



BC Geological Survey  
Assessment Report  
34789

**Report on the 2013 Soil Geochemistry Program**  
for the  
**Elf Property**

Claims

237990-238001, 238007-238009, 238029, 238128-238129, 238144, 238287, 238336

Omineca Mining Division  
Northeastern British Columbia

NTS Map Sheet  
094F07

397500 E, 6353400 N  
(NAD83, Zone 10)

Owner  
Cirque Operating Corporation

Operator  
Teck Resources Limited  
Suite 3300, 550 Burrard Street  
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## SUMMARY

The Elf property is located in the Muskwa Ranges at the northern end of the Rocky Mountains, northeastern BC, approximately 240 km north of the town of Mackenzie. The Elf property comprises 21 contiguous claims covering an area of 4,025 hectares. The property is owned 100% by Cirque Operating Corporation, a joint venture partnership between Teck Resources Limited (50%) and Korea Zinc Company Ltd. (50%).

The Elf deposit occurs in the Gataga–Akie district of the Kechika Trough, which is the southeast extension of the deep-water, clastic Selwyn Basin, host to many other sedimentary exhalative (SEDEX) deposits. Kechika Trough rocks in the immediate area and surrounding the Elf property consist of the Cambrian Kechika Group, the Ordovician to Devonian Road River Group, and the Devonian–Mississippian Earn Group. The informally named Gunsteel ‘formation’ of the Earn Group is host to the SEDEX mineralization at the Elf property as well as throughout this region. Basement rocks thought to underlie the Paleozoic strata within the Kechika Trough consist of the <1.8 Ga Muskwa Assemblage, possibly the 1.2(0.88?)–0.78 Ga Mackenzie Mountain Supergroup, and the 0.78–0.54 Ga Windermere Supergroup. These rocks may be the primary source of metals for the SEDEX-forming fluids, although they are not exposed in the vicinity of the Elf property.

Elf mineralization consists of massive, well-laminated barite, galena, sphalerite and pyrite hosted in siliceous shale of the Gunsteel formation. Historic drilling intersected significant mineralization in eight diamond drill holes directly under the Elf showing with the best interval being 3.65% Pb, 10.13% Zn and 27.2% Ag over 10.9 m. A geochemical soil sampling program was conducted during the 2013 field season over the area of the known mineralization, as well as the along-strike continuation of the prospective lithologies for the purpose of continuing property-scale exploration of untested areas in the future.

Results indicate that B soil horizon targeting is more advantageous than the A soil horizon due to 1) the more common occurrence of a developed B horizon, and ease of sample collection when compared to the A horizon, and 2) the finer scale delineation of targets (less geochemical ‘noise’ for selected elements). Geochemical soil sampling produced similar magnitude anomalies and background results as the historic sampling, verifying the validity of the historic data. A previously unsampled area returned numerous Pb anomalies across the valley from the Elf showing warranting follow up ground work. Due to the promising results, future programs are recommended to perform B horizon soil sampling for detection of massive sulfide bodies through cover. Follow-up geological mapping and prospecting over newly defined geochemical anomalies is also recommended

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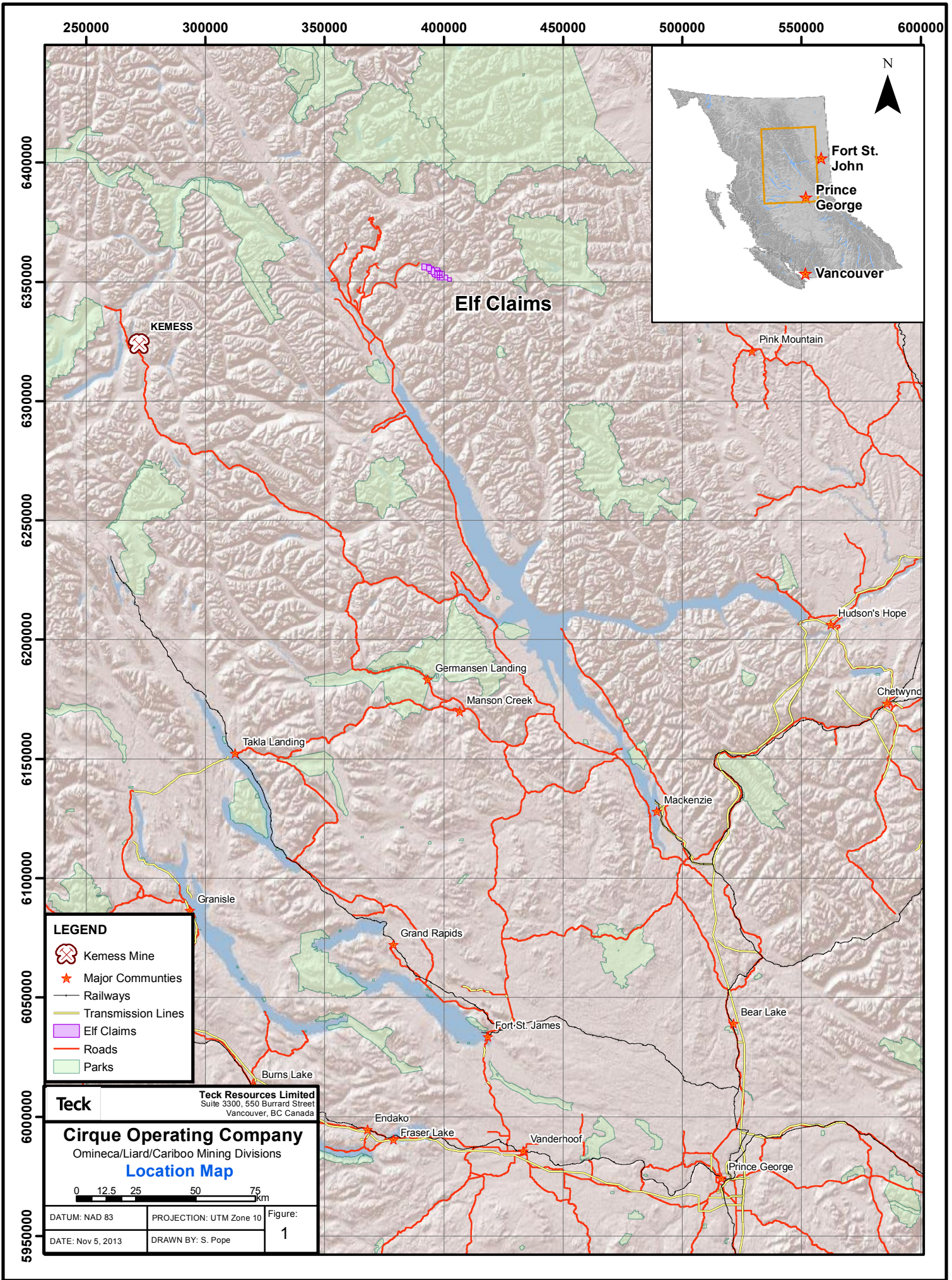
# **1 INTRODUCTION**

## **1.1 LOCATION, ACCESS, AND PHYSIOGRAPHY**

The Elf property is located in the Muskwa Ranges at the northern end of the Rocky Mountains, northeastern BC, within the traditional territories of the Tsay Keh Dene First Nation. The property is roughly centered at 397500 E, and 6353400 N using the NAD83, Zone 10 UTM coordinate system. The main supply centers include the town of Mackenzie and the city of Prince George, located approximately 240 and 390 km to the south-southeast, respectively (Figure 1). The two closest communities are Kwadacha (also known as Fort Ware, ~60 km to the west) and Tsay Keh Dene (~50 km to the south, Figure 2).

The area of Elf property (although not the property itself) is accessible by logging roads to the north of the town of Mackenzie (Figure 1). The Del Main Line and the Akie Main Line access roads branch eastward off the Finlay forest service road north of Tsay Keh Dene (Figure 2). Direct access to the property however, is only by helicopter. Nearby airstrips include the Finbow and Tsay Keh Dene airstrips (Figure 2), and scheduled air service currently consists of 3 weekly charters out of Prince George with booking managed by the local First Nations. Figure 3 is the claim map for the Elf property.

Physiographic regions include boreal forest and wetland up to 920 m in the Akie River valley along the northeast side of the northwest-trending Elf claim block (Figure 3). The majority of the property, however, is covered by forested to sub-alpine terrain between elevations of ~1100–1800 m. Alpine ridges and peaks up to elevations of 2200 m are only found off the property to the southwest. Relief in this area varies from gentle to steep, and outcrops are variably exposed in creek bottoms. Most of the property is forested with fir, and lesser aspen, pine, and local concentrations of spruce (at lower elevations), which limits exposures below the tree line; however, there are many outcrops scattered throughout the trees. The region is subject to moderate precipitation, but is generally free from snow cover from mid-June to late September. Summer temperatures ranging from 5–30°C (MacIntyre, 1998), and heavy morning fog is common in the valleys. The property is located within the Finlay River drainage basin and its mineralized showings drain to the northeast into the Akie River, mainly via the Ian, Joel, Elf, and MacIssac creeks.



340000 360000 380000 400000

6400000

6380000

6360000

6340000

6320000



**MOUNT  
ALCOCK**

KWADACHA  
WILDERNESS  
PARK

**CIRQUE**

**Fort  
Ware**

**PIE**

**FLUKE**

**AKIE**

**Finbow  
Airstrip**

*Cirque Mine Road*

*Akie Main Line*

**ELF**

*Del M/L*

*Finlay Forestry Service Road*

**LEGEND**

- ★ Communities
- Sedex Occurrences
- Roads
- Parks
- Elf Claims

**Teck** Teck Resources Limited  
Suite 3300, 550 Burrard Street  
Vancouver, BC Canada

**Cirque Operating Company**  
Omineca/Liard/Cariboo Mining Divisions  
**Local Access**

0 2.5 5 10 15 km

DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 5, 2013	DRAWN BY: S. Pope	2

ED BIRD -  
ESTELLA  
LAKES PARK

**Tsay Keh  
Dene**



392000

394000

396000

398000

400000

402000

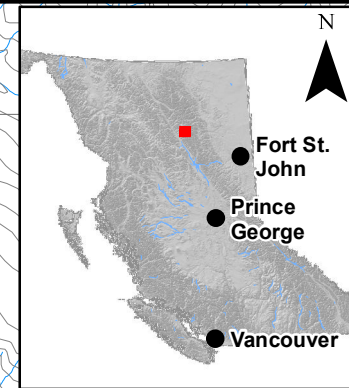
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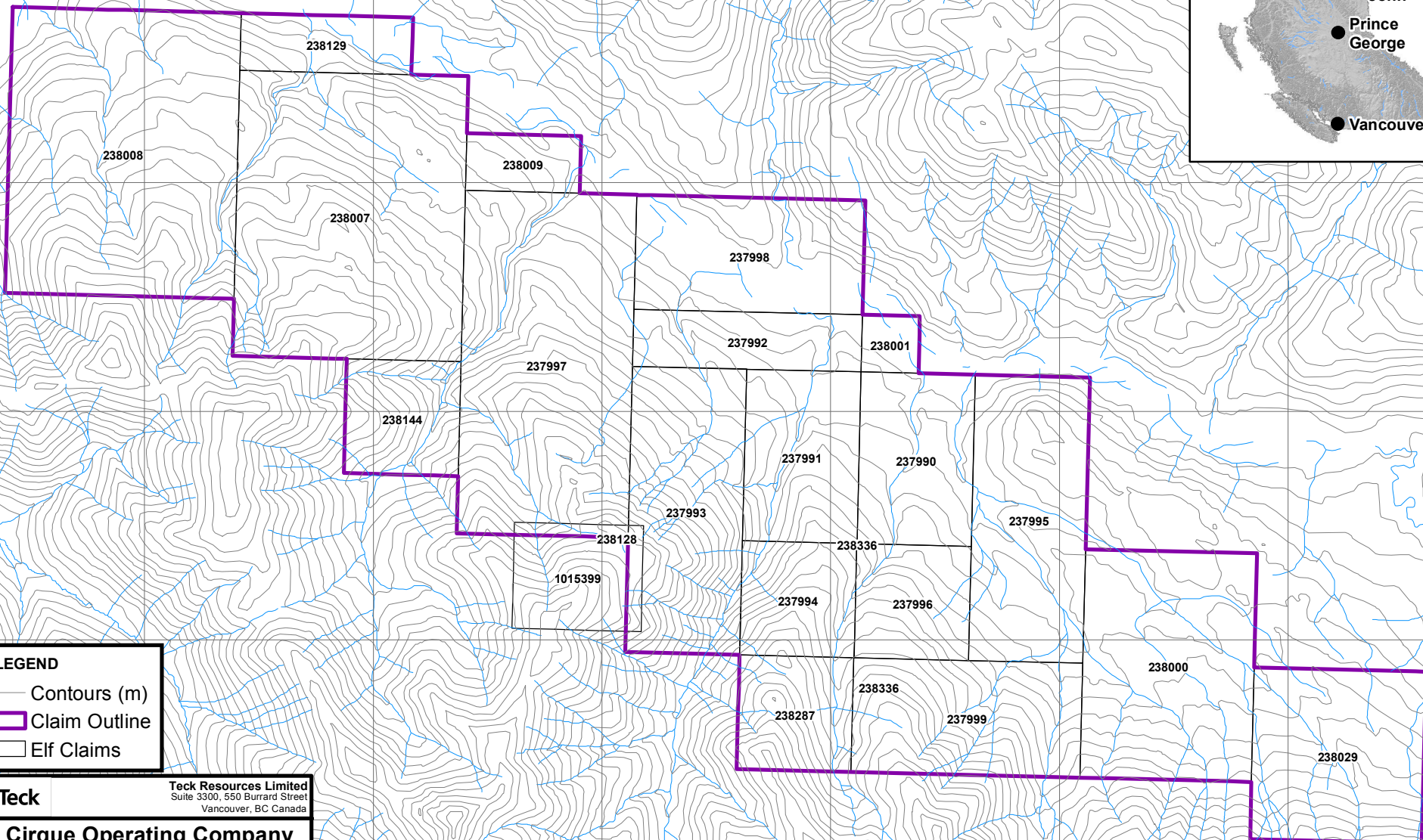
6354000

6352000

6350000



Fort St. John  
 Prince George  
 Vancouver



**LEGEND**

- Contours (m)
- Claim Outline
- Elf Claims

**Teck** Teck Resources Limited  
 Suite 3300, 550 Burrard Street  
 Vancouver, BC Canada

**Cirque Operating Company**  
 Omineca/Liard/Cariboo Mining Divisions

**Claim Map**



DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 5 2013	DRAWN BY: S. Pope	<b>3</b>

## 1.2 TENURE

The Elf property comprises 21 contiguous claims covering an area of 4,025 hectares. It is wholly owned by Cirque Operating Corporation, a joint venture between Teck Resources Limited (“Teck”) and Korea Zinc Company Ltd. (“Korea Zinc”). Key tenure information (tenure number, claim name, issue date, size, and the due date for the next assessment) for claims comprising the property is shown in Table 1 (note that claim owner 134801 refers to Cirque Operating Corporation).

**Table 1. Mineral tenure summary for the Elf property.**

Tenure No.	Claim	Owner	Issue Date	Area (ha)	2013 Claimed	Good to Date
237990	ELF NO. 1	134801	23/6/1978	150	Not yet claimed	15/5/2014
237991	ELF NO. 2	134801	23/6/1978	150	Not yet claimed	15/5/2014
237992	ELF NO. 3	134801	23/6/1978	100	Not yet claimed	15/5/2014
237993	ELF NO. 4	134801	23/6/1978	250	Not yet claimed	15/5/2014
237994	ELF NO. 5	134801	23/6/1978	100	Not yet claimed	15/5/2014
237995	ELF NO. 6	134801	23/6/1978	250	Not yet claimed	15/5/2014
237996	ELF NO. 7	134801	23/6/1978	100	Not yet claimed	15/5/2014
237997	ELF NO. 8	134801	23/6/1978	450	Not yet claimed	15/5/2014
237998	ELF NO. 9	134801	23/6/1978	200	Not yet claimed	15/5/2014
237999	ELF NO. 10	134801	23/6/1978	200	Not yet claimed	15/5/2014
238000	ELF NO. 11	134801	23/6/1978	300	Not yet claimed	15/5/2014
238001	ELF NO. 12	134801	23/6/1978	25	Not yet claimed	15/5/2014
238007	ELF # 13	134801	18/7/1978	500	Not yet claimed	15/5/2014
238008	ELF # 14	134801	18/7/1978	500	Not yet claimed	15/5/2014
238009	ELF # 15	134801	18/7/1978	50	Not yet claimed	15/5/2014
238029	ELF # 15	134801	1/8/1978	225	Not yet claimed	15/5/2014
238128	ELF # 16	134801	22/6/1979	125	Not yet claimed	15/5/2014
238129	ELF # 17	134801	22/6/1979	75	Not yet claimed	15/5/2014
238144	ELF # 18	134801	13/8/1979	100	Not yet claimed	15/5/2014
238287	ELF # 19	134801	11/7/1980	100	Not yet claimed	15/5/2014
238336	ELF # 21	134801	11/9/1980	75	Not yet claimed	15/5/2014
Total				4025		

## 1.3 HISTORY AND PREVIOUS WORK

In 1978 the Elf Showing was discovered by Cyprus Anvil Mining Corp. in joint venture with Hudson’s Bay Oil and Gas Ltd. (Table 2). In 1979 five diamond drill holes (Table 3) tested a stratiform sulfide showing in Elf creek which spurred a 3,000 m drilling budget for the 1980 season. Ten diamond drill holes were drilled around the creek showing and the Elf showing in 1980 with some success in proximity to the Elf showing. During the 1981 season 11 more diamond drill holes targeted stratigraphy near the Elf showing and also tested regional targets from geochemical surveys. Only eight holes of the 26 drilled intersected significant mineralization adjacent to the Elf showing with the best interval being 3.65% Pb, 10.13% Zn, and 27.2% Ag over 10.9 m. Ten of the 26 holes drilled were terminated due to poor drilling conditions prior to intersecting favorable stratigraphy.

The property was acquired by Curragh Resources Inc. in 1985, along with the Cirque and Fluke properties; however, Curragh Resources Inc. went into receivership in 1994. At this time, the Elf property

was acquired by Cirque Operating Corporation (25% Teck Corporation, 25% Cominco Limited, and 50% Korea Zinc Company Ltd.). In 1995 and 1997 Cirque Operating Corporation conducted geological and orthophoto mapping, line-cutting, prospecting, and geochemical sampling (stream sediment, rock, and soil) on the Elf property.

In 2001, when Teck Corporation and Cominco Limited merged, a 50% share in the property was obtained on behalf of Teck Cominco Limited (later Teck Resources Limited). Interest in the property was renewed in 2009, during which a community consultation and site visit took place, and extensive compilation and digitization of the historic data was undertaken.

**Table 2. Summary of the ownership history of the Elf property.**

Year	Company	Ownership History
1978	Cyprus Anvil/Hudson's Bay Oil and Gas	Hudson's Bay Oil and Gas Ltd. and Cyprus Anvil Mining Corp. jointly stake the Elf property.
1980	Hudson's Bay Oil and Gas	Hudson's Bay Oil and Gas purchases Cyprus Anvil.
1981	Dome Petroleum	Dome Petroleum Ltd. purchases Hudson's Bay Oil and Gas.
1985	Curragh Resources Inc.	Curragh Resources Inc. purchases rights to the claims with other assets.
1989–1991	Asturiana de Zinc	Asturiana de Zinc earns a 30% interest in the property by participating in exploration work.
1992	Curragh Resources Inc.	Curragh Resources Inc. re-acquires 100% ownership of the Elf property.
1994	Curragh Resources Inc.	Curragh Resources Inc. goes into receivership.
1994	Cirque Operating Corporation	Teck Corporation (25%), Cominco Limited (25%), Korea Zinc Company Ltd. (50%) buy Curragh Resources Inc. and together form Cirque Operating Corporation
2001	Cirque Operating Corporation	Teck Corporation and Cominco Limited merge to form Teck Cominco Limited, acquiring a 50% interest in the Elf property.

**Table 3. Summary of diamond drilling completed on the Elf property.**

Year	Target	Diamond Drilling	
		No. Holes	Meters
1979	Elf showing	5	1,047
1980	Elf showing	10	4,101
1981	Elf showing; geochemical anomalies	11	5,092
	Total	26	10,240

## **1.4 2013 WORK OBJECTIVES AND SUMMARY**

Work conducted during the 2013 field season consisted of a geochemical soil sampling program from July 4<sup>th</sup> to 27<sup>th</sup>, 2013. Fieldwork was based out of the Canada Zinc Metals Corp. (“Canada Zinc”) Akie camp for the month of July (located along the Akie Main Line access road). Soil samples were collected on the Elf claims ELF 1-5, 8, 13, and 19. These soil samples (649 samples total, including 285 B/C horizon, 295 A horizon, and 69 field duplicates and standards) were collected on the properties to assess known mineral occurrences and to develop new targets. Several soil traverses were set up to reproduce historic soil lines, crossing surface mineralization and prospective lithologies in order to develop a “type geochemical soil signature” for mineralization in the Earn Group. The historic soil data for this area is limited in terms of available elements (most samples report only Pb and Zn values) and also has high detection limits from older analytical techniques. Other soil traverses were completed over historically untested Earn rocks, in an attempt to delineate new geochemical targets.

## **2 GEOLOGY**

### **2.1 REGIONAL GEOLOGY**

The following synthesis of the regional geology is summarized primarily from MacIntyre (1998), Ferri et al. (1999), and Nelson and Colpron (2007).

The Elf property is located within the Gataga–Akie district of the Kechika Trough in northeastern British Columbia (Figure 4). The Kechika Trough is a narrow, north-northwest trending, autochthonous tectonostratigraphic extension of the Selwyn Basin (Figure 4), comprising mainly fine-grained clastic Paleozoic rocks deposited in a subsiding basin along the western margin of ancestral North America. The Kechika Trough is bound on the west by the northern Rocky Mountain Trench—a major structural boundary marking the eastern edge of parautochthonous North American rocks from a tectonically displaced off-shelf carbonate platform (i.e., the Cassiar Platform or Cassiar Terrane)—and on the east by the shallow-water carbonate shelf rocks of the Macdonald Platform (Figure 4). Dextral displacement on major faults in northeastern British Columbia suggests that the Cassiar Platform would have been located west of the Kechika Trough in Devonian-Mississippian time, restricting the western boundary of the basin (e.g., Nelson and Colpron, 2007). Regional metamorphic grades for Paleozoic strata in the Kechika Trough are restricted to sub-greenschist facies (e.g., Greenwood et al., 1991).

The basement to the Kechika Trough is thought to be composed of thick Proterozoic siliciclastic sequences (or more basin-ward equivalents) overlying tectonically thinned, late Paleoproterozoic, felsic to intermediate crystalline lower crust (e.g., Clowes et al., 2005; Evenchick et al., 2005). Proterozoic metasedimentary rocks of the <1.8 Ga Muskwa Assemblage, and possibly the 1.2(0.88?)–0.78 Ga Mackenzie Mountain Supergroup, are only exposed near the northern and eastern boundaries of the northern Cordillera (Figure 5). They are inferred, however, to underlie the 0.78–0.54 Ga Windermere Supergroup, which is widely exposed in northeastern British Columbia (Gordey and Makepeace, 1999; Clowes et al., 2005; Evenchick et al., 2005). Proterozoic rocks were deposited during major intracratonic extensional to continental rifting events and may be the primary source of metals for the SEDEX-forming fluids (Goodfellow and Lydon, 2007). Late Cambrian SEDEX-style mineralization of the Anvil district is

hosted in the Selwyn basin, as is the Early Silurian Howard's Pass SEDEX district.

Following the youngest continental rifting event in the Late Neoproterozoic, a relatively quiescent or passive tectonic setting existed along the Early Paleozoic western continental margin of North America. During this period, mainly siliciclastic sedimentary rocks deposited as westward-thickening sequences during sporadic subsidence and basin development in the Kechika Trough. This 'passive margin' sedimentation and intermittent basin subsidence ± rifting led to the deposition of two regionally extensive, long-lived sedimentary facies (e.g., Gordey and Anderson, 1993).

A platformal or "shelf" facies consisting of shallow water carbonate and clastic rocks was deposited on the Macdonald Platform in the east. A basinal facies consisting of deeper-water shale, chert, limestone, and turbiditic sediments deposited on the rapidly subsiding rifted margin in the Kechika Trough, west of the Macdonald Platform (Figure 4 and Figure 6; Gordey and Anderson, 1993). The extensive off-shelf Cassiar Platform marks the western limit to the Kechika Trough (Figure 4 and "Cassiar Terrane" in Figure 6), although laterally discontinuous mid-Devonian carbonate reefs were also formed locally in central portions of the Kechika Trough (Ferri et al., 1999). Intermittent basinal extension and subsidence was also associated with the intrusion and eruption of basaltic magmas (and, less commonly, intermediate to felsic equivalents) at basin–platform boundaries throughout the northern Cordillera, in the Cambrian and the mid- to Upper Ordovician (e.g., Goodfellow et al., 1995).

Extensive arc-related magmatism occurred along the length of the North America Cordillera in the Middle to Late Devonian. In the Late Devonian to Early Mississippian, a major shift in depositional patterns occurred when a northern Cordilleran-wide influx of turbiditic and cherty clastic sediments interrupted Lower Paleozoic 'passive margin' sedimentation. A widespread marine transgression at this time has typically been attributed to uplift and rifting at the western margin of North America, producing a back-arc region to an east-subducting oceanic slab (Figure 6; Nelson and Colpron, 2007). This back-arc rifting led to the separation of several pericratonic terranes separated from the western margin of Laurentia by the opening of the Slide Mountain ocean basin west of the Cassiar Platform (or the "Cassiar Terrane" in Figure 6; Nelson and Colpron, 2007). Block faulting, mafic back-arc magmatism, and exhalative barite and base metal mineralization occurred throughout the Kechika Trough during the Devonian–Mississippian (Figure 6; Nelson and Colpron, 2007).

Periodic extensional tectonism and restricted sedimentation within the Selwyn Basin and the Kechika Trough led to the formation of stratiform Zn–Pb–Ag–Ba, or SEDEX, deposits in the Cambrian, Middle Ordovician, Lower Silurian, and Upper Devonian (Ferri et al., 1999). The Upper Devonian deposits include mineralization at Cirque, Driftpile Creek, and Cardiac Creek (Akie) in the Kechika Trough, as well as the Tom and Jason deposits farther north in the Macmillan Pass area of the Selwyn Basin (Figure 4; Ferri et al., 1999). SEDEX-style mineralization was restricted to sediment-starved, anoxic, third-order sub-basins (grabens or half-grabens) actively subsiding along their bounding faults (e.g., MacIntyre, 1998; Ferri et al., 1999).

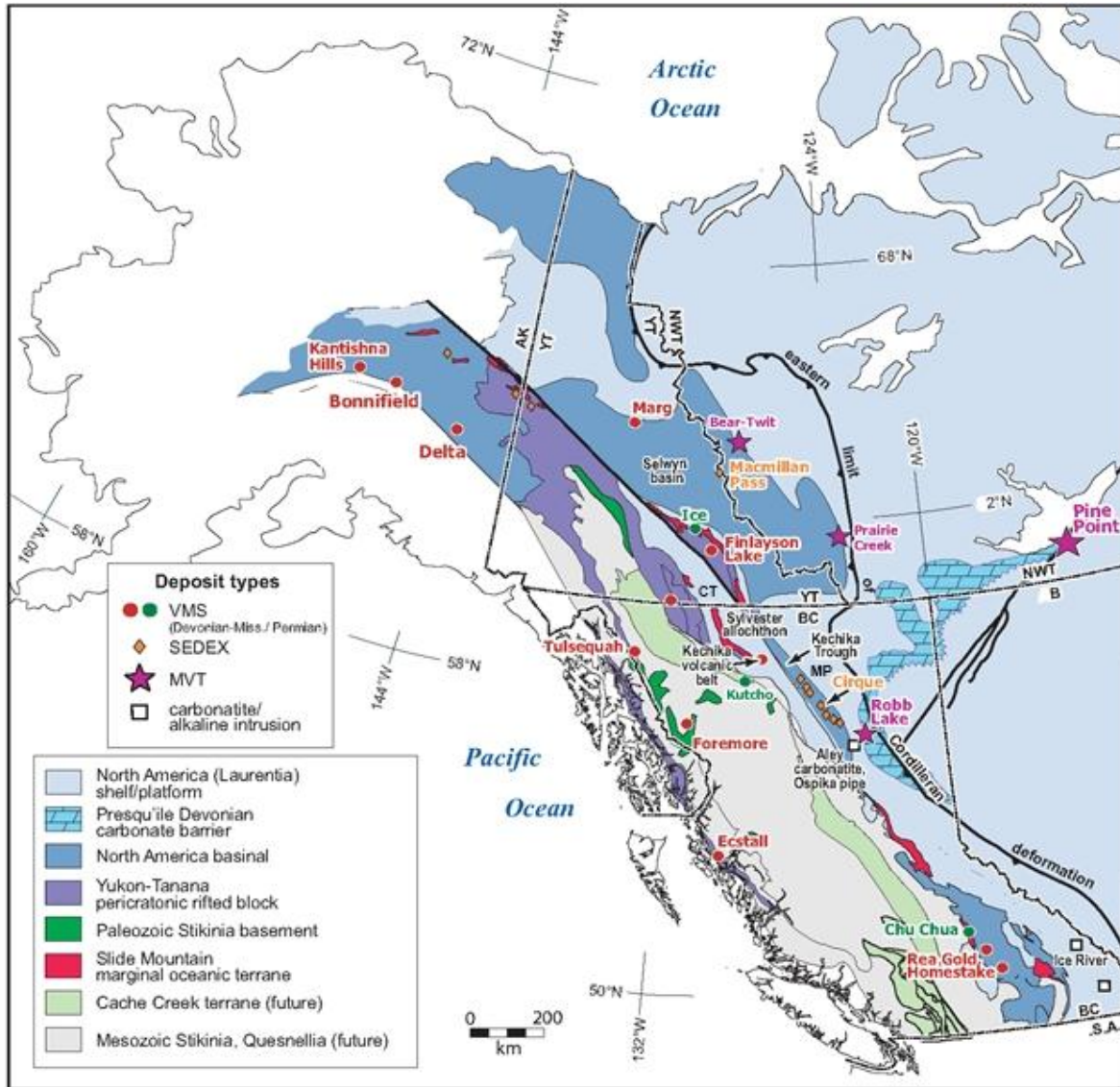


Figure 4. Devonian-Mississippian mineralization relative to terranes of the northern Cordillera (modified from Nelson and Colpron, 2007). Abbreviations are CT: Cassiar Terrane and MP: Macdonald Platform.

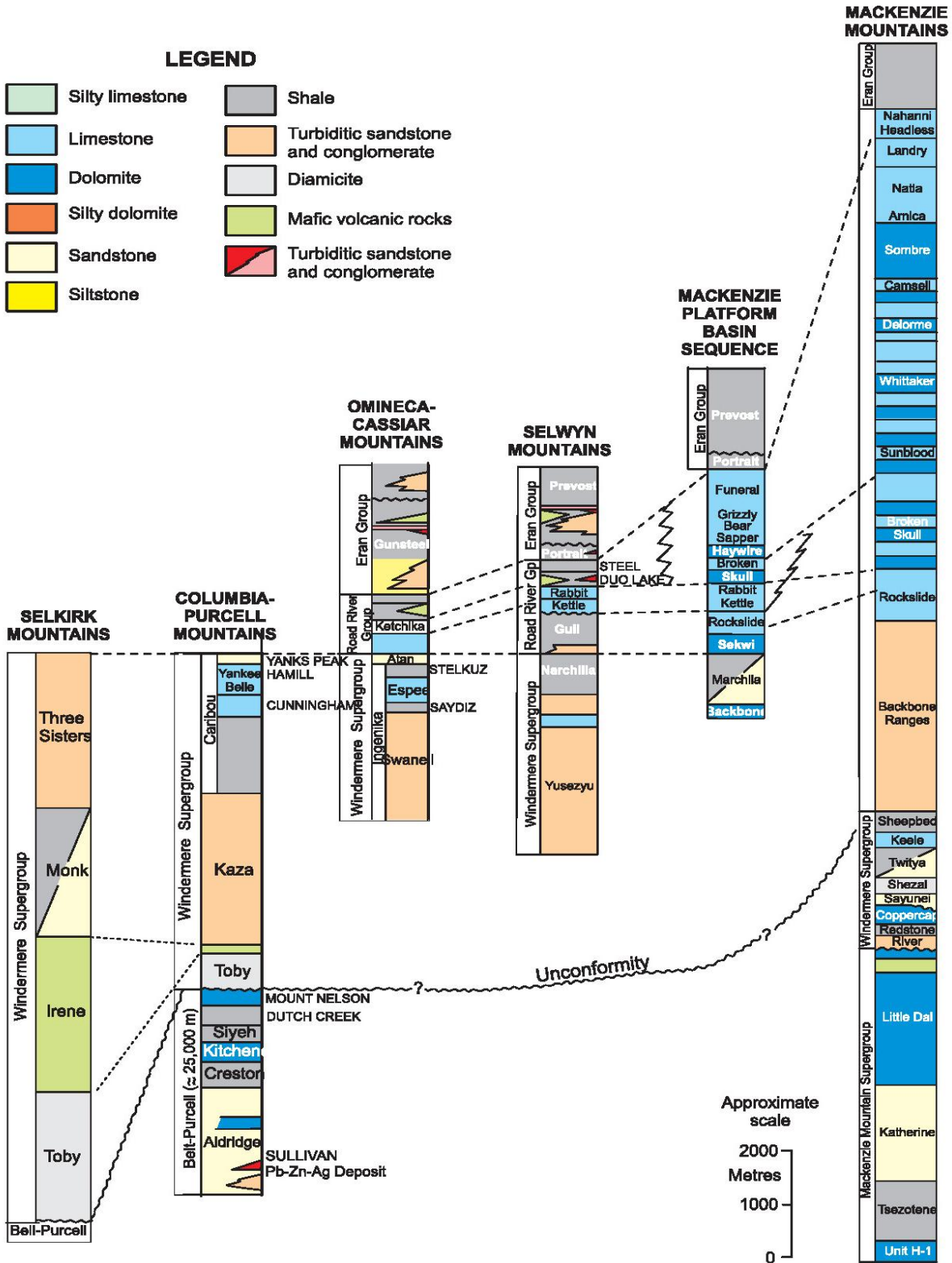
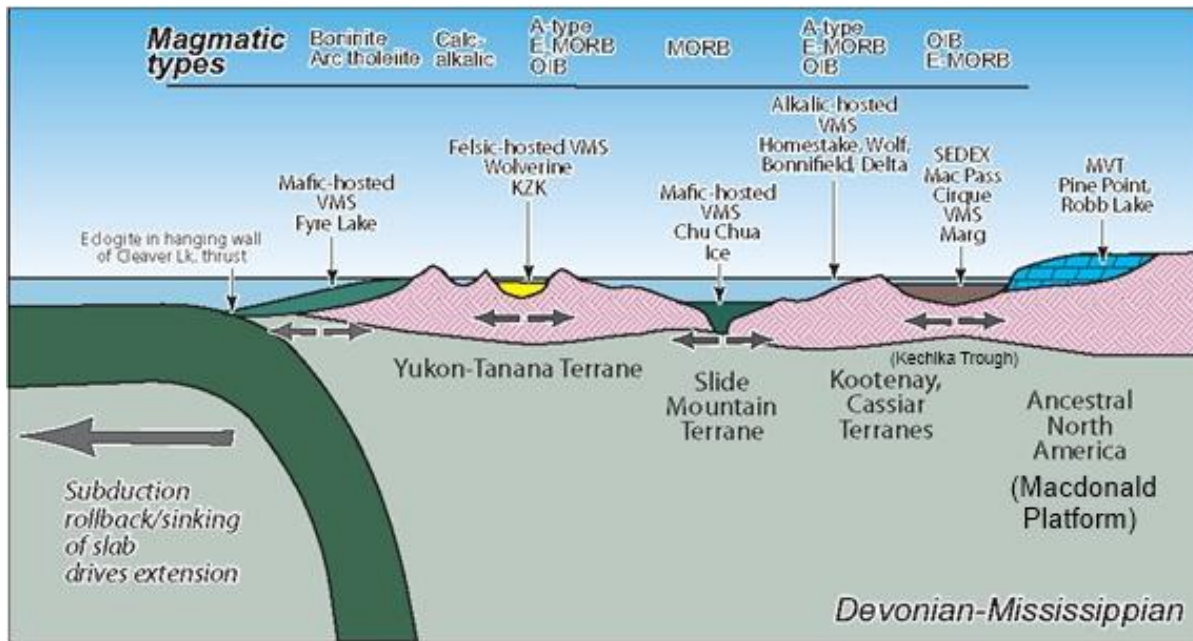


Figure 5. Stratigraphic cross-section of the Northern Canadian cordillera showing facies and thickness relationships between the Mackenzie carbonate platform, the Selwyn Basin (Selwyn Mtns), the Kechika Trough (Omineca-Cassiar Mtns, SEDEX-style mineralization noted in red within the Gunsteel) and the Belt-Purcell basin in SE BC (from Goodfellow, 2007).



**Figure 6. Schematic tectono-metallogenetic model for the Devonian-Mississippian western margin of North America (modified from Nelson and Colpron, 2007). Individual exhalative barite and base metal mineralized centers are named above each corresponding terrane.**

## 2.2 PROPERTY GEOLOGY

### 2.2.1 Stratigraphy

The Elf claims are underlain by supracrustal rocks of Ordovician to Mississippian age, which occur in three thrust-bound panels in the Gataga–Akie SEDEX district. Two main groups are exposed in the western and central panels in the vicinity of the Elf claims: the Ordovician to Silurian Road River Group and the Devonian–Mississippian Earn Group (Figure 7).

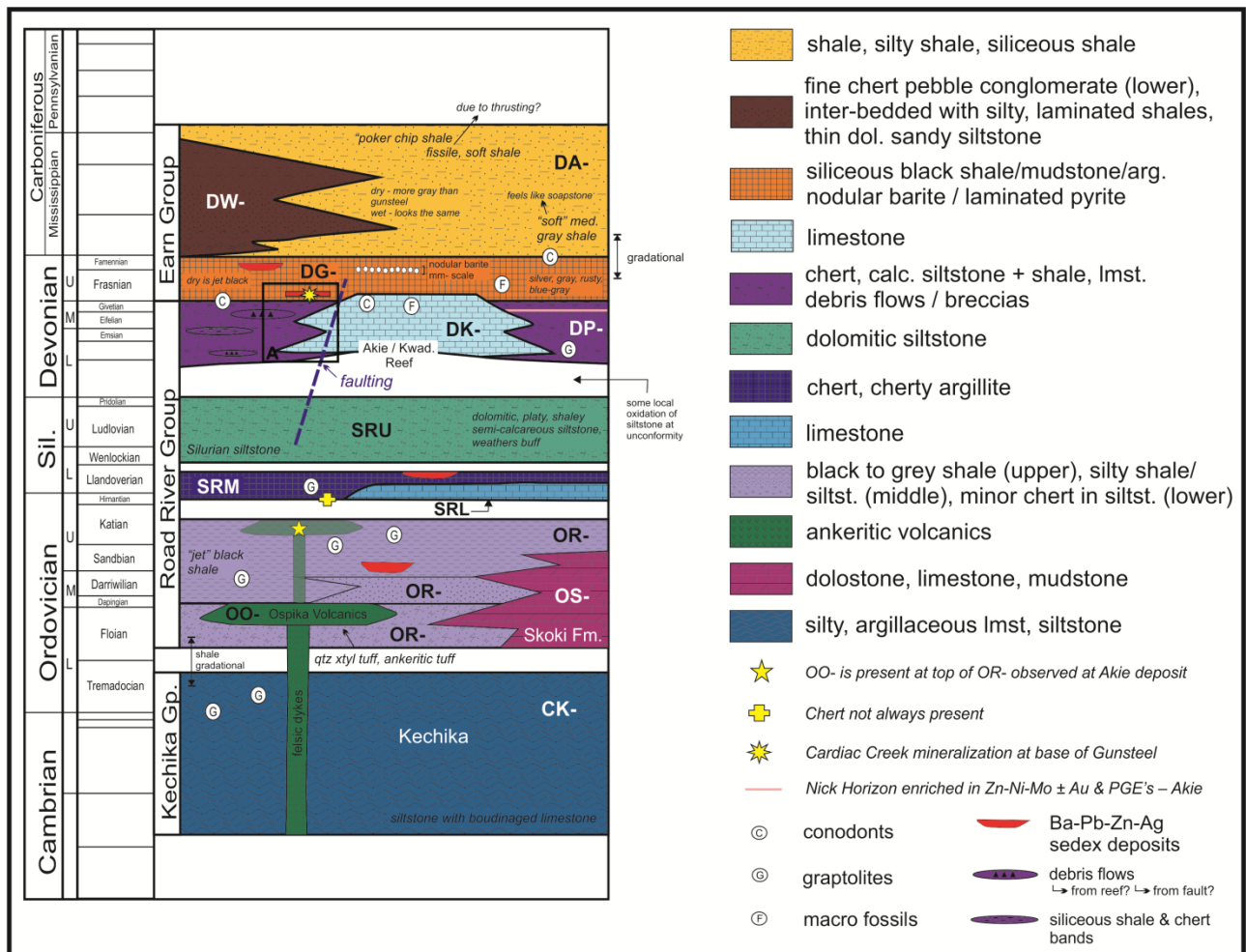
The Road River Group is a deep-water package of mainly fine-grained siliciclastic rocks deposited along the ancestral western margin of most of the northern Cordillera, including within the Kechika Trough. Regionally variably calcareous shale and siltstone dominate this unit, but lesser sandstone and deep-water limestone are also present (Gordey and Anderson, 1993). Syn-depositional, intermittent extensional or basin-deepening events are indicated by the occurrences of local mafic volcanic rocks and intermediate to felsic intrusive rocks. The Road River Group has regionally been sub-divided into Ordovician units (OR-; Figure 7) and Silurian units (SRL, SRM, SRU; Figure 7), that respectively correspond to the Duo Lake and Steel formations mapped farther north in the Selwyn Basin (Gordey and Anderson, 1993; Ferri et al., 1999). Unlike the Selwyn Basin, however, at least two Devonian units have sometimes been included in the Road River Group within the Kechika Trough (the Kwadacha Reef, or DK-, and the Paul River Formation, or DP- as defined by MacIntyre, 1998; Figure 7).

The Earn Group on the Elf property is a package of predominantly clastic rocks deposited during the influx of easterly derived detritus during uplift and rifting of the western margin of ancestral North



America that led to the formation of pericratonic terrane(s) and the opening of the Slide Mountain ocean basin. These rocks consist mainly of fine-grained clastic sedimentary rocks, with rare deep-water limestone, and are associated with mafic to felsic igneous rocks. In the Kechika Trough, the Earn Group is subdivided into three units by Jefferson et al. (1983), Pigage (1986), and MacIntyre (1992), informally known as the Gunsteel (DG-), Akie (DA-), and Warneford (DW-) formations (Figure 7). These three formations are stratigraphically and/or structurally interfingering, making differentiation of these units difficult at any scale of mapping (e.g., Jefferson et al., 1983; Ferri et al., 1999). Siliceous or cherty shales of the Earn Group are the primary host to mineralization on the Elf property, and variably contain barite ± pyrite ± galena ± sphalerite mineralized horizons.

Several sub-units within the Road River and Earn groups have been distinguished (historically and during the 2013 field program) in the Elf property area. These are summarized in Table 4.



**Table 4. Detailed lithological break-down of units in the Gataga district. Historic rock codes are from Pigage (1982).**

	<b>EARN GROUP</b>	<b>ROCK TYPES</b>	<b>HISTORIC ROCK CODES</b>
Devonian	Warneford Formation (DW-)	Silty shale, Siltstone, sandstone, chert pebble conglomerate	DMw, DMwc, DMwq, DMwt, DMwb, DMwm, DMwr, DMwbx
	Conundrum Siltstone (DC-)	Light grey siltstone and silty shale.	DC
	Akie Formation (DA-)	Soft black shale	DA, DArs, Daps, DAtb, DAgh, DAsH, DAph, DApf, DAgf, DAsf, DAsl
	DAC	DA- with <10% pyrite and <5 % barite	
	Gunsteel Formation (DG-)	Black siliceous shale to porcellanite	DG, DGgs, DGch, DGth, DGcm, DGpr, DGlB, DGdl, DGtf, DGft, DFfp, Dgt, DGsx
	DGA	DG- with <60% barite	
	DGC	DG- with <10% pyrite and <60% barite	
	DGL - laminated pyritic ore facies	DG- with 10-50% centimetric banded pyrite	
	DGB - baritic ore facies	DG- with >60% barite	DBvn, DBbx, DBbs, DBbf, Dbpy, DBms, DBsb, DGlB, Dbes, DBsx
	DGS - pyritic ore facies	DG- with 50-100% laminated pyrite with variable sphalerite and galena	
	<b>ROAD RIVER GROUP</b>	<b>ROCK TYPES</b>	<b>HISTORIC ROCK CODES</b>
Silurian	Paul River Formation (DP-)	Bryozoan to crinoid floatstone with a lime mudstone matrix	DPc, DPp, DPl, LDpx
	Kwadacha Reef (DK-)	Thick bedded, fossiliferous limestone	DKr
	Dolomitic Quartzite Formation (DQ-)	Dolomitic quartzite	LDpq
	Upper Road River Group (SRU)	Medium to dark grey mottle-bedded siltstone with abundant feeding burrows	SSsx, SSsc, Ssh, Ssb, Sss, Ssq, Ssl
	Middle Road River Group (SRM)	Black chert to porcellanite with interbedded silty shale	Src
	Lower Road River Group (SRL)	Medium grey lime mudstone	Srl
	Road River Group Shale facies and Siltstone facies (OR-)	Black variably calcareous shale	Orr, Orc, Org, Orq, Orp, Ord, Ors, Orl, Orn
Ordovician	Ospika Volcanics (OO-)	Orange weathering mafic sills and andesitic flows	Ov, Ovf, Ovx, Ovt, Ovg
	Skoki Formation (OS-)	Medium bedded dolostone and lime-mudstone	Osk
Cambrian	Kechika Group (CK-)	Nodular, wavy-banded argillaceous limestone	Cok, COku, Ok, Oku, COkI, EOK

## 2.2.2 Structural Geology

### *Literature Review*

Regional structural and lithostratigraphic correlations are well described by Pigage (1986), McClay and Insley (1986), McClay et al. (1988), Insley (1990), McClay (1991), MacIntyre (1992), and Paradis et al. (1998), and they are summarized below.

