	9.3	0.6	0.1
C-Horizon	VQ	7%	10%	14%	0%	5%	7%	4%	60%	10%	24%	8%	22%	8%	5%	8%	6%	9%	15%	6%	6%	7%	34%
C-Horizon	Mean	18.1	0.8	7	0.007	0.72	1.19	0.075	0.02	0.15	2.35	3.4	0.009	37	22.1	380	2.57	10.7	32.4	26.99	76.1	4.1	0.1
C-Horizon	Standard Deviation	2.6	0.1	1	0.001	0.14	0.14	0.004	0.02	0.02	1.33	0.5	0.002	6	2.3	116	0.46	1.4	6.6	3.87	9.0	0.4	0.0
C-Horizon	RSD	14%	16%	19%	12%	20%	12%	6%	86%	15%	56%	15%	27%	16%	10%	31%	18%	13%	20%	14%	12%	11%	27%
B-Horizon	Count	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
B-Horizon	Number <LDL	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	6
B-Horizon	Maximum	24.3	1.4	11	0.009	0.77	1.73	0.088	0.04	0.21	1.30	5.3	0.015	55	32.4	383	3.58	11.1	51.6	37.70	89.9	6.0	0.1
B-Horizon	99th Percentile	24.1	1.3	10	0.008	0.69	1.72	0.086	0.04	0.21	1.27	5.2	0.015	55	31.8	373	3.57	11.0	49.8	36.36	89.7	5.9	0.1
B-Horizon	95th Percentile	23.6	1.2	8	0.007	0.53	1.69	0.076	0.04	0.20	0.79	5.0	0.014	54	30.6	354	3.25	10.7	46.3	33.92	86.0	5.8	0.1
B-Horizon	90th Percentile	23.2	1.1	7	0.007	0.47	1.66	0.071	0.03	0.19	0.54	4.8	0.014	51	30.4	334	3.11	10.4	41.2	30.90	83.7	5.7	0.1
B-Horizon	75th Percentile	22.1	1.1	7	0.006	0.45	1.61	0.061	0.02	0.18	0.45	4.5	0.013	48	29.0	308	3.01	10.1	34.9	30.05	81.0	5.5	0.1
B-Horizon	Median	20.4	0.9	6	0.005	0.43	1.53	0.051	0.02	0.15	0.39	4.1	0.011	45	27.9	261	2.90	9.0	30.8	28.71	76.7	5.2	0.1
B-Horizon	25th Percentile	19.5	0.8	6	0.005	0.41	1.46	0.045	0.01	0.14	0.33	3.6	0.010	42	26.1	224	2.73	8.2	27.5	24.24	71.2	4.9	0.1
B-Horizon	Minimum	17.6	0.5	3	0.003	0.31	1.12	0.029	0.01	0.12	0.27	2.0	0.006	32	19.7	177	2.20	6.1	15.6	8.56	58.6	3.8	0.1
B-Horizon	Interquartile Range	2.6	0.3	1	0.001	0.04	0.15	0.016	0.01	0.04	0.12	0.9	0.003	6	2.9	84	0.28	1.9	7.4	5.81	9.8	0.6	0.0
B-Horizon	VQ	6%	16%	8%	9%	5%	5%	15%	33%	13%	15%	11%	13%	7%	5%	16%	5%	10%	12%	11%	6%	6%	0%
B-Horizon	Mean	20.8	0.9	6	0.005	0.44	1.52	0.054	0.02	0.16	0.44	4.0	0.011	45	27.4	265	2.88	9.0	31.6	26.51	75.8	5.1	0.1
B-Horizon	Standard Deviation	1.8	0.2	1	0.001	0.07	0.13	0.014	0.01	0.02	0.21	0.8	0.002	5	2.5	52	0.28	1.2	7.0	5.89	7.4	0.5	0.0
B-Horizon	RSD	8%	22%	24%	20%	16%	9%	25%	60%	13%	48%	19%	17%	11%	9%	20%	10%	13%	22%	22%	10%	9%	20%
Organic Soil	Count	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42
Organic Soil	Number <LDL	0	5	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	40
Organic Soil	Maximum	20.2	1.1	31	0.008	0.31	1.89	0.283	0.30	0.24	3.63	3.4	0.009	44	27.1	4090	2.61	43.8	84.1	32.69	247.5	5.6	0.1
Organic Soil	99th Percentile	15.8	1.1	30	0.008	0.31	1.77	0.276	0.28	0.24	3.63	3.0	0.008	39	26.1	3732	2.43	34.7	70.6	30.64	245.6	5.3	0.1
Organic Soil	95th Percentile	8.6	0.6	27	0.007	0.30	1.17	0.218	0.24	0.21	3.53	2.2	0.006	24	16.6	2837	1.38	20.5	29.8	22.39	223.6	3.7	nc
Organic Soil	90th Percentile	6.9	0.5	22	0.003	0.26	0.67	0.207	0.22	0.20	3.16	1.1	0.004	18	12.2	2033	1.21	17.9	21.7	16.38	220.7	2.6	nc
Organic Soil	75th Percentile	2.8	0.3	16	0.003	0.17	0.53	0.187	0.19	0.18	2.35	0.7	0.003	13	7.8	1607	0.65	13.4	14.6	11.51	139.1	1.7	nc
Organic Soil	Median	1.6	0.1	11	0.002	0.14	0.21	0.164	0.17	0.13	1.80	0.3	0.002	7	4.5	1113	0.33	9.2	12.1	10.41	88.5	0.9	nc
Organic Soil	25th Percentile	0.9	0.1	7	0.002	0.12	0.14	0.139	0.13	0.10	1.26	0.2	0.001	5	3.6	528	0.20	4.4	9.1	8.40	56.1	0.5	nc
Organic Soil	Minimum	0.5	0.1	3	0.001	0.08	0.08	0.089	0.04	0.04	0.30	0.1	0.001	2	2.6	59	0.12	1.7	4.5	3.97	18.1	0.2	nc
Organic Soil	Interquartile Range	1.9	0.2	9	0.001	0.05	0.38	0.048	0.06	0.08	1.09	0.5	0.002	8	4.2	1079	0.45	9.0	5.4	3.10	83.0	1.2	nc
Organic Soil	VQ	51%	50%	37%	20%	17%	57%	15%	19%	27%	30%	56%	50%	44%	36%	51%	53%	51%	23%	16%	43%	53%	nc
Organic Soil	Mean	2.7	0.2	12	0.002	0.16	0.38	0.163	0.16	0.14	1.86	0.6	0.002	10	6.7	1188	0.55	10.1	15.1	11.38	105.6	1.3	nc
Organic Soil	Standard Deviation	3.5	0.2	7	0.002	0.06	0.39	0.041	0.06	0.05	0.89	0.7	0.002	8	5.3	885	0.53	7.6	13.5	5.45	66.1	1.2	nc
Organic Soil	RSD	131%	108%	55%	64%	36%	103%	25%	35%	34%	48%	114%	76%	82%	80%	74%	96%	75%	89%	48%	63%	92%	nc

Appendix 5 - Summary Statistics for Routine (Non-Duplicate) Organic, B-Horizon and C-Horizon Soil Samples

Units Laboratory Lower Detection Limit		As ppm Acme 0.1	Se ppm Acme 0.1	Rb ppm Acme 0.1	Sr ppm Acme 0.5	Y ppm Acme 0.01	Zr ppm Acme 0.1	Nb ppm Acme 0.02	Mo ppm Acme 0.01	Ag ppb Acme 2	Cd ppm Acme 0.01	In ppm Acme 0.02	Sn ppm Acme 0.1	Sb ppm Acme 0.02	Te ppm Acme 0.02	Cs ppm Acme 0.02	Ba ppm Acme 0.5	La ppm Acme 0.5	Ce ppm Acme 0.1	Pr ppm Acme 0.02	Nd ppm Acme 0.02	Sm ppm Acme 0.02	Eu ppm Acme 0.02
C-Horizon	Count	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
C-Horizon	Number <LDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C-Horizon	Maximum	18.8	0.7	20.2	115.5	25.65	11.2	0.31	3.44	176	0.22	0.05	0.9	0.67	0.08	1.80	486.3	32.4	51.3	8.09	30.88	7.14	1.36
C-Horizon	99th Percentile	17.2	0.7	19.1	99.7	25.56	10.9	0.29	3.25	170	0.22	0.05	0.9	0.66	0.08	1.78	486.1	31.9	50.3	7.94	30.26	7.02	1.36
C-Horizon	95th Percentile	12.5	0.5	16.9	68.0	24.15	10.1	0.20	2.04	153	0.21	0.04	0.9	0.60	0.07	1.68	407.8	29.8	46.5	7.13	27.67	6.37	1.23
C-Horizon	90th Percentile	12.0	0.4	16.0	60.7	19.72	9.7	0.19	1.85	150	0.20	0.04	0.8	0.52	0.07	1.65	332.9	24.8	42.0	6.26	23.77	5.43	1.09
C-Horizon	75th Percentile	11.2	0.4	15.1	52.2	15.74	8.8	0.17	1.60	137	0.19	0.04	0.8	0.46	0.06	1.41	291.6	21.0	37.2	5.30	19.87	4.62	0.90
C-Horizon	Median	10.5	0.3	14.0	46.0	14.07	8.2	0.12	1.46	124	0.16	0.03	0.7	0.42	0.04	1.34	263.8	19.2	35.0	4.87	18.04	4.19	0.83
C-Horizon	25th Percentile	10.1	0.2	12.9	42.1	13.22	7.8	0.09	1.29	115	0.14	0.03	0.7	0.39	0.03	1.23	248.2	18.4	33.6	4.62	17.23	3.97	0.77
C-Horizon	Minimum	8.9	0.1	11.1	29.6	11.49	4.7	0.03	0.98	84	0.07	0.02	0.6	0.35	0.02	0.95	159.0	15.4	27.0	3.89	14.40	3.23	0.58
C-Horizon	Interquartile Range	1.2	0.2	2.2	10.1	2.52	1.0	0.08	0.31	22	0.06	0.01	0.1	0.07	0.03	0.18	43.4	2.6	3.6	0.69	2.64	0.65	0.13
C-Horizon	VQ	5%	27%	8%	11%	9%	6%	31%	11%	9%	17%	14%	7%	8%	33%	7%	8%	6%	5%	7%	7%	8%	8%
C-Horizon	Mean	10.9	0.3	14.1	48.7	15.23	8.3	0.13	1.51	126	0.16	0.03	0.7	0.44	0.04	1.34	277.7	20.4	36.2	5.12	19.23	4.47	0.87
C-Horizon	Standard Deviation	1.7	0.1	1.8	14.2	3.50	1.1	0.06	0.46	18	0.04	0.01	0.1	0.07	0.02	0.20	65.8	3.8	4.8	0.91	3.55	0.83	0.16
C-Horizon	RSD	15%	45%	13%	29%	23%	13%	42%	30%	15%	23%	19%	13%	17%	34%	15%	24%	19%	13%	18%	18%	19%	19%
B-Horizon	Count	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
B-Horizon	Number <LDL	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
B-Horizon	Maximum	14.8	0.8	21.2	48.7	30.51	9.5	0.48	3.27	182	0.18	0.05	1.1	0.57	0.08	1.63	552.6	32.5	82.0	9.53	36.87	8.89	1.85
B-Horizon	99th Percentile	14.3	0.7	21.0	46.2	30.15	9.5	0.47	2.89	178	0.17	0.05	1.1	0.55	0.08	1.61	489.7	32.2	72.8	9.37	36.03	8.65	1.79
B-Horizon	95th Percentile	13.1	0.6	20.2	36.8	29.30	9.5	0.34	1.96	160	0.14	0.05	1.0	0.51	0.07	1.58	328.4	31.7	58.1	8.79	34.75	7.92	1.67
B-Horizon	90th Percentile	12.6	0.6	19.3	34.4	24.98	9.1	0.28	1.69	151	0.11	0.05	1.0	0.50	0.07	1.51	308.2	31.1	54.9	8.32	31.49	7.39	1.63
B-Horizon	75th Percentile	11.9	0.5	18.1	31.3	20.77	8.8	0.23	1.55	113	0.09	0.04	0.9	0.44	0.06	1.40	261.2	28.1	48.4	7.49	28.24	6.53	1.33
B-Horizon	Median	11.2	0.4	16.8	27.4	16.89	7.8	0.20	1.38	85	0.08	0.04	0.9	0.40	0.05	1.25	222.3	24.7	44.7	6.64	25.36	5.76	1.15