During the Cambrian to Mississippian, basin subsidence and extension, and related normal faulting ( $D_1$ ), produced northwest-trending, parallel, asymmetric graben systems with steeply dipping bounding faults. These elongated grabens contained internal arrays of domino-like rotated fault blocks responsible for more localized sub-basins. The Road River and Earn Group sedimentary rocks were deposited with distinctive wedge-shaped geometries due to sedimentation within the faulted sub-basins.

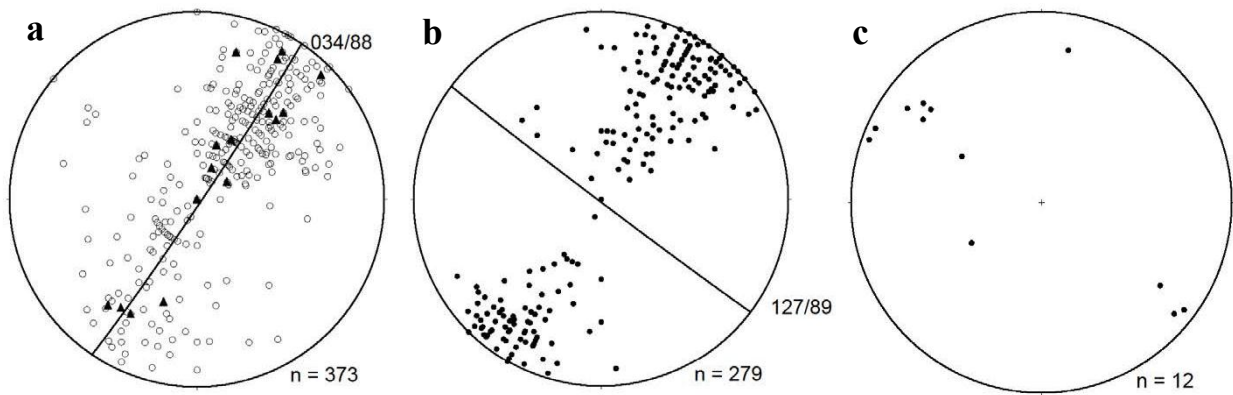
Insley (1990) has noted that some very local (meter-scale) northeast-trending folds (associated with  $D_2$ ) developed prior to the main Cordilleran compressional event ( $D_3$ ). These folds are minor and thought to only occur in lower Earn Group strata and are, thus, not discussed further. Northeast-trending compression ( $D_3$ ) from the Late Jurassic to 'mid'-Cretaceous deformed the Paleozoic strata into the prominent northwest-trending Cordilleran fold and thrust belt that is still present today. The majority of observable structures developed in the Elf area were formed during this compressional event. In general, deformation resulted in open to tight, northeast-verging anticline-syncline pairs and fault-propagation folds that form imbricate blocks or duplex structures within three main thrust panels. Pigage (1986) has identified two separate compressional coaxial phases of deformation that exhibit similar trending and verging folds ( $D_3$  and  $D_4$ ) on the Cirque property, which are also likely developed on the Elf property. Folds associated with  $D_3$  are dominantly macroscopic, northwest-trending, tight, and asymmetric. These folds have long gentle southwest-dipping, upright limbs and short, steep overturned forelimbs (northeastern limb of a northeasterly-verging anticline). These folds are associated with a pervasive, southwest-dipping, axial planar cleavage ( $S_3$ ) which is best developed in shale units. Localized areas of more intense deformation resulted in tight to chevron-style folding within the shaley units. Folding of more competent lithologies (e.g. limestone and chert) resulted in a tightly spaced fracture cleavage. Where rheologically differing lithologies are interbedded (e.g. chert and shale), tight folding was accommodated by flexural slip; cleavage planes may also refract between adjacent competent and incompetent beds. There is also northeast-verging fault propagation folding associated with the  $D_3$  event. Northwest-trending folding, related to the  $D_4$  event, is responsible for the development of a crenulation cleavage ( $S_4$ ).  $S_4$  is axial planar to northwest-trending, upright folds; these folds have an amplitude of up to 30 m and have only been mapped southeast of the Cirque deposit.

Late Mesozoic to Tertiary extension and dextral transpression ( $D_5$ ) is the latest stress regime affecting these rocks. This extension has led to the formation of steeply-dipping north- and northwest-trending normal faults, some with dextral movement, which crosscut all pre-existing structures. These brittle faults have displacements of up to 50 m locally, and may contain fault gouge and quartz-calcite veining. This northwest-directed extension was likely transferred from dextral strike-slip displacement along the Northern Rocky Mountain Trench, located to the west of the Kechika Trough (Nelson and Colpron, 2007).

Historical structural data from Cyprus Anvil and Teck for the Elf property have been reviewed and compared with the literature and technical reports using stereonet software from Allmendinger et al. (in press).

### *Historic Elf Structural Data Review*

Bedding data at Elf show folds have a gentle to moderately steep southwest-dipping limb and a gentle to moderately steep northeast-dipping limb (Figure 8a). Due to the paucity of overturned bedding data in the historic reports, no overturned forelimb is apparent from the dataset. The data indicate that the Elf property geology developed in open folds probably related to  $D_3$  rather than the northeast-verging overturned folds found at the Cirque deposit (Pigage, 1986). The profile plane is averaged at 034/88, similar to those for folds at Cirque. Cleavage measurements (Figure 8b) also fit with the  $D_3$  folding style as cleavage planes trend to the northwest and generally have a near vertical dip (average 127/89). Crenulation cleavages were not reported and it remains unclear if they are present at Elf. Lineation measurements (Figure 8c) are broadly comparable with the trend of the regional  $D_3$  fold structures; however there is not much data available. Lineation measurements are not historically differentiated into bedding-cleavage intersections or hinge lines.



**Figure 8. Historic structural data for the Elf property including a) poles to bedding planes (triangles are overturned bedding planes, open circles are upright and undifferentiated), profile plane is ~034/88, b) poles to cleavage planes, average cleavage 127/89, c) fold hinge lines and intersection lineations.**

## 2.3 MINERALIZATION

The Elf showing is a 4 m thick interval consisting of well laminated barite with abundant galena disseminations and laminations (Figure 9). Galena laminations are commonly 2-10 cm thick and contain trace pyrite and rare sphalerite. This mineralized horizon is hosted within a package of siliceous black shale of the Gunsteel formation which may contain disseminations of nodular barite 10 m above and below the mineralized horizon. Stratigraphically below the Elf showing, a 2 m wide calcite vein containing galena and sphalerite occurs. The origin of this vein is unclear. Elf showing mineralization returned historic surface samples of 0.22% Zn, 10.46% Pb, and 22.58 g/t Ag over a 4 m interval (Farmer, 1997).



**Figure 9. Grab sample of laminated barite with abundant galena collected from the Elf showing.**

The Joel Creek showing was discovered in 1995 and consists of well laminated pyrite and nodular barite within siliceous black shales of the Gunsteel formation. Nodular barite and laminated pyrite mineralization occurs over an interval of 4 m whereas disseminated nodular barite occurs for several meters above and below mineralization.

The Ian Creek showing, also discovered in 1995, occurs in the next drainage to the northwest of the Joel Creek showing and consists of disseminated barite and pyrite in siliceous black shales of the Gunsteel formation. These occurrences exhibit secondary rust-colored weathering of rocks and drainages, as well as hydrozincite and hemimorphite surface coatings.

## **2.4 ALTERATION**

Alteration in the form of secondary minerals is non-existent from outcrop mapping and hand sample identification. However, some general characteristics of the mineralized and unmineralized host-rocks may be indicative of other primary processes depositing ‘gangue’ minerals during sulfide deposition. For instance, non-sulfide mineralized Gunsteel shales generally have a very high silica content locally occurring as porcellanites or “dirty cherts” (muddy cherts). It is unknown if this silica has hydrothermal or biogenic origins yet its abundance proximal to sulfide mineralization suggests it may be a distal manifestation of the sulfide depositional system. Similarly, many of the Gunsteel rocks, unlike most Akie shales, have a very dark grey-black scratch due to their high carbon or graphite content. Again, due to the general spatial relationship of carbonaceous sediments within and adjacent to sulfide mineralization, these two factors may be related to similar depositional processes. Carbonate concretions also occur throughout the Gunsteel formation and have locally been observed to decrease in size and increase in abundance with proximity to SEDEX-style mineralization within the Kechika Trough (e.g. Canada Zinc’s Akie deposit). If sulfide depositional processes can be linked to this concretion size distribution, it too could be a useful ‘alteration’ discriminator for sulfide bodies in the Earn Group.

## **3 SOIL SAMPLING**

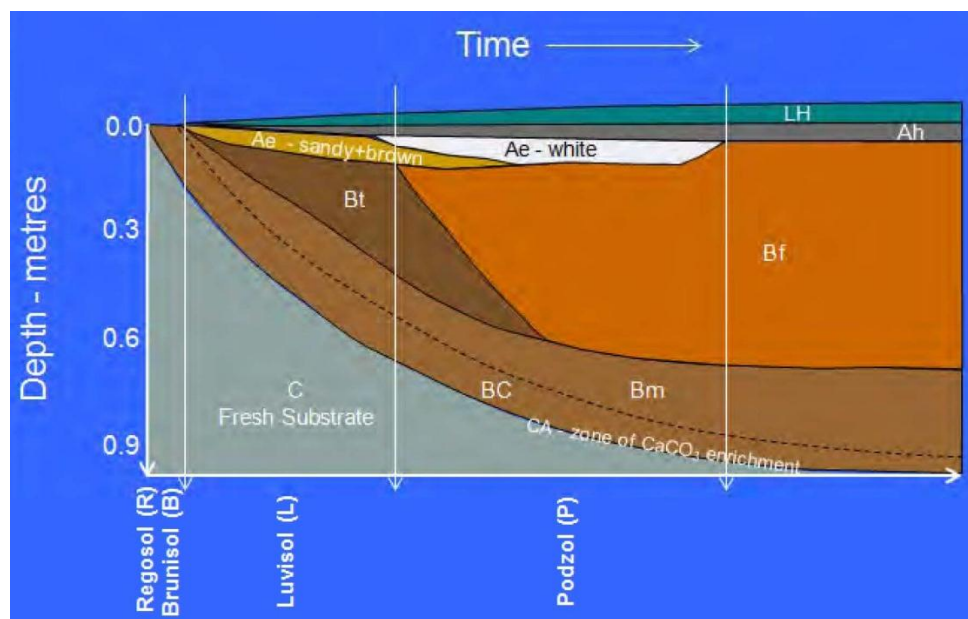
Soil sampling for the 2013 season had three primary objectives: 1) completing several baseline surveys over both known mineralization and unmineralized sections on all three properties, to compare current analytical results to the historic results, 2) filling holes in the historic soil data, compiled from both public and internal historic reports, and 3) determining the best sample media for the property. The extremely variable terrain and soil profile development across the properties meant that a single soil horizon could not be collected for the entire survey. In total, 649 samples (including 285 B/C horizon, 295 A horizon, and 69 field duplicates and standards) were collected from the Elf property. These samples are used in the interpretation below.

### **3.1 SURFICIAL ENVIRONMENT**

The Elf property is dominated by sub-alpine terrain with boreal forest and wetland ranging from 960 m to ~1720 m and minimal alpine tundra between 1720–1800 m. Extensive fir, with lesser aspen, pine and local concentrations of spruce at lower elevations constitute the dominant tree populations. The vast majority of the Elf property is situated below the tree-line where areas of deadfall and avalanche slide paths are common are dominated by willows, alder and stunted fir. Mountain ridges (southwest of the Elf property) typically trend to the northwest with secondary northeast trending ridges separated by large steep drainages that feed the Akie River. The Akie River is a braided river within a ~1.5 km wide valley and regionally drains into the Finlay River to the southwest. Locally the Akie river flows northwest in the vicinity of the Elf claims. Glacial and glacial-fluvial deposits are prevalent in the low, wide valleys especially below 1000 m. Relief in the area ranges from low angled to steep, with many slopes less than 15° near valley bottom and steeper than 30° in the sub-alpine where most soil sampling took place. As such, soil development was variable and soil profiles changed markedly from site to site in any aspect.

Mineral soils on the Elf property likely developed on colluvium in the sub-alpine and on glacial or glacio-fluvial deposits in the valley bottom.

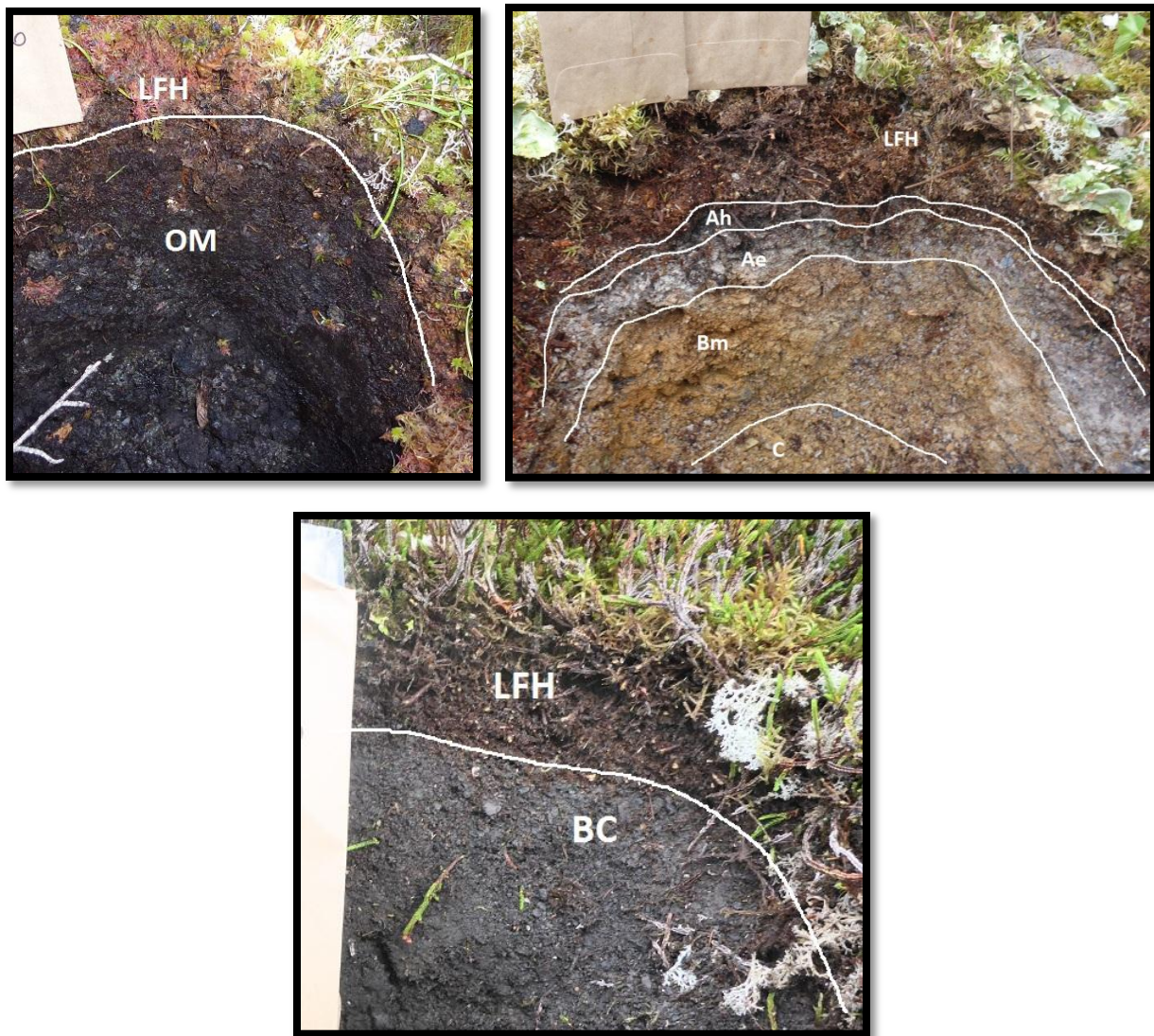
Most soils on steeper terrain have developed on stabilized colluvium due to the presence of abundant low level plants. Only the highest and steepest ridges and slopes are talus covered (active colluvium) where no Ah or B horizon soils have developed. Minor ‘islands’ of vegetation have inhabited these talus fields where very local and generally minor soil development has occurred resulting in Ah and B horizon soils. These soils occur in too low a frequency to be a reliable sample medium at these elevations. At lower elevations within the larger valleys thicker LFH horizons (peat) occur as well as regular Ah and Om horizons. These soils are often thick as basal C horizons are frequently not reached. These lower elevation sample sites may encounter sandy and or clay and silt rich material akin to underlying glacial-fluvial/outwash material and till. Figure 10 presents a schematic diagram of the location of different soil horizons within the soil profile, and how they develop over time.



**Figure 10. Schematic diagram of soil horizon development over time, from Hoffman, 1986. Organic horizons include the LH (or LFH) and Om (not shown here). The A horizon includes Ae (sandy+brown), Ae (white), and Ah. The B horizon includes Bm, Bt, and Bf. The BC is transitional between the B and C horizons.**

Soil profiles on the three properties were very heterogeneous between aspect, elevation, terrain angle, drainage, and even between adjacent sites on the same sample line. Organic LFH horizons were always present, varying from 1–2 cm thick in the alpine to ~50 cm thick in low-lying bogs, and consisted of partially decomposed needles, twigs, and mosses. The Ah horizon of fully decomposed organic material occurred in thin mm- to cm-thick veneers below the LFH horizon. Rarely did the Ah horizon reach 10 cm thickness, and in poorly drained areas the organic layers instead consisted of an Om horizon up to ~50 cm thick. Where available, charcoal fragments within the Ah horizon were collected and placed in the sample bags with the Ah soils. In alpine environments and commonly at the tree-line, the Ah horizon was not developed and could not be sampled. Eluviated Ae horizons rarely occurred as 1–10 cm grey to white units beneath the Ah (where present) or the LFH horizon (where Ah horizons were not developed), but

these horizons were not sampled in this program. B horizon soils were usually present, although their level of maturity was variable. Where observed, well-developed B horizon soils often graded down-hole into a grey BC, or commonly directly into the C horizon (typically composed of colluvium). BC horizons were grey to dark brown to tan-colored with abundant sand and gravel fragments. Less frequent Bm horizons of dark to light brown and relatively homogenous soils (with a small fraction of rock fragments) and rare Bf horizons of red-brown and homogenous fine-grained soils (with a silty-clay texture) were also observed and sampled at some sites. Where no B horizon soils were developed, especially in steep talus, the C horizon (or talus fines) was sieved and collected. Figure 11 shows a few examples of the varied soil horizons that were encountered during the 2013 field season.



**Figure 11. Upper left: A soil pit in low elevation, low-angled and poorly drained terrain where an Om horizon has developed below a LFH horizon. Upper right: A rare soil profile showing LFH, Ah, Ae, Bm, and C horizon development. Bottom: A typical soil profile of LFH with a BC developed below.**



### 3.2 SAMPLE METHODOLOGY AND ANALYTICAL TECHNIQUES

Sample lines were generally spaced 150 m to 200 m apart, with sample sites located every 50 m along the line. Most traverses were directed northeast, perpendicular to the regional strike of the geology, and attempted to cross known mineralization, Road River and Earn Group stratigraphy, and some areas not historically sampled. Sample pits were dug at each site, ranging from 30–50 cm across and varying from 10–100 cm in depth, depending on the thickness of the soil horizons present. Soil profiles were photographed and described at every station, and the data was entered digitally into a hand-held device (Trimble Juno). Soils for geochemical analysis were collected from both the Ah and B horizons at each sample site, where present. When sample material was sparse, multiple pits were dug within a 5 m radius for sufficient sample collection. Ah horizons were often thin, laterally discontinuous, and/or variably developed, resulting in laborious efforts to collect sufficient material. If the B horizon was not developed, then a sample of the BC or C (including talus fines) horizon was collected instead. All samples were sieved in the field using a 4 or 6 mm mesh sieve, depending on dryness, before being collected into Kraft paper bags (Figure 12). The Kraft bags were placed in individual plastic bags in the field to eliminate sample contamination during transportation. Back at camp samples were hung with chicken wire or laid on racks to dry, before packaging and shipping, to reduce inter-sample contamination by water soluble elements. All soil sample site descriptions can be found in Appendix III. Samples were then shipped to the Acme Analytical Laboratory in Vancouver for sample preparation by the method SS80 which involves drying up to 0.5 kg sample at 60°C followed by a 100 g portion sieved at -80 mesh. Samples were analyzed by the 1F04 method, which utilized a 0.5 g fraction (after Aqua Regia digestion) for analysis by inductively coupled plasma mass spectrometry. Samples were also analyzed by the 2A05 method to determine the loss on ignition at 1000°C. All soil sample analytical certificates are contained in Appendix IV.



**Figure 12. A 4mm mesh sieve used in the field to separate organic material from Ah soils and larger rocks from B-C soils.**

### **3.3 QUALITY CONTROL AND DATA VERIFICATION**

To reduce contamination between sample sites, shovels, sieves, and trowels were cleaned after each sample collection, and samples were placed in individual clean plastic bags. For every 20 samples, one standard and two duplicate samples (one Ah and one B) were included in the sample suite. Duplicates were collected in a manner identical to the original samples, with the material taken from the same holes. To avoid soil heterogeneities for duplicate samples, large samples were field-sieved and mixed, then placed in separate Kraft bags (rather than sampling from two separate pits at the same site). Two different standards were used to monitor accuracy and drift.

### **3.4 SOIL SAMPLING RESULTS**

Due to the extremely variable terrain and soil profile development across the property, a single soil horizon could not be collected at each sample site for the entire survey. The lower lying physiography of the Elf property, for example, results in poor development of B and C horizons in many areas where Ah is abundant, thus, a direct 1:1 comparison of the relative effectiveness of the A and B horizons is not possible. The soil geochemical data has been interrogated separately based on soil horizon, to determine which the best data to collect are. Figure 13 and Figure 14 show the distribution of A horizon soil sample sites on the Elf property, and Figure 15 through Figure 24 show Pb, Zn, Ag, Tl, and Ba levels in the A horizon samples. Figure 25 and Figure 26 show the distribution of B horizon soil sample sites on the Elf property, and Figure 27 through Figure 36 show Pb, Zn, Ag, Tl, and Ba levels in the B horizon samples.

#### **3.4.1 Ah Horizon**

Ah soils are common on the Elf property (likely due to the overall low elevation) and were found at most sample sites. Higher elevation Ah soils were often thin and heavily inundated with rootlets at the base of the LFH, and thus took considerable time and patience to extract sufficient sample. Pb in Ah soils shows a strong anomaly of over 400 ppm in the immediate vicinity of the Elf showing and also correlates positively with the historic Pb soil data. The Pb data also show background values away from the Elf showing, correlating with historic soil data which show weak to absent anomalies. One area to the southeast of the Elf showing was sampled in 2013 due to a lack of historic coverage, and resulted in anomalies up to 400 ppm which is encouraging enough to consider follow up work next year. The soil line to the northwest on the Elf property adjacent to the Ian Creek showing traverses both prospective and un-prospective lithologies largely beneath soil cover. The soil results from this area show no significant Pb anomalies, although the historic Pb data show a local high. Zn, being mobile in the surface environment, does not show any clear anomalies near or adjacent to the Elf showing. Sporadic Zn anomalies up to 600 ppm do occur, yet they concentrate heavily in low level and stream bed terrain suggesting these anomalies are hydromorphically transported down slope. The area southwest of the Elf showing displays no Zn soil anomalies. A significant anomaly of up to 1% Zn occurs along strike and to the east of the Ian Creek showing, which corresponds with the historic Pb data and which may suggest prospective rocks lay beneath. However, this strong anomaly does occur in a low angle catchment which would concentrate hydromorphically dispersed Zn, and thus should not be considered an unequivocal indicator of mineralization. Ag in the Ah horizon also appears to be an unreliable indicator of

mineralization due to the sporadic nature of strong anomalies in areas of both no known mineralization and no historic anomalies. Strong anomalies of Ag also occur adjacent to the Ian Creek showing over a 500 m length, yet they do not correlate with new Pb data or historic data and are suggested to be false anomalies. Tl occurs in near background levels throughout the Elf property with only a small anomaly of 4 ppm above the Elf showing and a 2 ppm anomaly adjacent to the Ian Creek showing. Tl anomalies correlate well with historic Pb data however, the anomalies are very small and it would be best to have them verified with other elements (such as Pb) from the 2013 data. Ba is a poor indicator of mineralization on the Elf property as it is very homogenous throughout the property.

### **3.4.2 B-C Horizon**

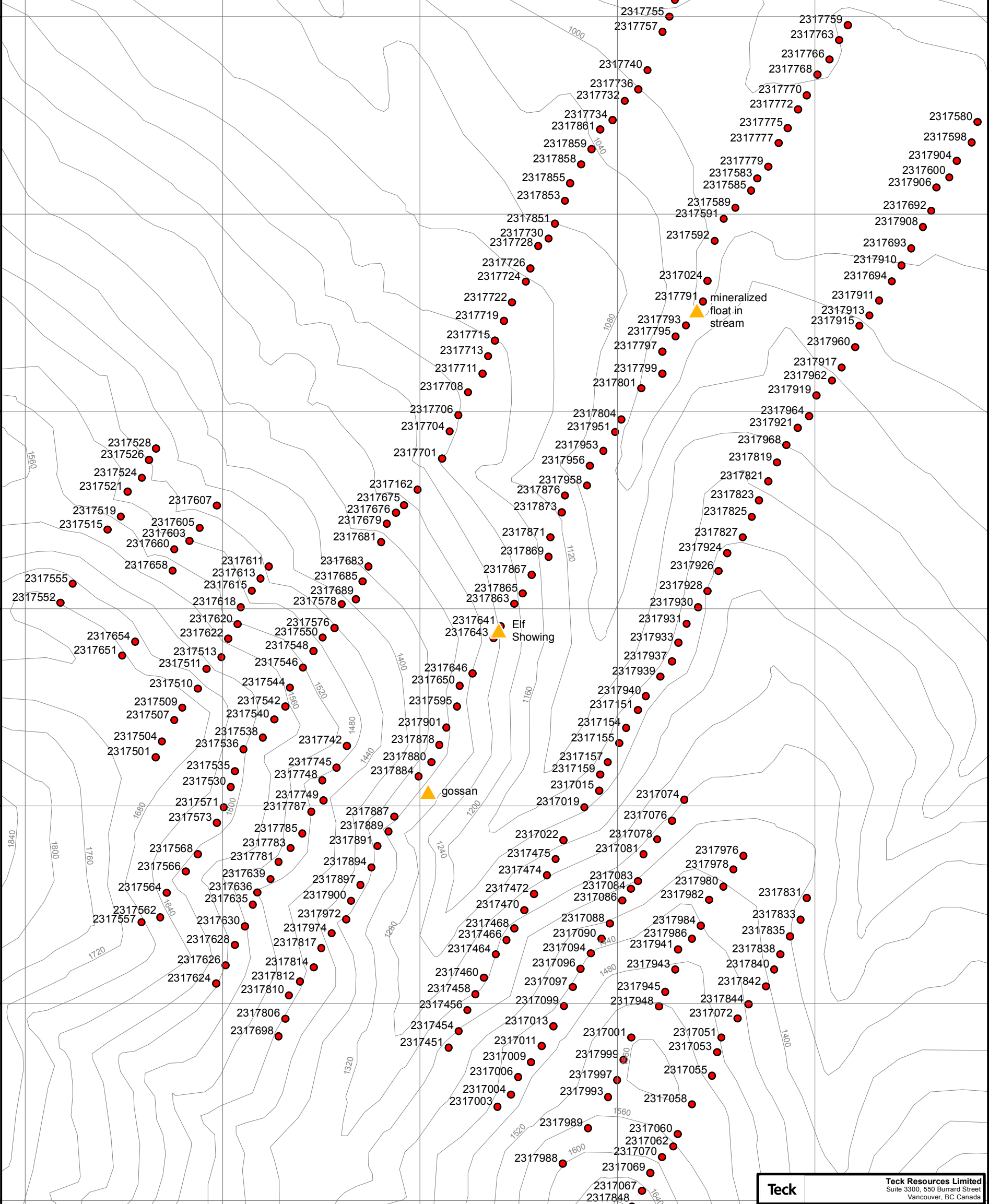
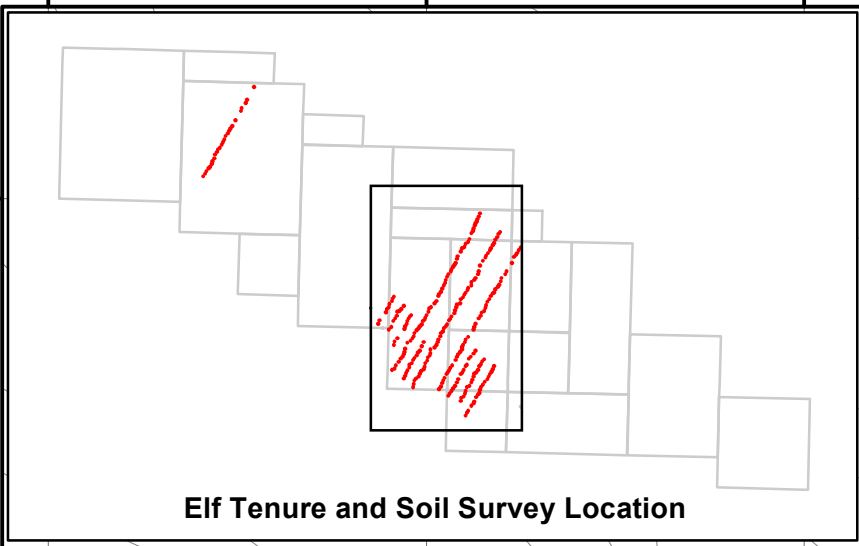
The most common soil horizon on the Elf property is a B/C transitional soil with lesser well developed Bm and Bf soils at lower elevations. Pb in soil appears to be a good indicator of mineralization as it shows strong anomalies directly above the Elf showing and more background levels away from it, which correlates well with historical Pb in soil data. Southeast of the Elf showing, where no historical data was collected, some new Pb anomalies occur with values as high as those at the mineralized occurrence, which is encouraging for future work in the area. Minor anomalies up to 100 ppm Pb occur adjacent to the Ian Creek showing suggesting potential mineralization under cover yet this does not correlate well with historical Pb data. Directly above the Elf showing displays high Zn values (correlates with historic Pb highs), however, strong Zn anomalies also occur throughout the Elf property which suggests Zn alone is an unreliable indicator of buried mineralization. Ag displays a large anomaly above the Elf showing and lesser sporadic anomalies adjacent to the showing which is somewhat correlative to the historic Pb data. Southeast of the Elf showing, where the new Pb anomaly occurs, Ag shows weak anomalies suggesting Ag may not be adequate to pinpoint a target, but follow up work will help resolve this. A moderate Ag anomaly occurs adjacent to the Ian Creek showing in the same location of the new Pb anomaly which is encouraging as a target even though this anomaly does not correlate with historic Pb in soil data. Tl in B/C horizon soil data is very similar to that of the Ah horizon, where pronounced anomalies occur above the Elf showing and adjacent to the Ian Creek showing. However, the Tl data for the B/C horizon soils shows strong anomalies from 4 to 40 ppm whereas the Ah data had very low values. These high Tl values are similar to the magnitude of Tl values over the North Cirque deposit. The rest of the Tl data is very consistent with historic Pb data, showing mostly background values with minor elevated anomalies above prospective rocks to the southeast of the Elf showing. Ba is a poor elemental indicator of mineralization in B/C soils on the Elf property due to its homogenous distribution throughout the property.

## **4 CONCLUSIONS AND RECOMMENDATIONS**

Areas of known mineralization and historical Pb in soil data on Elf was best duplicated by B (or BC) horizon soil geochemistry with particularly good results from Pb, Tl and to some degree Ag. Zn and Ba occur in too homogenous concentrations throughout the property to be deemed useful for target generation. Although the A horizon is well developed throughout the Elf property many elements did not duplicate historical trends over known mineralization or were in too low a concentration to be considered an anomaly. Southeast of the Elf showing where no historical data was collected, some new Pb anomalies occur with values as high as those at the mineralized occurrence, which is encouraging for future work in the area.

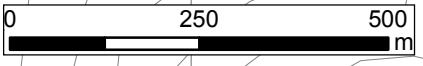
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**LEGEND**

- ▲ Showings and Gossans
- A Horizon Sample Locations
- Elevation (20 m contours)



<b>Teck</b>		<small>Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada</small>
<b>Elf Project</b> British Columbia <b>A Horizon</b> <b>Sample Locations</b>		
<small>DATUM: NAD 83</small>	<small>PROJECTION: UTM Zone 10</small>	<small>Figure:</small>
<small>DATE: Nov 13, 2013</small>	<small>DRAWN BY: E.Thiessen</small>	13

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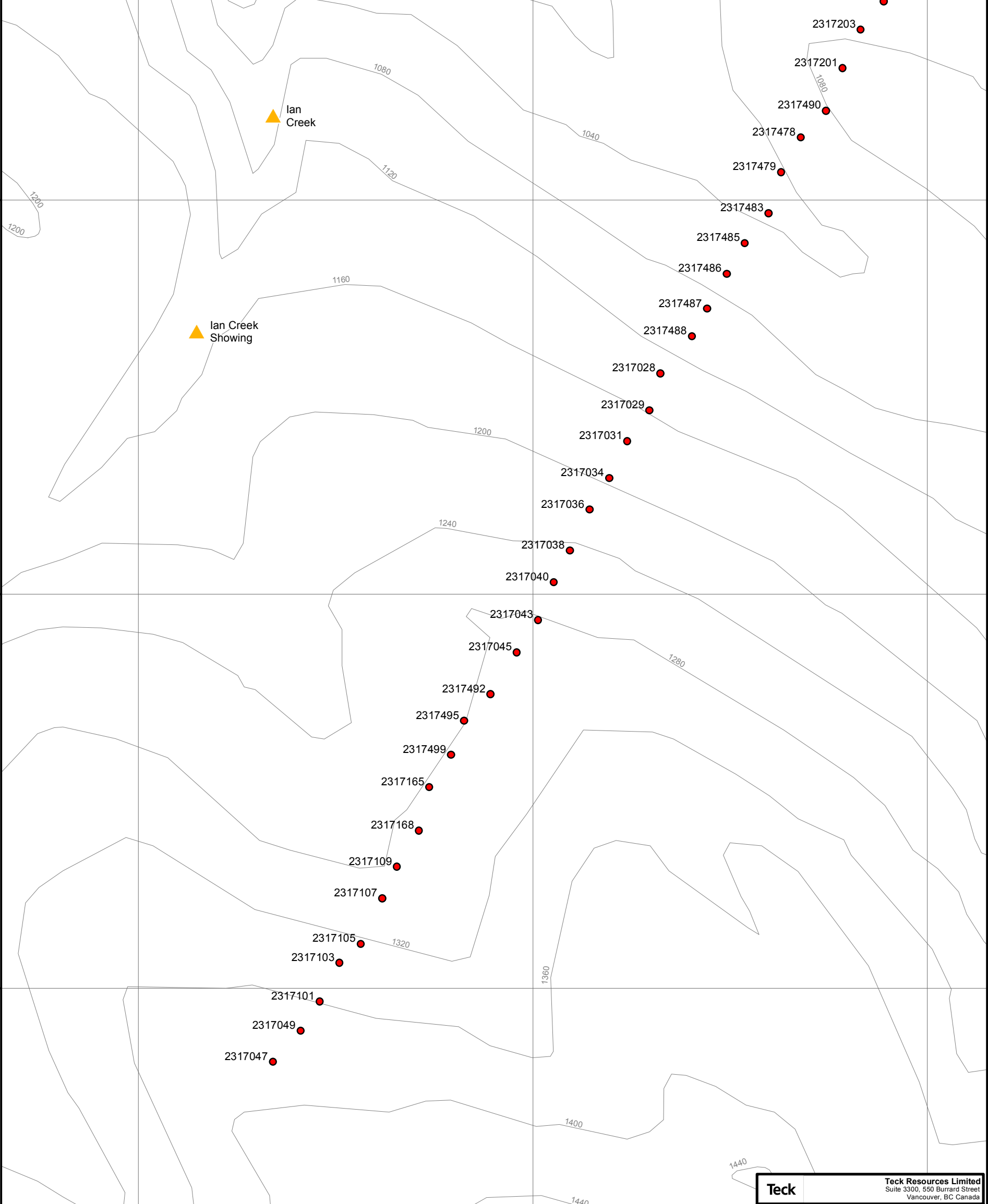
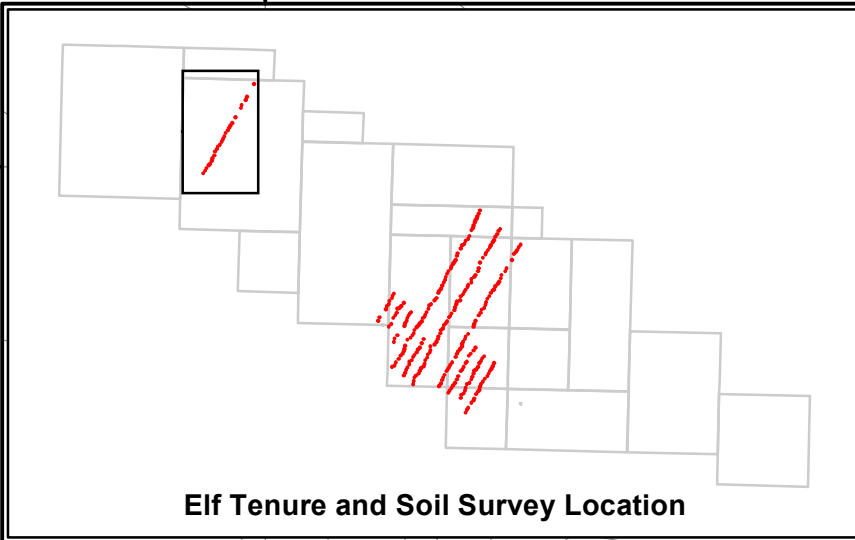
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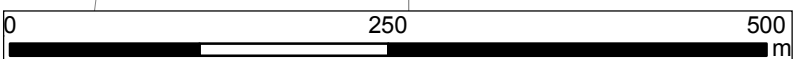
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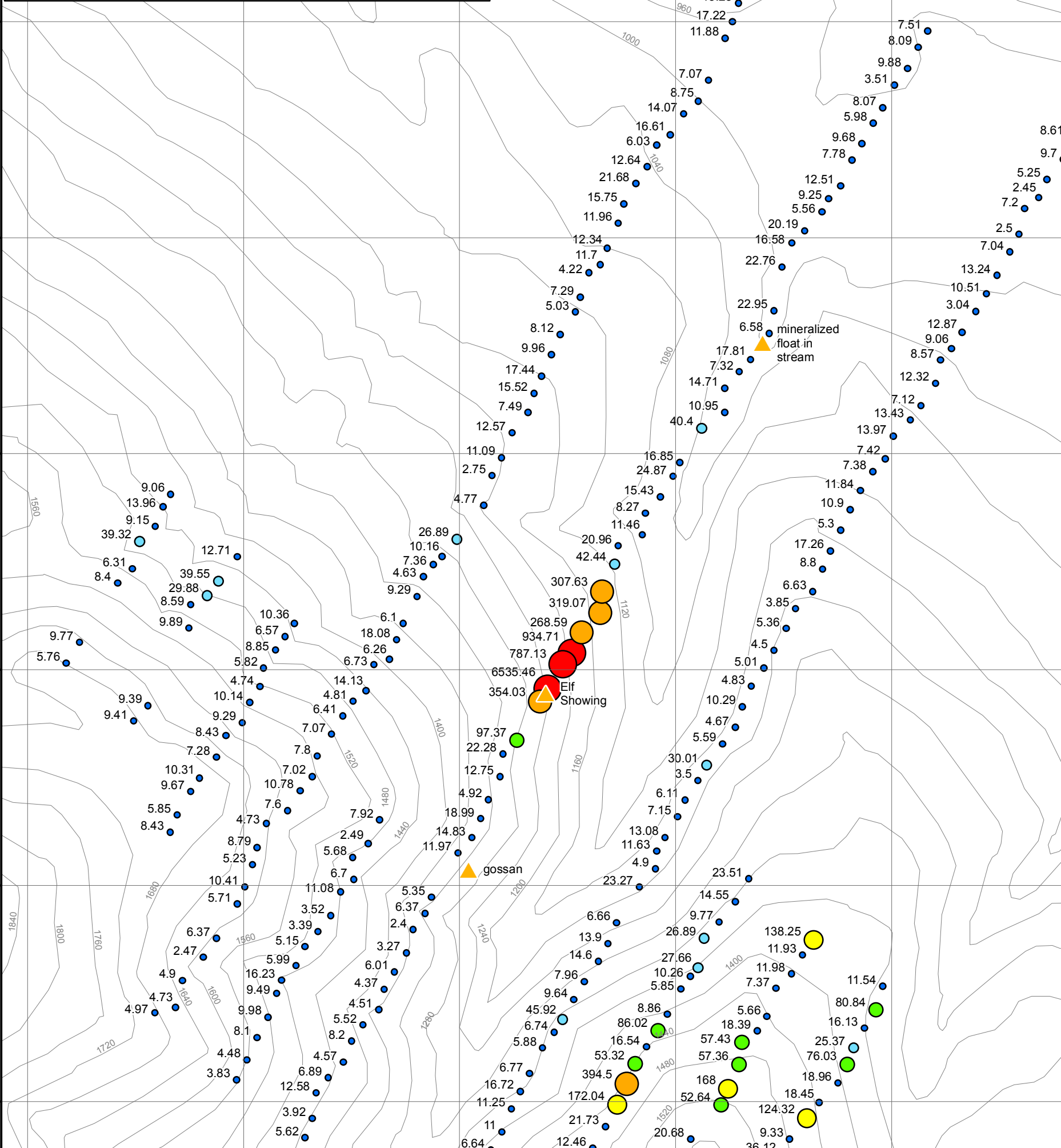
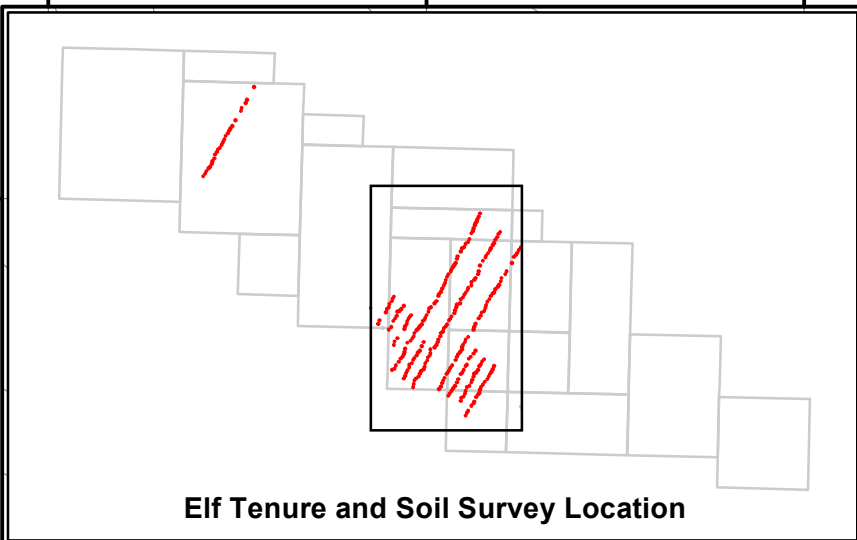
**LEGEND**

- Showings and Gossans
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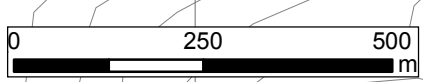
<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada
<b>Elf Project</b> British Columbia <b>A Horizon</b> <b>Sample Locations</b>		
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>14</b>

396000 396500 397000 397500 398000



**LEGEND**

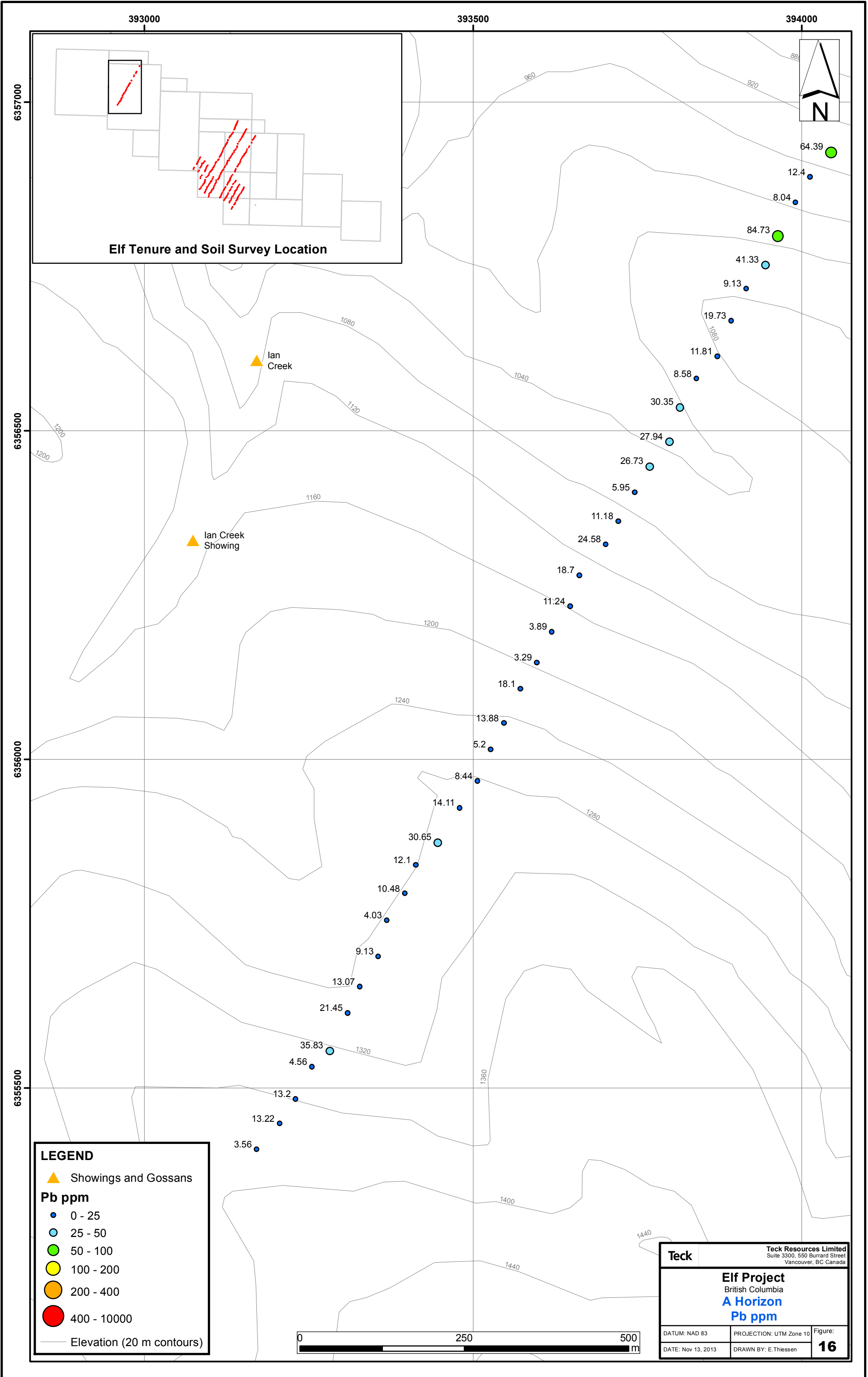
- Showings and Gossans
- Pb ppm**
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 400
- 400 - 10000
- Elevation (20 m contours)



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Vancouver, BC Canada

**Elf Project**  
British Columbia  
**A Horizon**  
**Pb ppm**

DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>15</b>



**Elf Tenure and Soil Survey Location**

Ian Creek

Ian Creek Showing

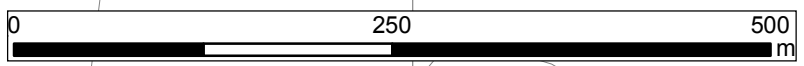
**LEGEND**

- ▲ Showings and Gossans
- Pb ppm**
  - 0 - 25
  - 25 - 50
  - 50 - 100
  - 100 - 200
  - 200 - 400
  - 400 - 10000
- Elevation (20 m contours)

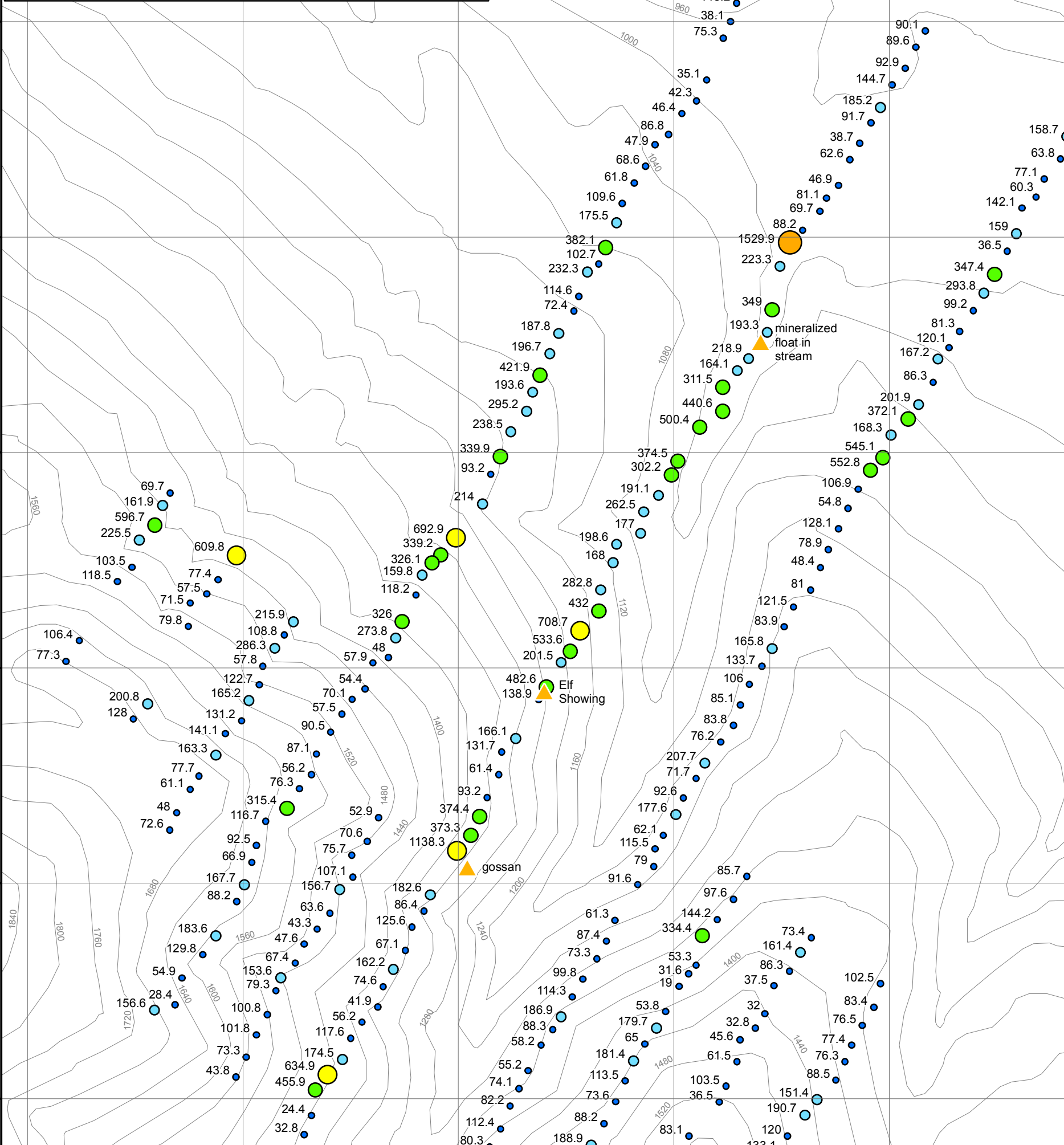
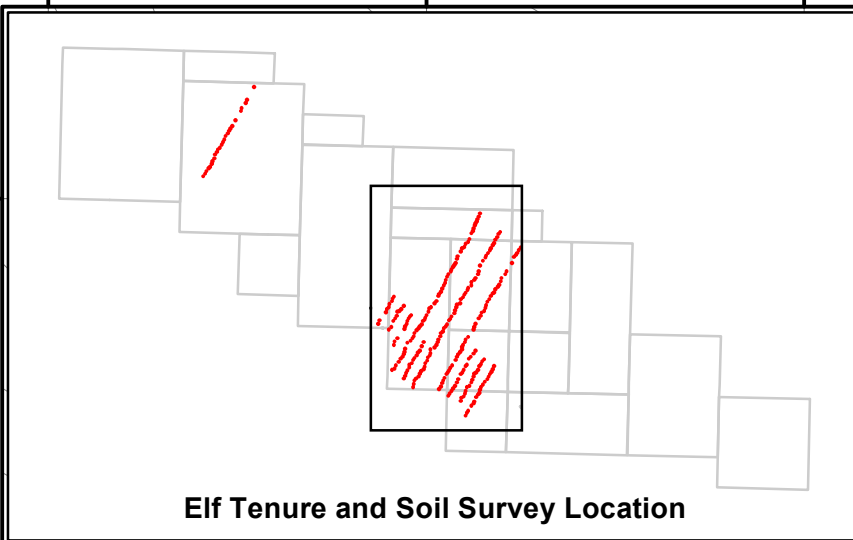
**Teck Resources Limited**  
 Suite 3300, 550 Burrard Street  
 Vancouver, BC Canada

**Elf Project**  
 British Columbia  
**A Horizon Pb ppm**

DATUM: NAD 83    PROJECTION: UTM Zone 10    Figure:  
 DATE: Nov 13, 2013    DRAWN BY: E.Thiessen    **16**

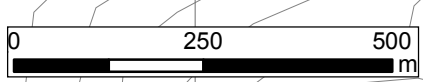


396000 396500 397000 397500 398000



**LEGEND**

- ▲ Showings and Gossans
- Zn ppm**
- 0 - 150
- 150 - 300
- 300 - 600
- 600 - 1200
- 1200 - 2400
- 2400 - 10000
- Elevation (20 m contours)

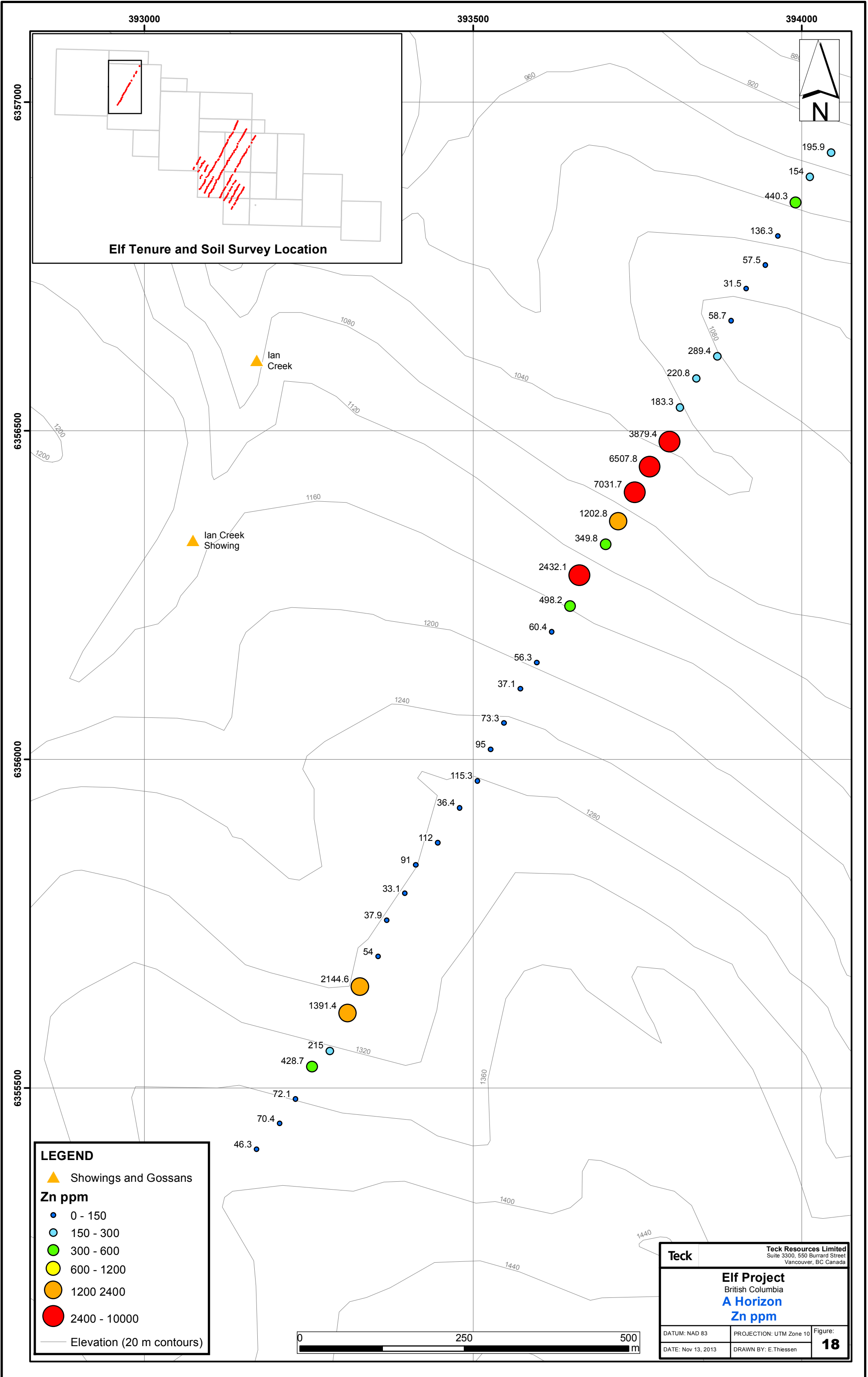


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**Elf Project**  
British Columbia  
**A Horizon**  
**Zn ppm**

DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>17</b>

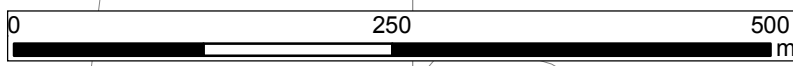




**Elf Tenure and Soil Survey Location**

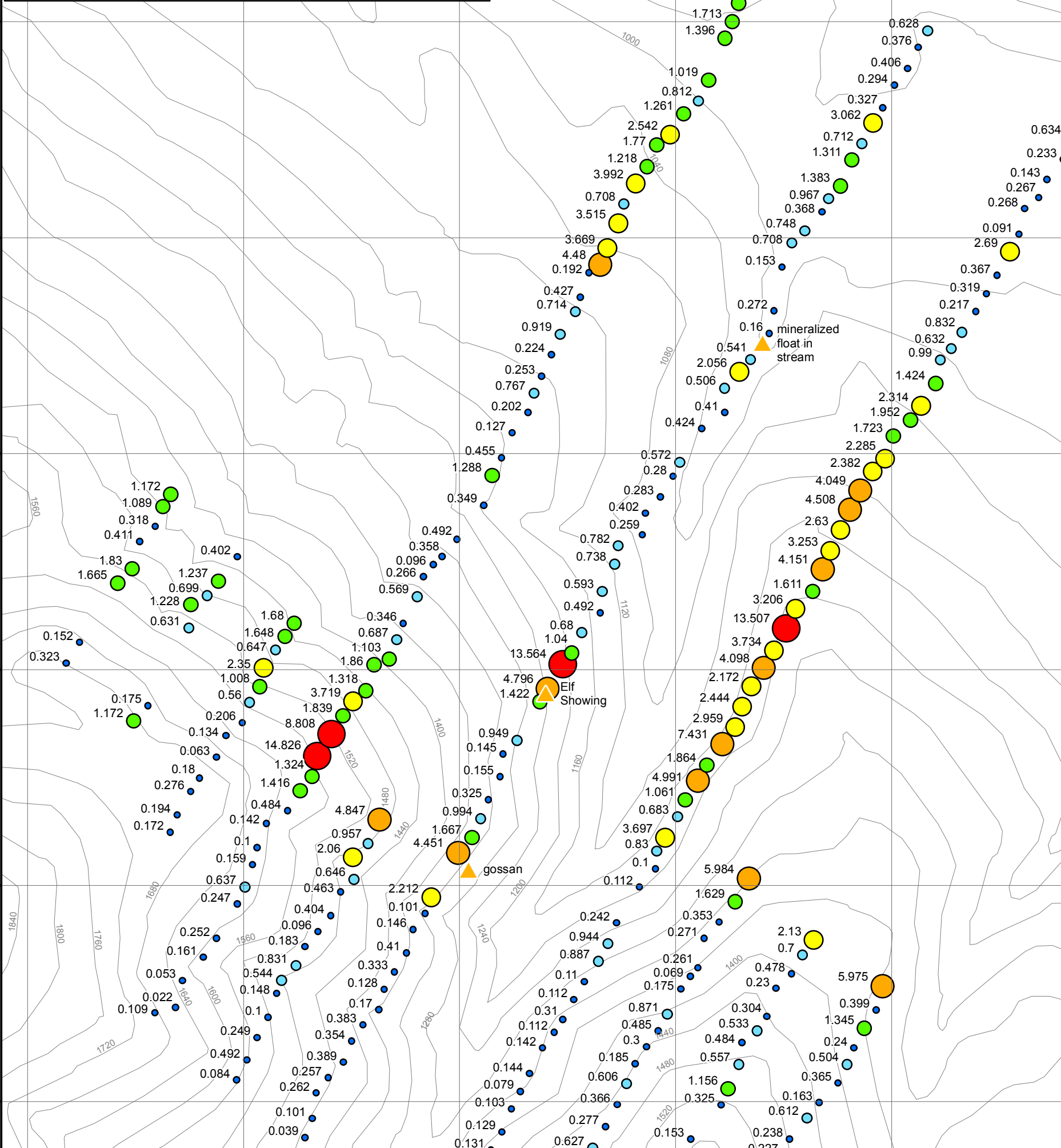
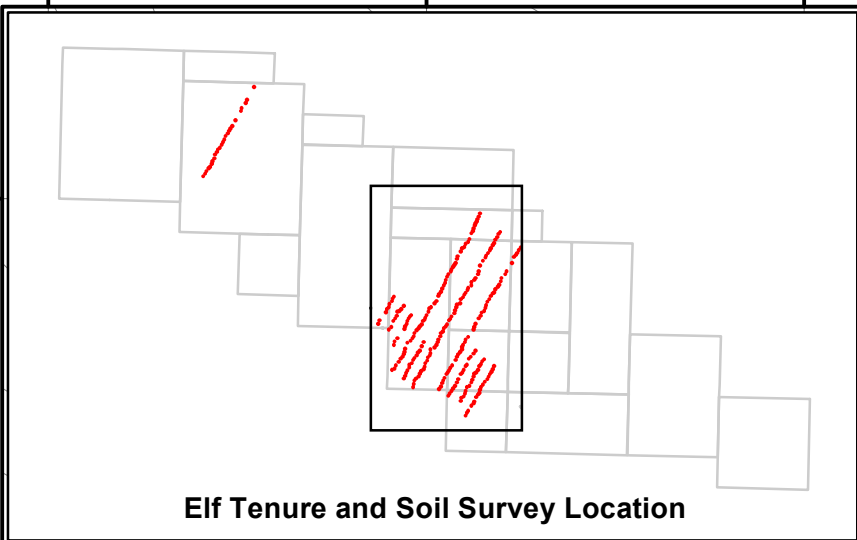
**LEGEND**

- ▲ Showings and Gossans
- Zn ppm**
- 0 - 150
- 150 - 300
- 300 - 600
- 600 - 1200
- 1200 - 2400
- 2400 - 10000
- Elevation (20 m contours)



<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada
<b>Elf Project</b> British Columbia <b>A Horizon Zn ppm</b>		
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>18</b>

396000 396500 397000 397500 398000



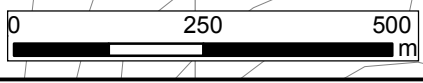
**LEGEND**

- ▲ Showings and Gossans

**Ag ppm**

- 0 - 0.5
- 0.5 - 1
- 1 - 2
- 2 - 4
- 4 - 8
- 8 - 100

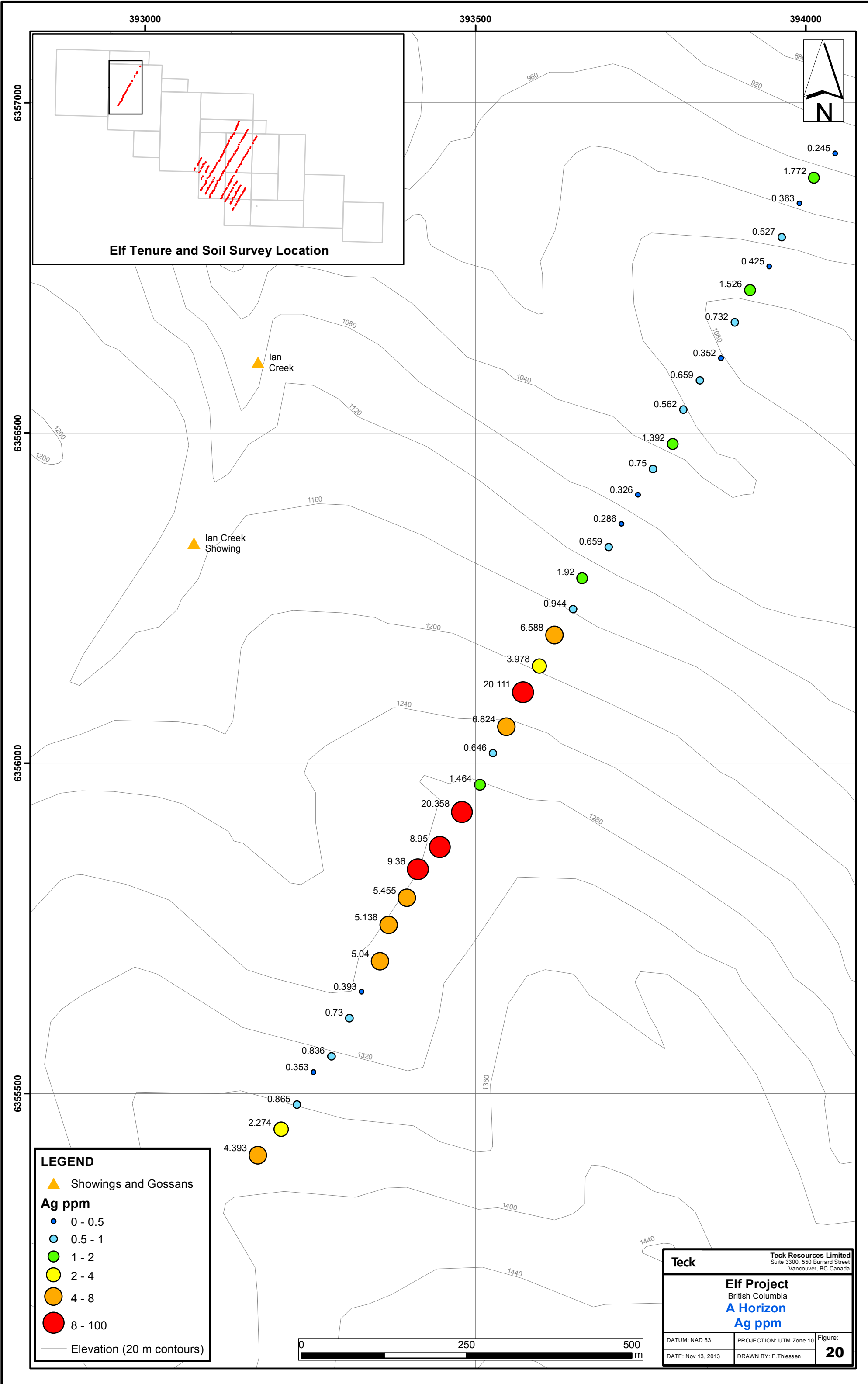
— Elevation (20 m contours)



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**Elf Project**  
British Columbia  
**A Horizon**  
**Ag ppm**

DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>19</b>



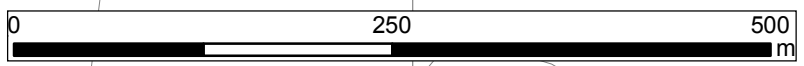
**Elf Tenure and Soil Survey Location**



Ian Creek  
 Ian Creek Showing

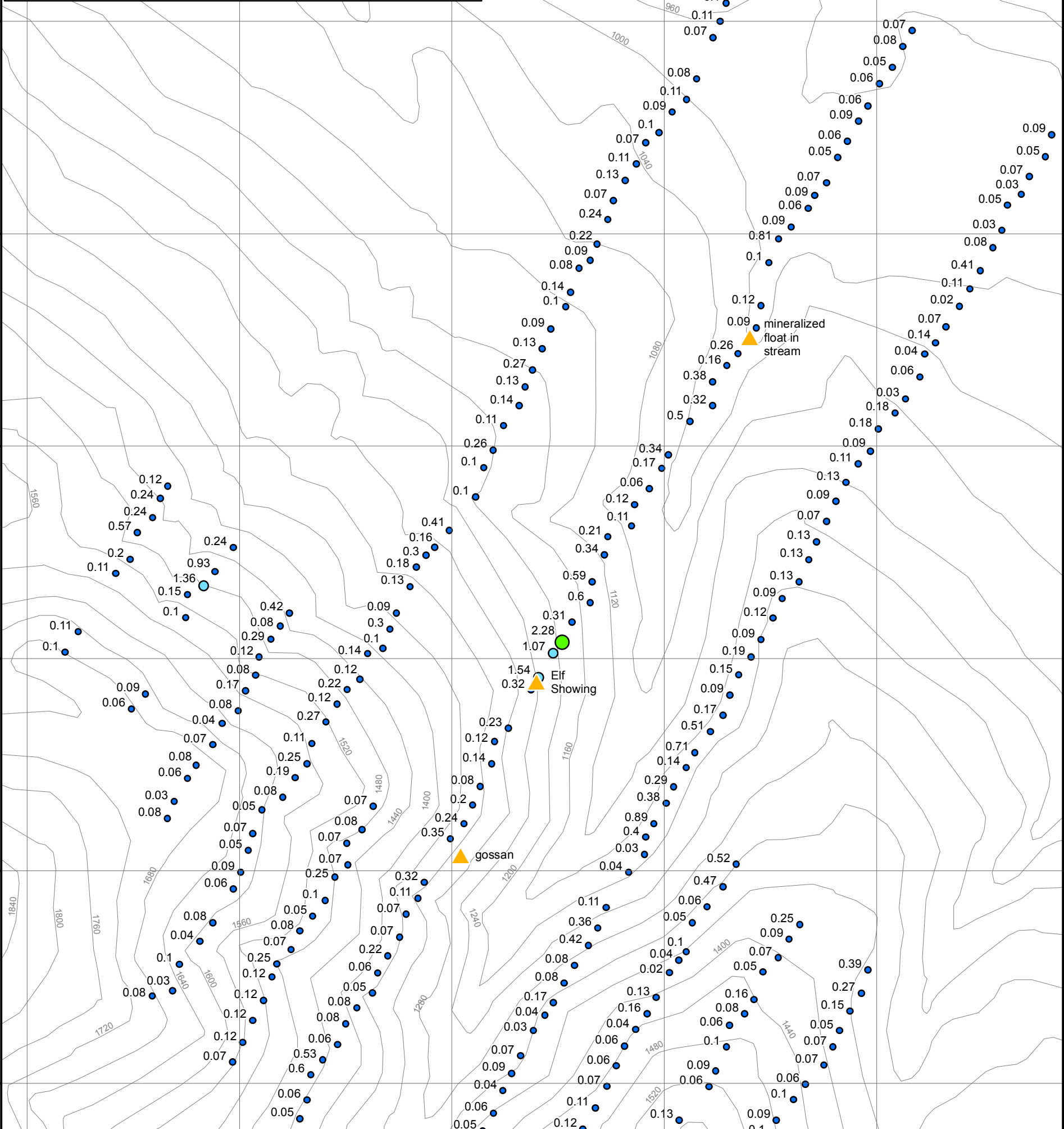
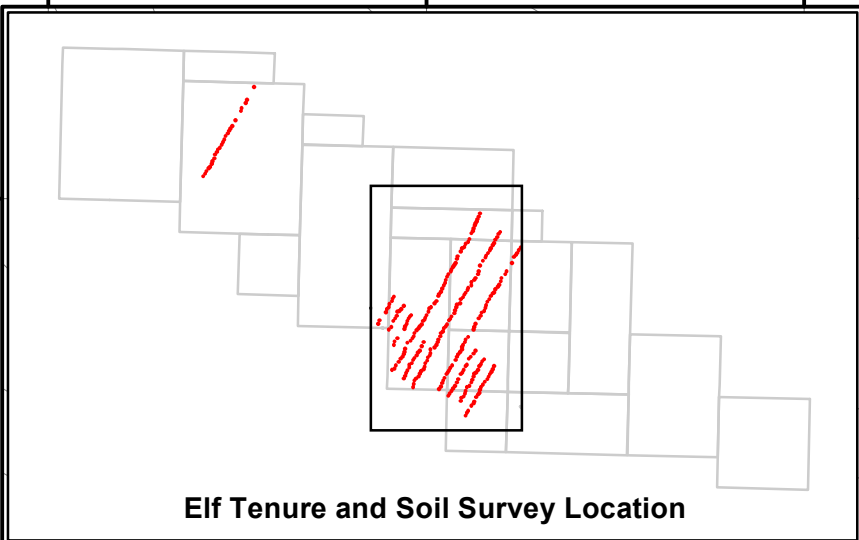
**LEGEND**

- ▲ Showings and Gossans
- Ag ppm**
- 0 - 0.5
- 0.5 - 1
- 1 - 2
- 2 - 4
- 4 - 8
- 8 - 100
- Elevation (20 m contours)



<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada
<b>Elf Project</b> British Columbia <b>A Horizon</b> <b>Ag ppm</b>		
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>20</b>

396000 396500 397000 397500 398000



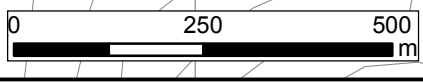
**LEGEND**

- ▲ Showings and Gossans

**TI ppm**

- 0 - 1
- 1 - 2
- 2 - 4
- 4 - 8
- 8 - 16
- 16 - 40

— Elevation (20 m contours)



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Vancouver, BC Canada

**Elf Project**  
British Columbia  
**A Horizon**  
**TI ppm**

DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>21</b>

393000

393500

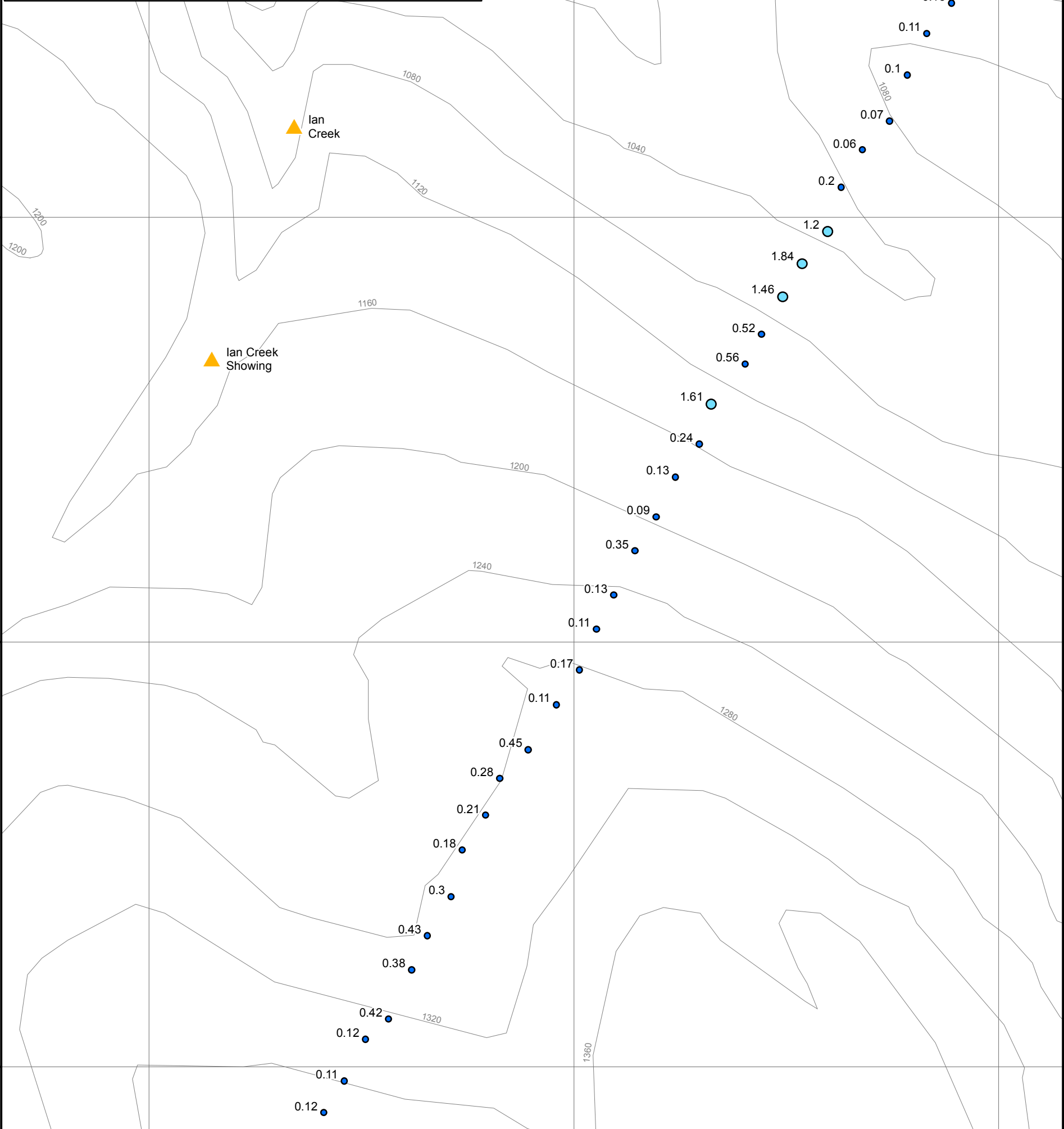
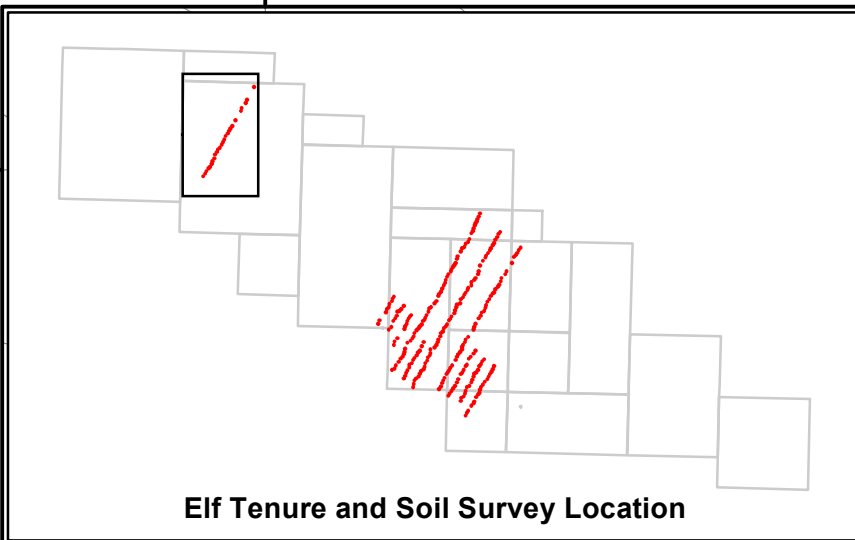
394000

6357000

6356500

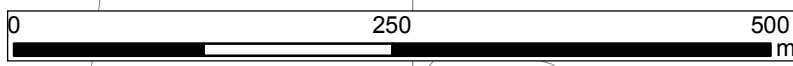
6356000

6355500



**LEGEND**

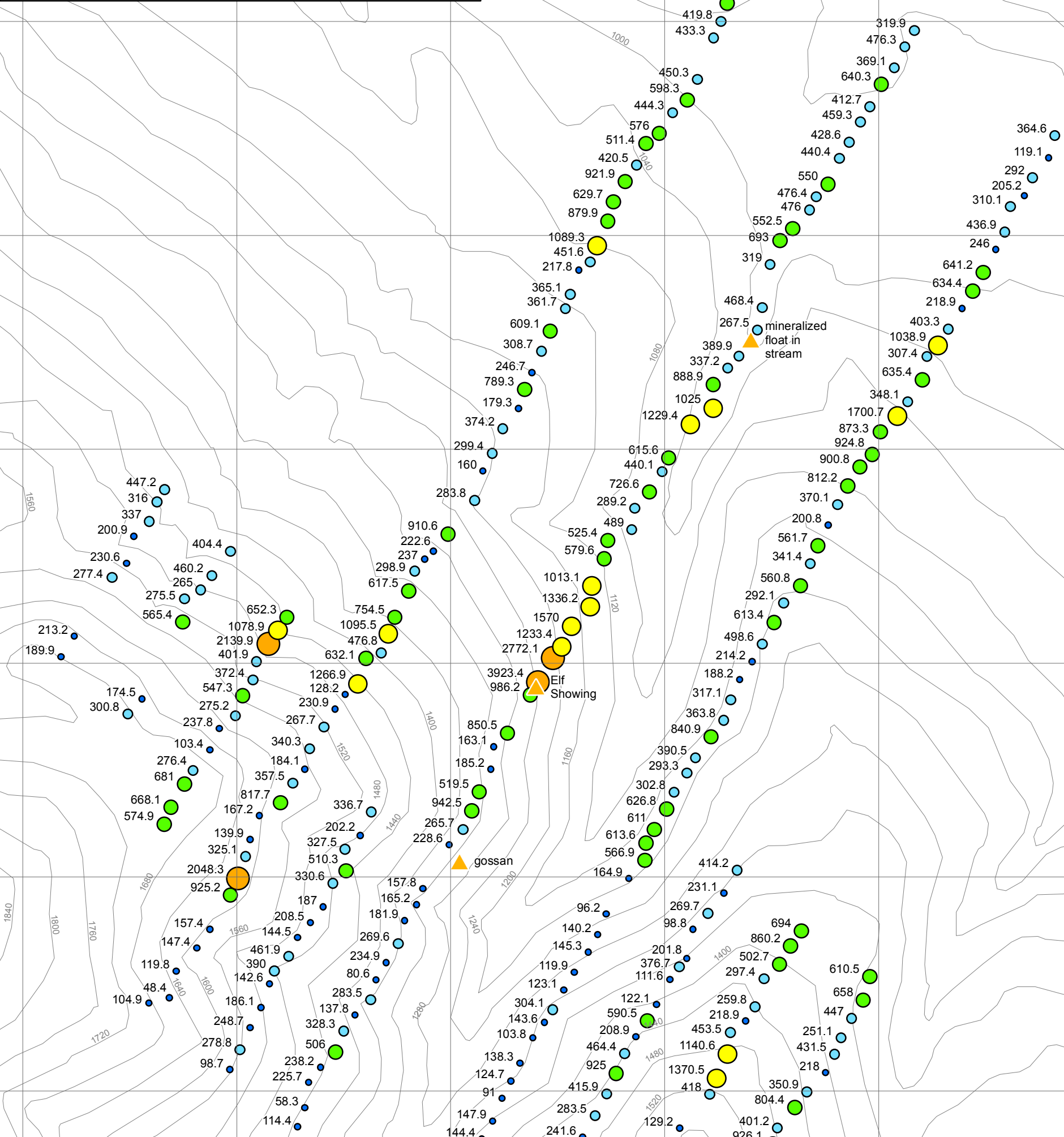
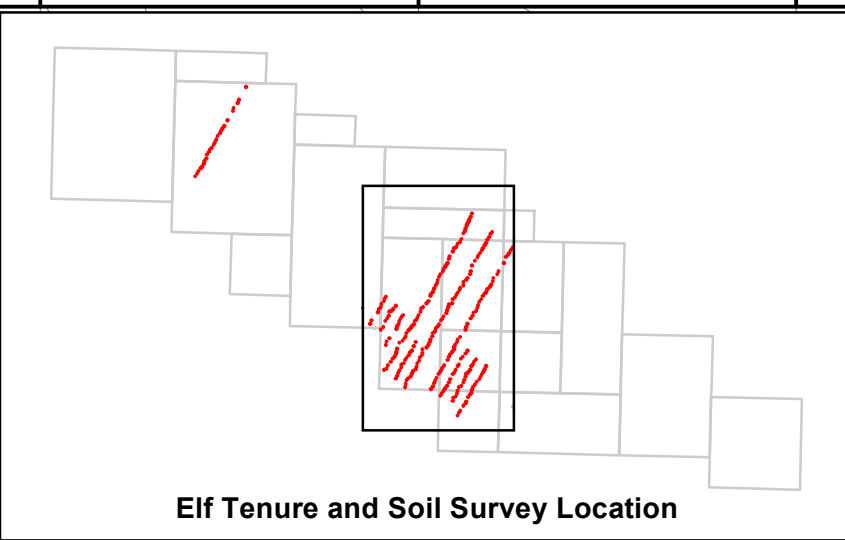
- Showings and Gossans
- Tl ppm**
- 0 - 1
- 1 - 2
- 2 - 4
- 4 - 8
- 8 - 16
- 16 - 40
- Elevation (20 m contours)



<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada
<b>Elf Project</b> British Columbia <b>A Horizon</b> <b>Tl ppm</b>		
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>22</b>

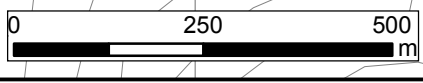
396000 396500 397000 397500 398000

6355000  
6354500  
6354000  
6353500  
6353000  
6352500  
6352000  
6351500



**LEGEND**

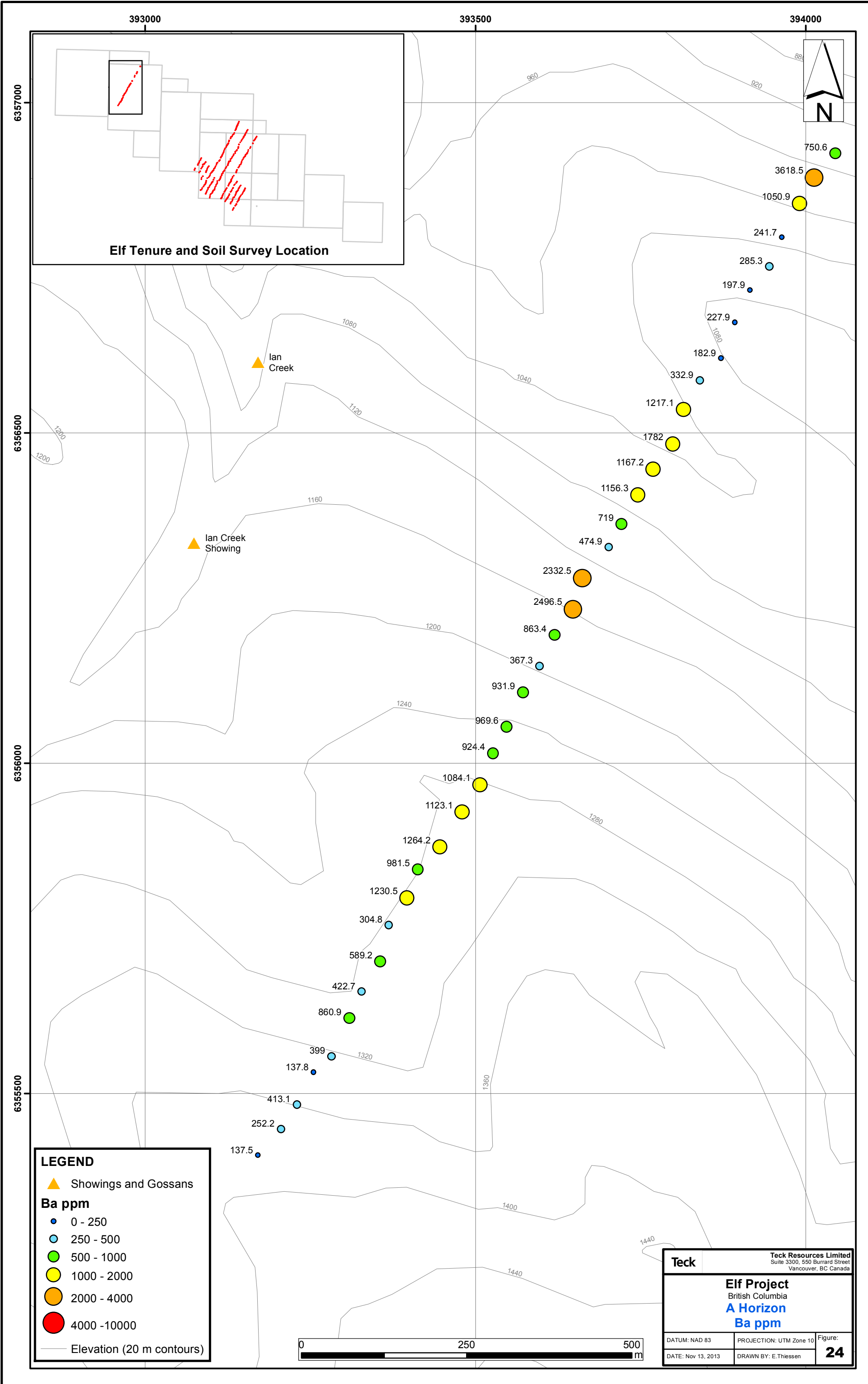
- ▲ Showings and Gossans
- Ba ppm**
- 0 - 250
- 250 - 500
- 500 - 1000
- 1000 - 2000
- 2000 - 4000
- 4000 - 10000
- Elevation (20 m contours)



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**Elf Project**  
British Columbia  
**A Horizon**  
**Ba ppm**

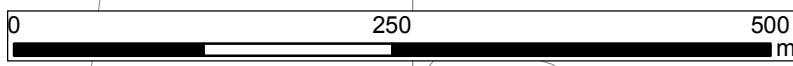
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>23</b>



**Elf Tenure and Soil Survey Location**

**LEGEND**

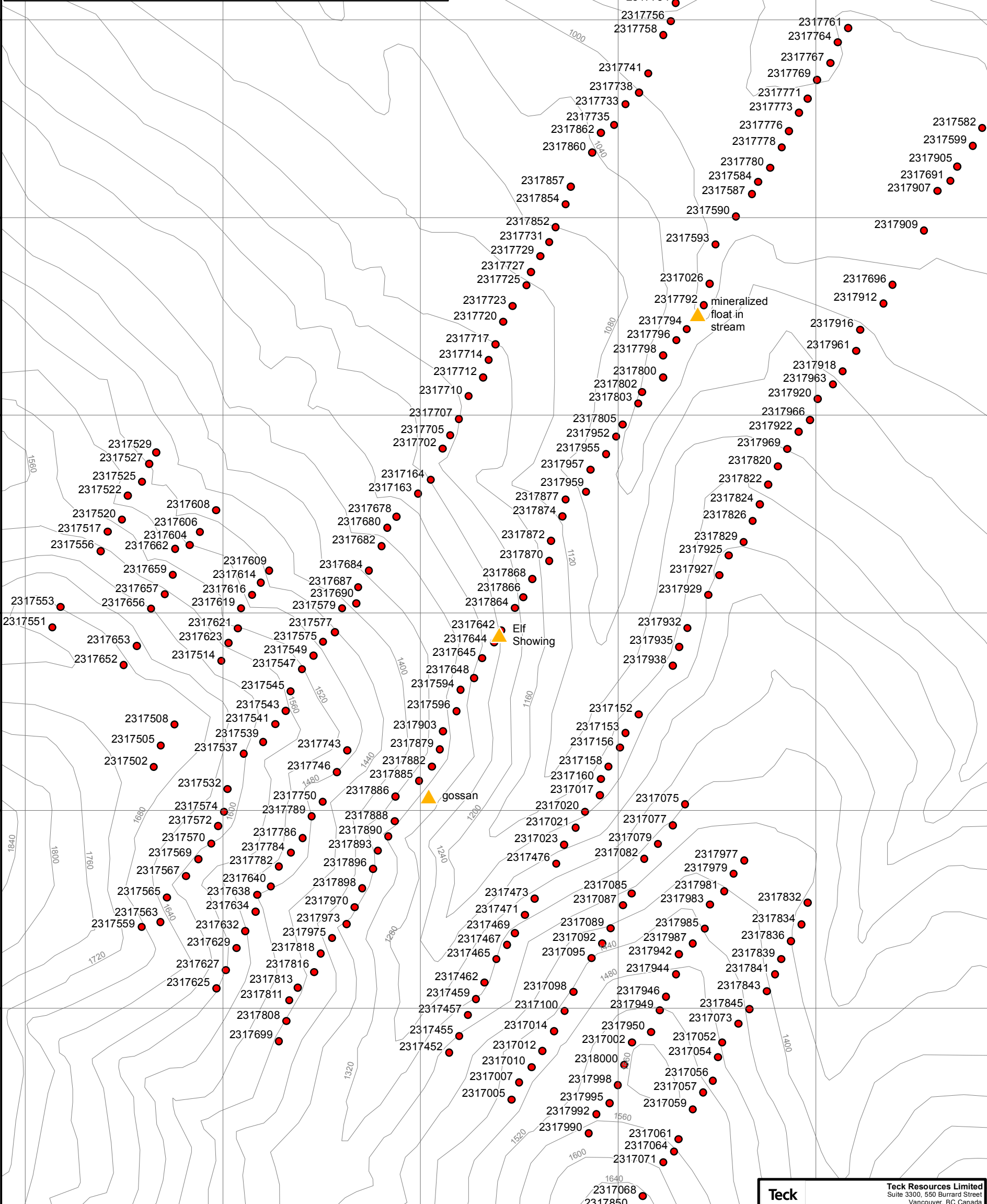
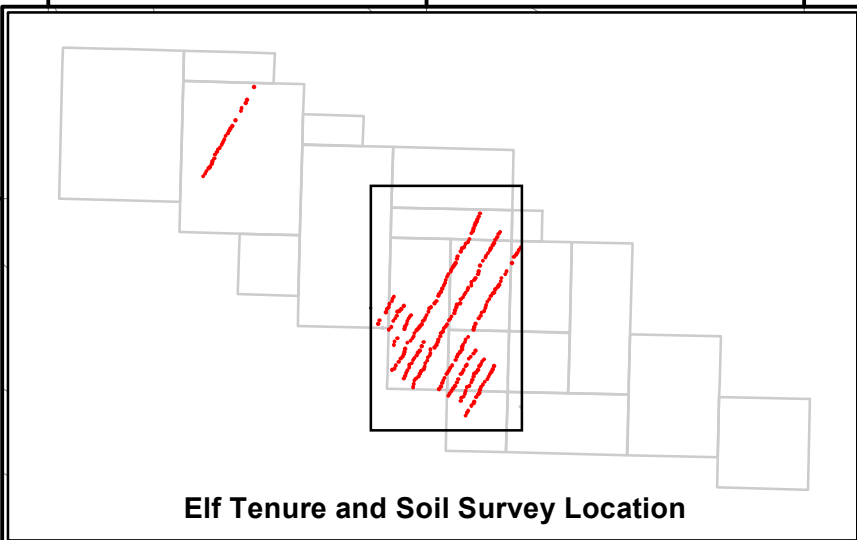
- ▲ Showings and Gossans
- Ba ppm**
- 0 - 250
- 250 - 500
- 500 - 1000
- 1000 - 2000
- 2000 - 4000
- 4000 - 10000
- Elevation (20 m contours)