B-Horizon	25th Percentile	10.5	0.2	15.9	25.4	12.02	6.3	0.17	1.26	66	0.06	0.03	0.8	0.34	0.04	1.16	195.5	21.7	37.3	5.29	19.39	4.13	0.84
B-Horizon	Minimum	6.4	0.1	12.2	19.1	5.11	3.2	0.14	0.86	38	0.04	0.02	0.5	0.18	0.01	0.52	169.3	15.3	26.2	3.25	11.25	1.99	0.36
B-Horizon	Interquartile Range	1.4	0.3	2.2	5.9	8.75	2.5	0.06	0.29	47	0.03	0.01	0.1	0.10	0.02	0.24	65.7	6.4	11.1	2.20	8.85	2.40	0.49
B-Horizon	VQ	6%	43%	6%	10%	27%	17%	15%	10%	26%	20%	14%	6%	13%	20%	9%	14%	13%	13%	17%	19%	23%	23%
B-Horizon	Mean	11.0	0.4	17.1	28.7	17.03	7.3	0.22	1.43	93	0.08	0.04	0.9	0.39	0.05	1.26	238.1	24.7	43.9	6.47	24.30	5.42	1.12
B-Horizon	Standard Deviation	1.6	0.2	1.8	5.3	6.52	1.7	0.07	0.41	36	0.03	0.01	0.1	0.08	0.02	0.21	69.9	4.4	9.9	1.57	6.51	1.69	0.38
B-Horizon	RSD	14%	44%	11%	19%	38%	23%	34%	29%	38%	37%	20%	14%	21%	35%	17%	29%	18%	23%	24%	27%	31%	34%
Organic Soil	Count	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42
Organic Soil	Number <LDL	0	0	0	0	0	0	0	0	0	0	35	0	0	9	0	0	0	0	0	0	0	1
Organic Soil	Maximum	5.5	1.7	35.7	125.3	14.25	4.6	0.84	2.35	2216	3.25	0.04	10.0	0.22	0.05	1.25	660.9	28.5	50.2	5.99	23.59	5.03	1.00
Organic Soil	99th Percentile	5.3	1.6	33.7	113.6	14.18	3.8	0.76	2.28	1909	3.17	0.04	6.9	0.21	0.05	1.18	585.0	25.3	47.2	5.34	21.37	4.56	0.95
Organic Soil	95th Percentile	2.6	1.3	22.3	78.0	7.38	2.6	0.60	2.11	858	2.61	0.03	1.0	0.19	0.04	0.89	456.1	18.7	29.4	3.40	12.46	2.57	0.55
Organic Soil	90th Percentile	2.4	1.1	19.8	67.4	6.44	2.3	0.42	1.86	828	2.06	0.02	0.9	0.18	0.03	0.60	428.1	13.8	24.7	2.40	9.82	2.16	0.46
Organic Soil	75th Percentile	1.8	0.9	10.4	56.7	3.01	0.8	0.26	1.37	680	1.70	nc	0.5	0.16	0.03	0.51	394.6	8.4	16.1	1.50	5.46	1.10	0.22
Organic Soil	Median	1.2	0.6	7.0	44.2	1.26	0.5	0.17	1.13	395	1.35	nc	0.3	0.12	0.02	0.41	354.4	3.4	6.7	0.61	2.23	0.43	0.07
Organic Soil	25th Percentile	1.0	0.4	5.0	39.4	0.91	0.4	0.13	0.82	250	1.00	nc	0.2	0.09	0.02	0.31	271.4	2.2	4.0	0.40	1.50	0.29	0.05
Organic Soil	Minimum	0.6	0.1	1.7	18.3	0.56	0.1	0.05	0.26	21	0.38	nc	0.1	0.06	0.01	0.13	126.6	1.0	1.9	0.19	0.71	0.13	0.01
Organic Soil	Interquartile Range	0.8	0.5	5.4	17.4	2.10	0.4	0.13	0.55	430	0.71	nc	0.3	0.07	0.01	0.20	123.2	6.1	12.1	1.10	3.96	0.82	0.17
Organic Soil	VQ	28%	36%	35%	18%	54%	32%	34%	25%	46%	26%	nc	43%	28%	20%	24%	18%	58%	60%	58%	57%	59%	63%
Organic Soil	Mean	1.6	0.7	9.4	48.6	2.69	0.8	0.23	1.16	487	1.43	nc	0.6	0.12	0.02	0.43	339.1	6.1	11.4	1.15	4.33	0.88	0.17
Organic Soil	Standard Deviation	1.0	0.3	7.1	19.6	3.20	0.9	0.17	0.47	394	0.62	nc	1.5	0.04	0.01	0.23	99.0	6.1	11.1	1.25	4.86	1.03	0.22
Organic Soil	RSD	62%	51%	76%	40%	119%	111%	74%	41%	81%	43%	nc	243%	35%	43%	53%	29%	101%	98%	108%	112%	117%	130%

Appendix 5 - Summary Statistics for Routine (Non-Duplicate) Organic, B-Horizon and C-Horizon Soil Samples

Units Laboratory Lower Detection Limit		Gd ppm Acme 0.02	Tb ppm Acme 0.01	Dy ppm Acme 0.02	Ho ppm Acme 0.02	Er ppm Acme 0.02	Tm ppm Acme 0.01	Yb ppm Acme 0.01	Lu ppm Acme 0.02	Hf ppm Acme 0.02	Ta ppm Acme 0.05	W ppm Acme 0.2	Re ppb Acme 1	Au ppb Acme 0.2	Hg ppb Acme 5	Tl ppm Acme 0.02	Pb ppm Acme 0.01	Bi ppm Acme 0.02	Th ppm Acme 0.1	U ppm Acme 0.1	LOI % Acme	Hg ppb Chem 10	Li ppm Chem 0.2
C-Horizon	Count	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39		39	39
C-Horizon	Number <LDL	0	0	0	0	0	0	0	0	0	39	39	5	0	0	0	0	0	0	0		0	0
C-Horizon	Maximum	6.74	0.81	4.59	0.83	2.19	0.32	2.23	0.28	0.20	nc	nc	5	5.0	125	0.36	19.99	0.31	9.6	1.4		120	63.0
C-Horizon	99th Percentile	6.68	0.81	4.59	0.81	2.19	0.31	2.12	0.26	0.19	nc	nc	4	4.6	117	0.31	19.48	0.31	9.4	1.4		112	57.5
C-Horizon	95th Percentile	5.57	0.75	4.34	0.71	2.14	0.30	1.87	0.23	0.18	nc	nc	2	3.5	99	0.22	18.46	0.28	8.8	1.2		82	47.7