<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada
<b>Elf Project</b> British Columbia <b>A Horizon</b> <b>Ba ppm</b>		
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>24</b>

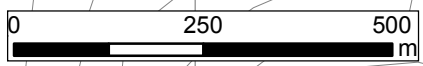
396000 396500 397000 397500 398000

6355000  
6354500  
6354000  
6353500  
6353000  
6352500  
6352000  
6351500



**LEGEND**

- Showings and Gossans
- B Horizon Sample Locations
- Elevation (20 m contours)



<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada	
<b>Elf Project</b> British Columbia <b>B Horizon</b> <b>Sample Locations</b>			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>25</b>	



393000

393500

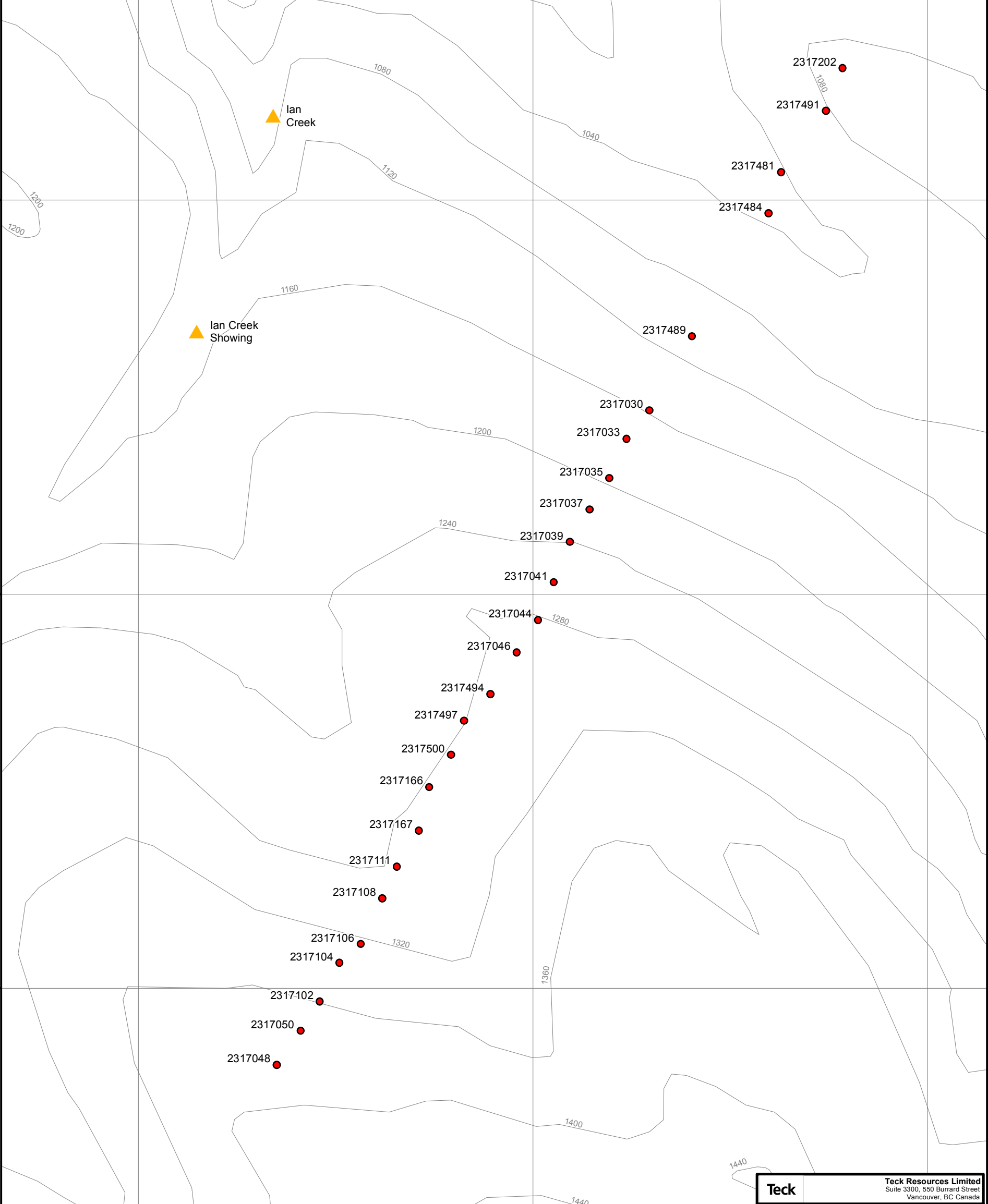
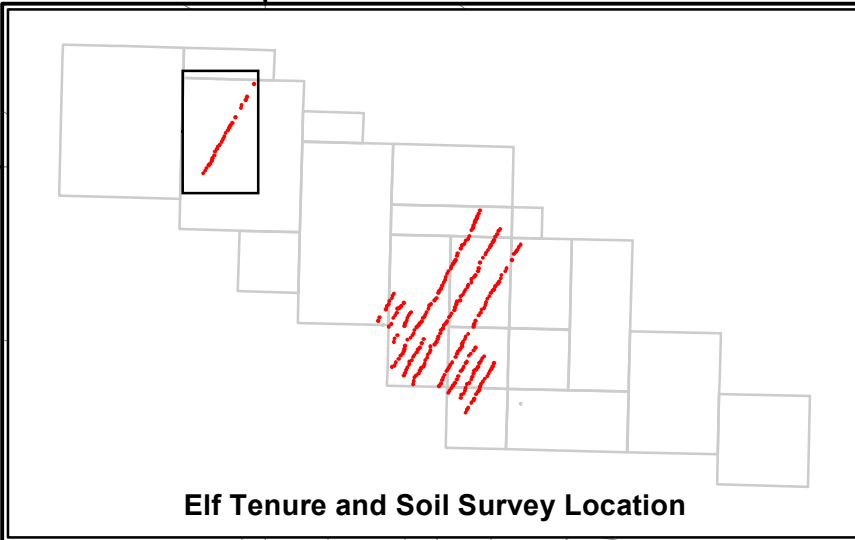
394000

6357000

6356500

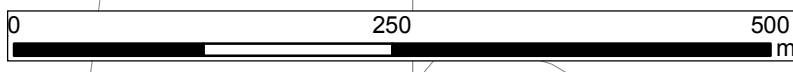
6356000

6355500



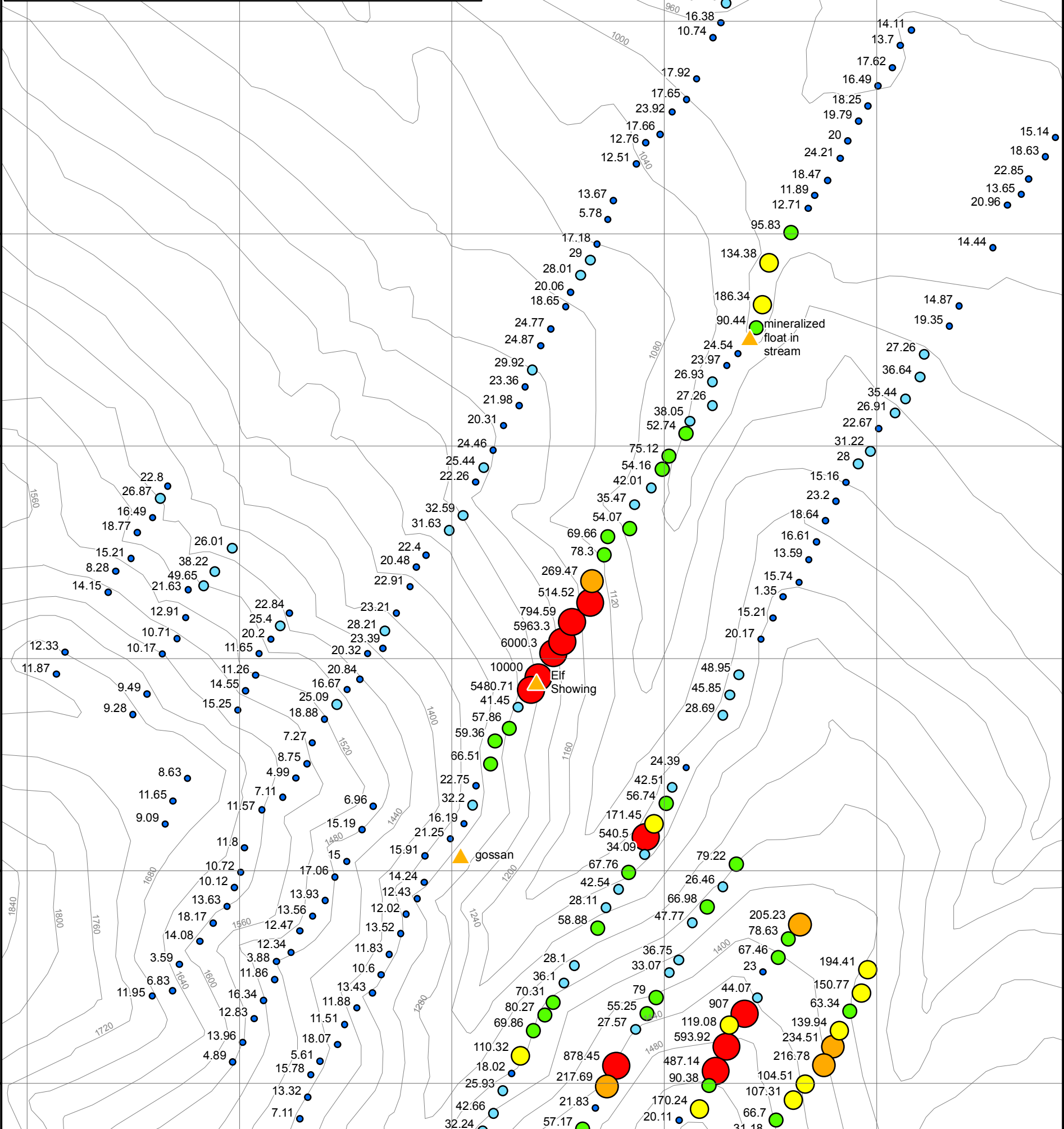
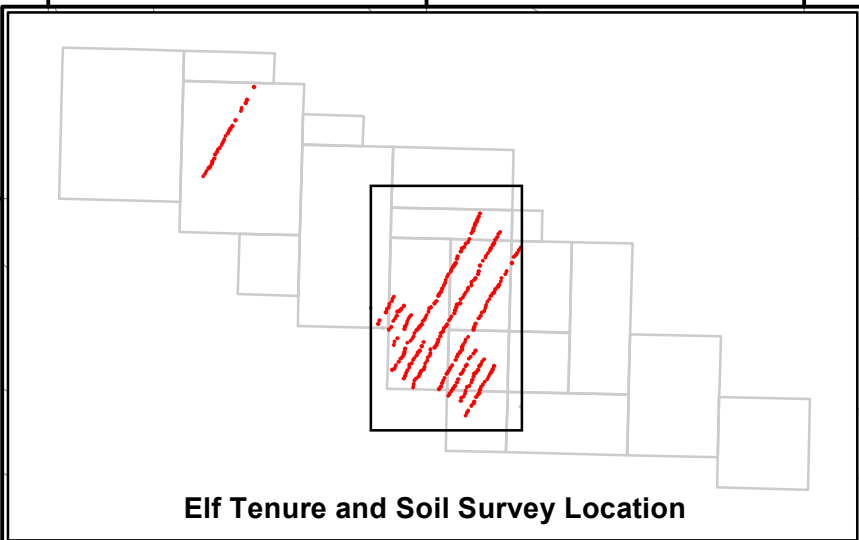
**LEGEND**

- Showings and Gossans
- B Horizon Sample Locations
- Elevation (20 m contours)



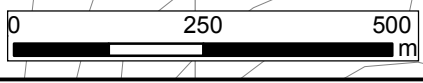
<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada	
<b>Elf Project</b> British Columbia <b>B Horizon</b> <b>Sample Locations</b>			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>26</b>	

396000 396500 397000 397500 398000



**LEGEND**

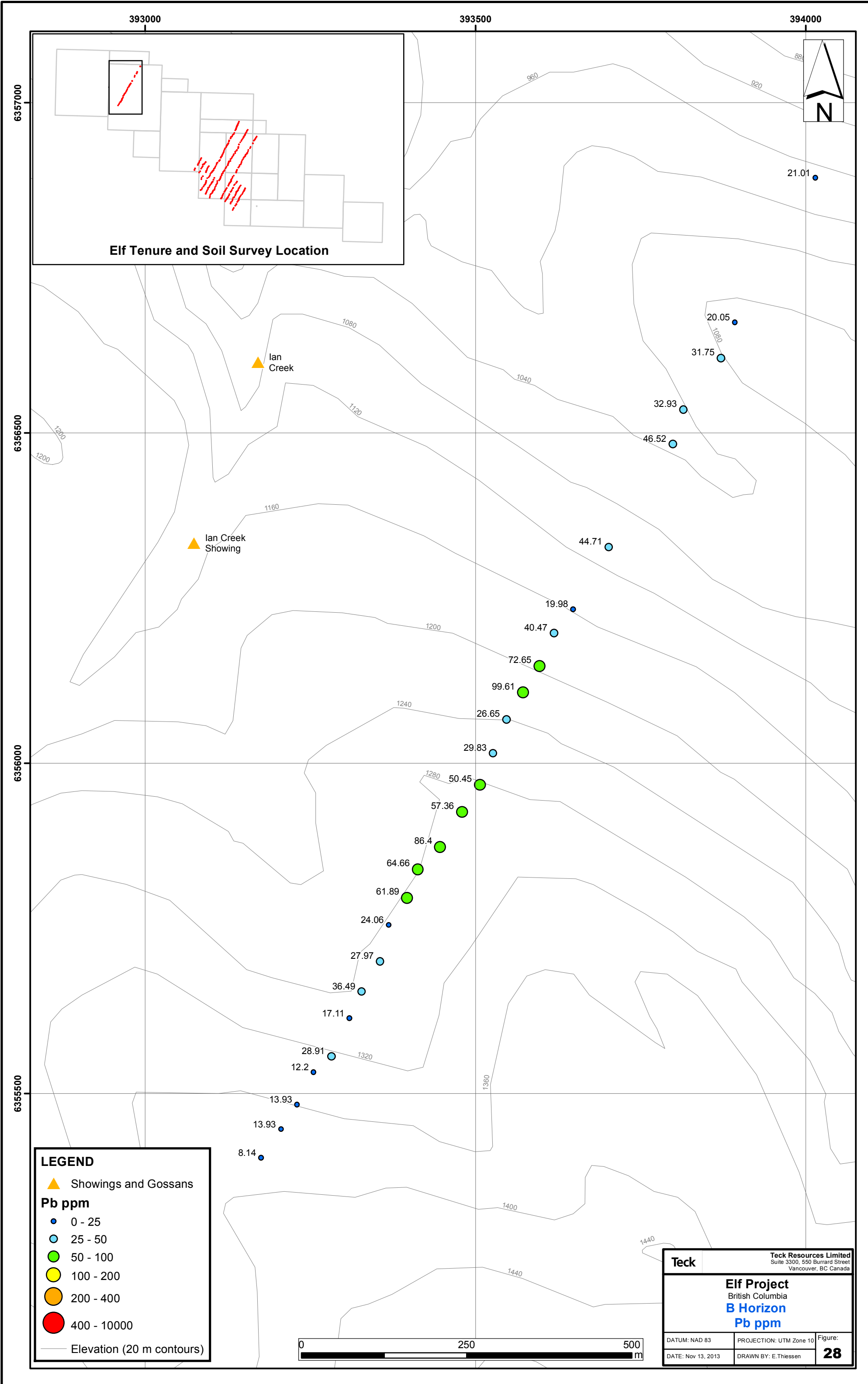
- ▲ Showings and Gossans
- Pb ppm**
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 400
- 400 - 10000
- Elevation (20 m contours)



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Vancouver, BC Canada

**Elf Project**  
British Columbia  
**B Horizon**  
**Pb ppm**

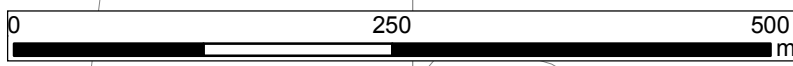
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>27</b>



**Elf Tenure and Soil Survey Location**

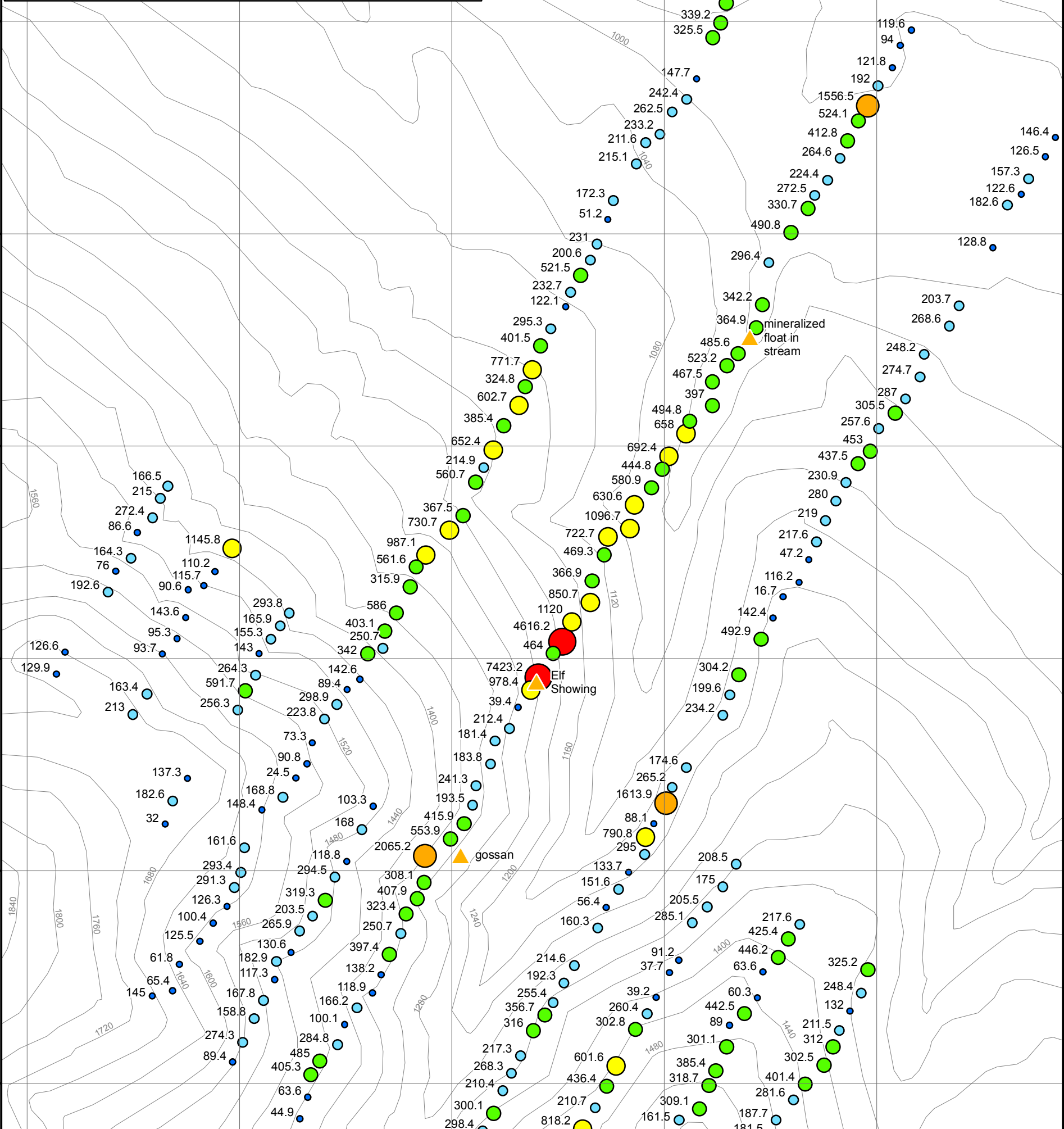
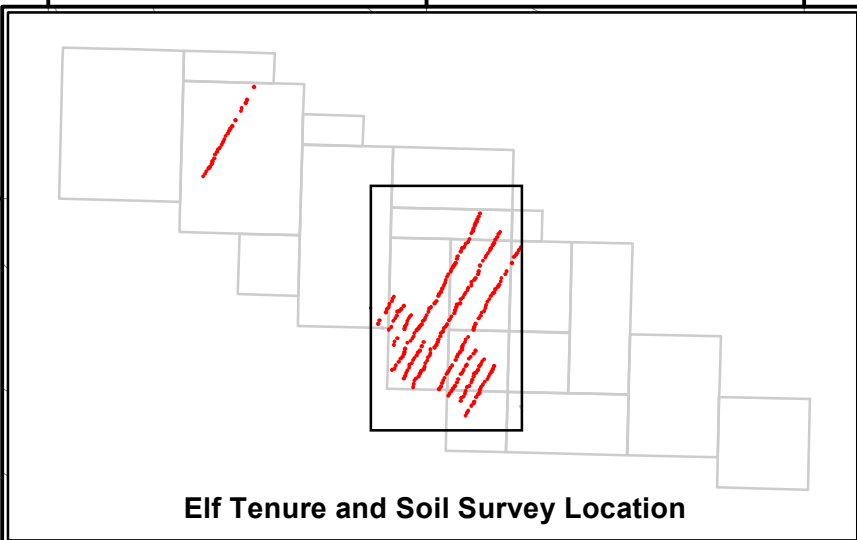
**LEGEND**

- ▲ Showings and Gossans
- Pb ppm**
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 400
- 400 - 10000
- Elevation (20 m contours)



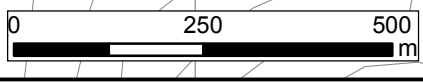
<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada
<b>Elf Project</b> British Columbia <b>B Horizon</b> <b>Pb ppm</b>		
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>28</b>

396000 396500 397000 397500 398000



**LEGEND**

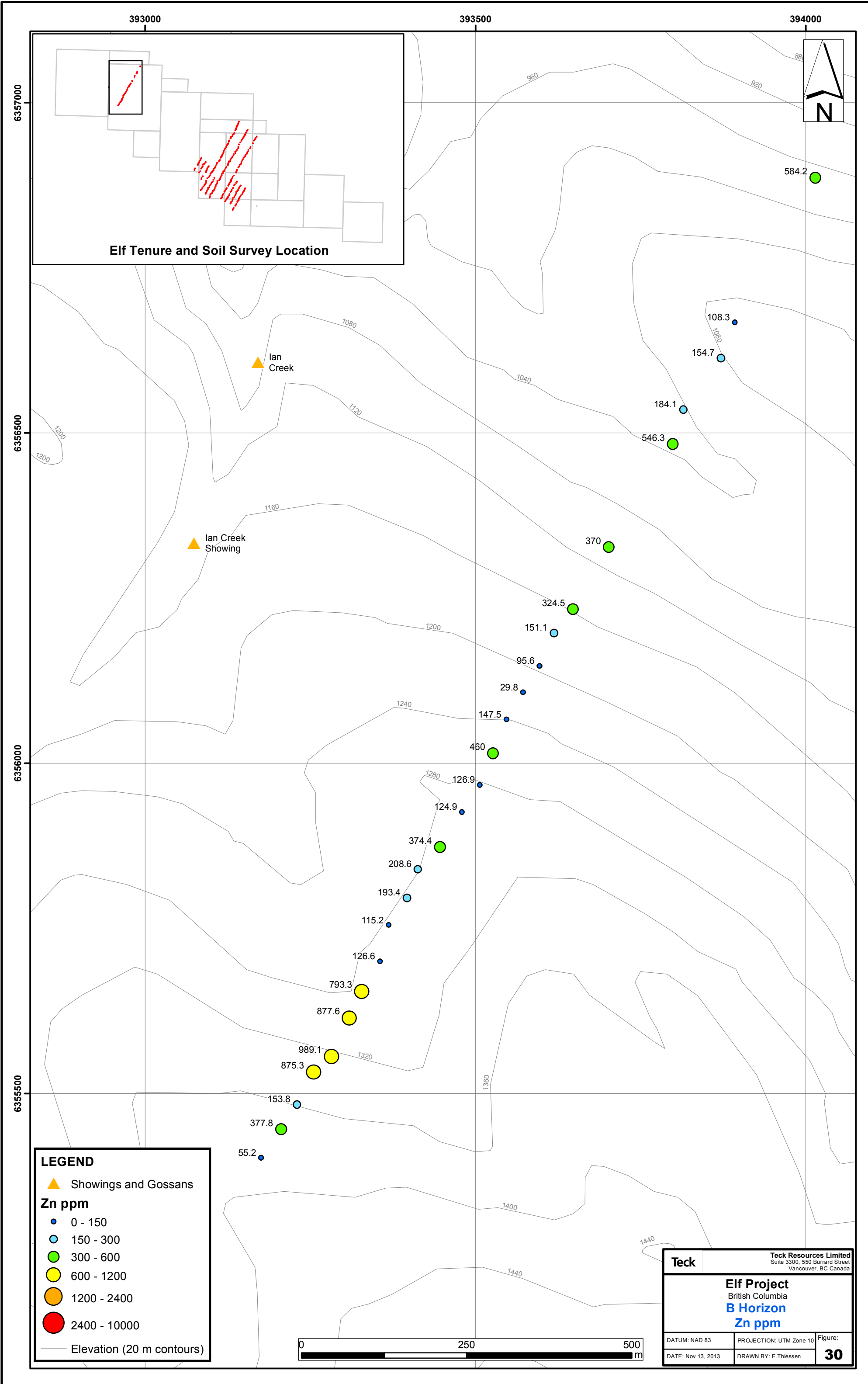
- Showings and Gossans
- Zn ppm**
- 0 - 150
- 150 - 300
- 300 - 600
- 600 - 1200
- 1200 - 2400
- 2400 - 10000
- Elevation (20 m contours)



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Vancouver, BC Canada

**Elf Project**  
British Columbia  
**B Horizon**  
**Zn ppm**

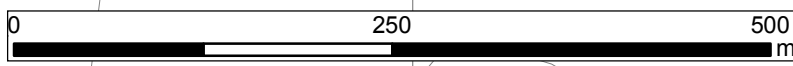
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>29</b>



**Elf Tenure and Soil Survey Location**

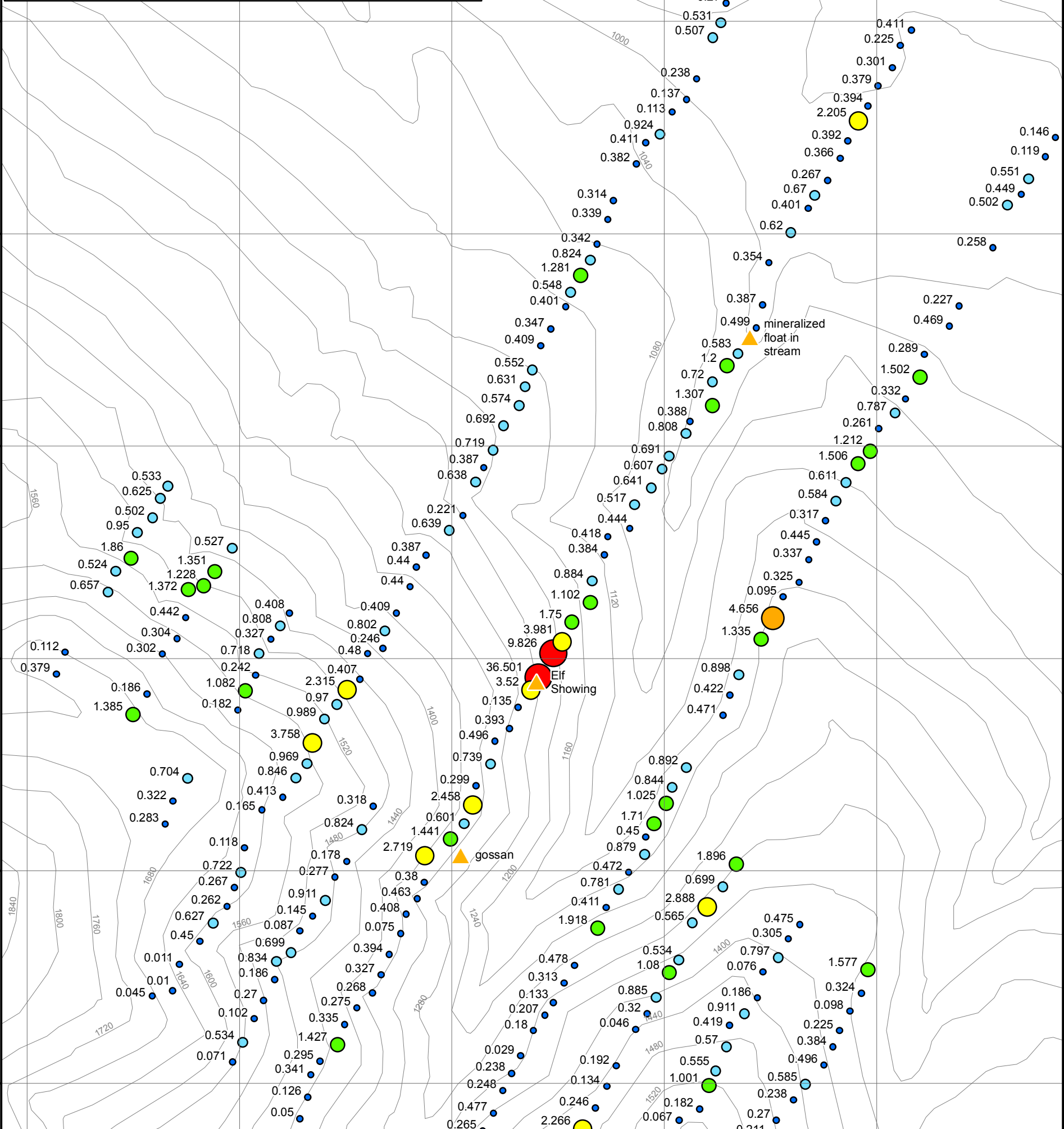
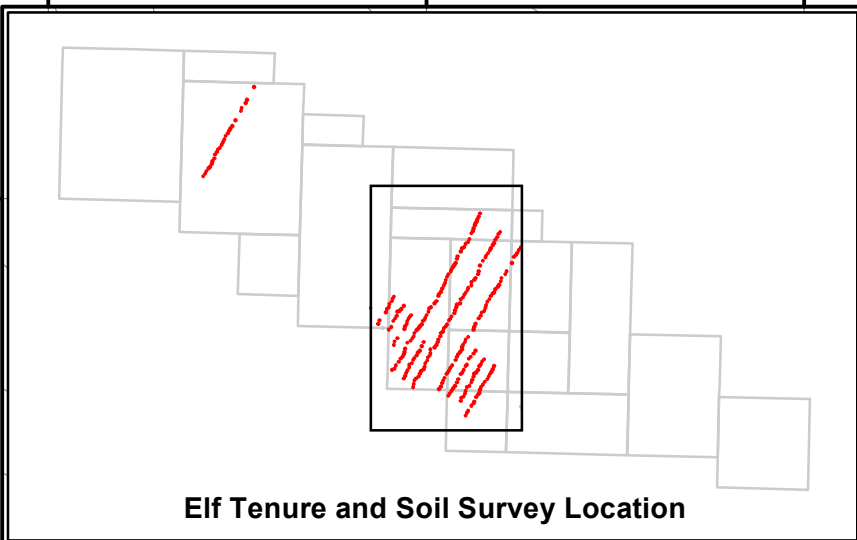
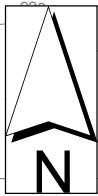
**LEGEND**

- ▲ Showings and Gossans
- Zn ppm**
- 0 - 150
- 150 - 300
- 300 - 600
- 600 - 1200
- 1200 - 2400
- 2400 - 10000
- Elevation (20 m contours)



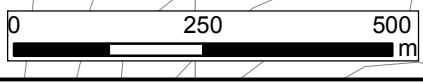
<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada
<b>Elf Project</b> British Columbia <b>B Horizon</b> <b>Zn ppm</b>		
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>30</b>

396000 396500 397000 397500 398000



**LEGEND**

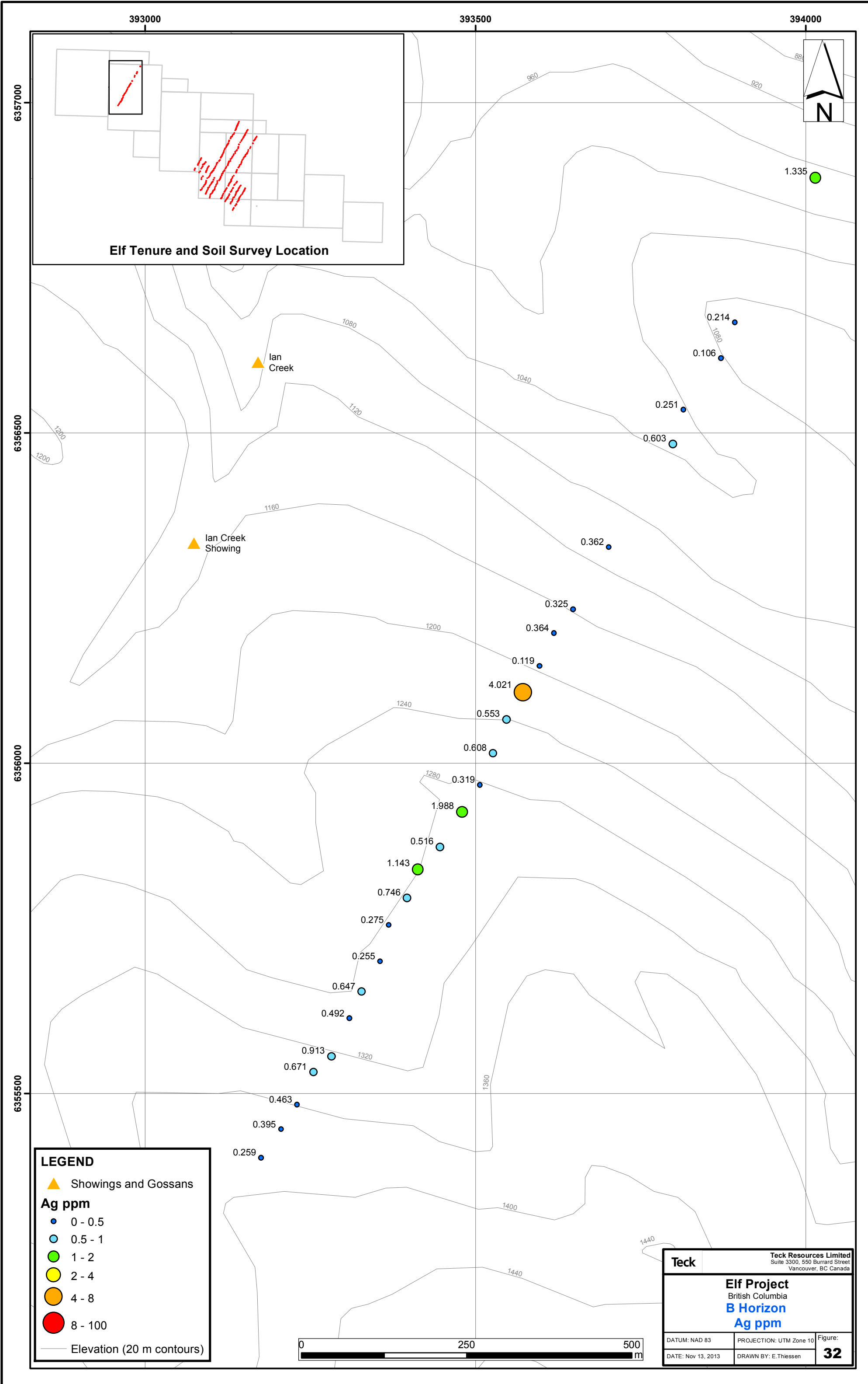
- Showings and Gossans
- Ag ppm**
- 0 - 0.5
- 0.5 - 1
- 1 - 2
- 2 - 4
- 4 - 8
- 8 - 100
- Elevation (20 m contours)



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Vancouver, BC Canada

**Elf Project**  
British Columbia  
**B Horizon**  
**Ag ppm**

DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>31</b>



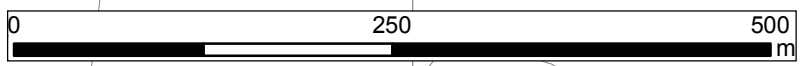
**Elf Tenure and Soil Survey Location**

Ian Creek

Ian Creek Showing

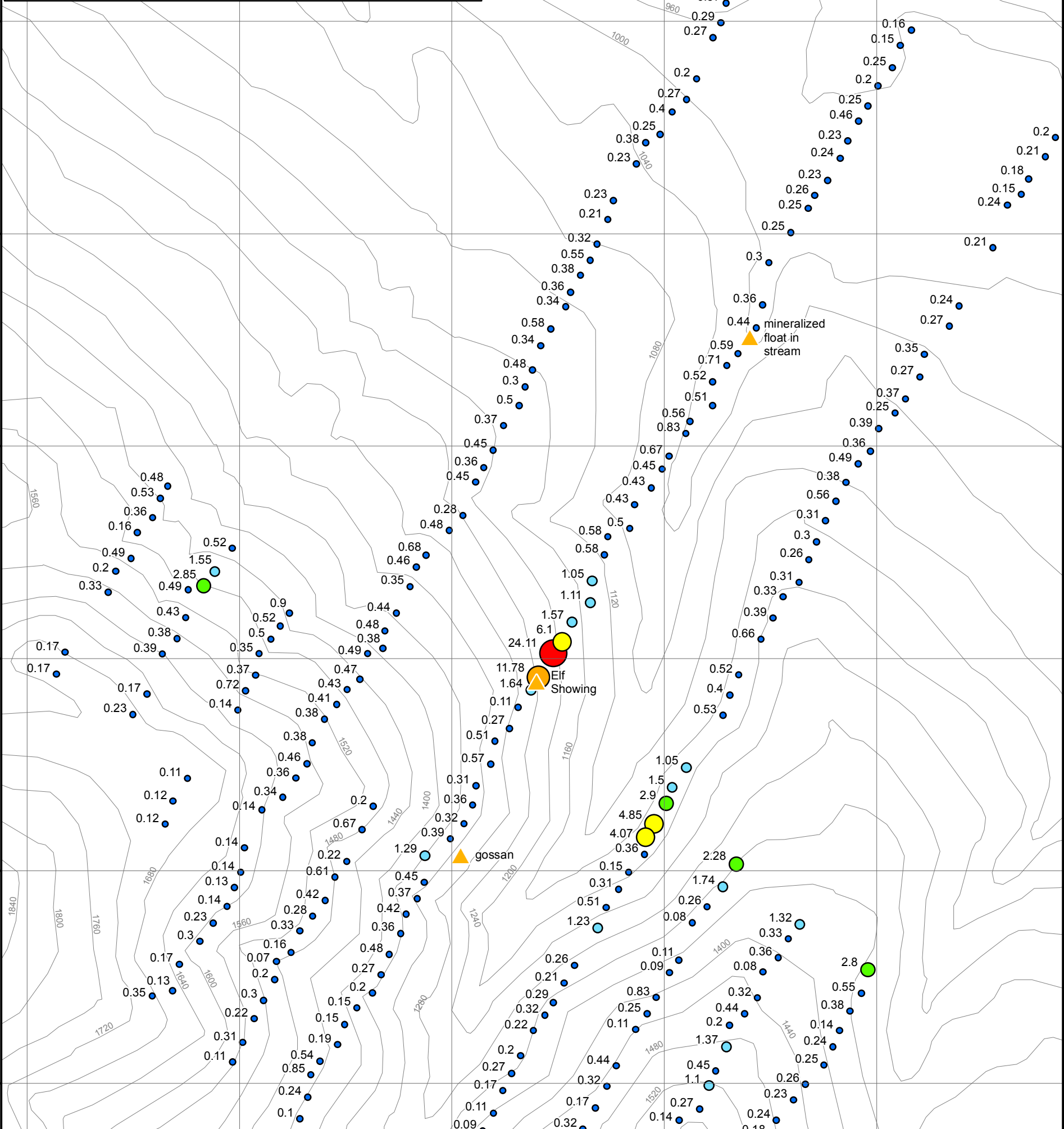
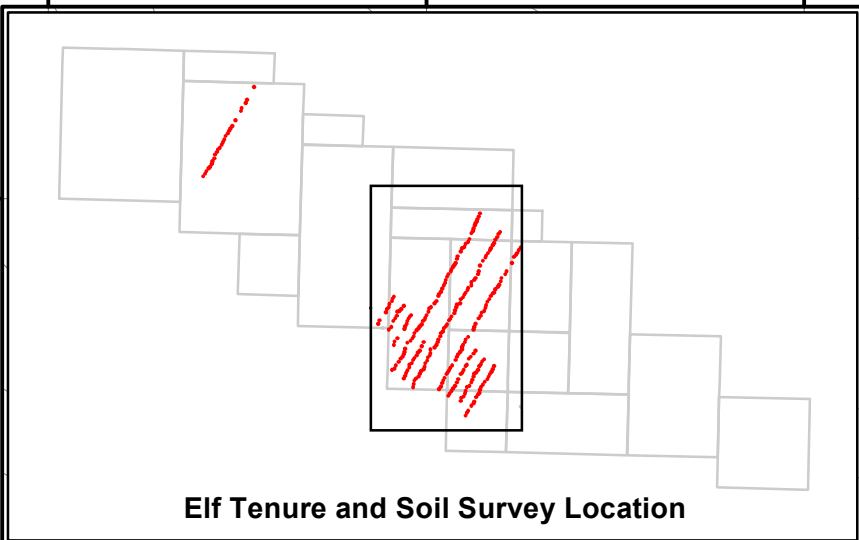
**LEGEND**

- ▲ Showings and Gossans
- Ag ppm**
- 0 - 0.5
- 0.5 - 1
- 1 - 2
- 2 - 4
- 4 - 8
- 8 - 100
- Elevation (20 m contours)



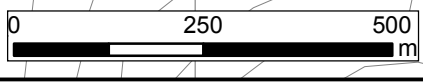
<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada
<b>Elf Project</b> British Columbia <b>B Horizon</b> <b>Ag ppm</b>		
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>32</b>

396000 396500 397000 397500 398000



**LEGEND**

- ▲ Showings and Gossans
- TI ppm**
- 0 - 1
- 1 - 2
- 2 - 4
- 4 - 8
- 8 - 16
- 16 - 40
- Elevation (20 m contours)



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Vancouver, BC Canada

**Elf Project**  
British Columbia  
**B Horizon**  
**TI ppm**

DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>33</b>



393000

393500

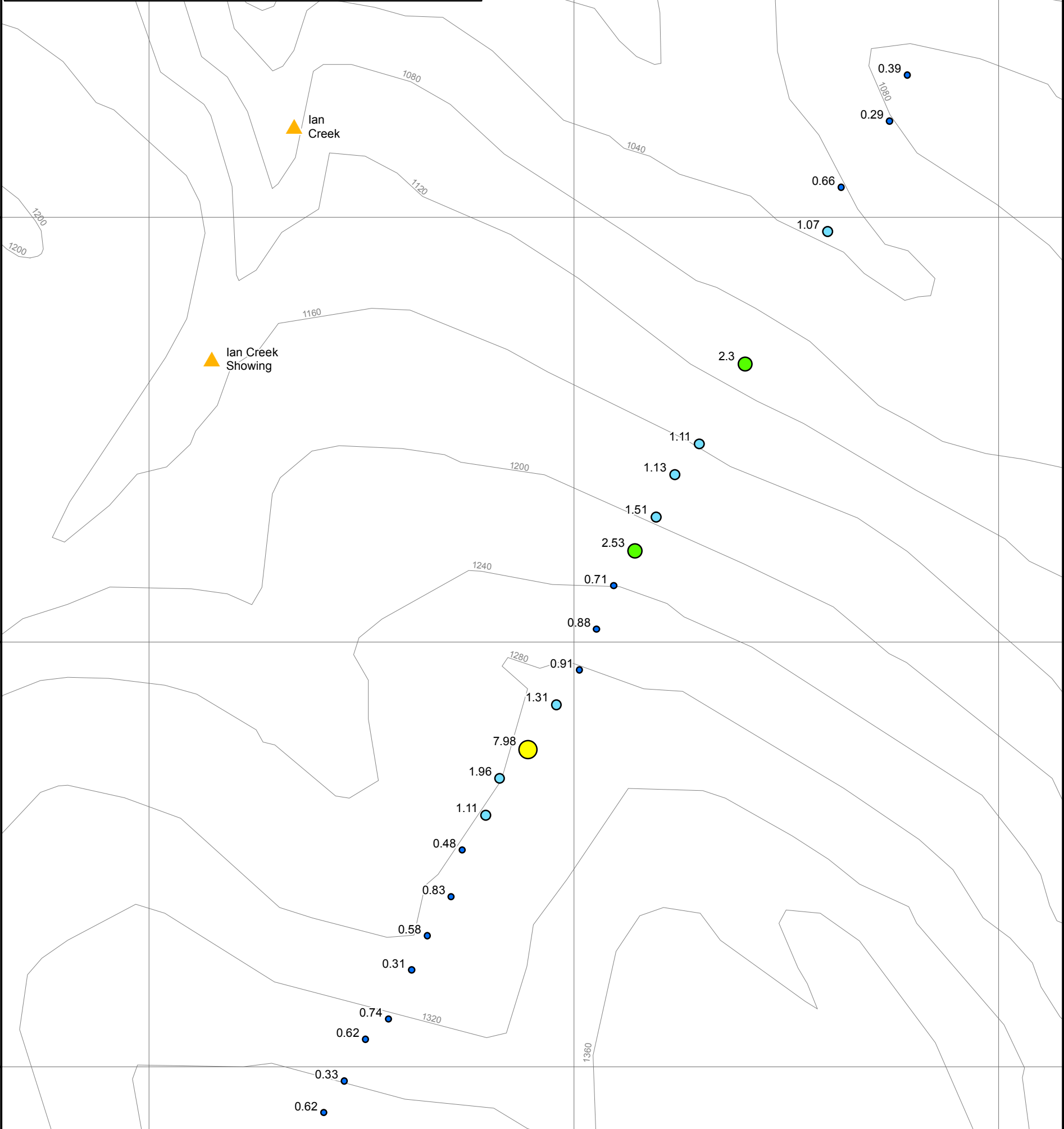
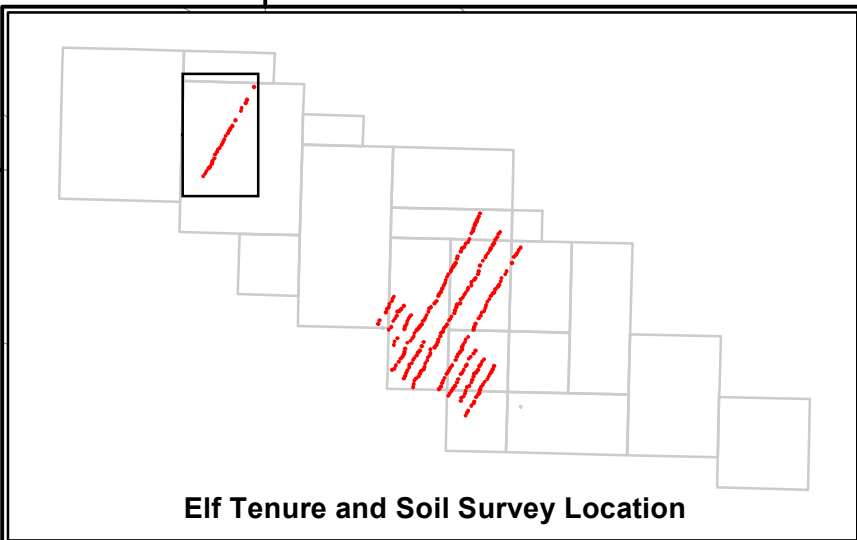
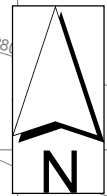
394000

6357000

6356500

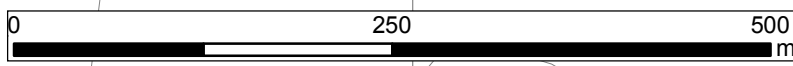
6356000

6355500



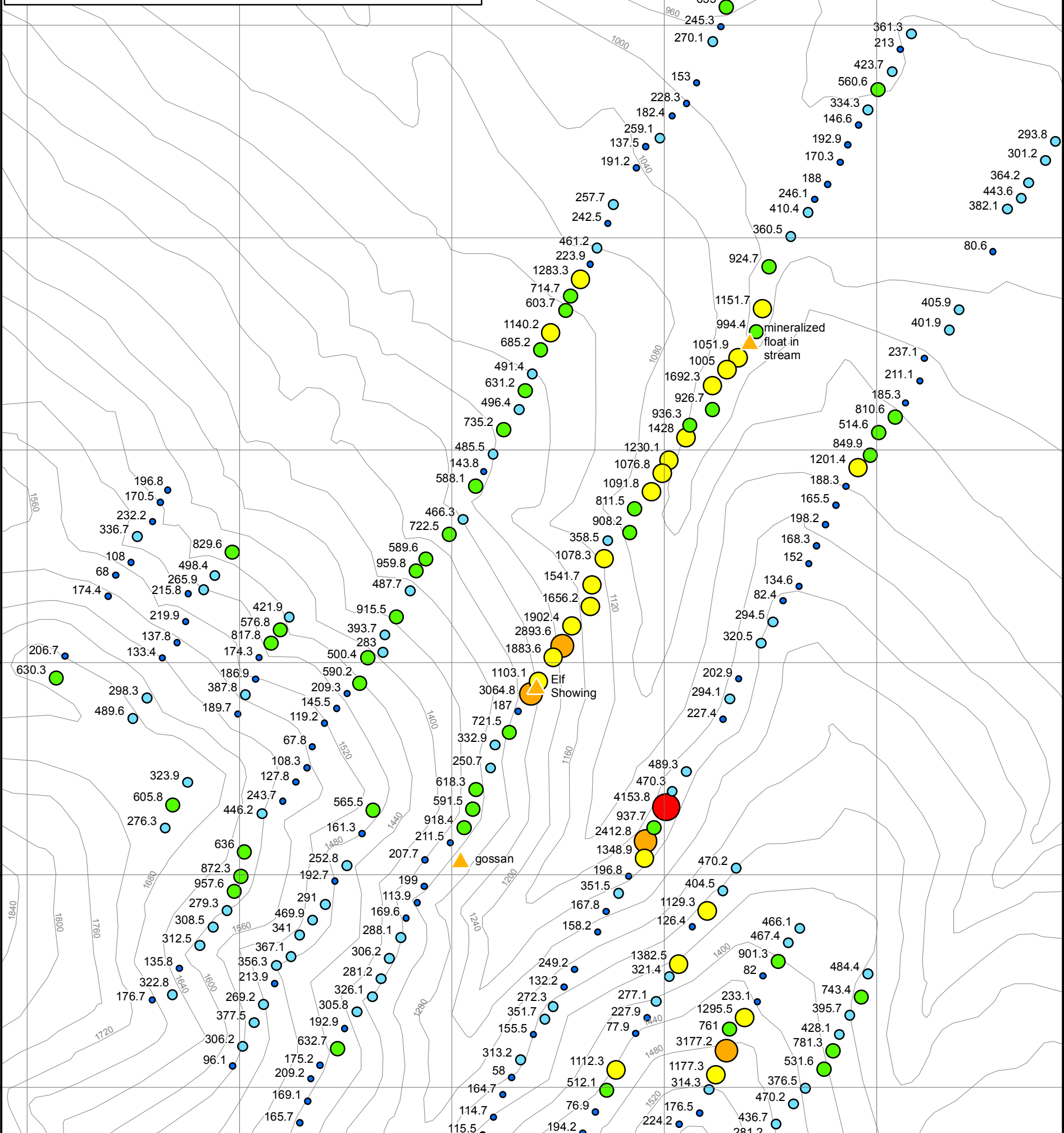
**LEGEND**

- Showings and Gossans
- TI ppm**
- 0 - 1
- 1 - 2
- 2 - 4
- 4 - 8
- 8 - 16
- 16 - 40
- Elevation (20 m contours)



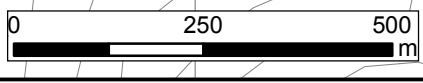
<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada
<b>Elf Project</b> British Columbia <b>B Horizon</b> <b>TI ppm</b>		
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>34</b>

396000 396500 397000 397500 398000



**LEGEND**

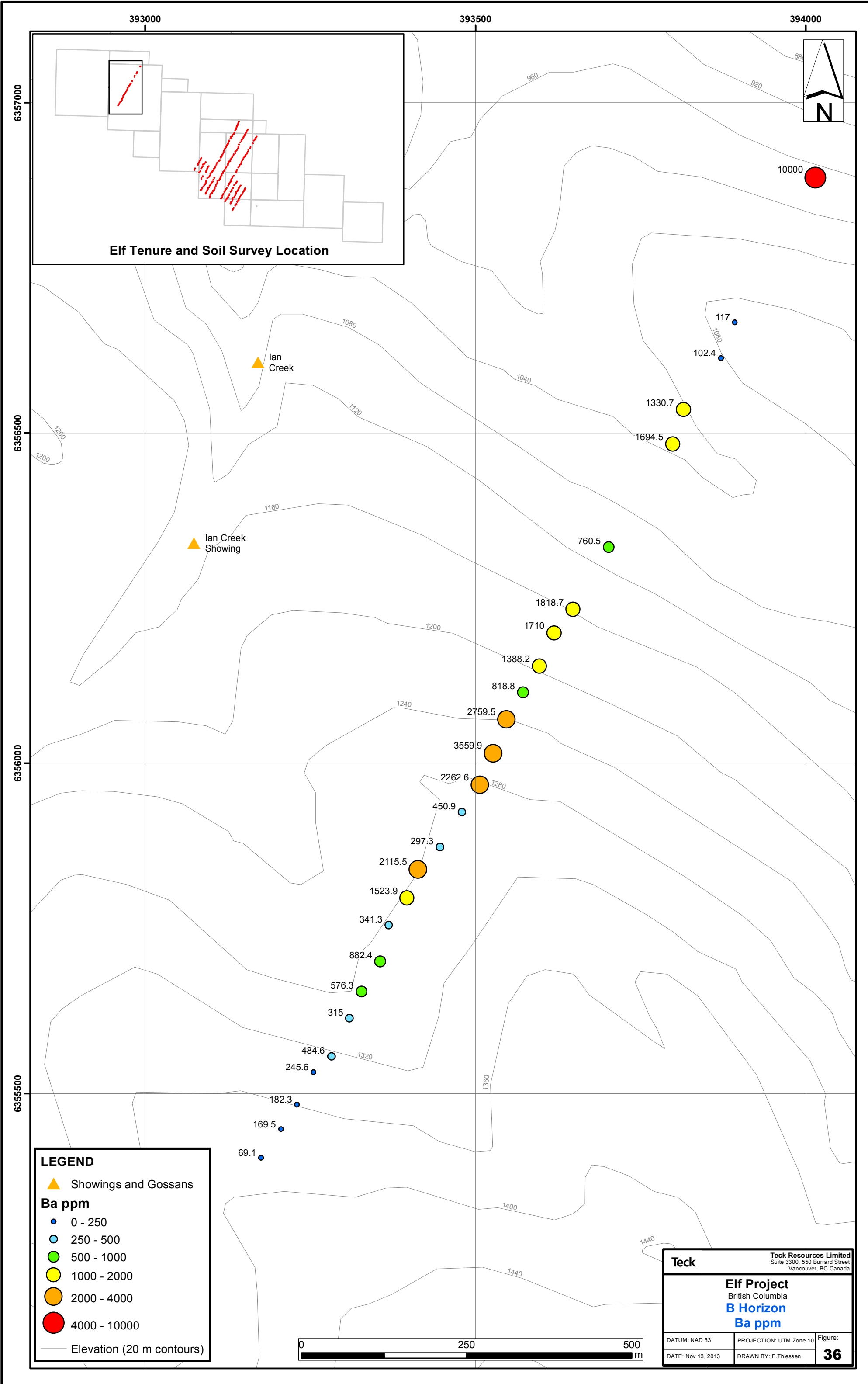
- ▲ Showings and Gossans
- Ba ppm**
- 0 - 250
- 250 - 500
- 500 - 1000
- 1000 - 2000
- 2000 - 4000
- 4000 - 10000
- Elevation (20 m contours)



**Teck** Teck Resources Limited  
Suite 3300, 550 Burrard Street  
Vancouver, BC Canada

**Elf Project**  
British Columbia  
**B Horizon**  
**Ba ppm**

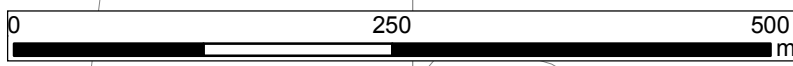
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>35</b>



**Elf Tenure and Soil Survey Location**

**LEGEND**

- ▲ Showings and Gossans
- Ba ppm**
- 0 - 250
- 250 - 500
- 500 - 1000
- 1000 - 2000
- 2000 - 4000
- 4000 - 10000
- Elevation (20 m contours)



<b>Teck</b>		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada
<b>Elf Project</b> British Columbia <b>B Horizon</b> <b>Ba ppm</b>		
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 13, 2013	DRAWN BY: E.Thiessen	<b>36</b>

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## APPENDIX I – STATEMENT OF QUALIFICATIONS

**Eric James Thiessen, M.Sc., B.Sc., GIT (APEGBC)**

I, Eric Thiessen, do hereby certify that:

I am a geologist employed by Teck Resources Ltd. (3300-550 Burrard Street, Vancouver, BC, V6C 0B3) at the Elf property for the 2013 field season, and at the time of the writing of this report.

I graduated from the University of Alberta, Canada, in January 2013 with a research-based Masters of Science in Geology.

I graduated from Queen's University, Canada, in May 2010 with a Bachelor of Science in Geology.

I have been practicing my profession since graduation in 2010 as a geologist in Canada.

The data contained in this report and the interpretations drawn from it are true and accurate to the best of my knowledge.



---

Eric James Thiessen, M.Sc., B.Sc., GIT (APEGBC)

Signed at Vancouver, British Columbia, Canada this 4<sup>th</sup> day of April, 2014.

**Amber Henry, M.Sc., B.Sc. Honours**

I, Amber Henry, M.Sc., B.Sc. Honours, do hereby certify that:

- I am a Project Geologist currently employed by Teck Resources Ltd., 3300-550 Burrard Street, Vancouver, B.C., V6C 0B3 (business phone 604-699-4448)
- I am a graduate of the University of British Columbia, Canada, with a research based Masters of Science, completed in 2008.
- I am a graduate of the University of Alberta, Canada, with a Bachelor of Science with Honours in Geology, completed in 2002.
- I have been practicing my profession since graduation in 2002 as a geologist in Canada, the U.S., and Mexico.
- I was the project geologist at the Elf property in 2013; I am responsible for the preparation of this report; and the data contained in this report, and interpretations drawn from it, are true and accurate to the best of my knowledge.



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Amber Henry, M.Sc., B.Sc. (Hon)

Signed at Vancouver, British Columbia, Canada this 7<sup>th</sup> day of April, 2014

## APPENDIX II – STATEMENT OF EXPENSES

Exploration Work type	Comment	Days			Totals
<b>Personnel (Name)* / Position</b>	<b>Field Days (list actual days)</b>	<b>Days</b>	<b>Rate</b>	<b>Subtotal*</b>	
Project Geologist	July 4-7, 9-16, 18-20, 22-24, 26-27	20	\$500.00	\$10,000.00	
Geologist 1	July 4-7, 9-20, 22-26	21	\$450.00	\$9,450.00	
Geologist 2	July 4-7, 9-20, 22-26	21	\$450.00	\$9,450.00	
Geologist 3	July 4-7, 9-20, 22-26	21	\$450.00	\$9,450.00	
Geologist 4	July 4-7, 9-20, 22-26	21	\$450.00	\$9,450.00	
Field Assistant 1	July 4-23, July 26-27	22	\$350.00	\$7,700.00	
Field Assistant 2	July 4-23, 26	21	\$350.00	\$7,350.00	
Field Assistant 3	July 4-23, 26	21	\$350.00	\$7,350.00	
Field Assistant 4	July 4-23, 26	21	\$350.00	\$7,350.00	
Medic	July 4-27	24	\$420.00	\$10,080.00	
				\$87,630.00	<b>\$87,630.00</b>
<b>Remote Sensing</b>	<b>Area in Hectares / Enter total invoiced amount or list personnel</b>				
LANDSAT	4129.89 Ha		\$0.00	\$3,028.00	
DEM	4129.89 Ha		\$0.00	\$192.00	
				\$3,220.00	<b>\$3,220.00</b>
<b>Ground Exploration Surveys</b>	<b>Area in Hectares/List Personnel</b>				
Geological mapping				\$0.00	
Regional				\$0.00	
Reconnaissance				\$0.00	
				\$0.00	<b>\$0.00</b>
<b>Geochemical Surveying</b>	<b>Number of Samples</b>	<b>Nb.</b>	<b>Rate</b>	<b>Subtotal</b>	
Stream sediment			\$0.00	\$0.00	
Soil		649	\$35.00	\$22,715.00	
Rock			\$0.00	\$0.00	
				\$22,715.00	<b>\$22,715.00</b>
<b>Transportation</b>		<b>Nb.</b>	<b>Rate</b>	<b>Subtotal</b>	
Helicopter (hours)	40.2 total hours		\$1,395.00	\$56,079.00	
Fuel (litres/hour)	8120 litres of fuel, cost is only an estimate	8120	\$1.50	\$12,180.00	
Fixed Wing	NT Air, mobilization, pro-rated		\$0.00	\$2,500.00	
				\$70,759.00	<b>\$70,759.00</b>
<b>Accommodation &amp; Food</b>	<b>Rates per day</b>	<b>Nb.</b>	<b>Rate</b>	<b>Subtotal</b>	
Camp		237	\$150.00	\$35,550.00	
Meals	included in camp rate		\$0.00	\$0.00	
				\$35,550.00	<b>\$35,550.00</b>
<b>Equipment Rentals</b>					
Field Gear			\$0.00	\$500.00	
4 x 4 MTC	medical transportation vehicle for 24 days	24	\$240.00	\$5,760.00	
				\$6,260.00	<b>\$6,260.00</b>
<b>Freight</b>					
Soil samples			\$0.00	\$400.00	
				\$400.00	<b>\$400.00</b>
<b>TOTAL Expenditures</b>	(no tax)				<b>\$226,534.00</b>



## **APPENDIX III – SOIL SAMPLE DESCRIPTIONS**

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317045	Ah	393480	6355926	(5-15)	Moist	Fir	None	0.04	0.08	2mm	Moist	Black	Organic	0	2	2	0	96
2317036	Ah	393572	6356107	(25-35)	Moist	Fir	None	0.1	0.2	2mm	Moist	Black	Organic	0	2	3	0	95
2317544	Ah	396671	6352799	(>35)	Dry	Fir	None	0.15	0.2	2mm	Dry	Black	Organic	0	5	5	0	90
2317863	Ah	397239	6353012	(25-35)	Moist	Fir	None	0.15	0.2	2mm	Saturated	Black	Organic	0	0	0	0	100
2317926	Ah	397757	6353094	(15-25)	Dry	Fir	None	0.03	0.08	2mm	Moist	Black	Organic	0	0	10	0	90
2317495	Ah	393413	6355839	(15-25)	Moist	Spruce	None	0.15	0.2	2mm	Moist	Brown	Organic	2	0	0	0	98
2317492	Ah	393447	6355873	(15-25)	Moist	Fir	None	0.1	0.12	2mm	Wet	Black	Organic	0	5	0	0	95
2317546	Ah	396704	6352850	(25-35)	Dry	Fir	None	0.1	0.15	2mm	Dry	Black	Organic	0	5	5	0	90
2317939	Ah	397609	6352827	(25-35)	Dry	Fir	None	0.12	0.2	2mm	Moist	Black	Organic	0	0	5	0	95
2317038	Ah	393547	6356055	(15-25)	Moist	Fir	None	0.07	0.12	2mm	Moist	Black	Organic	0	3	2	0	95
2317031	Ah	393620	6356194	(15-25)	Moist	Fir	None	0.02	0.04	2mm	Moist	Black	Organic	0	2	2	0	96
2317074	Ah	397670	6352515	(25-35)	Moist	Spruce	None	0.05	0.25	2mm	Moist	Black	Organic	0	5	0	0	95
2317831	Ah	397980	6352266	(>35)	Moist	Spruce	None	0.1	0.15	2mm	Moist	Black	Organic	0	5	0	5	90
2317499	Ah	393397	6355796	(15-25)	Moist	Fir	None	0.1	0.12	2mm	Moist	Black	Organic	0	5	0	0	95
2317165	Ah	393369	6355755	(15-25)	Moist	Fir	None	0.1	0.12	2mm	Moist	Brown	Organic	0	2	0	0	98
2317168	Ah	393356	6355700	(15-25)	Moist	Fir	None	0.05	0.06	2mm	Moist	Brown	Organic	0	2	0	0	98
2317151	Ah	397553	6352743	(>35)	Moist	Fir	None	0.05	0.2	2mm	Moist	Brown	Organic	0	5	0	0	95
2317742	Ah	396815	6352652	(25-35)	Moist	Fir	None	0.1	0.14	2mm	Moist	Black	Organic	0	5	0	5	90
2317641	Ah	397205	6352955	(15-25)	Moist	Fir	None	0.07	0.1	2mm	Moist	Black	Organic	0	10	5	0	85
2317819	Ah	397905	6353370	(15-25)	Moist	Spruce	None	0.15	0.17	2mm	Moist	Black	Organic	0	5	5	5	85
2317730	Ah	397326	6353937	(15-25)	Dry	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	8	0	7	85
2317884	Ah	396997	6352575	(>35)	Dry	Fir	None	0.03	0.04	2mm	Moist	Black	Organic	0	1	4	0	95
2317047	LFH	393171	6355407	(5-15)	Moist	Fir	None	0.02	0.1	2mm	Moist	Brown	Organic	0	0	0	0	100
2317825	Ah	397842	6353232	(15-25)	Moist	Fir	None	0.2	0.21	2mm	Saturated	Brown	Organic	0	1	5	0	94
2317930	Ah	397705	6353003	(25-35)	Moist	Fir	None	0.1	0.16	2mm	Moist	Black	Organic	0	5	10	0	85
2317968	Ah	397928	6353414	(5-15)	Moist	Fir	None	0.1	0.13	2mm	Moist	Black	Organic	0	0	0	0	100
2317858	Ah	397409	6354125	(5-15)	Moist	Spruce	None	0.03	0.07	2mm	Wet	Black	Organic	0	5	0	2	93
2317034	Ah	393597	6356147	(25-35)	Moist	Fir	None	0.05	0.15	2mm	Moist	Black	Organic	0	5	2	0	93
2317928	Ah	397729	6353044	(25-35)	Dry	Fir	None	0.1	0.16	2mm	Moist	Black	Organic	0	0	10	0	90
2317550	Ah	396754	6352926	(25-35)	Dry	Fir	None	0.07	0.1	2mm	Dry	Brown	Organic	0	10	10	0	80
2317157	Ah	397476	6352610	(25-35)	Moist	Fir	None	0.1	0.16	2mm	Wet	Brown	Organic	0	5	5	0	90
2317851	Ah	397342	6353975	(5-15)	Moist	Fir	None	0.05	0.25	2mm	Wet	Black	Organic	0	2	0	0	98
2317853	Ah	397368	6354033	(5-15)	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	8	2	0	90
2317823	Ah	397859	6353274	(5-15)	Moist	Fir	None	0.1	0.15	2mm	Wet	Black	Organic	0	5	0	0	95
2317924	Ah	397778	6353140	(15-25)	Moist	Spruce	None	0.1	0.15	2mm	Moist	Black	Organic	5	0	10	0	85
2317772	Ah	397958	6354264	(15-25)	Moist	Spruce	None	0.1	0.13	2mm	Moist	Black	Organic	0	0	0	0	100
2317937	Ah	397639	6352865	(25-35)	Dry	Fir	None	0.07	0.13	2mm	Moist	Black	Organic	0	0	10	0	90
2317908	Ah	398275	6353966	(5-15)	Moist	Spruce	None	0.02	0.05	2mm	Moist	Black	Organic	0	10	0	0	90
2317821	Ah	397883	6353322	(25-35)	Dry	Fir	None	0.05	0.07	2mm	Moist	Brown	Organic	0	0	5	0	95
2317734	Ah	397488	6354237	(15-25)	Moist	Fir	None	0.1	0.12	2mm	Moist	Black	Organic	0	4	6	0	90
2317933	Ah	397655	6352914	(25-35)	Dry	Fir	None	0.1	0.15	2mm	Moist	Black	Organic	0	0	10	0	90
2317921	Ah	397957	6353457	(5-15)	Moist	Spruce	None	0.12	0.18	2mm	Moist	Black	Organic	0	5	10	0	85
2317618	Ah	396547	6353003	(15-25)	Moist	Fir	None	0.04	0.07	2mm	Moist	Black	Organic	0	0	0	0	100

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317917	Ah	398069	6353610	(5-15)	Moist	Spruce	None	0.08	0.11	2mm	Moist	Black	Organic	0	5	0	0	95
2317964	Ah	397986	6353487	(15-25)	Wet	Spruce	None	0.05	0.15	2mm	Moist	Black	Organic	0	0	0	0	100
2317049	Ah	393206	6355446	(5-15)	Moist	Fir	None	0.02	0.05	2mm	Moist	Black	Organic	0	0	0	0	100
2317887	Ah	396935	6352472	(>35)	Dry	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	2	5	0	93
2317931	Ah	397676	6352960	(25-35)	Dry	Fir	None	0.1	0.18	2mm	Moist	Black	Organic	0	0	10	0	90
2317976	Ah	397820	6352373	(15-25)	Dry	Fir	None	0.1	0.12	2mm	Moist	Black	Organic	0	1	1	0	98
2317748	Ah	396754	6352564	(25-35)	Moist	Fir	None	0.02	0.08	2mm	Moist	Brown	Organic	0	5	5	10	80
2317795	Ah	397648	6353689	(25-35)	Moist	Fir	None	0.2	0.23	2mm	Moist	Black	Organic	0	5	5	0	90
2317962	Ah	398044	6353577	(0-5)	Moist	Fir	None	0.15	0.4	None	Moist	Black	Organic	0	0	0	0	100
2317940	Ah	397573	6352778	(25-35)	Dry	Fir	None	0.1	0.15	2mm	Moist	Black	Organic	0	0	15	0	85
2317578	Ah	396803	6353011	(>35)	Dry	Fir	None	0.1	0.11	2mm	Dry	Brown	Organic	0	5	5	0	90
2317548	Ah	396731	6352892	(25-35)	Dry	Fir	None	0.1	0.2	2mm	Dry	Black	Organic	0	10	5	0	85
2317519	Ah	396243	6353232	(25-35)	Dry	Fir	None	0.04	0.1	2mm	Moist	Brown	Organic	0	5	10	0	85
2317208	Ah	394013	6356886	(25-35)	Moist	Spruce	None	0.05	0.08	2mm	Moist	Black	Organic	0	2	2	0	96
2317861	Ah	397457	6354213	(15-25)	Moist	Spruce	None	0.03	0.15	2mm	Wet	Black	Organic	0	0	25	5	70
2317919	Ah	398004	6353540	(5-15)	Moist	Spruce	None	0.05	0.1		Moist	Black	Organic	5	0	5	0	90
2317755	Ah	397632	6354499	(5-15)	Dry	Spruce	None	0.07	0.08	2mm	Moist	Black	Organic	0	5	10	0	90
2317611	Ah	396617	6353107	(15-25)	Moist	Fir	None	0.02	0.04	2mm	Moist	Brown	Organic	0	0	0	0	100
2317848	Ah	397537	6351484	(15-25)	Moist	Spruce	None	0.1	0.13	2mm	Moist	Black	Organic	0	0	0	0	95
2317880	Ah	397029	6352610	(25-35)	Dry	Fir	None	0.05	0.06	2mm	Moist	Black	Organic	0	1	4	0	95
2317515	Ah	396209	6353199	(15-25)	Dry	Fir	None	0.04	0.05	2mm	Moist	Black	Organic	0	5	5	0	90
2317613	Ah	396596	6353076	(15-25)	Moist	Fir	None	0.02	0.04	2mm	Moist	Black	Organic	0	0	0	0	100
2317076	Ah	397639	6352462	(25-35)	Moist	Fir	None	0.03	0.06	2mm	Moist	Black	Organic	0	0	0	0	100
2317827	Ah	397818	6353180	(25-35)	Moist	Fir	None	0.1	0.15	2mm	Moist	Black	Organic	0	2	2	0	96
2317203	Ah	393916	6356716	(25-35)	Moist	Fir	None	0	0	2mm	Moist	Black	Organic	0	2	2	0	96
2317043	Ah	393507	6355967	(25-35)	Moist	Fir	None	0.08	0.12	2mm	Moist	Black	Organic	0	5	2	0	93
2317993	Ah	397477	6351762	(25-35)	Moist	Fir	None	0.1	0.15	None	Moist	Black	Organic	0	10	5	0	85
2317960	Ah	398103	6353662	(25-35)	Moist	Fir	None	0.03	0.06	2mm	Moist	Black	Organic	0	0	0	0	100
2317643	Ah	397186	6352925	(15-25)	Moist	Fir	None	0.02	0.06	2mm	Moist	Black	Organic	0	5	0	0	95
2317540	Ah	396632	6352719	(25-35)	Dry	Fir	None	0.03	0.05	2mm	Moist	Black	Organic	0	35	30	15	20
2317757	Ah	397615	6354461	(5-15)	Dry	Spruce	None	0.05	0.06	2mm	Moist	Black	Organic	0	5	10	0	85
2317483	Om	393799	6356483	(0-5)	Wet	Spruce	None	0.2	0.35	None	Saturated	Black	Organic	0	0	0	0	100
2317779	Ah	397883	6354119	(0-5)	Moist	Spruce	None	0.05	0.055	2mm	Moist	Black	Organic	0	0	0	0	100
2317835	Ah	397938	6352169	(25-35)	Moist	Spruce	None	0.05	0.07	2mm	Moist	Brown	Organic	0	10	0	0	90
2317542	Ah	396659	6352752	(25-35)	Dry	Fir	None	0.03	0.05	2mm	Moist	Brown	Organic	0	10	0	10	80
2317576	Ah	396784	6352951	(>35)	Dry	Fir	None	0.15	0.17	2mm	Dry	Brown	Organic	0	5	5	0	90
2317777	Ah	397909	6354179	(5-15)	Moist	Spruce	None	0.05	0.055	2mm	Moist	Black	Organic	0	0	0	0	100
2317704	Ah	397076	6353448	(5-15)	Dry	Fir	None	0.1	0.2	2mm	Moist	Brown	Organic	0	20	0	0	80
2317732	Ah	397519	6354286	(15-25)	Moist	Fir	None	0.1	0.14	2mm	Moist	Black	Organic	0	0	0	0	100
2317605	Ah	396442	6353204	(15-25)	Moist	Fir	None	0.02	0.05	2mm	Moist	Brown	Organic	0	0	0	0	100
2317660	Ah	396378	6353150	(25-35)	Dry	Pine	None	0.05	0.1	2mm	Moist	Black	Organic	0	0	15	0	85
2317859	Ah	397435	6354163	(0-5)	Moist	Fir	None	0.02	0.05	2mm	Wet	Black	Organic	0	10	0	0	90
2317753	Ah	397647	6354542	(15-25)	Moist	Spruce	None	0.12	0.17	2mm	Moist	Black	Organic	0	5	5	0	90
2317651	Ah	396246	6352880	(15-25)	Dry	Spruce	None	0.02	0.03	2mm	Moist	Brown	Organic	0	0	0	0	100

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317528	Ah	396332	6353405	(15-25)	Dry	Fir	None	0.01	0.1	2mm	Moist	Black	Organic	0	5	15	0	80
2317945	Ah	397622	6352028	(15-25)	Moist	Spruce	None	0.03	0.18	2mm	Moist	Black	Organic	10	0	0	0	90
2317689	Ah	396838	6353024	(15-25)	Moist	Fir	None	0.08	0.11	2mm	Moist	Black	Organic	0	0	0	0	100
2317526	Ah	396314	6353376	(15-25)	Moist	Fir	None	0.06	0.08	2mm	Moist	Black	Organic	0	5	5	0	90
2317154	Ah	397523	6352698	(25-35)	Moist	Fir	None	0.05	0.15	2mm	Wet	Brown	Organic	0	4	0	1	95
2317865	Ah	397260	6353038	(25-35)	Moist	Fir	None	0.5	0.55	2mm	Moist	Black	Organic	0	0	0	0	100
2317740	Ah	397577	6354364	(15-25)	Moist	Spruce	None	0.05	0.055	2mm	Moist	Black	Organic	0	0	0	0	100
2317620	Ah	396539	6352959	(15-25)	Moist	Fir	None	0.02	0.05	2mm	Moist	Brown	Organic	0	0	0	0	100
2317878	Ah	397050	6352654	(25-35)	Dry	Fir	None	0.1	0.11	2mm	Moist	Black	Organic	0	5	5	0	90
2317915	Ah	398113	6353716	(5-15)	Moist	Spruce	None	0.04	0.1	2mm	Moist	Black	Organic	0	0	0	0	0
2317583	Ah	397855	6354089	(0-5)	Moist	Spruce	None	0.03	0.13	2mm	Moist	Black	Organic	0	8	2	0	90
2317745	Ah	396789	6352596	(25-35)	Moist	Fir	None	0.03	0.15	2mm	Moist	Black	Organic	0	5	2	5	88
2317646	Ah	397133	6352835	(25-35)	Moist	Fir	None	0.06	0.12	2mm	Moist	Black	Organic	15	0	10	0	75
2317475	Ah	397344	6352365	(>35)	Wet	Spruce	None	0.05	0.09	2mm	Wet	Black	Organic	0	0	0	0	100
2317029	Ah	393648	6356233	(15-25)	Moist	Fir	None	0.03	0.08	None	Moist	Black	Organic	0	10	0	0	90
2317722	Ah	397233	6353775	(5-15)	Dry	Fir	None	0.05	0.25	2mm	Moist	Black	Organic	0	40	0	0	60
2317474	Ah	397322	6352324	(>35)	Moist	Spruce	None	0.05	0.1	2mm	Moist	Black	Organic	0	0	0	0	100
2317088	Ah	397481	6352201	(25-35)	Moist	Fir	None	0.1	0.13	2mm	Moist	Brown	Organic	2	0	0	0	98
2317101	Ah	393230	6355483	(5-15)	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	0	0	0	100
2317105	Ah	393282	6355556	(5-15)	Moist	Fir	None	0.05	0.15	2mm	Moist	Black	Organic	0	0	0	0	100
2317911	Ah	398163	6353780	(5-15)	Moist	Spruce	None	0.1	0.2	2mm	Moist	Black	Organic	0	0	10	0	90
2317639	Ah	396622	6352314	(15-25)	Moist	Fir	None	0.03	0.09	2mm	Moist	Black	Organic	0	5	10	0	85
2317159	Ah	397457	6352579	(25-35)	Moist	Fir	None	0.05	0.1	2mm	Wet	Brown	Organic	0	4	1	0	95
2317736	Ah	397554	6354315	(15-25)	Moist	Spruce	None	0.08	0.11	2mm	Moist	Black	Organic	0	2	5	2	90
2317876	Ah	397368	6353286	(5-15)	Moist	Fir	None	0.1	0.12	2mm	Moist	Black	Organic	0	0	0	0	100
2317713	Ah	397173	6353639	(5-15)	Dry	Spruce	None	0.1	0.2	2mm	Moist	Brown	Organic	0	10	0	0	90
2317485	Om	393769	6356445	(0-5)	Saturated	Spruce	None	0.3	0.5	None	Wet	Black	Organic	0	0	0	0	100
2317589	Ah	397800	6354015	(0-5)	Moist	Spruce	None	0.05	0.25	2mm	Moist	Black	Organic	0	8	2	0	90
2317873	Ah	397360	6353244	(15-25)	Moist	Fir	None	0.05	0.06	2mm	Moist	Brown	Organic	0	0	0	0	100
2317201	Ah	393893	6356667	(15-25)	Moist	Spruce	None	0.1	0.12	2mm	Moist	Black	Organic	0	5	5	0	90
2317107	Ah	393309	6355614	(15-25)	Moist	Fir	None	0.06	0.1	2mm	Moist	Black	Organic	0	0	0	0	100
2317724	Ah	397269	6353827	(15-25)	Dry	Fir	None	0.05	0.25	2mm	Moist	Brown	Organic	0	10	0	0	90
2317775	Ah	397932	6354217	(0-5)	Moist	Spruce	None	0.1	0.12	2mm	Moist	Black	Organic	0	0	0	0	100
2317855	Ah	397381	6354078	(5-15)	Wet	Fir	None	0.05	0.1	2mm	Wet	Black	Organic	0	25	0	0	75
2317591	Ah	397770	6353986	(0-5)	Wet	Spruce	None	0.05	0.15	2mm	Moist	Black	Organic	0	9	1	0	90
2317978	Ah	397795	6352338	(15-25)	Moist	Fir	None	0.4	0.2	2mm	Moist	Black	Organic	0	10	0	0	90
2317603	Ah	396416	6353171	(25-35)	Moist	Fir	None	0.02	0.06	2mm	Moist	Black	Organic	0	0	0	0	100
2317685	Ah	396855	6353069	(15-25)	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	0	0	0	100
2317155	Ah	397505	6352658	(15-25)	Moist	Fir	None	0.15	0.25	2mm	Moist	Brown	Organic	0	5	5	5	15
2317867	Ah	397283	6353085	(25-35)	Moist	Fir	None	0.03	0.25	None	Moist	Black	Organic	0	0	0	0	100
2317488	Ah	393702	6356327	(15-25)	Moist	Spruce	None	0.4	0.43	2mm	Moist	Black	Organic	0	2	3	5	90
2317478	Ah	393840	6356579	(15-25)	Moist	Spruce	None	0.08	0.12	2mm	Moist	Brown	Organic	0	5	0	0	95
2317062	Ah	397642	6351637	(15-25)	Moist	Fir	None	0.05	0.12	None	Moist	Black	Organic	0	0	0	0	100
2317615	Ah	396575	6353045	(15-25)	Moist	Fir	None	0.04	0.08	2mm	Moist	Black	Organic	0	0	0	0	100

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317749	Ah	396756	6352514	(>35)	Moist	Fir	None	0.1	0.15	2mm	Moist	Black	Organic	0	7	10	3	80
2317040	Ah	393527	6356015	(25-35)	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	5	2	0	93
2317571	Ah	396503	6352496	(25-35)	Dry	Fir	None	0.02	0.2	2mm	Dry	Black	Organic	0	10	5	0	85
2317580	Ah	398413	6354233	(5-15)	Moist	Spruce	None	0.5	0.7	2mm	Saturated	Black	Organic	0	5	5	0	90
2317913	Ah	398139	6353742	(5-15)	Moist	Spruce	None	0.1	0.45	2mm	Moist	Black	Organic	20	0	0	0	80
2317658	Ah	396374	6353095	(25-35)	Dry	Pine	None	0.05	0.1	2mm	Moist	Black	Organic	0	20	0	0	80
2317759	Ah	398084	6354478	(0-5)	Moist	Spruce	None	0.03	0.06	2mm	Moist	Black	Organic	0	5	0	0	95
2317011	Ah	397309	6351891	(25-35)	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	5	2	0	93
2317072	Ah	397805	6351961	(25-35)	Dry	Spruce	None	0.1	0.15	2mm	Moist	Black	Organic	0	3	2	0	95
2317097	Ah	397387	6352040	(15-25)	Moist	Fir	None	0.01	0.06	2mm	Moist	Black	Organic	0	5	0	0	95
2317871	Ah	397331	6353180	(15-25)	Moist	Fir	None	0.15	0.25	None	Moist	Black	Organic	0	0	0	0	100
2317804	Ah	397510	6353479	(>35)	Moist	Fir	None	0.1	0.2	2mm	Moist	Black	Organic	0	5	0	0	95
2317846	Ah	397511	6351439	(15-25)	Moist	Spruce	None	0.05	0.1	2mm	Moist	Black	Organic	5	5	0	0	90
2317681	Ah	396902	6353168	(5-15)	Moist	Fir	None	0.05	0.09	2mm	Moist	Black	Organic	0	0	0	0	100
2317479	Ah	393815	6356535	(15-25)	Moist	Spruce	None	0.08	0.1	2mm	Moist	Brown	Organic	0	5	0	0	95
2317622	Ah	396515	6352924	(25-35)	Moist	Fir	None	0.04	0.06	2mm	Moist	Black	Organic	0	0	0	0	100
2317943	Ah	397647	6352085	(15-25)	Moist	Spruce	None	0.25	0.3	2mm	Moist	Black	Organic	0	0	0	0	100
2317636	Ah	396588	6352280	(15-25)	Moist	Fir	None	0.05	0.18	2mm	Moist	Black	Organic	0	0	0	0	100
2317793	Ah	397674	6353717	(15-25)	Moist	Fir	None	0.3	0.35	2mm	Moist	Black	Organic	0	5	5	0	90
2317986	Ah	397690	6352163	(5-15)	Moist	Fir	None	0.05	0.06	2mm	Moist	Black	Organic	0	2	2	0	96
2317206	Ah	393964	6356796	(>35)	Moist	Fir	None	0.05	0.07	2mm	Moist	Black	Organic	0	3	2	0	95
2317797	Ah	397614	6353651	(15-25)	Moist	Fir	None	0.2	1	2mm	Moist	Black	Organic	0	5	5	0	90
2317840	Ah	397898	6352085	(25-35)	Moist	Spruce	None	0.15	0.25	2mm	Moist	Tan	Organic	0	5	0	0	95
2317626	Ah	396508	6352096	(15-25)	Moist	Fir	None	0.03	0.05	2mm	Moist	Black	Organic	0	0	0	0	100
2317869	Ah	397327	6353131	(15-25)	Moist	Fir	None	0.15	0.2	None	Moist	Black	Organic	0	0	0	0	100
2317162	Ah	396995	6353301	(15-25)	Moist	Fir	None	0.3	0.35	2mm	Dry	Black	Organic	0	5	5	0	90
2317090	Ah	397460	6352163	(15-25)	Moist	Fir	None	0.1	0.17	2mm	Moist	Black	Organic	0	2	0	0	98
2317538	Ah	396603	6352673	(15-25)	Dry	Fir	None	0.03	0.05	None	Moist	Black	Organic	0	0	5	0	95
2317941	Ah	397654	6352136	(15-25)	Dry	Spruce	None	0.08	0.15	2mm	Moist	Black	Organic	0	0	0	0	100
2317980	Ah	397769	6352295	(25-35)	Moist	Fir	None	0.1	0.2	2mm	Moist	Black	Organic	0	10	0	0	90
2317787	Ah	396726	6352485	(25-35)	Moist	Spruce	None	0.05	0.06	2mm	Moist	Black	Organic	0	0	0	2	98
2317999	Ah	397516	6351856	(15-25)	Dry	Fir	None	0.1	0.15	None	Moist	Black	Organic	0	10	5	0	85
2317706	Ah	397098	6353490	(5-15)	Dry	Fir	None	0.04	0.08	2mm	Moist	Brown	Organic	0	10	0	0	90
2317726	Ah	397280	6353861	(5-15)	Moist	Fir	None	0.05	0.25	2mm	Moist	Brown	Organic	0	9	0	1	90
2317205	Ah	393945	6356752	(15-25)	Moist	Spruce	None	0.05	0.15	2mm	Moist	Black	Organic	0	0	0	0	100
2317801	Ah	397561	6353557	(15-25)	Moist	Fir	None	0.05	0.2	2mm	Moist	Black	Organic	0	5	0	0	95
2317521	Ah	396260	6353296	(15-25)	Dry	Fir	None	0.04	0.08	2mm	Moist	Black	Organic	0	10	0	0	90
2317799	Ah	397614	6353595	(15-25)	Moist	Fir	None	0.25	0.5	2mm	Moist	Black	Organic	0	5	0	0	95
2317894	Ah	396878	6352344	(25-35)	Dry	Fir	None	0.15	0.2	2mm	Moist	Black	Organic	0	3	2	0	95
2317766	Ah	398038	6354390	(5-15)	Moist	Spruce	None	0.15	0.17	2mm	Saturated	Black	Organic	0	0	0	0	100
2317785	Ah	396702	6352429	(>35)	Moist	Spruce	None	0.05	0.06	2mm	Moist	Brown	Organic	0	0	0	0	100
2317607	Ah	396486	6353260	(15-25)	Moist	Fir	None	0.02	0.06	2mm	Moist	Brown	Organic	0	0	0	0	100
2317956	Ah	397431	6353361	(15-25)	Moist	Fir	None	0.1	0.11	2mm	Moist	Black	Organic	0	1	4	0	95
2317833	Ah	397965	6352211	(25-35)	Moist	Spruce	None	0.05	0.1	2mm	Moist	Black	Organic	0	5	5	0	90