C-Horizon	90th Percentile	5.15	0.68	3.71	0.63	1.72	0.24	1.61	0.19	0.17	nc	nc	2	3.0	81	0.21	16.04	0.27	8.1	1.1		80	44.9
C-Horizon	75th Percentile	4.44	0.57	3.24	0.55	1.48	0.21	1.40	0.17	0.16	nc	nc	2	2.6	74	0.20	15.42	0.25	7.7	1.0		70	43.9
C-Horizon	Median	4.08	0.51	2.91	0.47	1.36	0.19	1.22	0.15	0.15	nc	nc	1	2.2	67	0.19	14.57	0.24	7.1	1.0		70	42.0
C-Horizon	25th Percentile	3.82	0.48	2.67	0.46	1.20	0.17	1.13	0.14	0.14	nc	nc	1	1.8	60	0.17	13.81	0.23	6.7	0.9		60	39.1
C-Horizon	Minimum	3.10	0.41	2.34	0.39	1.06	0.15	0.90	0.12	0.09	nc	nc	0	1.1	32	0.15	10.62	0.16	5.1	0.6		50	31.4
C-Horizon	Interquartile Range	0.62	0.09	0.58	0.09	0.28	0.04	0.28	0.04	0.02	nc	nc	1	0.8	14	0.03	1.61	0.03	1.0	0.1		10	4.8
C-Horizon	VQ	8%	9%	10%	9%	10%	11%	11%	11%	7%	nc	nc	33%	18%	10%	8%	5%	5%	7%	5%		8%	6%
C-Horizon	Mean	4.23	0.54	3.03	0.52	1.41	0.20	1.30	0.16	0.15	nc	nc	1	2.3	69	0.19	14.66	0.24	7.2	1.0		67	41.8
C-Horizon	Standard Deviation	0.77	0.10	0.55	0.10	0.28	0.04	0.27	0.03	0.02	nc	nc	1	0.7	16	0.03	1.78	0.03	0.9	0.1		13	5.0
C-Horizon	RSD	18%	18%	18%	19%	20%	21%	21%	21%	14%	nc	nc	58%	32%	23%	18%	12%	12%	13%	15%		19%	12%
B-Horizon	Count	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41		41	41
B-Horizon	Number <LDL	0	0	0	0	0	0	0	0	0	41	41	15	0	0	0	0	0	0	0		0	0
B-Horizon	Maximum	8.81	1.17	6.73	1.05	2.95	0.38	2.49	0.31	0.19	nc	nc	3	4.9	101	0.23	17.50	0.33	11.9	2.3		100	49.2
B-Horizon	99th Percentile	8.66	1.12	6.45	1.00	2.82	0.37	2.47	0.31	0.19	nc	nc	3	4.6	101	0.23	17.23	0.33	11.7	2.1		100	48.7
B-Horizon	95th Percentile	7.67	0.97	5.74	0.91	2.60	0.34	2.33	0.31	0.17	nc	nc	2	3.8	98	0.22	16.69	0.32	11.1	1.6		90	47.4
B-Horizon	90th Percentile	7.53	0.95	5.54	0.88	2.46	0.33	2.29	0.30	0.17	nc	nc	2	3.7	92	0.22	16.56	0.29	10.3	1.6		90	45.6
B-Horizon	75th Percentile	6.38	0.83	4.65	0.72	1.95	0.26	1.85	0.23	0.16	nc	nc	1	3.1	86	0.21	15.59	0.27	9.6	1.5		90	44.6
B-Horizon	Median	5.46	0.69	3.79	0.63	1.58	0.22	1.55	0.18	0.14	nc	nc	1	2.4	74	0.19	14.98	0.26	8.9	1.2		80	42.8
B-Horizon	25th Percentile	3.91	0.51	2.80	0.45	1.08	0.17	1.05	0.13	0.12	nc	nc	0	2.0	51	0.17	13.61	0.24	8.0	1.1		50	40.8
B-Horizon	Minimum	1.67	0.26	1.23	0.19	0.50	0.07	0.44	0.05	0.08	nc	nc	0	0.5	17	0.11	9.32	0.15	4.4	0.6		10	36.6
B-Horizon	Interquartile Range	2.47	0.32	1.85	0.27	0.87	0.09	0.80	0.10	0.04	nc	nc	1	1.1	35	0.04	1.98	0.03	1.6	0.4		40	3.8
B-Horizon	VQ	24%	24%	25%	23%	29%	21%	28%	28%	14%	nc	nc	34%	22%	26%	11%	7%	6%	9%	15%		29%	4%
B-Horizon	Mean	5.20	0.67	3.80	0.60	1.61	0.22	1.48	0.18	0.14	nc	nc	1	2.6	68	0.19	14.53	0.26	8.6	1.3		68	42.5
B-Horizon	Standard Deviation	1.83	0.22	1.34	0.21	0.61	0.08	0.56	0.07	0.03	nc	nc	1	0.9	23	0.02	1.73	0.03	1.7	0.3		24	3.1
B-Horizon	RSD	35%	33%	35%	35%	38%	36%	38%	41%	22%	nc	nc	58%	36%	34%	13%	12%	13%	20%	26%		35%	7%
Organic Soil	Count	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	0	0
Organic Soil	Number <LDL	0	0	0	1	0	1	0	26	21	42	39	24	4	0	1	0	0	4	7	0.0	na	na
Organic Soil	Maximum	4.23	0.61	3.24	0.48	1.28	0.16	1.13	0.13	0.16	nc	0.3	7	7.7	232	0.15	17.37	0.24	4.9	12.9	88.6	na	na
Organic Soil	99th Percentile	4.12	0.56	3.01	0.47	1.23	0.16	1.07	0.12	0.13	nc	0.3	7	6.8	227	0.15	16.14	0.22	4.1	11.8	88.4	na	na
Organic Soil	95th Percentile	2.31	0.31	1.66	0.26	0.70	0.09	0.61	0.07	0.07	nc	0.2	3	5.1	203	0.10	14.08	0.17	2.4	7.9	87.8	na	na
Organic Soil	90th Percentile	1.97	0.27	1.46	0.25	0.58	0.08	0.50	0.06	0.06	nc	nc	2	4.2	197	0.08	13.39	0.13	1.2	1.5	86.0	na	na
Organic Soil	75th Percentile	0.93	0.14	0.71	0.11	0.27	0.03	0.24	0.03	0.03	nc	nc	1	2.4	170	0.06	11.79	0.10	0.4	0.6	84.3	na	na
Organic Soil	Median	0.36	0.05	0.24	0.04	0.09	0.01	0.11	nc	nc	nc	nc	nc	1.0	149	0.04	9.10	0.07	0.2	0.1	70.8	na	na