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317109	Ah	393328	6355654	(5-15)	Moist	Fir	None	0.05	0.15	2mm	Moist	Black	Organic	0	0	0	0	100
2317814	Ah	396731	6352090	(>35)	Moist	Fir	None	0.2	0.25	2mm	Moist	Black	Organic	0	5	5	0	90
2317974	Ah	396777	6352177	(25-35)	Dry	Fir	None	0.2	0.12	2mm	Moist	Brown	Organic	0	4	1	0	95
2317763	Ah	398062	6354440	(0-5)	Moist	Fir	N/A	0.1	0.12	2mm	Saturated	Black	Organic	5	20	0	0	75
2317585	Ah	397839	6354059	(0-5)	Moist	Spruce	None	0.05	0.15	2mm	Moist	Black	Organic	0	8	2	0	90
2317693	Om	398245	6353912	(0-5)	Saturated	Spruce	None	0.1	1	2mm	Saturated	Black	Organic	0	2	0	0	98
2317099	Ah	397365	6351992	(15-25)	Moist	Fir	None	0.2	0.3	2mm	Moist	Black	Organic	0	5	0	0	95
2317842	Ah	397877	6352042	(25-35)	Moist	Spruce	None	0.1	0.2	2mm	Moist	Black	Organic	0	5	0	0	95
2317207	Om	393991	6356847	(15-25)	Moist	Fir	None	0.1	0.6	None	Moist	Black	Organic	0	2	1	0	97
2317675	Ah	396960	6353261	(15-25)	Moist	Fir	None	0.02	0.6	2mm	Moist	Black	Organic	0	0	0	0	100
2317817	Ah	396751	6352140	(25-35)	Moist	Fir	None	0.2	0.4	2mm	Moist	Black	Organic	0	5	2	0	93
2317078	Ah	397602	6352415	(>35)	Moist	Fir	None	0.05	0.25	2mm	Moist	Black	Organic	0	2	0	0	98
2317103	Ah	393255	6355532	(5-15)	Moist	Fir	None	0.1	0.14	2mm	Moist	Black	Organic	0	0	0	0	100
2317490	Ah	393872	6356613	(>35)	Moist	Spruce	None	0.08	0.1	2mm	Moist	Black	Organic	0	2	0	0	98
2317701	Ah	397056	6353380	(15-25)	Dry	Fir	None	0.02	0.07	2mm	Moist	Brown	Organic	0	5	0	0	95
2317683	Ah	396870	6353106	(15-25)	Moist	Fir	None	0.03	0.05	2mm	Moist	Black	Organic	0	0	0	0	100
2317673	Ah	397679	6354628	(15-25)	Moist	Spruce	None	0.15	0.2	2mm	Moist	Black	Organic	0	0	0	2	98
2317897	Ah	396850	6352300	(>35)	Dry	Fir	None	0.25	0.28	2mm	Moist	Black	Organic	0	5	5	0	90
2317770	Ah	397980	6354300	(5-15)	Moist	Spruce	None	0.05	0.06	2mm	Moist	Black	Organic	0	0	0	0	100
2317486	Om	393746	6356406	(5-15)	Saturated	Spruce	None	0.2	0.5	None	Moist	Black	Organic	0	0	0	0	100
2317901	Ah	397068	6352698	(>35)	Dry	Fir	None	0.05	0.1	2mm	Moist	Brown	Organic	0	5	5	0	90
2317948	Ah	397606	6351991	(25-35)	Moist	Fir	None	0.05	0.35	2mm	Moist	Black	Organic	0	0	0	0	100
2317552	Ah	396090	6353014	(15-25)	Dry	Fir	None	0.04	0.08	2mm	Moist	Black	Organic	0	0	0	0	100
2317910	Ah	398220	6353869	(5-15)	Moist	Spruce	None	0.05	0.45	2mm	Moist	Black	Organic	10	5	5	0	80
2317524	Ah	396297	6353331	(25-35)	Moist	Fir	None	0.03	0.05	2mm	Moist	Black	Organic	0	10	10	0	80
2317468	Ah	397239	6352189	(>35)	Moist	Fir	None	0.05	0.4	2mm	Moist	Black	Organic	0	0	0	0	100
2317984	Ah	397712	6352196	(25-35)	Moist	Fir	None	0.15	0.16	2mm	Moist	Brown	Organic	0	1	5	0	94
2317006	Ah	397249	6351813	(25-35)	Moist	Fir	None	0.1	0.12	2mm	Moist	Black	Organic	0	3	2	0	95
2317094	Ah	397433	6352126	(15-25)	Moist	Fir	None	0.15	0.2	2mm	Moist	Brown	Organic	0	5	0	0	95
2317768	Ah	398007	6354352	(15-25)	Moist	Spruce	None	0.35	0.45	2mm	Moist	Black	Organic	0	0	0	0	100
2317671	Ah	397694	6354658	(15-25)	Moist	Spruce	None	0.15	0.2	2mm	Moist	Black	Organic	0	10	2	0	88
2317487	Ah	393721	6356362	(25-35)	Moist	Spruce	None	0	0	2mm	Moist	Black	Organic	0	5	0	0	95
2317953	Ah	397465	6353399	(25-35)	Moist	Fir	None	0.1	0.15	2mm	Moist	Black	Organic	0	10	5	0	85
2317951	Ah	397495	6353447	(25-35)	Wet	Aspen	None	0.25	0.3	2mm	Moist	Black	Organic	0	5	5	0	90
2317058	LFH	397690	6351743	(5-15)	Moist	Fir	None	0.05	0.06	2mm	Moist	Brown	Organic	0	0	0	0	100
2317013	Ah	397338	6351941	(25-35)	Moist	Spruce	None	0.15	0.2	2mm	Moist	Black	Organic	0	0	0	0	100
2317507	Ah	396378	6352716	(5-15)	Moist	Spruce	None	0.01	0.02	2mm	Moist	Brown	Organic	0	0	0	0	0
2317024	Ah	397729	6353830	(25-35)	Moist	Fir	None	0.2	0.25	4mm	Wet	Black	Organic	0	5	0	0	95
2317081	Ah	397567	6352377	(>35)	Moist	Fir	N/A	0.1	0.15	2mm	Moist	Black	Organic	0	5	0	0	95
2317906	Ah	398309	6354066	(5-15)	Wet	Spruce	None	0.04	0.1	2mm	Wet	Black	Organic	0	5	0	0	95
2317600	Ah	398341	6354092	(5-15)	Saturated	Spruce	None	0.12	0.22	2mm	Moist	Black	Organic	0	2	0	0	98
2317679	Ah	396916	6353215	(5-15)	Moist	Fir	None	0.04	0.08	2mm	Moist	Black	Organic	0	0	0	0	100
2317810	Ah	396669	6352019	(>35)	Moist	Fir	None	0.03	0.05	2mm	Moist	Black	Organic	0	2	2	2	94
2317083	Ah	397553	6352309	(>35)	Moist	Fir	None	0.1	0.2	2mm	Moist	Black	Organic	0	5	0	0	95

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317958	Ah	397424	6353311	(15-25)	Moist	Fir	None	0.2	0.25	2mm	Moist	Black	Organic	0	2	5	0	93
2317812	Ah	396696	6352054	(>35)	Moist	Spruce	None	0.05	0.5	2mm	Moist	Black	Organic	0	2	0	0	98
2317715	Ah	397190	6353679	(5-15)	Dry	Spruce	None	0.05	0.2	2mm	Moist	Brown	Organic	0	5	0	0	95
2317568	Ah	396438	6352377	(25-35)	Moist	Fir	None	0.05	0.08	2mm	Moist	Black	Organic	0	0	0	0	100
2317628	Ah	396531	6352147	(15-25)	Moist	Fir	None	0.03	0.06	2mm	Moist	Black	Organic	0	5	5	0	90
2317573	Ah	396486	6352457	(25-35)	Dry	Fir	None	0.03	0.06	2mm	Moist	Black	Organic	0	0	0	0	100
2317210	Ah	394045	6356923	(25-35)	Moist	Aspen	None	0.07	0.12	2mm	Moist	Black	Organic	0	2	2	0	96
2317022	Ah	397364	6352413	(>35)	Moist	Fir	None	0.1	0.12	2mm	Moist	Black	Organic	0	2	0	0	98
2317838	Ah	397913	6352123	(25-35)	Moist	Spruce	None	0.01	0.03	2mm	Moist	Black	Organic	0	5	0	0	95
2317667	Ah	397724	6354735	(0-5)	Moist	Spruce	None	0.05	0.08	2mm	Moist	Black	Organic	0	0	0	2	98
2317051	Ah	397765	6351912	(15-25)	Moist	Fir	None	0.05	0.06	2mm	Moist	Black	Organic	0	0	0	0	100
2317751	Ah	397666	6354598	(15-25)	Moist	Spruce	N/A	0.2	0.25	2mm	Moist	Black	Organic	0	0	4	1	95
2317598	Ah	398399	6354180	(0-5)	Moist	Spruce	None	0.02	0.06	2mm	Moist	Brown	Organic	0	5	0	0	95
2317982	Ah	397733	6352261	(15-25)	Moist	Fir	None	0.1	0.12	2mm	Moist	Black	Organic	0	2	2	0	96
2317053	Ah	397753	6351875	(15-25)	Moist	Fir	None	0.1	0.12	2mm	Moist	Black	Organic	0	0	0	0	100
2317719	Ah	397213	6353728	(5-15)	Dry	Fir	None	0.05	0.25	2mm	Moist	Brown	Organic	0	10	0	0	90
2317004	Ah	397231	6351768	(25-35)	Moist	Spruce	None	0.1	0.2	2mm	Moist	Black	Organic	0	2	3	0	95
2317694	Ah	398196	6353829	(5-15)	Moist	Fir	None	0.1	0.15	2mm	Moist	Brown	Organic	0	5	0	0	95
2317513	Ah	396498	6352876	(15-25)	Moist	Spruce	None	0.02	0.04	2mm	Moist	Brown	Organic	0	0	0	10	90
2317711	Ah	397159	6353595	(5-15)	Dry	Fir	None	0.05	0.2	2mm	Moist	Brown	Organic	0	10	5	0	85
2317055	Ah	397741	6351816	(15-25)	Moist	Fir	None	0.1	0.13	2mm	Moist	Black	Organic	0	0	0	0	100
2317728	Ah	397301	6353918	(0-5)	Dry	Fir	None	0.03	0.25	2mm	Moist	Brown	Organic	0	5	0	0	95
2317096	Ah	397407	6352087	(15-25)	Moist	Fir	None	0.7	0.15	2mm	Moist	Black	Organic	0	5	0	0	95
2317781	Ah	396643	6352358	(25-35)	Moist	Fir	None	0.1	0.15	2mm	Moist	Black	Organic	0	0	0	0	100
2317509	Ah	396399	6352748	(5-15)	Moist	Fir	None	0.03	0.07	2mm	Moist	Brown	Organic	0	5	5	0	90
2317654	Ah	396279	6352916	(25-35)	Dry	Fir	None	0.02	0.1	2mm	Moist	Black	Organic	0	0	10	0	90
2317086	Ah	397513	6352260	(>35)	Moist	Fir	None	0.15	0.25	2mm	Moist	Black	Organic	0	5	0	0	95
2317501	Ah	396331	6352623	(15-25)	Moist	Spruce	None	0.02	0.03	2mm	Moist	Brown	Organic	0	0	0	0	0
2317972	Ah	396813	6352212	(>35)	Dry	Fir	None	0.2	0.23	2mm	Moist	Brown	Organic	0	5	10	0	85
2317844	Ah	397833	6351997	(15-25)	Moist	Spruce	None	0.1	0.18	2mm	Moist	Black	Organic	0	5	0	0	95
2317989	Ah	397426	6351683	(25-35)	Dry	Fir	None	0.05	0.06	2mm	Moist	Black	Organic	0	1	1	0	98
2317566	Ah	396407	6352333	(25-35)	Dry	Fir	None	0.08	0.12	2mm	Moist	Black	Organic	0	0	0	0	100
2317791	Ah	397718	6353777	(15-25)	Wet	Fir	None	0.07	0.12	2mm	Moist	Black	Organic	0	5	5	0	90
2317530	Ah	396521	6352547	(25-35)	Dry	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	15	0	0	85
2317595	Ah	397094	6352751	(25-35)	Moist	Fir	None	0.1	0.18	2mm	Moist	Black	Organic	0	5	0	0	95
2317592	Ah	397747	6353931	(0-5)	Moist	Fir	None	0.03	0.15	2mm	Moist	Black	Organic	0	5	5	0	90
2317001	Ah	397536	6351912	(25-35)	Moist	Spruce	None	0.03	0.04	2mm	Moist	Black	Organic	0	0	0	0	100
2317555	Ah	396121	6353062	(15-25)	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	5	0	0	95
2317635	Ah	396577	6352250	(25-35)	Moist	Fir	None	0.4	0.12	2mm	Moist	Black	Organic	0	10	10	0	80
2317891	Ah	396893	6352398	(>35)	Dry	Spruce	None	0.2	0.3	None	Moist	Black	Organic	0	5	5	0	90
2317650	Ah	397101	6352804	(25-35)	Moist	Fir	None	0.1	0.15	2mm	Moist	Black	Organic	0	5	5	0	90
2317460	Ah	397162	6352064	(>35)	Moist	Spruce	None	0.06	0.15	2mm	Moist	Black	Organic	0	0	0	0	100
2317904	Ah	398360	6354134	(5-15)	Wet	Spruce	None	0.2	0.3	2mm	Wet	Black	Organic	0	5	0	0	95
2317536	Ah	396554	6352643	(25-35)	Moist	Fir	None	0.15	0.25	2mm	Moist	Black	Organic	0	15	5	10	70

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317464	Ah	397193	6352123	(>35)	Moist	Spruce	None	0.06	0.15	2mm	Moist	Black	Organic	0	0	0	0	100
2317069	Ah	397584	6351570	(25-35)	Moist	Spruce	None	0.1	0.12	2mm	Moist	Black	Organic	0	5	0	0	95
2317009	Ah	397282	6351850	(25-35)	Wet	Spruce	None	0.05	0.1	2mm	Moist	Brown	Organic	0	0	0	0	100
2317511	Ah	396459	6352847	(5-15)	Moist	Spruce	None	0.03	0.06	2mm	Moist	Brown	Organic	0	0	0	15	85
2317003	Ah	397197	6351737	(25-35)	Moist	Fir	None	0.12	0.2	2mm	Moist	Black	Organic	0	5	5	0	90
2317451	Ah	397073	6351887	(15-25)	Moist	Fir	None	0.05	0.2	2mm	Moist	Black	Organic	0	0	0	0	100
2317454	Ah	397099	6351929	(>35)	Moist	Spruce	None	0.1	0.13	2mm	Moist	Black	Organic	0	0	0	0	100
2317900	Ah	396826	6352259	(25-35)	Dry	Fir	None	0.15	0.2	2mm	Moist	Black	Organic	0	5	0	0	95
2317708	Ah	397123	6353547	(5-15)	Dry	Fir	Possible	0.1	0.2	2mm	Moist	Brown	Organic	0	10	0	0	90
2317997	Ah	397500	6351805	(25-35)	Moist	Spruce	None	0.12	0.15	2mm	Moist	Black	Organic	0	2	2	0	96
2317070	Ah	397614	6351610	(15-25)	Moist	Spruce	None	0.08	0.1	2mm	Moist	Black	Organic	0	5	0	0	95
2317466	Ah	397220	6352160	(>35)	Moist	Fir	None	0.05	0.2	2mm	Moist	Black	Organic	0	0	0	0	100
2317470	Ah	397265	6352235	(>35)	Moist	Fir	None	0.1	0.25	2mm	Moist	Black	Organic	0	0	0	0	100
2317019	Ah	397417	6352496	(25-35)	Moist	Fir	None	0.15	0.2	2mm	Moist	Black	Organic	0	5	0	0	95
2317665	Ah	397749	6354788	(0-5)	Moist	Spruce	None	0.07	0.1	2mm	Dry	Brown	Organic	0	0	0	2	98
2317472	Ah	397289	6352277	(>35)	Moist	Spruce	None	0.05	0.1	2mm	Moist	Black	Organic	0	0	0	0	100
2317557	Ah	396295	6352204	(15-25)	Dry	Fir	None	0.03	0.07	2mm	Moist	Black	Organic	0	0	0	0	100
2317456	Ah	397121	6351982	(25-35)	Moist	Fir	None	0.1	0.2	2mm	Moist	Black	Organic	0	0	0	0	100
2317806	Ah	396659	6351960	(25-35)	Moist	Fir	None	0.15	0.2	2mm	Moist	Black	Organic	0	5	5	0	90
2317889	Ah	396921	6352435	(>35)	Dry	Fir	None	0.03	0.23	2mm	Moist	Black	Organic	0	5	0	0	95
2317535	Ah	396532	6352587	(>35)	Dry	Fir	None	0.03	0.07	2mm	Dry	Black	Organic	0	5	0	10	85
2317630	Ah	396557	6352195	(15-25)	Moist	Fir	None	0.02	0.13	2mm	Moist	Black	Organic	0	5	5	0	90
2317015	Ah	397454	6352538	(>35)	Moist	Fir	None	0.15	0.2	2mm	Moist	Black	Organic	5	0	0	0	98
2317676	Ah	396939	6353242	(15-25)	Moist	Fir	None	0.15	0.36	2mm	Moist	Black	Organic	0	0	0	0	100
2317783	Ah	396673	6352392	(25-35)	Moist	Fir	None	0.15	0.2	2mm	Moist	Brown	Organic	0	0	0	0	100
2317060	Ah	397653	6351668	(0-5)	Moist	Fir	None	0.05	0.06	2mm	Moist	Black	Organic	0	0	0	0	100
2317692	Ah	398296	6354007	(0-5)	Saturated	Spruce	None	0.05	0.25	2mm	Saturated	Black	Organic	0	2	0	0	98
2317669	Ah	397713	6354689	(15-25)	Moist	Spruce	None	0.25	0.3	2mm	Moist	Brown	Organic	0	0	0	2	98
2317624	Ah	396484	6352050	(15-25)	Moist	Fir	None	0.03	0.06	2mm	Moist	Black	Organic	0	0	5	0	95
2317067	Ah	397563	6351524	(15-25)	Moist	Spruce	None	0.07	0.08	2mm	Moist	Black	Organic	0	5	0	0	95
2317458	Ah	397141	6352023	(>35)	Moist	Spruce	None	0.06	0.15	4mm	Moist	Black	Organic	0	0	0	0	100
2317988	Ah	397362	6351593	(25-35)	Dry	Fir	None	0.1	0.12	2mm	Moist	Black	Organic	0	10	5	0	85
2317084	Ah	397535	6352289	(>35)	Moist	Fir	None	0.1	0.25	2mm	Moist	Black	Organic	0	5	0	0	95
2317510	Ah	396438	6352796	(15-25)	Moist	Spruce	None	0.03	0.06	2mm	Moist	Brown	Organic	0	0	0	15	85
2317564	Ah	396358	6352279	(15-25)	Dry	Fir	None	0.03	0.08	2mm	Moist	Black	Organic	0	0	0	0	100
2317698	Ah	396643	6351916	(>35)	Moist	Spruce	None	0.05	0.1	2mm	Moist	Brown	Organic	0	8	2	0	90
2317562	Ah	396342	6352218	(15-25)	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	0	0	0	100
2317028	Om	393662	6356280	(15-25)	Moist	Fir	None	0.6	0.7	None	Moist	Black	Organic	0	0	0	0	100
2317504	Ah	396347	6352662	(5-15)	Moist	Spruce	None	1	0.02					0	0	0	0	0
2317709	Ah	397123	6353547	(5-15)	Dry	Fir	Possible	0.2	0.6	None	Moist	Grey-Blue	Till	0	85	5	0	10
2317642	Bm	397205	6352955	(15-25)	Moist	Fir	None	0.1	0.4	2mm	Moist	Brown	Colluvium	5	0	80	15	0
2317864	BC	397239	6353012	(25-35)	Moist	Fir	None	0.2	0.2	2mm	Moist	Black	Colluvium	0	5	15	80	0
2317927	BC	397757	6353094	(15-25)	Dry	Fir	None	0.08	0.2	2mm	Moist	Grey-Blue	Colluvium	45	0	30	20	5
2317866	BC	397260	6353038	(25-35)	Moist	Fir	None	0.45	0	2mm	Moist	Grey-Blue	Colluvium	0	0	40	60	0



SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317545	BC	396672	6352801	(>35)	Dry	Fir	None	0.3	0.4	2mm	Dry	Grey-Blue	Colluvium	0	20	35	40	5
2317644	Bm	397186	6352925	(15-25)	Moist	Fir	None	0.06	0.35	2mm	Moist	Brown	Colluvium	25	0	45	30	0
2317079	BC	397602	6352415	(>35)	Moist	Fir	None	0.25	0.35	2mm	Moist	Brown	Colluvium	30	30	0	40	0
2317886	BC	396937	6352535	(>35)	Dry	Fir	None	0.01	0.08	2mm	Moist	Red	Colluvium	0	5	60	35	0
2317879	BC	397050	6352654	(25-35)	Dry	Fir	None	0.15	0.25	2mm	Moist	Brown	Colluvium	0	10	65	25	0
2317575	Bm	396754	6352926	(25-35)	Dry	Fir	None	0.3	0.5	2mm	Dry	Brown	Colluvium	0	20	40	35	5
2317012	BC	397309	6351891	(25-35)	Moist	Fir	None	0.1	0.2	2mm	Moist	Grey-Blue	Colluvium	0	40	45	15	0
2317773	BC	397958	6354264	(15-25)	Moist	Spruce	None	0.15	0.3	2mm	Moist	Brown	Colluvium	0	60	20	20	0
2317064	BC	397642	6351637	(15-25)	Moist	Fir	None	0.3	0.6	None	Moist	Brown	Colluvium	0	65	15	20	0
2317046	BC	393480	6355926	(5-15)	Moist	Fir	None	0.1	0.2	2mm	Moist	Brown	Colluvium	0	30	40	30	80
2317476	BC	397344	6352365	(>35)	Wet	Spruce	None	0.09	0.25	6mm	Wet	Grey-Blue	Colluvium	0	20	20	60	0
2317075	BC	397670	6352515	(25-35)	Moist	Spruce	None	0.25	0.4	2mm	Moist	Brown	Colluvium	30	30	0	40	0
2317520	BC	396245	6353235	(25-35)	Dry	Fir	None	0.3	0.45	2mm	Moist	Brown	Colluvium	0	15	50	35	0
2317868	BC	397283	6353085	(25-35)	Moist	Fir	None	0.35	1	2mm	Moist	Grey-Blue	Colluvium	10	10	10	70	0
2317158	BC	397476	6352610	(25-35)	Moist	Fir	None	0.16	0.25	6mm	Wet	Tan	Colluvium	0	30	10	60	0
2317832	Bm	397980	6352266	(>35)	Moist	Spruce	None	0.15	0.35	2mm	Moist	Brown	Colluvium	20	20	40	20	0
2317922	C	397957	6353457	(5-15)	Moist	Spruce		0.2	0.35	2mm	Moist	Grey-Blue	Colluvium	65	0	10	25	0
2317961	BC	398103	6353662	(25-35)	Moist	Fir	None	0.08	0.2	2mm	Moist	Brown	Colluvium	0	30	50	20	0
2317885	BC	396997	6352575	(>35)	Dry	Fir	None	0.05	0.2	2mm	Moist	Brown	Colluvium	0	10	50	40	0
2317816	BC	396731	6352090	(>35)	Moist	Fir	None	0.25	0.45	2mm	Moist	Tan	Colluvium	0	33	33	33	90
2317652	Bm	396249	6352867	(15-25)	Dry	Fir	None	10	25	2mm	Moist	Brown	Colluvium	0	10	85	0	5
2317662	Bm	396380	6353161	(25-35)	Dry	Pine	None	0.2	0.3	2mm	Moist	Brown	Colluvium	0	5	50	40	5
2317606	BC	396442	6353204	(15-25)	Moist	Fir	None	0.06	0.15	2mm	Moist	Brown	Colluvium	0	5	80	15	0
2317929	Bm	397728	6353044	(25-35)	Dry	Fir		0.16	0.25	2mm	Moist	Brown	Colluvium	35	0	55	5	5
2317209	Bm	394015	6356886	(25-35)	Moist	Spruce	None	0.15	0.25	6mm	Moist	Brown	Colluvium	0	30	60	10	0
2317800	Bm	397614	6353595	(15-25)	Moist	Fir	None	0.5	0.7	2mm	Moist	Grey-Blue	Colluvium	0	40	25	35	0
2317729	BC	397304	6353901	(0-5)	Dry	Fir	None	0.25	0.4	2mm	Moist	Tan	Till	0	35	20	40	5
2317995	BC	397479	6351759	(25-35)	Moist	Fir	None	0.2	0.5	2mm	Moist	Grey-Blue	Colluvium	0	40	10	60	0
2317604	BC	396416	6353171	(25-35)	Moist	Fir	None	0.08	0.15	2mm	Moist	Brown	Colluvium	0	80	5	15	0
2317966	Bm	397986	6353487	(15-25)	Wet	Spruce	None	0.25	0.4	2mm	Moist	Grey-Blue	Colluvium	0	70	25	5	0
2317796	Bm	397648	6353689	(25-35)	Moist	Fir	None	0.2	0.25	2mm	Moist	Grey-Blue	Colluvium	0	60	15	25	0
2317497	Bm	393413	6355839	(15-25)	Moist	Spruce	None	0.2	0.5	6mm	Moist	Brown	Colluvium	30	30	0	40	0
2317870	BC	397327	6353131	(15-25)	Moist	Fir	None	0.25	0.4	None	Moist	Grey-Blue	Colluvium	0	5	20	75	0
2317990	BC	397426	6351683	(25-35)	Dry	Fir	None	0.1	0.2	None	Moist	Brown	Colluvium	0	5	45	50	0
2317623	Bm	396515	6352924	(25-35)	Moist	Fir	None	0.06	0.15	2mm	Moist	Brown	Colluvium	0	0	90	10	0
2317087	BC	397513	6352260	(>35)	Moist	Fir	None	0.25	0.4	2mm	Moist	Brown	Colluvium	30	30	0	40	0
2317156	BC	397505	6352658	(15-25)	Moist	Fir	None	0.25	0.4	6mm	Moist	Tan	Colluvium	0	30	30	60	0
2317949	BC	397606	6351994	(25-35)	Moist	Fir	None	0.35	0.45	2mm	Moist	Grey-Blue	Colluvium	20	0	45	35	0
2317547	Bm	396701	6352857	(25-35)	Dry	Fir	None	0.5	0.7	2mm	Dry	Brown	Colluvium	0	35	45	20	0
2317549	BC	396730	6352891	(25-35)	Dry	Fir	None	0.5	0.7	2mm	Dry	Brown	Colluvium	0	30	45	25	0
2317543	BC	396659	6352752	(25-35)	Dry	Fir		0.05	0.2	2mm	Moist	Tan	Colluvium	0	50	10	40	0
2317522	BC	396260	6353296	(15-25)	Dry	Fir	None	0.04	0.08	2mm	Moist	Grey-Blue	Colluvium	0	10	60	30	90
2317735	BC	397491	6354233	(15-25)	Moist	Fir	None	0.45	0.6	2mm	Moist	Brown	Colluvium	0	60	30	10	0
2317106	BC	393282	6355556	(5-15)	Moist	Fir	None	0.15	0.3	6mm	Moist	Brown	Colluvium	15	0	35	50	0

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317786	BC	396702	6352429	(>35)	Moist	Spruce	None	0.1	0.2	2mm	Moist	Brown	Colluvium	20	0	0	80	0
2317987	Bm	397690	6352163	(5-15)	Moist	Fir	None	0.1	0.2	2mm	Moist	Brown	Colluvium	0	30	55	15	0
2317932	Bm	397676	6352960	(25-35)	Dry	Fir	None	0.18	0.3	2mm	Moist	Brown	Colluvium	30	0	50	20	0
2317089	BC	397481	6352201	(25-35)	Moist	Fir	None	0.13	0.25	6mm	Moist	Tan	Colluvium	25	25	0	50	0
2317872	BC	397331	6353182	(15-25)	Moist	Fir	N/A	0.3	1	2mm	Moist	Grey-Blue	Colluvium	0	20	20	60	0
2317017	BC	397454	6352538	(>35)	Moist	Fir	None	0.2	0.3	4mm	Moist	Brown	Colluvium	30	30	0	40	0
2317541	BC	396633	6352718	(25-35)	Dry	Fir	None	0.05	0.15	2mm	Moist	Grey-Blue	Colluvium	0	20	40	40	0
2317153	BC	397520	6352696	(25-35)	Moist	Fir	None	0.15	0.3	6mm	Moist	Tan	Colluvium	0	20	15	60	5
2317638	Bm	396588	6352286	(15-25)	Moist	Fir	None	0.2	0.4	2mm	Moist	Brown	Colluvium	0	10	90	0	0
2317731	Bf	397326	6353937	(15-25)	Dry	Fir	None	0.3	0.5	2mm	Moist	Brown	Till	0	40	40	20	0
2317746	C	396789	6352596	(25-35)	Moist	Fir	None	0.15	0.4	2mm	Saturated	Tan	Colluvium	0	40	10	50	0
2317614	Bm	396596	6353076	(15-25)	Moist	Fir	None	0.05	0.15	2mm	Moist	Brown	Colluvium	0	5	90	5	0
2317803	Bm	397552	6353529	(15-25)	Moist	Fir	None	0.2	0.3	2mm	Moist	Grey-Blue	Colluvium	0	65	25	10	0
2317687	Bm	396843	6353064	(15-25)	Moist	Fir	None	0.1	0.25	2mm	Moist	Brown	Colluvium	40	15	45	0	0
2317981	BC	397769	6352295	(25-35)	Moist	Fir	None	0.2	0.3	2mm	Moist	Tan	Colluvium	0	10	60	30	0
2317963	Bm	398044	6353577	(0-5)	Wet	Fir	None	0.5	0.6	None	Wet	Grey-Blue	Colluvium	85	0	15	0	0
2317021	BC	397393	6352456	(25-35)	Moist	Fir	None	0.05	0.4	4mm	Moist	Other	Colluvium	30	30	0	40	0
2317500	Bf	393397	6355796	(15-25)	Moist	Fir	None	0.16	0.3	6mm	Moist	Orange	Colluvium	0	40	30	30	0
2317596	BC	397092	6352751	(25-35)	Moist	Fir	None	0.18	0.3	2mm	Moist	Brown	Colluvium	25	0	50	25	0
2317574	BC	396503	6352496	(25-35)	Dry	Fir	None	0.1	0.3	2mm	Dry	Brown	Colluvium	0	15	40	40	5
2317798	Bm	397614	6353651	(15-25)	Moist	Fir	None	0.7	0.85	2mm	Moist	Grey-Blue	Colluvium	0	55	20	25	0
2317707	Bm	397098	6353490	(5-15)	Dry	Fir	None	0.25	0.45	2mm	Moist	Grey-Blue	Till	0	80	10	10	0
2317619	BC	396547	6353011	(15-25)	Moist	Fir	None	0.1	0.2	2mm	Moist	Grey-Blue	Colluvium	0	0	85	15	0
2317508	Bm	396378	6352716	(5-15)	Moist	Spruce	None	0.09	0.13	2mm	Moist	Tan	Colluvium	0	0	0	0	0
2317640	Bm	396622	6352307	(15-25)	Moist	Fir	None	0.1	0.22	2mm	Moist	Brown	Colluvium	0	10	80	10	0
2317077	BC	397639	6352462	(15-25)	Moist	Fir	None	0.15	0.5	2mm	Moist	Grey-Blue	Colluvium	20	20	10	50	0
2317805	Bm	397512	6353476	(>35)	Moist	Fir	None	0.12	0.2	2mm	Moist	Grey-Blue	Colluvium	0	65	30	5	0
2317104	BC	393255	6355532	(5-15)	Moist	Fir	None	0.2	0.3	6mm	Moist	Brown	Colluvium	10	20	30	30	0
2317584	BC	397855	6354089	(0-5)	Moist	Spruce	None	0.2	0.3	2mm	Moist	Brown	Till	0	20	40	40	0
2317556		396191	6353156	(25-35)	Moist	Spruce	None	0.1	0.3	2mm	Moist	Grey-Blue	Colluvium	55	5	20	20	0
2317111	BC	393328	6355654	(5-15)	Moist	Fir	None	0.2	0.5	6mm	Moist	Brown	Colluvium	0	50	30	20	0
2317955	BC	397470	6353401	(25-35)	Moist	Fir	None	0.2	0.3	2mm	Moist	Grey-Blue	Colluvium	0	10	65	15	5
2317163	BC	396995	6353301	(15-25)	Moist	Fir	None	0.35	0.45	6mm	Dry	Other	Colluvium	0	20	50	15	15
2317702	Bm	397056	6353414	(15-25)	Dry	Fir	None	0.2	0.3	2mm	Moist	Brown	Till	0	70	10	15	5
2317714	Bm	397173	6353639	(5-15)	Dry	Spruce	None	0.2	0.4	2mm	Moist	Grey-Blue	Till	0	75	15	10	0
2317569	BC	396438	6352377	(25-35)	Moist	Fir	None	0.1	0.29	2mm	Moist	Brown	Colluvium	15	0	60	25	0
2317527	BC	396314	6353376	(15-25)	Moist	Fir	None	0.25	0.35	2mm	Moist	Brown	Colluvium	0	15	65	15	5
2317672	BC	397694	6354658	(15-25)	Moist	Spruce	None	0.2	0.3	2mm	Moist	Grey-Blue	Till	0	10	25	65	0
2317590	BC	397799	6354002	(0-5)	Moist	Spruce	None	0.3	0.5	2mm	Moist	Tan	Till	0	20	40	40	0
2317969	BC	397928	6353414	(5-15)	Moist	Fir	None	0.14	0.25	2mm	Moist	Tan	Colluvium	35	50	5	10	0
2317952	BC	397496	6353445	(25-35)	Wet	Aspen	None	0.3	0.4	2mm	Moist	Grey-Blue	Colluvium	0	10	80	10	0
2317484	BC	393799	6356483	(0-5)	Wet	Spruce	None	0.2	0.35	6mm	Moist	Tan	Till	20	30	20	30	0
2317882	BC	397029	6352610	(25-35)	Dry	Fir	None	0.1	0.2	2mm	Moist	Brown	Colluvium	0	5	75	20	0
2317670	BC	397711	6354692	(15-25)	Moist	Spruce	None	0.3	0.4	2mm	Moist	Brown	Colluvium	0	5	10	85	0

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317845	Bm	397833	6351997	(15-25)	Moist	Spruce	None	0.18	0.3	None	Moist	Tan	Colluvium	50	40	10	0	0
2317820	BC	397905	6353370	(15-25)	Moist	Spruce	None	0.22	0.4	2mm	Moist	Tan	Colluvium	0	40	40	20	0
2317794	Bm	397674	6353717	(15-25)	Moist	Fir	None	0.35	0.45	2mm	Moist	Grey-Blue	Colluvium	0	60	15	25	0
2317712	Bm	397159	6353595	(5-15)	Dry	Fir	None	0.2	0.5	2mm	Moist	Grey-Blue	Till	0	65	25	10	0
2317944	BC	397647	6352085	(15-25)	Moist	Spruce	None	0.3	0.45	2mm	Moist	Brown	Colluvium	0	35	45	20	0
2317082	BC	397567	6352377	(>35)	Moist	Fir	N/A	0.15	0.3	2mm	Moist	Brown	Colluvium	30	30	0	40	0
2317946	BC	397622	6352028	(15-25)	Moist	Spruce	None	0.18	0.3	2mm	Moist	Grey-Blue	Colluvium	25	0	55	20	0
2317039	Bm	393547	6356066	(5-15)	Moist	Fir	None	0.12	0.2	6mm	Moist	Tan	Colluvium	0	30	55	15	0
2317717	Bm	397190	6353679	(5-15)	Dry	Spruce	None	0.2	0.5	2mm	Moist	Grey-Blue	Till	0	60	20	15	5
2317752	BC	397666	6354598	(15-25)	Moist	Spruce	N/A	0.25	0.35	2mm	Moist	Brown	Colluvium	0	20	50	28	2
2317905	C	398358	6354128	(5-15)	Wet	Spruce		0.35	0.45	2mm	Wet	Grey-Blue	Alluvium	80	10	5	0	5
2317727	Bm	397280	6353861	(5-15)	Moist	Fir	None	0.3	0.4	2mm	Moist	Tan	Till	0	55	40	5	0
2317627	Bm	396508	6352096	(15-25)	Moist	Fir		0.05	0.24	2mm	Moist	Brown	Colluvium	5	0	85	10	0
2317085	BC	397535	6352289	(>35)	Moist	Fir	None	0.25	0.45	2mm	Moist	Brown	Colluvium	20	20	10	50	0
2317529	BC	396332	6353405	(15-25)	Dry	Fir	None	0.01	0.1	2mm	Moist	Brown	Colluvium	0	5	15	0	80
2317756	BC	397634	6354496	(5-15)	Moist	Spruce	None	0.15	0.25	2mm	Moist	Grey-Blue	Colluvium	0	10	65	25	0
2317608	Bm	396484	6353258	(15-25)	Moist	Fir	None	0.07	0.2	2mm	Moist	Brown	Colluvium	0	20	70	10	0
2317517	BC	396209	6353204	(15-25)	Dry	Fir	None	0.15	0.2	2mm	Moist	Brown	Colluvium	0	10	50	40	0
2317957	BC	397431	6353361	(15-25)	Moist	Fir	None	0.11	0.2	2mm	Moist	Brown	Colluvium	0	15	60	25	0
2317494	Bf	393447	6355873	(15-25)	Moist	Fir	None	0.2	0.35	6mm	Wet	Orange	Colluvium	0	30	20	50	0
2317758	BC	397615	6354461	(5-15)	Dry	Spruce	None	0.15	0.25	2mm	Moist	Brown	Colluvium	0	10	60	30	0
2317525	Bm	396297	6353331	(25-35)	Moist	Fir	None	0.03	0.05	2mm	Moist	Black	Colluvium	0	30	60	10	0
2317907	C	398309	6354066	(5-15)	Wet	Spruce		0.1	0.3	2mm	Wet	Grey-Blue	Alluvium	90	5	0	5	0
2317792	Bm	397718	6353777	(15-25)	Wet	Fir	None	0.1	0.15	2mm	Moist	Grey-Blue	Colluvium	0	60	15	25	0
2317594	BC	397102	6352805	(25-35)	Moist	Fir	None	0.15	0.28	2mm	Moist	Brown	Colluvium	25	0	40	35	0
2317843	Bm	397877	6352042	(25-35)	Moist	Spruce	None	0.2	0.4	2mm	Moist	Brown	Colluvium	40	30	0	30	0
2317108	BC	393309	6355614	(15-25)	Moist	Fir	None	0.15	0.25	None	Moist	Grey-Blue	Colluvium	10	20	30	40	0
2317579	Bm	396803	6353011	(>35)	Dry	Fir	None	0.2	0.3	2mm	Dry	Brown	Colluvium	0	20	50	25	5
2317473	BC	397289	6352277	(>35)	Moist	Spruce	None	0.1	0.35	6mm	Moist	Brown	Colluvium	0	30	40	30	0
2317455	BC	397099	6351929	(>35)	Moist	Spruce	None	0.15	0.4	6mm	Moist	Brown	Colluvium	0	10	30	60	0
2317666	BC	397749	6354788	(0-5)	Moist	Spruce	None	0.11	0.19	2mm	Dry	Brown	GlaFluv	0	5	15	80	0
2317674	BC	397679	6354628	(15-25)	Moist	Spruce	None	0.2	0.3	2mm	Moist	Grey-Blue	Till	0	60	20	5	0
2317668	BC	397724	6354735	(0-5)	Moist	Spruce	None	0.08	0.2	2mm	Moist	Black	GlaFluv	0	5	80	15	0
2317977	BC	397820	6352373	(15-25)	Dry	Fir	None	0.12	0.2	2mm	Moist	Tan	Organic	0	25	50	25	0
2317020	BC	397417	6352496	(25-35)	Moist	Fir	None	0.3	0.5	4mm	Moist	Tan	Colluvium	30	30	0	40	0
2317938	BC	397639	6352865	(25-35)	Dry	Fir	None	0.13	0.3	2mm	Moist	Grey-Blue	Colluvium	35	0	55	20	0
2317912	BC	398172	6353782	(5-15)	Moist	Spruce	None	0.2	0.35	2mm	Moist	Tan	Colluvium	35	5	40	20	0
2317890	BC	396919	6352434	(>35)	Dry	Fir	None	0.23	0.45	2mm	Moist	Tan	Colluvium	0	20	25	35	20
2317102	BC	393230	6355483	(5-15)	Moist	Fir	None	0.1	0.3	6mm	Moist	Brown	Colluvium	20	0	10	70	0
2317567	BC	396407	6352333	(25-35)	Dry	Fir	None	0.12	0.3	2mm	Moist	Brown	Colluvium	0	5	75	20	0
2317160	BC	397457	6352579	(25-35)	Moist	Fir	None	0.1	0.2	6mm	Wet	Tan	Colluvium	0	40	20	40	0
2317691	C	398341	6354092	(5-15)	Saturated	Spruce	None	0.22	0.5	2mm	Moist	Grey-Blue	Alluvium	95	5	0	0	0
2317824	Bm	397859	6353274	(5-15)	Moist	Fir	None	0.18	0.33	2mm	Wet	Brown	Colluvium	0	40	40	20	0
2317959	BC	397420	6353305	(15-25)	Moist	Fir	None	0.3	0.4	2mm	Moist	Brown	Colluvium	0	20	65	15	0

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2317659	BC	396374	6353095	(25-35)	Dry	Pine	None	0.15	0.2	2mm	Moist	Brown	Colluvium	0	5	60	35	0
2317680	BC	396916	6353215	(5-15)	Moist	Fir	None	0.08	0.2	2mm	Moist	Brown	Colluvium	40	0	60	0	0
2317682	BC	396902	6353168	(5-15)	Moist	Fir	None	0.09	0.28	2mm	Moist	Brown	Colluvium	45	0	55	5	0
2317935	BC	397655	6352914	(25-35)	Dry	Fir	None	0.15	0.3	2mm	Moist	Grey-Blue	Colluvium	45	0	30	20	5
2317942	BC	397654	6352136	(15-25)	Dry	Spruce	None	0.15	0.3	2mm	Moist	Brown	Colluvium	35	0	50	15	0
2317877	BC	397368	6353286	(5-15)	Moist	Fir	None	0.15	0.25	2mm	Moist	Grey-Blue	Colluvium	30	20	0	50	0
2317539	BC	396603	6352673	(15-25)	Dry	Fir	None	0.05	0.2	2mm	Moist	Tan	Colluvium	0	40	30	30	95
2317862	Bm	397457	6354213	(15-25)	Moist	Spruce	None	0.15	0.3	2mm	Wet	Tan	Colluvium	20	0	60	10	0
2317761	Bm	398082	6354479	(0-5)	Moist	Spruce	None	0.06	0.2	2mm	Moist	Tan	Till	0	95	5	0	0
2317023	C	397364	6352413	(25-35)	Moist	Fir	None	0.12	0.4	6mm	Moist	Grey-Blue	Colluvium	30	20	10	40	0
2317720	Bm	397210	6353735	(5-15)	Dry	Fir	None	0.25	0.5	2mm	Moist	Grey-Blue	Till	0	65	10	20	5
2317684	BC	396870	6353106	(15-25)	Moist	Fir	None	0.03	0.05	2mm	Moist	Brown	Colluvium	55	0	30	15	100
2317609	Bm	396617	6353107	(15-25)	Moist	Fir	None	0.07	0.2	2mm	Moist	Brown	Colluvium	0	0	98	2	0
2317893	BC	396893	6352398	(>35)	Dry	Spruce	None	0.3	0.45	2mm	Saturated	Tan	Colluvium	0	25	40	35	0
2317577	Bm	396784	6352951	(>35)	Dry	Fir	None	0.2	0.35	2mm	Dry	Brown	Colluvium	0	15	60	25	0
2317725	BC	397269	6353827	(15-25)	Dry	Fir	None	0.25	0.4	2mm	Moist	Tan	Till	0	50	45	5	0
2317587	BC	397839	6354059	(0-5)	Moist	Spruce	None	0.2	0.35	2mm	Moist	Brown	Till	0	20	40	40	0
2317050	BC	393206	6355446	(5-15)	Moist	Fir	None	0.1	0.15	6mm	Moist	Brown	Colluvium	30	30	0	40	0
2317771	BC	397980	6354300	(5-15)	Moist	Spruce	None	0.06	0.16	2mm	Moist	Brown	Colluvium	0	30	40	30	0
2317898	Bm	396853	6352303	(>35)	Dry	Fir	None	0.3	0.5	2mm	Moist	Brown	Colluvium	0	25	45	30	5
2317648	BC	397136	6352834	(25-35)	Moist	Fir	None	0.12	0.35	2mm	Moist	Brown	Colluvium	30	0	45	25	0
2317776	BC	397933	6354218	(0-5)	Moist	Spruce	None	0.12	0.3	2mm	Moist	Black	Colluvium	0	60	20	20	0
2317802	Bm	397561	6353557	(15-25)	Moist	Fir	None	0.3	0.5	2mm	Moist	Grey-Blue	Colluvium	0	70	20	10	0
2317705	Bm	397076	6353448	(5-15)	Dry	Fir	None	0.25	0.35	2mm	Moist	Brown	Till	0	40	40	20	0
2317678	BC	396939	6353242	(15-25)	Moist	Fir	None	0.36	0.45	2mm	Moist	Brown	Colluvium	55	0	40	5	0
2317026	BC	397732	6353832	(25-35)	Moist	Fir	None	0.25	0.45	other	Wet	Grey-Blue	Till	0	25	20	50	5
2317874	BC	397360	6353244	(15-25)	Moist	Fir	None	0.1	0.25	2mm	Moist	Grey-Blue	Colluvium	0	0	60	40	0
2317841	Bm	397898	6352085	(25-35)	Moist	Spruce	None	0.25	0.35	2mm	Moist	Tan	Colluvium	30	40	0	30	0
2317860	BC	397435	6354163	(0-5)	Moist	Fir	None	0.1	0.2	2mm	Wet	Tan	Till	0	80	10	10	0
2317888	BC	396935	6352472	(>35)	Dry	Fir	None	0.1	0.2	2mm	Moist	Brown	Colluvium	0	10	50	40	0
2317551	BC	396069	6352963	(5-15)	Dry	Fir	None	0.15	0.3	2mm	Moist	Brown	Colluvium	5	10	80	0	5
2317769	C	398004	6354348	(15-25)	Moist	Spruce	None	0.45	0.65	None	Moist	Grey-Blue	Colluvium	0	90	0	10	0
2317778	Bm	397915	6354176	(5-15)	Moist	Spruce	None	0.055	0.205	2mm	Moist	Brown	Colluvium	0	30	60	10	0
2317033	BC	393619	6356197	(15-25)	Moist	Fir	None	0.2	0.3	4mm	Moist	Brown	Colluvium	0	5	80	15	0
2317489	BC	393702	6356327	(15-25)	Moist	Spruce	None	0.45	0.5	6mm	Moist	Grey-Blue	Till	25	2	25	50	0
2317847	BC	397511	6351439	(15-25)	Moist	Spruce	None	0.1	0.2	2mm	Moist	Brown	Colluvium	50	20	0	30	0
2317593	BC	397747	6353931	(0-5)	Moist	Fir	None	0.15	0.25	2mm	Moist	Grey-Blue	Till	0	30	35	35	5
2317723	BC	397233	6353775	(5-15)	Dry	Fir	None	0.25	0.4	2mm	Moist	Grey-Blue	Till	0	20	30	50	5
2317852	BC	397342	6353975	(5-15)	Moist	Fir	None	0.25	0.35	2mm	Wet	Tan	Till	0	85	5	10	0
2317811	BC	396669	6352019	(>35)	Moist	Fir	None	0.05	0.15	2mm	Moist	Tan	Colluvium	0	20	20	60	0
2317854	Bm	397368	6354033	(5-15)	Moist	Fir	None	0.1	0.25	None	Moist	Tan	Till	0	93	5	2	0
2317826	Bm	397842	6353232	(15-25)	Moist	Fir	None	0.25	0.35	2mm	Saturated	Brown	Colluvium	0	10	75	45	0
2317818	BC	396748	6352138	(25-35)	Moist	Fir	None	0.4	0.6	2mm	Moist	Brown	Colluvium	0	45	35	15	5
2317918	Bm	398069	6353610	(5-15)	Moist	Spruce	None	0.08	0.11	2mm	Moist	Brown	Till	30	20	40	10	0