Organic Soil	25th Percentile	0.24	0.03	0.17	0.02	0.06	0.01	0.09	nc	nc	nc	nc	nc	0.5	121	0.03	6.93	0.04	0.1	0.1	61.3	na	na
Organic Soil	Minimum	0.13	0.02	0.09	0.01	0.04	0.01	0.05	nc	nc	nc	nc	nc	0.1	43	0.01	2.74	0.03	0.1	0.1	21.2	na	na
Organic Soil	Interquartile Range	0.69	0.10	0.54	0.08	0.21	0.02	0.15	nc	nc	nc	nc	nc	1.8	49	0.03	4.86	0.06	0.3	0.5	23.0	na	na
Organic Soil	VQ	59%	61%	61%	65%	62%	50%	45%	nc	nc	nc	nc	nc	63%	17%	33%	26%	40%	60%	70%	16%	na	na
Organic Soil	Mean	0.77	0.11	0.57	0.09	0.23	0.03	0.22	nc	nc	nc	nc	nc	1.6	143	0.05	9.18	0.08	0.5	1.1	67.9	na	na
Organic Soil	Standard Deviation	0.93	0.13	0.69	0.11	0.29	0.04	0.24	nc	nc	nc	nc	nc	1.7	44	0.03	3.34	0.05	0.9	2.7	19.0	na	na
Organic Soil	RSD	121%	119%	121%	124%	125%	118%	110%	nc	nc	nc	nc	nc	105%	31%	62%	36%	59%	184%	257%	28%	na	na

Appendix 5 - Summary Statistics for Routine (Non-Duplicate) Organic, B-Horizon and C-Horizon Soil Samples

Units Laboratory Lower Detection Limit		Be ppm Chem 0.05	Na % Chem 0.01	Mg % Chem 0.01	Al % Chem 0.01	P ppm Chem 10	S % Chem 0.01	K % Chem 0.01	Ca % Chem 0.01	Ti % Chem 0.01	V ppm Chem 1	Cr ppm Chem 1	Mn ppm Chem 5	Fe % Chem 0.01	Co ppm Chem 0.1	Ni ppm Chem 0.2	Cu ppm Chem 0.2	Zn ppm Chem 2	Ga ppm Chem 0.05	Ge ppm Chem 0.05	As ppm Chem 0.2	Se ppm Chem 1
C-Horizon	Count	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
C-Horizon	Number <LDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
C-Horizon	Maximum	2.20	0.61	1.40	7.48	860	0.10	2.00	8.90	0.42	205	75	700	5.82	15.5	53.7	41.4	116	18.45	0.35	20.0	nc
C-Horizon	99th Percentile	2.11	0.59	1.33	7.29	852	0.09	2.00	7.34	0.41	198	75	660	5.21	15.3	53.4	41.0	115	18.03	0.33	19.3	nc
C-Horizon	95th Percentile	1.95	0.54	1.17	6.97	840	0.06	1.90	4.26	0.40	168	71	429	3.99	14.5	51.4	40.2	109	17.22	0.30	16.0	nc
C-Horizon	90th Percentile	1.85	0.52	1.13	6.86	830	0.05	1.85	3.70	0.37	147	69	402	3.86	14.2	47.7	38.7	104	16.21	0.30	14.2	nc
C-Horizon	75th Percentile	1.78	0.50	1.05	6.58	790	0.04	1.75	2.90	0.34	140	67	380	3.69	13.1	43.8	35.0	97	15.40	0.25	13.4	nc
C-Horizon	Median	1.70	0.48	1.00	6.19	770	0.03	1.68	2.10	0.32	132	63	355	3.36	12.1	37.4	32.4	88	14.70	0.25	12.6	nc
C-Horizon	25th Percentile	1.60	0.46	0.94	5.84	740	0.03	1.58	1.88	0.31	126	57	330	3.20	11.1	34.0	29.9	83	13.60	0.20	11.9	nc
C-Horizon	Minimum	1.30	0.39	0.60	5.17	670	0.01	1.35	0.48	0.25	103	50	245	2.93	8.9	30.0	25.6	74	11.40	0.15	10.0	nc
C-Horizon	Interquartile Range	0.18	0.04	0.11	0.74	50	0.01	0.17	1.03	0.03	14	10	50	0.50	2.1	9.8	5.1	14	1.80	0.05	1.5	nc
C-Horizon	VQ	5%	4%	5%	6%	3%	14%	5%	21%	5%	5%	8%	7%	7%	8%	13%	8%	8%	6%	11%	6%	nc
C-Horizon	Mean	1.69	0.48	0.99	6.23	766	0.03	1.67	2.47	0.33	135	62	359	3.49	12.1	39.3	32.7	90	14.64	0.25	12.9	nc
C-Horizon	Standard Deviation	0.18	0.04	0.14	0.52	46	0.02	0.14	1.41	0.04	19	6	83	0.50	1.5	6.4	3.8	11	1.44	0.04	1.8	nc
C-Horizon	RSD	11%	8%	14%	8%	6%	49%	9%	57%	11%	14%	10%	23%	14%	12%	16%	12%	12%	10%	16%	14%	nc
B-Horizon	Count	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
B-Horizon	Number <LDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
B-Horizon	Maximum	2.20	0.66	0.93	7.29	860	0.04	1.74	1.50	0.35	183	89	350	4.26	12.3	55.1	44.6	102	17.65	0.35	16.6	1
B-Horizon	99th Percentile	2.20	0.66	0.92	7.25	832	0.04	1.74	1.44	0.35	183	89	350	4.18	12.1	54.0	43.8	101	17.63	0.33	16.4	1
B-Horizon	95th Percentile	2.10	0.62	0.81	7.05	750	0.02	1.72	0.86	0.35	159	88	345	3.99	11.5	47.0	42.4	98	17.60	0.30	16.0	1
B-Horizon	90th Percentile	2.05	0.59	0.76	6.91	720	0.02	1.69	0.67	0.34	159	84	335	3.88	11.0	45.6	41.6	94	17.20	0.30	15.2	nc
B-Horizon	75th Percentile	1.95	0.47	0.73	6.73	620	0.02	1.65	0.60	0.33	148	79	300	3.68	10.5	39.0	39.0	90	16.40	0.25	14.6	nc
B-Horizon	Median	1.80	0.45	0.71	6.37	520	0.01	1.59	0.48	0.32	142	75	260	3.53	9.9	35.4	34.4	86	16.00	0.25	13.4	nc
B-Horizon	25th Percentile	1.70	0.43	0.67	6.16	480	0.01	1.52	0.43	0.31	133	72	230	3.36	9.2	33.4	28.6	82	15.40	0.20	12.4	nc
B-Horizon	Minimum	1.25	0.41	0.51	5.01	350	0.01	1.30	0.39	0.30	93	54	195	2.81	7.7	20.8	14.8	72	10.85	0.15	7.4	nc
B-Horizon	Interquartile Range	0.25	0.04	0.06	0.57	140	0.01	0.13	0.17	0.02	15	7	70	0.32	1.3	5.6	10.4	8	1.00	0.05	2.2	nc
B-Horizon	VQ	7%	4%	4%	4%	13%	33%	4%	17%	3%	5%	5%	13%	5%	7%	8%	15%	5%	3%	11%	8%	nc
B-Horizon	Mean	1.81	0.47	0.70	6.40	552	0.01	1.59	0.55	0.32	140	74	267	3.53	9.9	36.6	33.2	86	15.67	0.24	13.3	nc
B-Horizon	Standard Deviation	0.21	0.07	0.08	0.47	119	0.01	0.09	0.23	0.02	17	8	46	0.30	1.0	6.8	7.2	7	1.48	0.04	1.9	nc
B-Horizon	RSD	12%	14%	11%	7%	21%	49%	6%	41%	5%	12%	11%	17%	8%	10%	19%	22%	8%	9%	16%	15%	nc
Organic Soil	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Organic Soil	Number <LDL	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Maximum	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	99th Percentile	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	95th Percentile	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	90th Percentile	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	75th Percentile	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Median	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	25th Percentile	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Minimum	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Interquartile Range	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	VQ	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Mean	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Standard Deviation	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	RSD	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

Appendix 5 - Summary Statistics for Routine (Non-Duplicate) Organic, B-Horizon and C-Horizon Soil Samples

Units Laboratory Lower Detection Limit		Rb ppm Chem 0.1	Sr ppm Chem 0.2	Y ppm Chem 0.1	Zr ppm Chem 0.5	Nb ppm Chem 0.1	Mo ppm Chem 0.05	Ag ppm Chem 0.02	Cd ppm Chem 0.02	In ppm Chem 0.005	Sn ppm Chem 0.2	Sb ppm Chem 0.05	Te ppm Chem 0.05	Cs ppm Chem 0.05	Ba ppm Chem 0.5	La ppm Chem 0.5	Ce ppm Chem 0.01	Ta ppm Chem 0.05	W ppm Chem 0.1	Re ppm Chem 0.002	Tl ppm Chem 0.02	Pb ppm Chem 0.5
C-Horizon	Count	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
C-Horizon	Number <LDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0
C-Horizon	Maximum	92.0	209.0	28.3	77.5	14.5	3.85	1.36	0.26	0.065	2.0	1.35	0.10	8.05	854.8	46.0	74.00	3.75	1.8	0.002	0.78	32.0
C-Horizon	99th Percentile	91.0	187.0	28.0	76.7	14.1	3.83	1.35	0.26	0.065	1.8	1.33	0.10	7.56	854.3	43.7	73.32	3.29	1.6	nc	0.77	31.6
C-Horizon	95th Percentile	85.0	147.4	26.6	74.2	13.3	2.63	1.23	0.26	0.061	1.4	1.26	0.10	6.57	853.2	39.1	69.68	2.24	1.4	nc	0.72	30.1
C-Horizon	90th Percentile	84.1	138.8	24.3	73.0	12.4	2.41	1.12	0.24	0.056	1.4	0.99	0.10	6.23	848.7	37.6	68.82	2.01	1.4	nc	0.66	28.8
C-Horizon	75th Percentile	77.2	129.3	19.9	67.0	12.1	2.20	0.92	0.22	0.053	1.2	0.90	0.10	5.88	800.4	35.3	64.75	1.35	1.3	nc	0.64	27.5
C-Horizon	Median	73.4	124.5	18.5	65.0	11.4	1.95	0.80	0.18	0.050	1.2	0.85	0.05	5.60	658.6	33.0	61.50	1.15	1.2	nc	0.62	26.0
C-Horizon	25th Percentile	67.4	114.8	17.7	61.5	10.7	1.73	0.72	0.17	0.045	1.2	0.78	0.05	5.15	597.4	31.5	58.75	0.95	1.1	nc	0.58	25.3
C-Horizon	Minimum	52.2	95.3	14.2	51.0	8.1	1.45	0.46	0.08	0.040	1.0	0.70	0.05	4.15	567.2	18.0	37.50	0.40	1.0	nc	0.50	21.5
C-Horizon	Interquartile Range	9.8	14.5	2.3	5.5	1.4	0.48	0.20	0.05	0.008	0.0	0.13	0.05	0.73	203.0	3.8	6.00	0.40	0.2	nc	0.06	2.3