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317616	Bm	396575	6353045	(15-25)	Moist	Fir	None	0.1	0.2	2mm	Moist	Brown	Colluvium	0	0	90	10	0
2317970	Bm	396834	6352255	(25-35)	Dry	Fir	None	0.32	0.37	None	Moist	Brown	Colluvium	0	30	60	5	5
2317829	Bm	397818	6353178	(25-35)	Moist	Fir	None	0.18	0.33	2mm	Moist	Grey-Blue	Colluvium	0	40	15	40	5
2317030	BC	393648	6356233	(15-25)	Moist	Fir	None	0.1	0.2	6mm	Moist	Tan	Colluvium	0	15	70	15	0
2317834	Bm	397965	6352211	(25-35)	Moist	Spruce	None	0.1	0.3	2mm	Moist	Brown	Colluvium	30	40	0	30	0
2317505	Bf	396344	6352664	(5-15)	Moist	Spruce	None	0.1	0.15	2mm	Moist	Orange	Colluvium	0	0	0	0	0
2317092	BC	397460	6352163	(15-25)	Moist	Fir	None	0.17	0.3	6mm	Moist	Brown	Colluvium	30	30	0	40	0
2317044	Bm	393507	6355967	(25-35)	Moist	Fir	None	0.15	0.2	6mm	Dry	Brown	Colluvium	0	20	70	10	0
2317743	BC	396815	6352652	(25-35)	Moist	Fir	None	0.14	0.3	2mm	Moist	Tan	Colluvium	0	30	25	40	5
2317822	BC	397880	6353324	(25-35)	Moist	Fir	None	0.1	0.2	2mm	Moist	Tan	Colluvium	0	20	55	25	0
2317857	Bm	397381	6354078	(5-15)	Wet	Fir	None	0.1	0.25	None	Wet	Tan	Colluvium	0	70	30	0	0
2317471	BC	397265	6352235	(>35)	Moist	Fir	None	0.25	0.4	6mm	Moist	Brown	Colluvium	0	30	45	25	0
2317979	BC	397793	6352339	(15-25)	Moist	Fir	None	0.4	0.5	2mm	Moist	Tan	Colluvium	0	20	50	30	0
2317657	BC	396354	6353046	(>35)	Dry	Fir	None	0.2	0.4	2mm	Moist	Brown	Colluvium	0	30	15	40	5
2317656	BC	396319	6353009	(25-35)	Dry	Fir	None	0.2	0.3	2mm	Moist	Brown	Colluvium	0	55	40	0	5
2317767	C	398037	6354390	(5-15)	Moist	Spruce	None	0.17	0.3	2mm	Saturated	Tan	Alluvium	0	100	0	0	0
2317903	BC	397057	6352700	(>35)	Dry	Fir	None	0.1	0.2	2mm	Moist	Brown	Colluvium	0	20	35	40	5
2317850	Bf	397541	6351490	(15-25)	Moist	Spruce	None	0.13	0.2	2mm	Moist	Brown	Colluvium	40	30	10	20	0
2317813	BC	396690	6352051	(>35)	Moist	Spruce	None	0.7	0.9	2mm	Moist	Brown	Colluvium	0	35	20	35	10
2317916	Bm	398113	6353715	(5-15)	Moist	Spruce	None	0.1	0.25	2mm	Moist	Brown	Till	45	0	30	25	0
2317502	BC	396326	6352610	(15-25)	Moist	Spruce	None	0.05	0.1	2mm	Moist	Brown	Colluvium	0	0	0	0	0
2317158	BC	397476	6352610	(25-35)	Moist	Fir	None	0.16	0.25	6mm	Wet	Tan	Colluvium	0	30	10	60	0
2317789	BC	396726	6352485	(25-35)	Moist	Spruce	None	0.1	0.2	2mm	Moist	Brown	Colluvium	20	20	10	50	0
2317975	BC	396777	6352177	(25-35)	Dry	Fir	None	0.12	0.45	2mm	Moist	Brown	Colluvium	0	45	10	40	5
2317166	Bf	393369	6355755	(15-25)	Moist	Fir	None	0.25	0.4	6mm	Moist	Orange	Colluvium	0	30	30	40	0
2317754	BC	397647	6354542	(15-25)	Moist	Spruce	None	0.2	0.35	2mm	Moist	Brown	Colluvium	0	5	70	25	0
2317632	BC	396557	6352195	(15-25)	Moist	Fir	None	0.13	0.25	2mm	Moist	Brown	Colluvium	25	0	60	15	0
2317052	BC	397765	6351912	(15-25)	Moist	Fir	None	0.06	0.4	None	Moist	Brown	Colluvium	10	50	10	30	0
2317071	BC	397615	6351609	(15-25)	Moist	Spruce	None	0.1	0.2	2mm	Moist	Brown	Colluvium	0	0	40	60	0
2317572	Bm	396488	6352460	(25-35)	Dry	Fir	None	0.14	0.25	2mm	Dry	Brown	Colluvium	0	0	80	20	0
2317780	BC	397885	6354125	(0-5)	Moist	Spruce	None	0.2	0.4	2mm	Moist	Black	Colluvium	0	60	30	10	0
2317452	BC	397073	6351887	(15-25)	Moist	Fir	None	0.2	0.3	6mm	Moist	Brown	Colluvium	50	0	10	40	0
2317570	Bm	396471	6352416	(25-35)	Dry	Fir	None	0.1	0.35	2mm	Dry	Brown	Colluvium	0	5	80	15	0
2317920	BC	398005	6353540	(5-15)	Moist	Spruce	None	0.1	0.3	2mm	Moist	Grey-Blue	Colluvium	60	0	10	30	0
2317048	BC	393176	6355403	(5-15)	Moist	Fir	None	0.15	0.17	None	Moist		Colluvium	30	30	0	40	0
2317909	C	398275	6353966	(5-15)	Moist	Spruce	None	0.05	0.15	2mm	Moist	Grey-Blue	Alluvium	80	0	15	5	0
2317167	Bf	393356	6355700	(15-25)	Moist	Fir	None	0.25	0.4	6mm	Moist	Orange	Colluvium	0	30	30	40	0
2317457	BC	397121	6351982	(25-35)	Moist	Fir	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	50	10	40	0
2317690	Bm	396838	6353024	(15-25)	Moist	Fir	None	0.11	0.28	2mm	Moist	Brown	Colluvium	0	5	85	10	0
2317014	BC	397338	6351941	(25-35)	Moist	Spruce	None	0.3	0.45	2mm	Moist	Grey-Blue	Colluvium	0	45	45	10	0
2317621	Bm	396539	6352959	(15-25)	Moist	Fir	None	0.08	0.2	2mm	Moist	Brown	Colluvium	0	0	95	5	0
2317741	BC	397577	6354364	(15-25)	Moist	Spruce	None	0.15	0.25	2mm	Moist	Brown	Till	0	20	55	25	0
2317073	BC	397805	6351960	(25-35)	Dry	Spruce	None	0.2	0.3	2mm	Moist	Brown	Colluvium	0	30	50	20	0
2317459	BC	397141	6352023	(>35)	Moist	Spruce	None	0.15	0.3	6mm	Moist	Brown	Colluvium	0	20	40	50	0

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317696	BC	398195	6353829	(5-15)	Moist	Fir	None	0.2	0.4	2mm	Moist	Tan	Till	0	40	40	20	0
2317764	Bm	398056	6354442	(0-5)	Moist	Spruce		0.13	0.33	2mm	Saturated	Brown	Colluvium	80	10	10	0	0
2317839	Bm	397913	6352123	(25-35)	Moist	Spruce	None	0.13	0.2	2mm	Moist	Tan	Colluvium	30	40	0	30	0
2317164	Bm	397027	6353336	(15-25)	Moist	Fir	Mining	0.25	0.35	6mm	Dry	Brown	Colluvium	0	10	60	25	5
2317202	BC	393893	6356667	(15-25)	Moist	Spruce	None	0.17	0.25	6mm	Moist	Tan	Colluvium	0	40	45	15	0
2317054	BC	397753	6351875	(15-25)	Moist	Fir	None	0.15	0.5	None	Moist	Brown	Colluvium	10	15	50	25	0
2317467	BC	397220	6352160	(>35)	Moist	Fir	None	0.2	0.5	6mm	Moist	Brown	Colluvium	0	15	25	60	0
2317098	Bm	397387	6352040	(15-25)	Moist	Fir	None	0.06	0.15	6mm	Moist	Tan	Colluvium	0	5	50	30	20
2317653	BC	396282	6352916	(25-35)	Dry	Fir	None	0.15	0.25	2mm	Moist	Brown	Colluvium	0	10	85	0	5
2317634	Bm	396583	6352244	(15-25)	Moist	Fir	None	0.15	0.2	2mm	Moist	Brown	Colluvium	10	0	65	25	0
2317985	Bm	397720	6352200	(25-35)	Moist	Fir	None	0.12	0.2	2mm	Moist	Brown	Colluvium	0	5	75	20	0
2317514	BC	396497	6352878	(5-15)	Moist	Spruce	None	0.1	0.12	2mm	Moist	Tan	Colluvium	0	10	15	75	0
2317950	BC	397584	6351939	(25-35)	Moist	Spruce	None	0.05	0.1	2mm	Moist	Brown	Colluvium	0	15	55	30	0
2317750	Bm	396753	6352522	(>35)	Moist	Fir	None	0.15	0.3	None	Dry	Brown	Colluvium	0	30	55	10	5
2317010	BC	397282	6351850	(25-35)	Wet	Spruce	None	0.1	0.3	None	Wet	Grey-Blue	Colluvium	5	10	65	20	0
2317537	BC	396554	6352643	(25-35)	Moist	Fir	None	0.15	0.25	2mm	Moist	Black	Colluvium	0	45	30	20	5
2317992	BC	397446	6351731	(25-35)	Moist	Fir	None	0.15	0.2	2mm	Moist	Brown	Colluvium	0	10	50	40	0
2317582	Bm	398422	6354225	(5-15)	Moist	Spruce	None	0.2	0.45	2mm	Saturated	Tan	Alluvium	0	75	25	0	0
2317784	BC	396673	6352392	(25-35)	Moist	Fir	None	0.2	0.3	2mm	Moist	Brown	Colluvium	0	80	0	20	0
2317738	BC	397554	6354315	(15-25)	Moist	Spruce		0.3	0.45	2mm	Moist	Brown	Till	0	30	60	10	0
2317645	BC	397156	6352885	(15-25)	Moist	Fir		0.09	0.28	2mm	Dry	Grey-Blue	Colluvium	0	10	60	30	0
2317100	BC	397365	6351992	(15-25)	Moist	Fir	None	0.2	0.3	6mm	Moist	Tan	Colluvium	0	35	35	30	0
2317469	Bm	397239	6352189	(>35)	Moist	Fir	None	0.2	0.5	6mm	Moist	Brown	Colluvium	0	40	60	0	0
2317808	BC	396661	6351966	(25-35)	Moist	Fir	None	0.2	0.3	2mm	Moist	Tan	Colluvium	0	60	25	15	0
2317599	Bm	398399	6354180	(0-5)	Moist	Spruce	None	0.06	0.2	2mm	Moist	Tan	Alluvium	0	70	30	0	0
2317035	BC	393597	6356147	(25-35)	Moist	Fir	None	0.2	0.3	4mm	Moist	Brown	Colluvium	0	5	75	20	0
2317532	BC	396512	6352553	(25-35)	Dry	Fir	None	0.15	0.25	2mm	Moist	Brown	Colluvium	0	30	50	20	0
2317733	BC	397519	6354286	(15-25)	Moist	Fir	None	0.17	0.3	2mm	Moist	Brown	Colluvium	0	40	40	20	0
2317553	BC	396090	6353014	(15-25)	Dry	Fir	None	0.1	0.25	2mm	Moist	Brown	Colluvium	0	10	90	0	100
2317491	BC	393872	6356613	(>35)	Moist	Spruce	None	0.1	0.12	6mm	Moist	Tan	Colluvium	25	5	10	60	0
2317629	Bm	396535	6352151	(15-25)	Moist	Fir	None	0.06	0.15	2mm	Moist	Brown	Colluvium	15	0	70	15	0
2317836	Bm	397938	6352169	(25-35)	Moist	Spruce	None	0.07	0.2	2mm	Moist	Brown	Colluvium	30	30	0	40	0
2317068	BC	397563	6351524	(15-25)	Moist	Spruce	None	0.08	0.2	2mm	Moist	Brown	Colluvium	20	20	0	60	0
2317925	BC	397780	6353144	(15-25)	Moist	Spruce	None	0.15	0.28	2mm	Moist	Grey-Blue	Colluvium	50	0	25	20	5
2317061	BC	397653	6351668	(0-5)	Moist	Fir	None	0.25	0.4	None	Moist	Brown	Colluvium	0	15	30	55	0
2317057	BC	397716	6351787	(25-35)	Moist	Fir	None	0.15	0.3	None	Moist	Brown	Colluvium	25	0	25	50	0
2317059	BC	397690	6351743	(5-15)	Moist	Fir	None	0.1	0.2	2mm	Moist	Brown	Colluvium	0	20	20	60	0
2317782	BC	396643	6352358	(25-35)	Moist	Fir	None	0.2	0.3	2mm	Moist	Brown	Colluvium	10	40	15	35	0
2317983	BC	397733	6352261	(15-25)	Moist	Fir	None	0.12	0.2	2mm	Moist	Tan	Colluvium	0	20	40	40	0
2317896	BC	396880	6352352	(25-35)	Dry	Fir	None	0.3	0.4	2mm	Moist	Tan	Colluvium	0	10	40	30	20
2317625	Bm	396484	6352050	(15-25)	Moist	Fir	None	0.06	0.24	2mm	Moist	Brown	Colluvium	0	10	85	5	0
2317002	BC	397536	6351912	(25-35)	Moist	Spruce	None	0.25	0.3	2mm	Moist	Brown	Colluvium	0	30	45	25	0
2317056	BC	397741	6351816	(15-25)	Moist	Fir	None	0.15	0.3	None	Moist	Brown	Colluvium	10	30	20	40	0
2317005	BC	397231	6351768	(25-35)	Moist	Spruce	None	0.15	0.3	2mm	Moist	Brown	Colluvium	0	15	55	20	10

SAMPLE ID	Soil horizon	UTM E	UTM N	Slope (deg)	Drainage	Vegetation	Contamination	Depth from-to (m)		Sieve mesh	Soil moisture	Colour	Parent material	Clay %	Silt %	Sand %	Gravel %	Organic %
2317699	BC	396643	6351916	(>35)	Moist	Spruce	None	0.1	0.2	2mm	Moist	Tan	Colluvium	0	20	50	30	0
2317095	BC	397433	6352126	(15-25)	Moist	Fir	None	0.2	0.3	6mm	Moist	Brown	Colluvium	30	30	0	40	0
2317559	Bm	396295	6352204	(15-25)	Dry	Fir	None	0.07	0.15	2mm	Moist	Brown	Colluvium	0	7	90	3	0
2317007	BC	397250	6351812	(25-35)	Moist	Fir	None	0.2	0.25	2mm	Moist	Tan	Colluvium	0	40	40	20	0
2318000	BC	397516	6351856	(15-25)	Dry	Fir	None	0.1	0.15	None	Moist	Brown	Colluvium	0	20	40	40	0
2317998	BC	397500	6351805	(25-35)	Moist	Spruce	None	0.2	0.3	2mm	Moist	Brown	Colluvium	0	35	40	25	0
2317462	BC	397162	6352064	(>35)	Moist	Spruce	None	0.15	0.3	6mm	Moist	Brown	Colluvium	0	20	30	50	0
2317565	Bm	396358	6352279	(15-25)	Dry	Fir	None	0.03	0.08	2mm	Moist	Brown	Colluvium	0	10	70	20	0
2317563	Bm	396342	6352218	(15-25)	Moist	Fir	None	0.1	0.3	2mm	Moist	Brown	Colluvium	0	10	80	10	0
2317973	Ah	396813	6352212	(>35)	Dry	Fir	None	0.23	0.5	2mm	Moist	Brown	Organic	0	15	35	40	10
2317037	Ah	393572	6356107	(25-35)	Moist	Fir	None	0.3	0.4	6mm	Moist	Brown	Colluvium	0	13	10	75	2
2317152	Ah	397553	6352743	(>35)	Moist	Fir	None	0.2	0.4	6mm	Moist	Tan	Colluvium	0	20	40	0	40
2317710	BC	397123	6353547	(5-15)	Dry	Fir	Possible	0.6	0.75	2mm	Moist	Tan	Till	0	35	25	40	0
2317041	Ah	393527	6356015	(25-35)	Moist	Fir	None	0.1	0.2	6mm	Dry	Brown	Colluvium	0	20	40	40	0
2317481	Ah	393815	6356535	(15-25)	Moist	Spruce	None	0.1	0.3	6mm	Moist	Tan	Till	30	30	0	40	0
2317465	Ah	397193	6352123	(>35)	Moist	Spruce	None	0.15	0.3	6mm	Moist	Brown	Colluvium	0	30	30	40	0

**APPENDIX IV – SOIL SAMPLE ANALYTICAL CERTIFICATES**





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9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA  
PHONE (604) 253-3158

**Client:** **Teck Resources Limited**  
Suite 3300, 550 Burrard St.  
Vancouver BC V6C 0B3 CANADA

Submitted By: Michael Buchanan and Rupa Mukherjee  
Receiving Lab: Canada-Vancouver  
Received: August 20, 2013  
Report Date: September 09, 2013  
Page: 1 of 6

## CERTIFICATE OF ANALYSIS

VAN13003265.1

### CLIENT JOB INFORMATION

Project: 204700  
Shipment ID: CRQ\_2013\_002  
P.O. Number  
Number of Samples: 148

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
STOR-RJT-SOIL Store Soil Reject - RJSV Charges Apply

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Teck Resources Limited  
Suite 3300, 550 Burrard St.  
Vancouver BC V6C 0B3  
CANADA

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	143	Dry at 60C			VAN
SS80	143	Dry at 60C sieve 100g to -80 mesh			VAN
RJSV	143	Saving all or part of Soil Reject			VAN
1F04	148	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	0.5	Completed	VAN
2A05	148	Loss on Ignition at 1000 C		Completed	VAN

### ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. \*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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 PHONE (604) 253-3158

Client: **Teck Resources Limited**  
 Suite 3300, 550 Burrard St.  
 Vancouver BC V6C 0B3 CANADA

Project: 204700  
 Report Date: September 09, 2013

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# CERTIFICATE OF ANALYSIS

VAN13003265.1

Method Analyte	Unit	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
MDL		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317003	Soil	1.33	6.67	6.82	44.6	132	7.1	2.4	134	0.49	0.9	0.4	1.4	0.7	37.8	0.76	0.41	0.14	5	1.90	0.091
2317004	Soil	2.77	6.66	8.57	124.4	221	9.1	2.4	37	0.53	1.1	0.9	1.4	0.9	39.3	2.75	0.51	0.29	9	1.16	0.077
2317005	Soil	1.41	5.91	19.73	111.4	59	16.7	5.4	167	1.25	1.8	0.5	0.8	3.1	16.7	1.07	0.41	0.08	12	0.41	0.041
2317006	Soil	3.02	6.64	8.86	55.9	301	7.9	1.6	112	0.43	1.5	0.2	<0.2	0.8	11.0	0.34	0.53	0.09	8	0.37	0.080
2317007	Soil	8.85	10.19	162.2	233.8	44	28.8	3.6	74	1.39	5.1	0.6	0.9	2.0	3.6	0.29	0.70	0.10	46	0.05	0.038
2317008 BAL-1	Rock Pulp	1.31	18.00	24.81	80.6	127	33.0	7.1	272	1.79	4.9	1.5	1.7	1.9	30.9	1.81	0.26	0.11	46	0.67	0.055
2317009	Soil	4.49	14.67	17.53	99.9	135	26.5	4.4	349	1.01	2.5	1.3	<0.2	0.6	42.7	1.49	0.72	0.11	10	3.02	0.088
2317010	Soil	9.46	14.48	31.80	136.5	171	38.9	6.5	393	1.63	5.6	1.3	0.3	2.8	19.8	0.99	0.69	0.12	12	1.90	0.075
2317011	Soil	6.39	17.23	12.46	188.9	627	24.3	1.9	36	0.59	<0.1	0.8	<0.2	0.9	42.4	7.50	2.24	0.08	52	2.31	0.082
2317012	Soil	17.31	42.36	57.17	818.2	2266	97.5	5.4	257	1.37	21.1	2.7	1.9	4.1	51.5	13.32	8.99	0.14	96	5.84	0.124
2317013	Soil	3.39	30.49	21.73	88.2	277	26.8	3.8	492	0.72	1.7	0.8	<0.2	0.4	70.1	4.72	1.71	0.06	7	4.17	0.090
2317014	Soil	10.37	20.40	21.83	210.7	246	50.9	6.9	196	1.89	8.0	1.1	0.6	6.7	9.2	1.92	2.67	0.11	9	0.35	0.081
2317015	Soil	3.21	10.58	4.90	79.0	100	8.7	1.8	42	0.35	0.8	0.4	1.5	0.4	54.6	1.39	0.72	0.06	5	2.54	0.063
2317016	Soil	3.26	8.83	4.79	74.5	110	8.4	1.7	41	0.35	1.0	0.4	1.0	0.4	56.7	1.22	0.76	0.04	5	2.56	0.060
2317017	Soil	8.52	32.88	34.09	295.0	879	54.4	8.3	259	2.08	10.3	1.1	2.4	4.8	55.5	1.99	3.16	0.15	29	1.47	0.099
2317018	Soil	8.77	34.79	35.41	282.8	875	53.7	8.4	278	2.09	10.6	1.1	1.2	4.9	56.8	1.84	3.17	0.16	29	1.68	0.089
2317019	Soil	3.10	7.02	23.27	91.6	112	13.7	3.2	174	1.02	2.2	1.1	<0.2	0.7	56.4	1.98	0.64	0.05	12	3.07	0.058
2317020	Soil	8.37	19.13	67.76	133.7	472	43.0	8.4	664	3.12	9.1	0.9	0.8	2.4	60.0	0.79	1.66	0.11	20	4.66	0.081
2317021	Soil	20.09	40.12	42.54	151.6	781	61.8	7.7	504	2.41	11.8	1.6	1.3	3.9	36.0	1.53	3.77	0.14	29	2.59	0.066
2317022	Soil	20.78	7.59	6.66	61.3	242	12.6	1.0	29	0.24	<0.1	0.3	0.7	0.5	21.3	3.05	0.73	0.04	6	0.58	0.076
2317023	Soil	31.57	23.41	28.11	56.4	411	18.8	1.6	45	0.75	9.9	2.9	1.7	2.9	25.2	1.35	3.94	0.11	22	0.07	0.029
2317024	Soil	4.12	22.99	22.95	349.0	272	28.8	3.4	204	0.47	1.2	2.5	0.2	0.4	96.7	7.02	1.40	0.05	3	3.69	0.108
2317025	Soil	4.13	24.04	24.06	356.8	275	29.8	3.7	215	0.48	1.2	2.5	0.6	0.4	96.3	6.90	1.42	0.05	4	3.79	0.110
2317026	Soil	7.23	25.77	186.3	342.2	387	58.7	12.1	283	1.99	8.0	1.2	0.6	6.9	65.0	1.95	1.43	0.11	21	3.23	0.098
2317027	Soil	7.29	25.84	166.1	369.5	383	57.9	13.1	257	1.91	8.8	1.2	<0.2	6.3	82.3	2.27	1.36	0.12	21	3.98	0.099
2317028	Soil	6.80	104.1	18.70	2432	1920	1357	5.5	457	1.30	2.6	6.0	2.7	0.7	171.0	62.74	3.37	0.09	18	3.97	0.092
2317029	Soil	9.58	26.73	11.24	498.2	944	175.0	1.5	29	0.47	2.0	3.5	1.2	0.5	53.2	9.48	1.23	0.05	13	1.19	0.073
2317030	Soil	30.06	22.48	19.98	324.5	325	77.1	4.4	146	1.60	9.9	2.9	1.8	1.5	19.3	2.41	1.50	0.12	55	0.20	0.039
2317031	Soil	2.99	8.89	3.89	60.4	6588	13.9	1.0	27	0.19	1.0	0.2	1.7	0.5	18.2	4.94	0.19	0.04	5	0.20	0.058
2317032 BAL-1	Rock Pulp	1.23	18.43	25.41	79.0	144	32.7	6.8	262	1.77	4.7	1.4	0.3	1.8	28.4	1.77	0.24	0.10	46	0.66	0.055

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317003	Soil	7.3	5.3	0.32	148.7	0.003	<20	0.34	0.003	0.05	<0.1	1.1	0.05	0.11	114	0.4	<0.02	0.9	0.35	<0.1	0.05
2317004	Soil	3.7	7.3	0.18	314.8	0.002	<20	0.45	0.003	0.04	<0.1	1.5	0.03	0.12	108	0.4	<0.02	1.1	0.15	<0.1	0.06
2317005	Soil	16.5	12.6	0.22	155.8	0.002	<20	0.72	<0.001	0.06	<0.1	2.0	0.08	<0.02	33	0.3	<0.02	1.5	0.24	<0.1	0.04
2317006	Soil	4.1	6.7	0.11	136.0	0.003	<20	0.25	0.003	0.06	<0.1	1.1	0.09	0.10	222	0.5	<0.02	1.0	0.42	<0.1	0.03
2317007	Soil	18.6	16.7	0.14	198.2	0.003	<20	0.81	<0.001	0.05	<0.1	1.3	0.42	<0.02	11	0.8	0.05	3.2	0.61	<0.1	<0.02
2317008 BAL-1	Rock Pulp	19.4	30.3	0.19	63.4	0.002	<20	1.24	0.007	0.07	<0.1	4.5	0.33	0.06	103	1.4	0.04	3.6	0.68	<0.1	0.07
2317009	Soil	6.3	8.1	0.38	262.9	0.002	<20	0.43	0.001	0.04	<0.1	1.8	0.15	0.11	118	0.8	<0.02	0.9	0.23	<0.1	0.10
2317010	Soil	14.7	6.7	0.97	110.9	0.002	<20	0.37	0.002	0.04	<0.1	3.5	0.21	0.02	68	0.6	<0.02	0.8	0.20	<0.1	0.05
2317011	Soil	4.2	9.8	0.35	241.6	0.003	<20	0.49	0.003	0.02	<0.1	1.4	0.12	0.13	206	9.6	0.02	1.4	0.29	<0.1	0.11
2317012	Soil	14.8	17.0	3.25	194.2	0.003	<20	0.29	0.005	0.07	<0.1	3.4	0.32	0.03	331	9.1	0.12	0.8	0.51	<0.1	0.05
2317013	Soil	4.6	4.9	0.42	283.5	0.002	<20	0.34	0.003	0.03	<0.1	1.2	0.11	0.17	326	1.3	<0.02	0.6	0.20	<0.1	0.10
2317014	Soil	22.5	10.9	0.08	76.9	<0.001	<20	0.22	0.002	0.05	<0.1	3.6	0.17	<0.02	3676	0.8	0.03	0.3	0.22	<0.1	0.09
2317015	Soil	1.7	5.5	0.21	566.9	0.002	<20	0.25	0.003	0.02	<0.1	0.8	0.03	0.14	128	0.8	<0.02	0.6	0.13	<0.1	0.05
2317016	Soil	1.7	5.5	0.21	576.3	0.002	<20	0.25	0.003	0.03	<0.1	1.0	0.03	0.14	147	0.9	<0.02	0.6	0.13	<0.1	0.05
2317017	Soil	18.2	8.7	0.50	1349	0.003	<20	0.49	0.002	0.09	<0.1	3.5	0.36	0.05	145	2.1	0.07	1.2	0.47	<0.1	0.10
2317018	Soil	17.9	8.7	0.62	1394	0.003	<20	0.50	0.002	0.10	<0.1	3.9	0.36	0.05	172	2.2	<0.02	1.1	0.51	<0.1	0.11
2317019	Soil	5.7	5.2	0.11	164.9	0.002	<20	0.28	0.004	0.02	<0.1	1.0	0.04	0.13	64	0.5	0.04	0.6	0.08	<0.1	0.06
2317020	Soil	12.7	4.5	1.26	196.8	0.001	<20	0.16	0.003	0.03	<0.1	2.4	0.15	0.04	115	0.9	0.07	0.4	0.21	<0.1	0.06
2317021	Soil	15.0	6.3	1.00	351.5	<0.001	<20	0.24	0.002	0.06	<0.1	2.0	0.31	0.04	204	2.0	0.09	0.6	0.61	<0.1	0.06
2317022	Soil	2.0	5.2	0.08	96.2	0.001	<20	0.10	0.003	0.07	<0.1	0.6	0.11	0.16	185	6.8	0.03	0.3	0.30	<0.1	0.04
2317023	Soil	22.7	3.0	0.03	167.8	<0.001	<20	0.15	0.002	0.06	<0.1	0.6	0.51	0.06	125	3.7	0.09	0.5	0.72	<0.1	<0.02
2317024	Soil	2.1	4.8	0.28	468.4	0.001	<20	0.17	0.003	0.05	<0.1	0.6	0.12	0.20	170	4.0	<0.02	0.4	0.18	<0.1	0.05
2317025	Soil	2.2	5.5	0.28	463.5	0.001	<20	0.16	0.005	0.05	<0.1	0.5	0.13	0.20	178	4.0	<0.02	0.4	0.17	<0.1	0.05
2317026	Soil	18.0	16.0	1.30	1152	0.003	<20	0.89	<0.001	0.10	<0.1	2.5	0.36	0.04	98	1.1	0.06	2.2	0.66	<0.1	0.07
2317027	Soil	17.8	16.0	1.37	1054	0.003	<20	0.87	<0.001	0.10	<0.1	2.5	0.43	0.04	108	1.1	0.05	2.0	0.67	<0.1	0.08
2317028	Soil	4.8	6.8	0.18	2332	0.003	<20	0.57	0.003	0.07	0.1	1.6	1.61	0.22	595	6.0	<0.02	1.2	0.51	0.1	0.09
2317029	Soil	4.1	4.3	0.07	2496	0.003	<20	0.33	0.004	0.06	<0.1	1.2	0.24	0.13	162	0.6	0.04	0.8	0.22	<0.1	0.03
2317030	Soil	17.2	8.5	0.18	1819	0.005	<20	0.70	<0.001	0.08	0.1	1.0	1.11	0.03	72	0.7	<0.02	3.0	0.66	<0.1	<0.02
2317031	Soil	3.3	5.2	0.05	863.4	0.003	<20	0.15	0.005	0.06	<0.1	0.8	0.13	0.09	130	0.4	0.03	0.5	0.52	<0.1	<0.02
2317032 BAL-1	Rock Pulp	19.4	29.9	0.18	58.6	0.002	<20	1.25	0.007	0.07	<0.1	4.3	0.31	0.06	94	1.5	0.04	3.4	0.65	<0.1	0.04



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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	%	
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
2317003	Soil	0.10	2.9	0.2	<0.05	2.4	4.64	15.0	0.02	<1	0.1	2.1	<10	<2	74.3
2317004	Soil	0.11	1.7	0.2	<0.05	2.5	2.96	7.2	<0.02	<1	0.2	1.2	<10	<2	74.7
2317005	Soil	0.12	4.1	0.1	<0.05	1.4	7.00	34.5	<0.02	<1	0.6	5.5	<10	<2	15.8
2317006	Soil	0.10	2.9	0.2	<0.05	1.5	0.85	8.2	<0.02	<1	<0.1	1.1	<10	2	75.3
2317007	Soil	0.18	5.5	0.3	<0.05	0.5	2.43	34.1	<0.02	<1	0.1	4.7	<10	<2	10.0
2317008 BAL-1	Rock Pulp	0.24	7.2	0.6	<0.05	2.1	19.39	33.9	<0.02	<1	0.7	10.0	<10	<2	12.9
2317009	Soil	0.19	3.5	0.1	<0.05	3.9	12.24	10.3	<0.02	<1	0.2	2.4	<10	<2	56.8
2317010	Soil	0.17	2.8	<0.1	<0.05	2.9	16.02	27.7	<0.02	<1	0.3	2.9	<10	<2	11.3
2317011	Soil	0.21	1.7	0.2	<0.05	4.6	5.32	7.5	<0.02	<1	0.3	2.1	<10	<2	71.8
2317012	Soil	0.14	4.0	0.5	<0.05	3.8	18.71	24.3	0.04	<1	0.3	3.4	<10	4	18.3
2317013	Soil	0.10	2.1	<0.1	<0.05	3.3	11.24	7.1	<0.02	<1	0.4	1.4	<10	<2	71.3
2317014	Soil	<0.02	2.1	<0.1	<0.05	7.1	11.87	40.6	0.02	<1	0.2	0.8	<10	<2	4.7
2317015	Soil	0.05	0.7	0.1	<0.05	1.9	2.28	3.5	<0.02	<1	0.2	0.8	<10	<2	85.7
2317016	Soil	0.06	0.8	<0.1	<0.05	2.0	2.40	3.5	<0.02	<1	0.1	0.9	<10	<2	85.4
2317017	Soil	0.16	6.0	0.1	<0.05	5.4	11.86	32.0	0.02	<1	0.3	4.9	<10	2	14.6
2317018	Soil	0.19	5.9	0.2	<0.05	5.6	12.21	31.8	0.03	<1	0.4	4.8	<10	3	14.3
2317019	Soil	0.05	0.7	<0.1	<0.05	2.6	6.56	11.2	0.02	<1	0.2	1.3	<10	<2	72.4
2317020	Soil	0.03	2.2	<0.1	<0.05	2.0	10.24	24.8	0.05	<1	0.2	1.5	<10	<2	21.2
2317021	Soil	0.05	3.5	0.1	<0.05	2.9	9.09	24.5	0.03	<1	0.3	1.8	<10	4	14.8
2317022	Soil	0.04	1.4	<0.1	<0.05	1.8	0.83	3.6	<0.02	2	<0.1	0.5	<10	<2	82.1
2317023	Soil	0.05	3.8	<0.1	<0.05	0.7	4.30	31.9	<0.02	19	0.2	1.0	<10	<2	5.3
2317024	Soil	0.03	1.6	<0.1	<0.05	2.0	3.56	4.3	<0.02	3	<0.1	1.9	<10	3	79.1
2317025	Soil	0.04	1.6	<0.1	<0.05	1.9	3.46	4.4	<0.02	9	<0.1	2.2	<10	<2	78.4
2317026	Soil	0.09	5.3	<0.1	<0.05	3.5	9.69	34.6	0.03	3	0.2	13.7	<10	<2	10.1
2317027	Soil	0.07	5.6	<0.1	<0.05	4.0	10.25	34.8	<0.02	<1	0.3	12.9	<10	3	10.5
2317028	Soil	0.20	5.0	0.3	<0.05	3.7	10.30	8.1	<0.02	7	0.4	2.2	<10	<2	78.0
2317029	Soil	0.09	2.0	0.1	<0.05	1.3	7.15	8.0	<0.02	<1	0.2	1.1	<10	<2	82.7
2317030	Soil	0.37	10.5	0.5	<0.05	0.2	5.03	32.3	<0.02	<1	0.2	6.1	<10	3	9.1
2317031	Soil	0.05	2.7	0.2	<0.05	0.8	0.61	5.9	<0.02	<1	<0.1	0.4	<10	<2	82.4
2317032 BAL-1	Rock Pulp	0.24	7.4	0.9	<0.05	2.1	18.56	32.0	<0.02	4	0.6	9.7	<10	3	12.9

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# CERTIFICATE OF ANALYSIS

VAN13003265.1

Method	Analyte	1F Mo	1F Cu	1F Pb	1F Zn	1F Ag	1F Ni	1F Co	1F Mn	1F Fe	1F As	1F U	1F Au	1F Th	1F Sr	1F Cd	1F Sb	1F Bi	1F V	1F Ca	1F P
Unit	MDL	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
2317033	Soil	17.30	26.38	40.47	151.1	364	44.7	3.9	106	3.16	22.6	2.2	1.8	3.9	23.1	1.07	3.45	0.16	73	0.04	0.091
2317034	Soil	2.51	7.49	3.29	56.3	3978	6.9	0.6	72	0.10	0.4	0.1	2.2	0.2	9.3	1.38	0.14	0.03	3	0.21	0.075
2317035	Soil	26.01	20.56	72.65	95.6	119	27.3	2.6	56	3.39	37.2	2.8	2.7	3.1	31.8	0.34	7.15	0.19	147	0.01	0.081
2317036	Soil	4.41	19.51	18.10	37.1	20111	9.2	0.8	29	0.23	1.3	0.6	<0.2	0.5	17.8	0.48	0.40	0.05	7	0.29	0.057
2317037	Soil	36.81	27.56	99.61	29.8	4021	6.4	1.0	17	1.07	22.2	2.1	0.7	1.3	43.9	0.25	4.47	0.14	93	0.06	0.039
2317038	Soil	4.48	13.51	13.88	73.3	6824	17.5	1.4	72	0.31	1.3	1.1	2.1	0.3	22.5	2.04	0.76	0.05	11	0.42	0.109
2317039	Soil	14.08	13.95	26.65	147.5	553	27.2	3.4	84	1.31	10.6	2.6	4.7	2.2	41.5	0.98	2.44	0.18	51	0.07	0.057
2317040	Soil	3.05	7.93	5.20	95.0	646	14.2	2.0	63	0.28	1.6	0.4	6.1	0.4	21.2	4.74	0.58	0.19	9	0.38	0.091
2317041	Soil	16.00	50.32	29.83	460.0	608	85.6	8.6	279	2.17	14.8	5.5	3.5	4.3	52.9	4.28	4.42	0.14	56	0.24	0.083
2317042 BAL-1	Rock Pulp	1.22	17.04	23.80	78.5	137	30.9	6.5	274	1.76	4.3	1.4	1.1	1.8	30.4	1.82	0.30	0.12	45	0.66	0.058
2317043	Soil	4.58	6.55	8.44	115.3	1464	11.0	1.4	81	0.38	3.5	0.4	3.5	0.6	25.7	11.17	0.89	0.09	15	0.41	0.080
2317044	Soil	15.97	14.16	50.45	126.9	319	25.8	2.4	32	2.15	19.3	2.1	3.5	3.2	37.7	0.81	3.27	0.16	71	0.04	0.102
2317045	Soil	3.05	16.47	14.11	36.4	20358	10.2	0.8	15	0.29	1.8	0.2	2.3	0.3	18.4	3.15	0.30	0.08	10	0.15	0.081
2317046	Soil	18.59	15.67	57.36	124.9	1988	15.9	1.9	28	1.51	34.5	0.8	1.3	3.0	7.6	1.84	3.40	0.09	86	0.01	0.038
2317047	Soil	2.63	5.02	3.56	46.3	4393	5.4	0.9	26	0.18	0.7	<0.1	3.1	0.3	15.1	1.38	0.13	0.06	2	0.30	0.058
2317048	Soil	14.44	21.41	8.14	55.2	259	24.0	5.9	60	2.03	5.7	0.3	1.2	2.3	1.5	0.32	0.20	0.16	40	0.01	0.052
2317049	Soil	3.40	20.42	13.22	70.4	2274	20.6	1.6	22	0.52	1.0	4.6	1.2	0.4	13.9	11.78	0.27	0.07	10	0.34	0.102
2317050	Soil	21.30	32.44	13.93	377.8	395	69.8	3.6	30	2.91	10.6	3.4	1.5	2.9	5.9	1.90	0.59	0.21	53	0.05	0.074
2317051	Soil	10.03	12.34	9.33	120.0	238	17.6	3.8	223	0.69	1.5	0.5	4.0	0.7	33.4	3.60	0.70	0.08	9	1.21	0.087
2317052	Soil	7.67	16.07	66.70	187.7	270	33.5	7.6	147	2.25	4.9	0.8	2.2	2.2	15.9	0.71	0.80	0.11	40	0.46	0.055
2317053	Soil	5.20	14.14	36.12	133.1	227	17.3	5.2	153	1.03	2.0	0.6	1.1	0.8	40.6	3.37	0.83	0.09	18	1.38	0.113
2317054	Soil	6.81	21.24	31.18	181.5	211	49.3	11.5	345	2.60	5.2	0.8	3.8	4.9	13.4	0.92	0.93	0.09	31	0.34	0.087
2317055	Soil	3.25	4.62	7.86	46.7	202	5.8	1.4	46	0.29	0.7	0.1	3.8	0.5	15.2	0.91	0.30	0.05	6	0.60	0.071
2317056	Soil	4.57	11.84	28.44	111.0	61	18.2	4.1	65	1.16	2.5	0.6	<0.2	0.7	15.6	1.28	0.57	0.10	31	0.28	0.044
2317057	Soil	5.58	12.50	38.62	181.4	93	32.4	8.3	242	1.99	3.6	0.8	3.4	0.7	11.7	0.98	0.89	0.13	27	0.33	0.078
2317058	Soil	3.20	5.09	5.99	40.5	280	5.4	0.9	105	0.21	0.2	0.1	7.1	0.4	7.4	0.76	0.23	0.04	6	0.37	0.109
2317059	Soil	7.63	13.66	28.93	191.5	91	24.1	5.1	184	2.77	5.2	0.6	<0.2	4.6	4.9	0.43	0.72	0.14	43	0.06	0.044
2317060	Soil	3.90	7.09	11.40	46.4	96	6.6	1.2	49	0.33	0.7	0.2	1.5	0.4	6.5	1.39	0.15	0.06	9	0.26	0.106
2317061	Soil	9.08	11.05	24.48	273.2	94	38.3	9.0	295	2.42	4.6	0.8	4.4	3.1	4.6	1.06	0.64	0.11	32	0.10	0.055
2317062	Soil	34.55	26.08	8.71	277.0	652	103.8	3.9	269	1.09	17.7	1.8	0.3	1.5	55.6	7.79	6.69	0.09	65	2.53	0.158



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**Project:** 204700  
**Report Date:** September 09, 2013

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# CERTIFICATE OF ANALYSIS

VAN13003265.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317033	Soil	15.0	14.7	0.24	1710	0.005	<20	0.98	<0.001	0.08	0.3	1.2	1.13	0.07	92	1.6	0.05	3.0	0.51	<0.1	0.02
2317034	Soil	1.3	3.6	0.06	367.3	0.002	<20	0.09	0.003	0.09	<0.1	0.7	0.09	0.11	126	0.5	<0.02	0.3	0.49	<0.1	<0.02
2317035	Soil	12.5	12.3	0.09	1388	0.010	<20	0.67	<0.001	0.07	0.5	1.1	1.51	0.09	68	2.6	0.16	4.0	0.70	<0.1	<0.02
2317036	Soil	3.6	4.4	0.03	931.9	0.004	<20	0.16	0.003	0.04	<0.1	0.9	0.35	0.10	188	2.0	<0.02	0.5	0.59	<0.1	0.03
2317037	Soil	18.6	12.9	0.02	818.8	0.005	<20	0.35	0.002	0.08	0.5	0.7	2.53	0.15	101	3.0	0.15	4.9	0.68	<0.1	<0.02
2317038	Soil	2.8	4.4	0.05	969.6	0.003	<20	0.24	0.003	0.09	<0.1	0.9	0.13	0.11	266	0.7	<0.02	0.7	0.21	<0.1	<0.02
2317039	Soil	15.2	9.4	0.23	2760	0.002	<20	0.66	<0.001	0.09	0.2	1.2	0.71	0.07	148	0.6	0.03	2.1	0.70	<0.1	0.04
2317040	Soil	2.0	6.1	0.05	924.4	0.002	<20	0.19	0.005	0.08	<0.1	1.1	0.11	0.12	201	0.5	0.02	0.5	0.20	<0.1	0.02
2317041	Soil	17.7	14.5	0.39	3560	0.003	<20	0.87	<0.001	0.12	0.1	2.9	0.88	0.08	202	1.9	0.10	2.0	0.83	<0.1	0.03
2317042 BAL-1	Rock Pulp	18.3	29.6	0.17	63.4	0.002	<20	1.21	0.006	0.07	<0.1	4.5	0.32	0.06	88	1.5	<0.02	3.2	0.75	<0.1	0.07
2317043	Soil	2.9	5.2	0.06	1084	0.002	<20	0.22	0.002	0.09	<0.1	0.7	0.17	0.12	112	0.6	<0.02	0.8	0.31	<0.1	<0.02
2317044	Soil	13.9	11.6	0.15	2263	0.002	<20	0.84	<0.001	0.10	0.2	1.1	0.91	0.09	81	1.4	0.06	2.3	0.73	<0.1	0.03
2317045	Soil	3.0	4.8	0.02	1123	0.003	<20	0.36	0.002	0.06	<0.1	0.6	0.11	0.11	162	1.0	<0.02	0.9	0.10	<0.1	<0.02
2317046	Soil	18.8	10.1	0.06	450.9	0.005	<20	0.58	<0.001	0.04	0.3	1.0	1.31	0.03	165	2.1	0.09	4.3	0.48	<0.1	<0.02
2317047	Soil	1.3	4.1	0.07	137.5	0.001	<20	0.13	0.004	0.05	<0.1	0.5	0.11	0.10	207	0.3	<0.02	0.4	0.61	<0.1	<0.02
2317048	Soil	19.6	8.9	0.08	69.1	0.001	<20	1.25	<0.001	0.04	<0.1	1.3	0.61	<0.02	30	0.4	0.03	6.5	1.56	<0.1	0.03
2317049	Soil	4.5	5.7	0.04	252.2	0.003	<20	0.34	0.004	0.05	<0.1	0.8	0.12	0.10	93	0.6	0.03	1.1	0.54	<0.1	<0.02
2317050	Soil	15.5	12.2	0.08	169.5	0.002	<20	1.10	<0.001	0.05	<0.1	1.2	0.62	0.03	62	1.7	0.07	4.6	1.05	<0.1	<0.02
2317051	Soil	5.2	8.7	0.21	401.2	0.003	<20	0.42	0.001	0.05	<0.1	1.5	0.09	0.11	275	1.1	<0.02	1.2	0.48	<0.1	0.05
2317052	Soil	19.3	23.5	0.50	436.7	0.004	<20	1.06	<0.001	0.08	<0.1	2.3	0.24	<0.02	53	1.0	0.06	3.6	0.58	<0.1	<0.02
2317053	Soil	6.8	11.0	0.16	926.1	0.003	<20	0.63	0.001	0.05	<0.1	1.5	0.10	0.11	217	0.7	0.04	1.8	0.45	<0.1	0.06
2317054	Soil	24.5	32.7	0.98	281.2	0.004	<20	1.30	<0.001	0.09	<0.1	3.4	0.18	<0.02	96	1.1	0.02	3.6	0.54	<0.1	<0.02
2317055	Soil	2.1	7.2	0.08	127.3	0.003	<20	0.22	0.002	0.05	<0.1	1.0	0.03	0.08	177	0.2	<0.02	0.8	0.22	<0.1	0.02
2317056	Soil	19.7	9.8	0.15	490.4	0.004	<20	0.76	<0.001	0.06	<0.1	1.2	0.19	<0.02	44	0.3	<0.02	3.5	0.59	<0.1	<0.02
2317057	Soil	15.3	13.1	0.29	319.9	0.003	<20	1.04	<0.001	0.06	<0.1	1.6	0.19	0.02	131	0.8	<0.02	2.8	0.76	<0.1	<0.02
2317058	Soil	3.0	6.5	0.07	110.7	0.002	<20	0.20	0.003	0.10	<0.1	1.0	0.07	0.09	212	0.3	<0.02	1.0	0.17	<0.1	<0.02
2317059	Soil	21.4	14.8	0.25	217.1	0.008	<20	1.12	<0.001	0.05	<0.1	1.4	0.15	<0.02	29	0.9	0.07	4.5	0.49	<0.1	0.02
2317060	Soil	5.7	5.9	0.08	240.4	0.003	<20	0.37	0.002	0.07	<0.1	0.7	0.08	0.06	133	0.4	<0.02	1.7	0.18	<0.1	<0.02
2317061	Soil	18.2	19.1	0.28	176.4	0.005	<20	1.39	<0.001	0.05	<0.1	2.7	0.19	<0.02	61	1.3	<0.02	3.1	0.52	<0.1	<0.02
2317062	Soil	18.9	11.2	0.46	258.5	0.003	<20	0.55	<0.001	0.04	0.2	1.8	0.65	0.11	304	4.0	0.03	1.4	0.37	<0.1	0.11