C-Horizon	VQ	7%	6%	6%	4%	6%	12%	12%	13%	8%	0%	7%	33%	7%	15%	6%	5%	17%	8%	nc	5%	4%
C-Horizon	Mean	72.8	125.3	19.4	64.9	11.4	2.06	0.85	0.19	0.050	1.3	0.86	0.06	5.60	695.5	33.2	61.34	1.30	1.2	nc	0.61	26.3
C-Horizon	Standard Deviation	8.1	17.9	3.1	5.9	1.2	0.49	0.19	0.04	0.006	0.2	0.16	0.02	0.67	108.7	4.3	6.22	0.59	0.2	nc	0.06	2.3
C-Horizon	RSD	11%	14%	16%	9%	10%	24%	23%	22%	12%	14%	18%	36%	12%	16%	13%	10%	46%	13%	nc	10%	9%
B-Horizon	Count	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
B-Horizon	Number <LDL	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	38	0	0
B-Horizon	Maximum	105.0	121.5	34.4	119.5	13.5	4.45	1.58	0.22	0.065	4.6	1.80	0.15	7.20	977.1	55.5	95.40	1.50	1.7	0.002	0.74	28.5
B-Horizon	99th Percentile	103.0	121.1	34.2	119.3	13.5	3.95	1.52	0.20	0.065	3.3	1.54	0.15	7.12	967.1	55.1	94.76	1.48	1.7	0.002	0.73	28.5
B-Horizon	95th Percentile	99.5	117.5	30.7	116.0	13.4	2.60	1.34	0.14	0.060	1.4	1.05	0.15	6.95	914.3	52.0	91.80	1.30	1.4	0.002	0.72	28.0
B-Horizon	90th Percentile	98.9	115.5	26.8	112.0	13.0	2.25	1.20	0.14	0.060	1.4	0.95	0.10	6.75	864.0	49.5	88.60	1.25	1.3	nc	0.70	27.5
B-Horizon	75th Percentile	95.0	108.0	24.4	107.5	12.4	2.05	1.04	0.10	0.055	1.4	0.85	0.10	6.45	838.0	45.5	84.20	1.15	1.3	nc	0.70	27.0
B-Horizon	Median	87.0	105.0	20.8	76.0	11.8	1.90	0.94	0.10	0.055	1.4	0.80	0.05	6.10	775.6	36.5	66.50	1.05	1.2	nc	0.66	26.0
B-Horizon	25th Percentile	81.6	100.5	15.9	69.5	11.4	1.80	0.80	0.08	0.050	1.2	0.75	0.05	5.80	724.8	31.5	58.70	0.95	1.2	nc	0.64	24.0
B-Horizon	Minimum	68.4	92.8	10.6	54.0	9.0	1.20	0.66	0.06	0.030	0.8	0.40	0.02	3.45	543.5	21.5	41.20	0.70	0.8	nc	0.50	19.0
B-Horizon	Interquartile Range	13.4	7.5	8.5	38.0	1.0	0.25	0.24	0.02	0.005	0.2	0.10	0.05	0.65	113.2	14.0	25.50	0.20	0.1	nc	0.06	3.0
B-Horizon	VQ	8%	4%	21%	21%	4%	6%	13%	11%	5%	8%	6%	33%	5%	7%	18%	18%	10%	4%	nc	4%	6%
B-Horizon	Mean	87.6	105.8	20.5	85.7	11.8	1.98	0.95	0.10	0.053	1.4	0.80	0.07	5.94	762.6	38.1	69.49	1.05	1.2	nc	0.65	25.5
B-Horizon	Standard Deviation	8.7	6.9	5.9	20.7	1.0	0.52	0.20	0.03	0.007	0.5	0.22	0.03	0.84	106.4	8.6	14.76	0.16	0.2	nc	0.05	2.0
B-Horizon	RSD	10%	7%	29%	24%	8%	26%	21%	31%	13%	40%	27%	47%	14%	14%	23%	21%	15%	13%	nc	8%	8%
Organic Soil	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Organic Soil	Number <LDL	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Maximum	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	99th Percentile	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	95th Percentile	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	90th Percentile	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	75th Percentile	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Median	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	25th Percentile	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Minimum	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Interquartile Range	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	VQ	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Mean	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Standard Deviation	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	RSD	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

Appendix 5 - Summary Statistics for Routine (Non-Duplicate) Organic, B-Horizon and C-Horizon Soil Samples

Units Laboratory Lower Detection Limit		Sm ppm Becq 0.1	Eu ppm Becq 1	Tb ppm Becq 0.5	Yb ppm Becq 2	Lu ppm Becq 0.2	Hf ppm Becq 1	Ta ppm Becq 0.5	W ppm Becq 2	Ir ppb Becq 50	Au ppb Becq 2	Th ppm Becq 0.2	U ppm Becq 0.2
C-Horizon	Count	39	39	39	39	39	39	39	39	39	39	39	39
C-Horizon	Number <LDL	0	1	0	0	0	0	0	24	39	12	0	0
C-Horizon	Maximum	8.4	3	1.1	5	1.0	11	1.6	2	nc	5	13.0	3.5
C-Horizon	99th Percentile	8.2	3	1.1	5	1.0	10	1.5	2	nc	5	12.6	3.5
C-Horizon	95th Percentile	7.5	2	0.9	4	0.9	8	1.3	2	nc	5	12.0	3.3
C-Horizon	90th Percentile	6.8	2	0.9	4	0.8	8	1.3	2	nc	5	11.0	3.2
C-Horizon	75th Percentile	6.1	2	0.8	4	0.8	8	1.2	nc	nc	4	10.0	3.0
C-Horizon	Median	5.7	2	0.8	3	0.7	8	1.2	nc	nc	3	10.0	2.9
C-Horizon	25th Percentile	5.6	1	0.7	3	0.6	7	1.1	nc	nc	1	10.0	2.8
C-Horizon	Minimum	4.6	0	0.6	2	0.5	5	0.8	nc	nc	1	7.4	2.0
C-Horizon	Interquartile Range	0.6	1	0.1	1	0.2	1	0.1	nc	nc	3	0.0	0.2
C-Horizon	VQ	5%	33%	7%	14%	14%	7%	4%	nc	nc	60%	0%	3%
C-Horizon	Mean	6.0	2	0.8	3	0.7	7	1.2	nc	nc	3	10.1	2.9
C-Horizon	Standard Deviation	0.8	1	0.1	1	0.1	1	0.1	nc	nc	2	1.0	0.3
C-Horizon	RSD	13%	32%	14%	19%	15%	13%	13%	nc	nc	50%	10%	9%
B-Horizon	Count	41	41	41	41	41	41	41	41	41	41	41	41
B-Horizon	Number <LDL	0	2	2	0	0	0	0	15	41	14	0	0
B-Horizon	Maximum	10.0	4	1.4	6	1.1	12	1.4	3	nc	10	14.0	3.9
B-Horizon	99th Percentile	9.8	4	1.3	6	1.1	12	1.4	3	nc	9	13.6	3.9
B-Horizon	95th Percentile	9.0	3	1.2	5	1.1	10	1.4	2	nc	6	13.0	3.7
B-Horizon	90th Percentile	8.6	3	1.1	5	1.0	9	1.4	2	nc	6	13.0	3.7
B-Horizon	75th Percentile	7.8	2	1.0	4	0.8	9	1.3	2	nc	5	12.0	3.5
B-Horizon	Median	7.2	2	0.9	4	0.8	8	1.2	nc	nc	4	12.0	3.2
B-Horizon	25th Percentile	5.9	2	0.8	3	0.7	8	1.1	nc	nc	1	11.0	3.1
B-Horizon	Minimum	3.6	0	0.3	2	0.4	5	0.8	nc	nc	1	8.6	2.5
B-Horizon	Interquartile Range	1.9	0	0.2	1	0.1	1	0.2	nc	nc	4	1.0	0.4
B-Horizon	VQ	14%	0%	11%	14%	7%	6%	8%	nc	nc	67%	4%	6%
B-Horizon	Mean	6.9	2	0.9	4	0.8	8	1.2	nc	nc	3	11.5	3.3
B-Horizon	Standard Deviation	1.5	1	0.2	1	0.2	1	0.1	nc	nc	2	1.2	0.3
B-Horizon	RSD	22%	38%	27%	27%	20%	13%	12%	nc	nc	64%	11%	10%
Organic Soil	Count	0	0	0	0	0	0	0	0	0	0	0	0
Organic Soil	Number <LDL	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Maximum	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	99th Percentile	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	95th Percentile	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	90th Percentile	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	75th Percentile	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Median	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	25th Percentile	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Minimum	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Interquartile Range	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	VQ	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Mean	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	Standard Deviation	na	na	na	na	na	na	na	na	na	na	na	na
Organic Soil	RSD	na	na	na	na	na	na	na	na	na	na	na	na

Appendix 6 – Summary of Median Analytical Values in the B-Horizon Soil Samples Relative to the C-Horizon Soil Samples

	Aqua regia ICP-AES/MS analyses	Four-acid ICP-AES/MS and CVAA analyses	INAA
Li	(H)	S	--
Be	(H)	S	--
B	(L)	--	--
Na	L	S	S
Mg	L	L	--
Al	H	S	--
P	L	L	--
S	S	L	--
K	S	S	--
Ca	L	L	--
Sc	H	--	S
Ti	H	S	--
V	H	S	--
Cr	H	H	(H)
Mn	L	L	--
Fe	(H)	S	(H)
Co	(L)	(L)	(L)
Ni	S	S	S
Cu	S	S	--
Zn	S	S	--
Ga	H	S	--
Ge	S	S	--
As	S	S	S
Se	H	--	--
Br	--	--	L
Rb	(H)	(H)	(H)
Sr	L	(L)	--
Y	(H)	(H)	--
Zr	S	(H)	S
Nb	H	S	--
Mo	S	S	S
Ag	L	(H)	--
Cd	L	L	--
In	H	S	--
Sn	H	(H)	--
Sb	S	S	S
Te	H	S	--
Cs	S	S	S

	Aqua-regia ICP-AES/MS analyses	Four-acid ICP-AES/MS and CVAA analyses	INAA
Ba	(L)	(H)	S
La	H	(H)	(H)
Eu	H	--	S
Yb	H	--	H
Hf	S	--	S
Ta	--	S	S
W	--	S	--
Re	S	--	--
Au	S	--	H
Hg	S	(H)	--
Tl	S	S	--
Pb	S	S	--
Bi	S	(H)	--
Th	H	H	(H)
U	(H)	(H)	(H)

Abbreviations: H, higher; (H), somewhat higher; S, similar; (L), somewhat lower; L, lower; —, not analyzed.