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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Project: 204700  
 Report Date: September 09, 2013

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# CERTIFICATE OF ANALYSIS

VAN13003265.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317033	Soil	0.64	8.5	0.4	<0.05	1.3	2.80	26.1	0.04	<1	0.2	7.9	<10	4	11.8
2317034	Soil	0.03	3.9	<0.1	<0.05	0.8	0.26	2.3	<0.02	<1	<0.1	0.2	<10	<2	91.0
2317035	Soil	0.98	10.9	0.7	<0.05	1.4	2.17	20.9	0.02	<1	0.1	3.5	<10	<2	10.7
2317036	Soil	0.07	3.4	0.2	<0.05	0.7	0.58	6.3	<0.02	<1	<0.1	0.2	<10	3	80.8
2317037	Soil	0.17	5.0	1.0	<0.05	<0.1	1.58	30.7	<0.02	<1	<0.1	1.2	<10	2	12.4
2317038	Soil	0.05	2.1	0.2	<0.05	0.4	1.18	5.1	<0.02	<1	<0.1	0.9	<10	2	79.7
2317039	Soil	0.14	7.6	0.4	<0.05	0.7	4.26	29.2	0.04	<1	0.2	8.1	<10	<2	9.3
2317040	Soil	0.05	2.0	0.2	<0.05	1.1	0.72	4.0	<0.02	<1	0.1	1.0	<10	<2	86.0
2317041	Soil	0.08	7.2	0.2	<0.05	1.2	12.01	35.7	<0.02	2	0.4	13.0	<10	<2	7.0
2317042 BAL-1	Rock Pulp	0.23	7.8	0.5	<0.05	2.1	19.81	32.5	0.03	<1	0.7	9.7	<10	<2	13.0
2317043	Soil	0.08	3.5	0.2	<0.05	1.3	0.69	5.2	<0.02	<1	<0.1	0.9	<10	<2	77.7
2317044	Soil	0.25	9.6	0.3	<0.05	1.1	3.29	25.0	0.02	<1	0.2	7.0	<10	<2	12.1
2317045	Soil	0.08	2.1	0.2	<0.05	0.5	0.81	6.3	<0.02	<1	0.2	0.3	<10	<2	83.0
2317046	Soil	0.40	3.9	0.8	<0.05	0.4	1.31	34.9	<0.02	<1	<0.1	1.5	<10	2	12.0
2317047	Soil	0.03	2.6	<0.1	<0.05	0.6	0.31	2.7	<0.02	<1	<0.1	0.3	<10	<2	89.3
2317048	Soil	0.14	9.4	0.5	<0.05	1.3	1.79	33.4	<0.02	<1	0.3	2.8	<10	<2	13.4
2317049	Soil	0.15	6.6	0.1	<0.05	0.5	1.36	8.3	<0.02	<1	0.2	0.6	<10	<2	78.1
2317050	Soil	0.55	14.5	0.4	<0.05	0.6	2.69	28.6	<0.02	4	0.5	19.7	<10	<2	14.2
2317051	Soil	0.12	4.5	0.1	<0.05	2.7	6.76	9.5	<0.02	<1	0.3	2.5	<10	4	70.5
2317052	Soil	0.52	8.1	0.3	<0.05	0.5	5.72	39.0	0.03	<1	0.3	12.0	<10	<2	11.0
2317053	Soil	0.33	4.4	0.1	<0.05	2.5	8.58	14.1	<0.02	<1	0.4	3.7	<10	<2	62.3
2317054	Soil	0.24	7.1	<0.1	<0.05	0.9	9.82	50.8	0.03	<1	0.4	16.6	<10	<2	7.2
2317055	Soil	0.11	1.6	<0.1	<0.05	1.5	0.93	4.4	<0.02	<1	<0.1	1.0	<10	3	84.8
2317056	Soil	0.37	8.3	0.4	<0.05	0.2	3.73	37.8	<0.02	<1	0.2	4.6	<10	<2	11.7
2317057	Soil	0.29	9.0	0.2	<0.05	0.4	8.20	32.4	0.03	<1	0.3	10.7	<10	4	14.0
2317058	Soil	0.06	1.8	0.1	<0.05	0.7	0.48	5.9	<0.02	<1	0.1	0.6	<10	<2	75.1
2317059	Soil	0.80	8.1	0.4	<0.05	1.5	2.34	40.4	0.03	<1	0.2	8.4	<10	<2	8.3
2317060	Soil	0.14	2.3	0.1	<0.05	0.3	1.10	10.7	<0.02	<1	0.2	1.3	<10	<2	65.2
2317061	Soil	0.95	7.0	0.4	<0.05	0.9	8.31	39.9	0.04	<1	0.3	11.3	<10	3	10.4
2317062	Soil	3.63	3.0	0.2	<0.05	5.3	15.15	27.1	<0.02	<1	0.3	4.5	<10	<2	57.1

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# CERTIFICATE OF ANALYSIS

VAN13003265.1

Method Analyte	Unit	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
MDL		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317063	Soil	37.85	29.33	9.70	309.5	664	100.9	4.1	345	1.07	18.9	1.7	3.1	1.4	63.2	8.93	6.87	0.08	59	2.76	0.160
2317064	Soil	104.5	74.55	17.42	924.3	2135	313.7	6.8	245	2.13	54.5	4.1	2.5	7.4	54.6	14.62	16.81	0.12	165	1.77	0.225
2317065	Soil	104.8	69.03	16.08	832.6	2039	303.6	6.6	214	2.07	51.7	3.9	3.0	6.9	54.6	14.00	17.34	0.12	167	1.78	0.227
2317066	Soil	11.71	44.97	19.32	656.4	303	85.8	10.2	221	2.65	18.7	1.1	<0.2	0.4	5.7	1.21	3.71	0.18	65	0.11	0.141
2317067	Soil	4.98	9.88	10.76	68.4	82	14.4	3.5	170	0.66	1.6	0.4	2.4	0.6	7.0	1.30	0.54	0.10	16	0.22	0.109
2317068	Soil	6.50	16.79	15.85	154.6	98	38.7	8.7	255	2.05	5.3	0.8	2.7	1.4	4.7	0.64	1.02	0.13	28	0.10	0.074
2317069	Soil	9.21	8.84	7.07	78.5	136	9.5	2.4	125	0.41	1.0	0.2	0.8	0.7	25.0	3.60	0.50	0.07	6	1.39	0.091
2317070	Soil	4.83	7.71	6.80	43.9	118	10.2	1.7	43	0.43	1.5	0.2	1.9	0.8	10.6	0.94	0.50	0.05	10	0.42	0.074
2317071	Soil	16.81	16.72	15.90	114.0	269	59.4	6.6	319	1.72	7.3	1.2	1.4	1.2	16.1	1.65	1.57	0.11	20	1.09	0.087
2317072	Soil	3.45	23.62	124.3	190.7	612	41.0	5.2	661	0.89	1.0	3.4	0.5	0.7	71.5	7.16	1.17	0.07	8	3.77	0.093
2317073	Soil	11.27	19.33	107.3	281.6	238	52.4	9.9	215	2.04	5.7	1.0	0.7	3.0	10.7	2.45	1.47	0.50	29	0.29	0.055
2317074	Soil	4.02	7.53	23.51	85.7	5984	10.1	1.2	36	0.37	2.3	0.3	4.6	0.4	27.7	1.93	0.74	0.25	10	0.33	0.092
2317075	Soil	37.94	18.92	79.22	208.5	1896	24.9	2.6	26	4.30	35.8	2.8	5.5	2.1	54.1	0.50	6.78	0.19	92	0.01	0.094
2317076	Soil	6.93	9.14	14.55	97.6	1629	13.7	2.2	58	0.74	5.5	0.6	1.2	0.5	32.7	1.00	1.33	0.16	13	0.57	0.090
2317077	Soil	40.83	30.77	26.46	175.0	699	25.3	2.8	41	3.24	21.8	2.5	2.7	2.8	98.2	1.30	5.18	0.20	71	0.06	0.059
2317078	Soil	1.57	8.36	9.77	144.2	353	14.1	1.8	20	0.52	1.3	0.3	0.7	0.4	19.6	1.65	0.63	0.10	5	1.01	0.098
2317079	Soil	7.37	49.67	66.98	205.5	2888	91.3	9.6	121	3.70	9.6	2.3	2.7	2.2	27.5	0.70	3.79	0.17	35	1.66	0.367
2317080 BAL-1	Soil	1.16	16.53	23.47	73.5	120	31.7	6.2	217	1.73	3.9	1.2	0.8	1.4	24.9	1.68	0.25	0.09	45	0.66	0.052
2317081	Soil	3.99	10.83	26.89	334.4	271	23.5	3.9	202	1.32	4.4	0.3	2.4	1.2	18.9	1.41	0.93	0.06	6	2.04	0.052
2317082	Soil	6.27	18.35	47.77	285.1	565	42.8	6.9	313	2.44	7.3	0.6	0.4	2.3	34.1	1.49	1.63	0.08	11	5.11	0.049
2317083	Soil	7.34	17.54	27.66	53.3	261	46.5	10.2	300	1.79	7.4	1.2	0.8	1.2	30.1	0.28	1.62	0.11	13	2.12	0.160
2317084	Soil	3.81	7.02	10.26	31.6	69	22.7	3.9	60	0.88	3.6	0.5	2.6	0.5	21.8	0.16	0.60	0.05	8	1.16	0.082
2317085	Soil	16.21	26.78	36.75	91.2	534	89.1	15.4	426	3.17	13.7	2.7	1.4	2.5	86.2	0.29	2.09	0.12	31	4.46	0.331
2317086	Soil	2.45	6.10	5.85	19.0	175	10.0	2.2	36	0.42	1.5	0.2	5.2	0.6	14.8	0.38	0.27	0.04	3	0.86	0.052
2317087	Soil	2.60	88.37	33.07	37.7	1080	52.4	13.7	267	2.61	6.2	0.6	3.0	2.4	14.2	0.25	1.45	0.16	5	1.02	0.046
2317088	Soil	5.68	6.58	8.86	53.8	871	22.2	2.0	36	0.49	2.9	0.2	<0.2	0.8	9.3	0.64	0.82	0.05	6	0.25	0.068
2317089	Soil	46.45	15.89	79.00	39.2	885	8.1	1.2	11	1.63	12.0	0.8	1.4	2.1	34.1	0.27	2.19	0.14	48	0.01	0.033
2317090	Soil	6.76	177.9	86.02	179.7	485	89.7	25.1	317	1.25	2.9	9.1	0.7	1.5	36.9	7.71	1.72	0.08	12	1.49	0.102
2317091	Soil	6.89	175.7	80.73	174.8	439	87.8	22.0	303	1.24	2.7	8.9	0.4	1.6	38.4	7.21	1.64	0.07	12	1.51	0.098
2317092	Soil	12.34	109.6	55.25	260.4	320	76.6	11.9	108	1.91	6.5	3.4	1.0	3.0	11.7	2.25	1.35	0.08	22	0.31	0.082

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



# CERTIFICATE OF ANALYSIS

VAN13003265.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
2317063	Soil	16.4	10.3	0.49	241.8	0.003	<20	0.51	<0.001	0.03	0.2	1.6	0.52	0.12	309	3.8	0.04	1.3	0.33	<0.1	0.10
2317064	Soil	70.9	18.6	0.72	249.0	0.004	<20	0.45	0.001	0.10	0.3	4.1	2.38	0.02	780	9.5	0.19	1.5	0.67	0.2	0.06
2317065	Soil	70.1	18.8	0.72	237.2	0.004	<20	0.44	<0.001	0.10	0.3	4.3	2.14	0.02	614	10.2	0.15	1.2	0.77	0.1	0.05
2317066	Soil	14.0	22.4	0.20	368.8	0.002	<20	0.68	<0.001	0.12	<0.1	0.8	0.26	<0.02	54	4.4	<0.02	2.4	0.86	<0.1	<0.02
2317067	Soil	9.0	10.3	0.13	218.7	0.002	<20	0.55	<0.001	0.07	<0.1	0.7	0.10	0.05	57	0.3	<0.02	2.5	0.36	<0.1	0.02
2317068	Soil	13.9	17.4	0.21	293.9	0.002	<20	0.90	<0.001	0.11	<0.1	1.6	0.20	0.02	32	0.8	<0.02	2.6	0.76	<0.1	0.02
2317069	Soil	2.4	7.5	0.27	75.1	0.002	<20	0.20	0.003	0.06	<0.1	1.0	0.04	0.11	160	0.5	<0.02	0.6	0.26	<0.1	0.09
2317070	Soil	4.1	8.3	0.16	114.8	0.003	<20	0.34	<0.001	0.06	<0.1	1.2	0.08	0.07	180	0.6	<0.02	1.4	0.24	<0.1	0.06
2317071	Soil	14.5	9.8	0.21	126.4	0.001	<20	0.53	<0.001	0.05	<0.1	4.5	0.33	0.04	88	0.9	<0.02	0.7	0.44	<0.1	0.05
2317072	Soil	9.0	7.7	0.30	804.4	0.002	<20	0.49	<0.001	0.05	<0.1	1.4	0.10	0.14	334	3.1	<0.02	1.0	0.31	<0.1	0.08
2317073	Soil	17.5	29.1	0.36	470.2	0.003	<20	0.85	<0.001	0.07	<0.1	3.5	0.23	0.02	79	1.8	<0.02	2.3	0.45	<0.1	0.07
2317074	Soil	3.1	6.2	0.05	414.2	0.002	<20	0.21	0.002	0.07	<0.1	0.9	0.52	0.10	181	0.6	<0.02	0.7	0.61	<0.1	<0.02
2317075	Soil	11.4	11.3	0.04	470.2	0.003	<20	0.43	0.003	0.10	0.2	0.8	2.28	0.18	224	6.5	0.17	1.9	0.74	<0.1	<0.02
2317076	Soil	1.9	7.5	0.05	231.1	0.002	<20	0.14	0.002	0.09	<0.1	0.6	0.47	0.14	259	1.2	0.06	0.4	0.21	<0.1	<0.02
2317077	Soil	12.4	7.0	0.02	404.5	0.002	<20	0.28	0.003	0.19	<0.1	1.0	1.74	0.37	139	7.3	0.23	1.5	0.64	0.1	<0.02
2317078	Soil	1.8	5.3	0.07	269.7	0.002	<20	0.13	0.004	0.04	<0.1	1.0	0.06	0.13	221	1.2	<0.02	0.2	0.08	0.1	0.02
2317079	Soil	14.4	10.0	0.16	1129	0.004	<20	0.57	0.002	0.07	<0.1	3.8	0.26	0.08	263	3.7	0.04	1.1	0.41	<0.1	0.03
2317080 BAL-1	Soil	16.7	26.5	0.14	54.5	0.003	<20	1.20	0.007	0.07	<0.1	4.1	0.30	0.06	95	1.1	<0.02	3.3	0.55	<0.1	0.08
2317081	Soil	4.5	5.9	0.69	98.8	0.001	<20	0.06	0.003	0.04	<0.1	1.5	0.05	0.09	104	1.0	0.03	0.1	0.09	<0.1	0.10
2317082	Soil	7.5	4.5	2.60	126.4	<0.001	<20	0.06	0.003	0.03	<0.1	2.8	0.08	0.05	86	1.2	<0.02	0.1	0.16	<0.1	0.07
2317083	Soil	16.6	10.1	0.34	201.8	0.002	<20	0.20	0.003	0.03	<0.1	1.8	0.10	0.08	137	0.6	<0.02	0.4	0.13	<0.1	0.11
2317084	Soil	3.2	7.1	0.08	376.7	0.002	<20	0.16	0.002	0.02	<0.1	0.8	0.04	0.09	209	0.3	0.04	0.4	0.08	<0.1	0.05
2317085	Soil	11.8	10.8	1.05	1383	0.004	<20	0.31	0.002	0.08	<0.1	2.4	0.11	0.06	278	1.1	0.03	0.7	0.35	<0.1	0.06
2317086	Soil	1.7	4.1	0.13	111.6	0.001	<20	0.08	0.002	0.04	<0.1	0.8	0.02	0.10	90	0.4	<0.02	0.2	0.11	<0.1	0.05
2317087	Soil	11.2	7.1	0.25	321.4	<0.001	<20	0.11	<0.001	0.04	<0.1	3.9	0.09	0.07	106	1.4	0.09	0.1	0.23	<0.1	0.06
2317088	Soil	3.5	16.4	0.04	122.1	0.002	<20	0.15	0.003	0.07	<0.1	0.8	0.13	0.08	387	0.9	<0.02	0.3	0.27	<0.1	0.04
2317089	Soil	12.1	5.2	0.02	277.1	0.002	<20	0.21	<0.001	0.23	<0.1	0.7	0.83	0.45	118	7.2	0.12	1.2	0.59	<0.1	<0.02
2317090	Soil	9.0	10.2	0.22	590.5	0.002	<20	0.64	0.002	0.06	<0.1	2.7	0.16	0.12	221	1.1	<0.02	0.9	0.30	<0.1	0.09
2317091	Soil	9.1	10.3	0.21	489.4	0.002	<20	0.64	0.002	0.07	<0.1	2.6	0.17	0.12	187	0.9	<0.02	0.8	0.30	<0.1	0.11
2317092	Soil	14.7	9.3	0.21	227.9	0.002	<20	0.72	<0.001	0.09	<0.1	2.9	0.25	<0.02	101	1.2	0.07	1.2	0.51	<0.1	0.03



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Project: 204700  
 Report Date: September 09, 2013

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Part: 3 of 3

# CERTIFICATE OF ANALYSIS

VAN13003265.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	%	
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317063	Soil	3.62	2.6	0.1	<0.05	5.5	15.74	23.9	<0.02	1	0.3	3.4	10	<2	62.5
2317064	Soil	4.47	6.3	0.4	<0.05	4.3	30.31	93.4	<0.02	11	0.4	5.4	<10	<2	12.2
2317065	Soil	3.83	6.1	0.4	<0.05	3.8	27.95	90.2	0.02	4	0.5	5.3	<10	2	12.9
2317066	Soil	0.03	13.7	0.2	<0.05	0.2	5.12	27.0	<0.02	<1	0.5	7.2	<10	7	10.4
2317067	Soil	0.15	4.3	0.2	<0.05	0.6	1.86	17.5	<0.02	<1	0.2	2.7	<10	<2	41.0
2317068	Soil	0.16	10.9	0.3	<0.05	0.7	7.38	29.5	<0.02	<1	0.5	11.6	<10	<2	11.6
2317069	Soil	0.09	2.4	0.1	<0.05	2.4	3.57	4.9	<0.02	<1	0.2	1.7	<10	3	80.6
2317070	Soil	0.10	1.9	0.1	<0.05	1.6	1.66	7.5	<0.02	<1	<0.1	1.3	<10	<2	70.0
2317071	Soil	0.09	5.5	<0.1	<0.05	1.7	29.70	26.9	<0.02	<1	0.6	3.3	<10	<2	18.8
2317072	Soil	0.15	3.4	<0.1	<0.05	3.1	19.20	14.8	<0.02	<1	0.6	2.1	<10	<2	71.8
2317073	Soil	0.31	5.9	0.2	<0.05	2.6	10.39	32.3	0.03	<1	0.4	7.2	<10	2	14.0
2317074	Soil	0.08	2.6	0.1	<0.05	0.9	0.90	5.8	<0.02	<1	<0.1	0.7	<10	<2	79.1
2317075	Soil	0.20	6.9	0.2	<0.05	1.2	2.50	17.8	0.07	2	<0.1	2.0	25	3	12.4
2317076	Soil	0.07	2.1	0.1	<0.05	1.7	1.09	3.2	<0.02	<1	<0.1	0.8	<10	3	80.8
2317077	Soil	0.14	8.2	0.2	<0.05	0.6	4.28	18.3	0.03	2	0.1	2.0	21	<2	10.4
2317078	Soil	0.04	0.8	<0.1	<0.05	1.3	2.45	3.1	<0.02	1	<0.1	0.9	<10	<2	85.3
2317079	Soil	0.11	4.5	0.1	<0.05	1.4	20.28	21.8	0.03	<1	0.4	5.7	<10	3	17.4
2317080 BAL-1	Soil	0.25	6.6	0.4	<0.05	2.1	18.64	25.8	<0.02	3	0.9	9.8	10	4	12.5
2317081	Soil	0.03	1.1	<0.1	<0.05	3.9	4.85	7.5	<0.02	<1	0.2	0.5	<10	2	54.0
2317082	Soil	0.02	1.2	<0.1	<0.05	3.8	8.80	11.7	<0.02	<1	<0.1	0.8	<10	<2	18.7
2317083	Soil	0.03	1.7	<0.1	<0.05	4.7	13.50	35.7	0.05	<1	0.2	1.2	<10	3	46.8
2317084	Soil	0.04	0.7	<0.1	<0.05	2.4	3.74	5.9	<0.02	<1	0.1	0.3	<10	<2	77.1
2317085	Soil	0.02	3.1	0.1	<0.05	5.1	16.11	19.7	0.02	2	0.3	1.3	<10	3	21.6
2317086	Soil	0.03	1.0	<0.1	<0.05	1.6	1.86	3.2	<0.02	<1	<0.1	0.4	<10	<2	82.3
2317087	Soil	0.02	2.5	0.1	<0.05	2.0	12.08	19.2	0.04	1	0.3	0.7	<10	2	15.1
2317088	Soil	0.04	2.1	0.3	<0.05	1.9	1.70	5.8	<0.02	<1	0.2	0.4	<10	<2	69.9
2317089	Soil	0.03	9.7	0.4	<0.05	<0.1	2.50	16.0	<0.02	<1	0.2	1.3	18	<2	7.2
2317090	Soil	0.12	3.4	0.1	<0.05	3.1	27.28	15.4	0.02	4	0.9	3.3	15	<2	63.6
2317091	Soil	0.15	3.8	0.2	<0.05	3.3	25.86	15.0	<0.02	<1	0.7	3.0	<10	<2	63.1
2317092	Soil	0.15	6.1	0.1	<0.05	0.9	9.94	24.7	0.03	2	0.7	6.5	<10	<2	8.3

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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Project: 204700  
 Report Date: September 09, 2013

Page: 5 of 6 Part: 1 of 3

# CERTIFICATE OF ANALYSIS

## VAN13003265.1

Method Analyte Unit MDL		1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	0.02	2	0.01	0.001
2317093	Soil	13.40	118.1	62.17	286.9	336	84.4	13.4	118	2.00	7.3	3.7	0.3	3.5	11.8	2.41	1.31	0.09	23	0.33	0.094	
2317094	Soil	2.42	10.93	16.54	65.0	300	11.4	2.0	105	0.64	1.3	0.6	<0.2	0.7	11.6	1.20	0.41	0.04	13	0.57	0.082	
2317095	Soil	10.05	19.99	27.57	302.8	46	34.9	7.1	89	1.56	5.6	0.6	<0.2	1.3	2.6	0.66	1.64	0.10	12	0.06	0.051	
2317096	Soil	1.83	27.30	53.32	181.4	185	21.4	3.0	182	0.59	0.7	0.9	<0.2	0.4	53.4	4.75	0.62	0.03	6	2.97	0.088	
2317097	Soil	2.11	13.21	394.5	113.5	606	17.0	4.8	55	0.65	1.6	0.6	0.9	0.6	27.1	6.77	0.56	0.04	9	0.73	0.077	
2317098	Soil	3.50	25.74	878.5	601.6	192	39.2	7.0	331	2.26	4.2	1.4	<0.2	6.4	11.8	2.76	0.49	0.10	34	0.36	0.065	
2317099	Soil	2.05	9.18	172.0	73.6	366	11.0	2.0	17	0.59	1.2	0.5	<0.2	0.5	32.8	2.70	0.46	0.04	11	1.40	0.068	
2317100	Soil	6.01	13.47	217.7	436.4	134	39.1	7.5	123	2.43	5.2	0.5	<0.2	2.5	14.8	1.13	0.89	0.09	27	0.58	0.044	
2317101	Soil	3.26	19.66	13.20	72.1	865	51.6	3.7	11	1.33	0.9	21.1	<0.2	0.3	23.1	3.39	0.62	0.07	8	0.39	0.142	
2317102	Soil	8.09	30.54	13.93	153.8	463	39.6	4.0	30	1.53	5.8	6.3	0.2	1.6	13.7	2.18	1.23	0.13	39	0.12	0.061	
2317103	Soil	6.51	14.95	4.56	428.7	353	97.1	3.0	61	0.45	1.7	2.7	0.3	0.4	41.3	7.16	1.03	0.02	6	0.67	0.096	
2317104	Soil	11.36	38.53	12.20	875.3	671	176.5	8.0	182	1.54	8.4	6.3	0.7	1.3	33.7	6.07	1.54	0.11	30	0.60	0.075	
2317105	Soil	8.26	21.19	35.83	215.0	836	47.8	2.7	21	2.08	5.3	4.3	1.2	0.9	14.0	5.65	1.33	0.15	25	0.09	0.167	
2317106	Soil	15.04	28.78	28.91	989.1	913	108.4	10.6	178	2.34	12.4	3.3	1.8	1.3	32.1	18.41	1.29	0.16	41	0.11	0.054	
2317107	Soil	7.87	58.18	21.45	1391	730	216.0	14.4	324	2.14	6.7	3.7	1.0	1.6	98.3	24.89	3.07	0.10	29	1.64	0.115	
2317108	Soil	7.20	32.93	17.11	877.6	492	108.9	11.1	243	2.54	8.3	1.4	0.4	2.8	25.7	6.70	1.77	0.09	33	0.38	0.083	
2317109	Soil	9.53	27.05	13.07	2145	393	239.1	5.3	224	1.04	4.5	2.3	<0.2	0.9	156.2	33.63	2.10	0.06	16	2.78	0.075	
2317110	Soil	9.38	28.79	14.03	2136	457	241.2	5.8	240	1.06	5.3	2.3	15.7	1.4	153.8	33.69	2.09	1.87	16	2.79	0.079	
2317111	Soil	13.00	37.99	36.49	793.3	647	93.4	17.1	201	2.52	13.3	1.8	1.5	3.4	44.1	7.37	2.57	0.16	38	0.59	0.075	

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Project: 204700  
 Report Date: September 09, 2013

Page: 5 of 6 Part: 2 of 3

**CERTIFICATE OF ANALYSIS**

**VAN13003265.1**

	Method	Analyte	1F																						
			La		Cr	Mg		Ba	Ti		B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
			ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
			MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL
2317093	Soil	15.9	10.6	0.23	245.1	0.003	<20	0.74	<0.001	0.10	<0.1	3.0	0.27	<0.02	102	1.7	0.03	1.2	0.48	<0.1	0.02				
2317094	Soil	4.0	10.7	0.08	208.9	0.003	<20	0.43	0.001	0.05	<0.1	1.6	0.04	0.10	170	0.6	<0.02	1.4	0.17	<0.1	0.03				
2317095	Soil	14.5	4.3	0.03	77.9	0.001	<20	0.27	<0.001	0.03	<0.1	1.2	0.11	<0.02	27	0.8	<0.02	0.8	0.40	<0.1	0.04				
2317096	Soil	4.6	6.3	0.27	464.4	0.003	<20	0.39	0.003	0.03	<0.1	1.0	0.06	0.14	158	1.1	<0.02	0.7	0.20	<0.1	0.07				
2317097	Soil	7.0	8.8	0.09	925.0	0.003	<20	0.39	0.003	0.07	<0.1	1.6	0.06	0.11	281	0.4	<0.02	0.9	0.13	<0.1	0.05				
2317098	Soil	23.3	16.7	0.29	1112	0.003	<20	1.11	<0.001	0.08	<0.1	5.5	0.44	<0.02	236	0.5	0.07	2.1	0.26	<0.1	0.12				
2317099	Soil	5.0	8.8	0.12	415.9	0.004	<20	0.44	0.002	0.03	<0.1	1.7	0.07	0.11	177	0.6	<0.02	1.1	0.27	<0.1	0.06				
2317100	Soil	11.1	13.1	0.20	512.1	0.004	<20	0.67	<0.001	0.06	<0.1	1.9	0.32	0.02	58	0.6	0.03	1.7	0.33	<0.1	0.02				
2317101	Soil	6.1	4.8	0.03	413.1	0.004	<20	0.51	0.001	0.03	<0.1	1.1	0.11	0.16	209	1.6	<0.02	1.3	0.42	<0.1	0.03				
2317102	Soil	11.4	10.8	0.13	182.3	0.002	<20	0.81	<0.001	0.04	<0.1	1.0	0.33	0.04	52	1.4	0.03	3.1	0.96	<0.1	<0.02				
2317103	Soil	2.4	4.6	0.04	137.8	0.003	<20	0.23	0.003	0.05	<0.1	1.1	0.12	0.13	150	1.3	<0.02	0.7	0.20	<0.1	0.03				
2317104	Soil	12.0	10.5	0.19	245.6	0.002	<20	0.83	<0.001	0.05	<0.1	1.4	0.62	0.04	117	1.7	<0.02	2.5	0.70	<0.1	0.06				
2317105	Soil	6.1	7.8	0.05	399.0	0.003	<20	0.80	<0.001	0.05	<0.1	1.6	0.42	0.14	190	2.0	<0.02	1.7	0.70	<0.1	0.04				
2317106	Soil	13.9	10.7	0.14	484.6	0.002	<20	0.90	0.001	0.07	<0.1	1.3	0.74	0.04	88	1.9	0.05	2.8	0.84	<0.1	0.03				
2317107	Soil	10.6	11.4	0.23	860.9	0.002	<20	0.95	<0.001	0.09	<0.1	2.9	0.38	0.12	186	2.5	0.02	1.8	0.82	<0.1	0.12				
2317108	Soil	16.3	13.7	0.35	315.0	0.002	<20	0.95	<0.001	0.09	<0.1	2.4	0.31	0.02	87	1.1	<0.02	2.1	0.66	<0.1	0.06				
2317109	Soil	2.6	6.8	0.25	422.7	0.002	<20	0.44	0.001	0.08	<0.1	1.0	0.43	0.14	121	4.5	<0.02	0.9	0.49	<0.1	0.09				
2317110	Soil	2.8	8.1	0.24	453.8	0.003	<20	0.43	<0.001	0.07	0.1	1.1	0.60	0.14	136	5.0	0.21	0.9	0.56	<0.1	0.09				
2317111	Soil	18.3	11.5	0.28	576.3	0.001	<20	0.91	<0.001	0.10	<0.1	2.6	0.58	0.04	125	2.7	0.09	1.7	0.81	<0.1	0.07				



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Project: 204700  
 Report Date: September 09, 2013

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Part: 3 of 3

# CERTIFICATE OF ANALYSIS

**VAN13003265.1**

	Method Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	%	
	MDL	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317093	Soil	0.16	6.3	<0.1	<0.05	0.8	10.65	26.1	0.03	<1	0.8	6.7	<10	<2	7.9
2317094	Soil	0.12	2.2	0.2	<0.05	1.6	4.13	7.4	<0.02	<1	0.2	0.8	<10	<2	69.1
2317095	Soil	0.06	4.4	<0.1	<0.05	1.3	5.38	24.5	0.03	<1	<0.1	1.3	13	<2	7.7
2317096	Soil	0.12	1.6	<0.1	<0.05	2.8	13.50	5.9	<0.02	<1	0.3	1.3	<10	<2	80.1
2317097	Soil	0.07	1.6	0.1	<0.05	1.9	12.18	10.6	<0.02	<1	0.5	1.2	<10	2	79.6
2317098	Soil	0.29	6.1	0.2	<0.05	5.1	19.75	37.8	0.06	<1	0.6	11.4	<10	3	8.8
2317099	Soil	0.12	1.3	0.2	<0.05	2.2	5.71	8.1	<0.02	1	0.2	1.0	<10	3	77.7
2317100	Soil	0.60	7.8	0.2	<0.05	1.6	4.29	19.9	0.04	<1	0.4	8.6	<10	<2	13.3
2317101	Soil	0.14	1.6	0.1	<0.05	1.1	8.52	13.2	<0.02	<1	0.4	1.1	<10	<2	80.3
2317102	Soil	0.37	8.6	0.2	<0.05	0.7	3.18	19.5	0.02	3	0.2	10.6	<10	2	17.5
2317103	Soil	0.12	2.5	<0.1	<0.05	1.4	3.08	4.1	<0.02	<1	0.4	1.1	<10	<2	84.7
2317104	Soil	0.37	6.4	0.1	<0.05	1.4	6.79	20.2	<0.02	9	0.3	14.0	<10	<2	18.2
2317105	Soil	0.30	4.9	0.2	<0.05	1.3	4.95	11.3	0.03	<1	0.1	3.5	<10	<2	59.2
2317106	Soil	0.35	8.0	0.3	<0.05	0.7	5.00	23.5	0.02	1	0.1	16.7	<10	<2	12.0
2317107	Soil	0.17	6.5	0.2	<0.05	4.1	19.41	18.9	0.04	7	0.5	10.9	<10	<2	48.9
2317108	Soil	0.10	5.8	0.1	<0.05	1.3	8.51	28.1	<0.02	4	0.3	20.6	<10	<2	8.4
2317109	Soil	0.11	4.8	0.1	<0.05	3.7	3.97	4.5	<0.02	22	0.2	5.5	<10	3	64.2
2317110	Soil	0.17	5.0	0.5	<0.05	4.3	4.06	4.9	0.04	29	0.1	5.4	<10	11	63.8
2317111	Soil	0.09	6.0	0.2	<0.05	2.2	11.54	31.0	0.03	18	0.2	15.2	<10	4	11.0

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Project: 204700  
 Report Date: September 09, 2013

Page: 1 of 2 Part: 1 of 3

# QUALITY CONTROL REPORT

VAN13003265.1

Method	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
Unit	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
MDL	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001	
Pulp Duplicates																					
2317010	Soil	9.46	14.48	31.80	136.5	171	38.9	6.5	393	1.63	5.6	1.3	0.3	2.8	19.8	0.99	0.69	0.12	12	1.90	0.075
REP 2317010	QC																				
2317030	Soil	30.06	22.48	19.98	324.5	325	77.1	4.4	146	1.60	9.9	2.9	1.8	1.5	19.3	2.41	1.50	0.12	55	0.20	0.039
REP 2317030	QC	31.07	22.97	21.04	338.9	317	80.4	4.2	154	1.60	10.1	3.0	0.8	1.5	19.4	2.61	1.75	0.13	54	0.21	0.040
2317046	Soil	18.59	15.67	57.36	124.9	1988	15.9	1.9	28	1.51	34.5	0.8	1.3	3.0	7.6	1.84	3.40	0.09	86	0.01	0.038
REP 2317046	QC																				
2317066	Soil	11.71	44.97	19.32	656.4	303	85.8	10.2	221	2.65	18.7	1.1	<0.2	0.4	5.7	1.21	3.71	0.18	65	0.11	0.141
REP 2317066	QC	11.51	44.12	18.84	607.4	322	86.3	9.8	213	2.71	18.9	1.1	1.8	0.6	6.0	1.29	3.78	0.18	65	0.12	0.136
2317082	Soil	6.27	18.35	47.77	285.1	565	42.8	6.9	313	2.44	7.3	0.6	0.4	2.3	34.1	1.49	1.63	0.08	11	5.11	0.049
REP 2317082	QC																				
2317102	Soil	8.09	30.54	13.93	153.8	463	39.6	4.0	30	1.53	5.8	6.3	0.2	1.6	13.7	2.18	1.23	0.13	39	0.12	0.061
REP 2317102	QC	7.77	30.07	13.52	157.7	491	40.8	4.0	30	1.48	5.8	6.3	0.8	1.6	12.3	1.95	1.20	0.12	38	0.11	0.058
2317118	Soil	3.06	11.16	9.51	96.3	88	19.7	4.7	204	1.37	2.4	0.5	2.3	<0.1	6.3	0.33	0.66	0.09	19	0.26	0.145
REP 2317118	QC																				
2317138	Soil	24.16	23.20	61.17	656.2	472	41.6	4.8	72	2.55	28.7	1.2	0.5	0.2	14.7	0.47	3.05	0.12	228	<0.01	0.060
REP 2317138	QC	24.94	24.93	62.75	677.6	503	45.5	5.3	75	2.55	29.0	1.2	0.7	0.2	14.7	0.47	3.21	0.12	227	<0.01	0.059
Reference Materials																					
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DS9	Standard	13.83	113.5	134.4	341.5	1795	42.9	8.2	607	2.38	25.0	2.8	103.9	6.2	65.2	2.44	4.99	6.07	40	0.72	0.084
STD DS9	Standard	13.46	108.6	143.5	322.7	1890	40.0	7.5	549	2.32	25.1	2.7	123.1	6.1	69.5	2.56	5.15	6.21	39	0.69	0.086
STD DS9	Standard	14.46	120.3	123.2	344.4	1922	46.3	8.8	605	2.43	26.7	2.6	112.0	6.0	62.2	2.65	3.93	5.72	42	0.74	0.088
STD DS9	Standard	13.94	112.4	131.8	310.1	1768	43.0	7.6	558	2.30	24.7	2.7	110.9	5.6	55.6	2.35	3.86	4.88	40	0.69	0.081
STD DS9	Standard	12.98	114.1	130.9	346.3	1861	42.3	7.8	625	2.42	26.6	2.7	108.8	6.2	68.3	2.49	4.64	6.82	41	0.73	0.084
STD OREAS45EA	Standard	1.29	651.5	15.35	27.7	239	375.2	50.2	380	23.14	8.0	1.8	58.9	10.6	3.5	0.03	0.11	0.22	286	0.04	0.026

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Project: 204700  
 Report Date: September 09, 2013

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# QUALITY CONTROL REPORT

VAN13003265.1

Method	Analyte	Unit	MDL	1F La	1F Cr	1F Mg	1F Ba	1F Ti	1F B	1F Al	1F Na	1F K	1F W	1F Sc	1F Ti	1F S	1F Hg	1F Se	1F Te	1F Ga	1F Cs	1F Ge	1F Hf
				ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
Pulp Duplicates																							
2317010	Soil			14.7	6.7	0.97	110.9	0.002	<20	0.37	0.002	0.04	<0.1	3.5	0.21	0.02	68	0.6	<0.02	0.8	0.20	<0.1	0.05
REP 2317010	QC																						
2317030	Soil			17.2	8.5	0.18	1819	0.005	<20	0.70	<0.001	0.08	0.1	1.0	1.11	0.03	72	0.7	<0.02	3.0	0.66	<0.1	<0.02
REP 2317030	QC			18.0	8.3	0.19	1818	0.005	<20	0.70	<0.001	0.08	0.1	1.1	1.18	0.03	69	0.7	0.08	2.9	0.81	<0.1	<0.02
2317046	Soil			18.8	10.1	0.06	450.9	0.005	<20	0.58	<0.001	0.04	0.3	1.0	1.31	0.03	165	2.1	0.09	4.3	0.48	<0.1	<0.02
REP 2317046	QC																						
2317066	Soil			14.0	22.4	0.20	368.8	0.002	<20	0.68	<0.001	0.12	<0.1	0.8	0.26	<0.02	54	4.4	<0.02	2.4	0.86	<0.1	<0.02
REP 2317066	QC			13.7	18.8	0.20	348.7	0.002	<20	0.68	<0.001	0.12	<0.1	1.1	0.24	<0.02	63	4.6	0.04	2.4	0.78	<0.1	<0.02
2317082	Soil			7.5	4.5	2.60	126.4	<0.001	<20	0.06	0.003	0.03	<0.1	2.8	0.08	0.05	86	1.2	<0.02	0.1	0.16	<0.1	0.07
REP 2317082	QC																						
2317102	Soil			11.4	10.8	0.13	182.3	0.002	<20	0.81	<0.001	0.04	<0.1	1.0	0.33	0.04	52	1.4	0.03	3.1	0.96	<0.1	<0.02
REP 2317102	QC			11.6	11.0	0.13	182.9	0.002	<20	0.79	<0.001	0.04	<0.1	1.0	0.34	0.03	55	1.4	0.06	3.0	1.06	<0.1	<0.02
2317118	Soil			9.3	8.6	0.08	156.6	0.002	<20	0.43	<0.001	0.06	<0.1	0.4	0.11	0.07	29	0.4	<0.02	1.4	0.89	<0.1	<0.02
REP 2317118	QC																						
2317138	Soil			18.5	9.5	0.05	335.9	0.006	<20	1.14	<0.001	0.06	<0.1	1.0	1.30	0.06	26	2.0	0.10	5.0	1.70	<0.1	<0.02
REP 2317138	QC			19.3	10.1	0.05	340.1	0.006	<20	1.14	<0.001	0.06	<0.1	1.2	1.30	0.06	21	2.2	0.10	5.7	1.77	<0.1	<0.02
Reference Materials																							
STD DOLOMITE-2	Standard																						
STD DOLOMITE-2	Standard																						
STD DOLOMITE-2	Standard																						
STD DOLOMITE-2	Standard																						
STD DOLOMITE-2	Standard																						
STD DS9	Standard			12.6	120.6	0.63	318.4	0.109	<20	0.95	0.083	0.41	2.5	2.4	5.18	0.17	266	5.5	5.27	4.7	2.41	<0.1	0.07
STD DS9	Standard			11.7	116.3	0.61	319.8	0.097	<20	0.93	0.081	0.40	2.4	2.2	5.61	0.17	244	5.9	5.28	4.7	2.44	0.1	0.07
STD DS9	Standard			12.5	128.7	0.64	355.6	0.119	<20	1.00	0.081	0.41	3.5	2.6	5.72	0.17	218	5.9	5.70	4.7	2.47	<0.1	0.08
STD DS9	Standard			11.3	120.3	0.61	311.9	0.109	<20	0.91	0.077	0.38	3.1	2.3	5.03	0.16	199	5.0	4.53	4.2	2.28	0.2	0.06
STD DS9	Standard			12.6	120.0	0.64	326.8	0.112	<20	0.95	0.082	0.40	2.6	2.4	5.49	0.18	240	5.7	4.92	4.5	2.41	0.1	0.05
STD OREAS45EA	Standard			6.7	774.9	0.09	135.3	0.086	<20	3.19	0.019	0.05	<0.1	64.6	<0.02	0.04	13	0.7	0.10	11.2	0.67	0.2	0.46

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

## QUALITY CONTROL REPORT

VAN13003265.1

Method Analyte	Unit	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
MDL		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
Pulp Duplicates															
2317010	Soil	0.17	2.8	<0.1	<0.05	2.9	16.02	27.7	<0.02	<1	0.3	2.9	<10	<2	11.3
REP 2317010	QC														11.5
2317030	Soil	0.37	10.5	0.5	<0.05	0.2	5.03	32.3	<0.02	<1	0.2	6.1	<10	3	9.1
REP 2317030	QC	0.32	11.4	0.4	<0.05	0.1	5.00	31.3	<0.02	<1	0.1	6.4	<10	2	
2317046	Soil	0.40	3.9	0.8	<0.05	0.4	1.31	34.9	<0.02	<1	<0.1	1.5	<10	2	12.0
REP 2317046	QC														12.0
2317066	Soil	0.03	13.7	0.2	<0.05	0.2	5.12	27.0	<0.02	<1	0.5	7.2	<10	7	10.4
REP 2317066	QC	0.03	13.6	0.2	<0.05	0.3	5.17	26.8	0.03	<1	0.4	6.9	<10	<2	
2317082	Soil	0.02	1.2	<0.1	<0.05	3.8	8.80	11.7	<0.02	<1	<0.1	0.8	<10	<2	18.7
REP 2317082	QC														18.9
2317102	Soil	0.37	8.6	0.2	<0.05	0.7	3.18	19.5	0.02	3	0.2	10.6	<10	2	17.5
REP 2317102	QC	0.34	8.9	0.3	<0.05	0.8	3.14	19.4	0.02	4	0.3	11.6	<10	4	
2317118	Soil	0.05	6.0	0.3	<0.05	0.1	7.09	18.1	<0.02	<1	0.7	2.9	<10	<2	16.2
REP 2317118	QC														16.5
2317138	Soil	0.27	9.0	0.8	<0.05	0.2	5.06	30.4	<0.02	<1	<0.1	1.7	<10	<2	11.8
REP 2317138	QC	0.28	8.9	0.9	<0.05	0.1	4.93	30.7	<0.02	2	<0.1	1.7	<10	<2	
Reference Materials															
STD DOLOMITE-2	Standard														45.7
STD DOLOMITE-2	Standard														46.0
STD DOLOMITE-2	Standard														45.9
STD DOLOMITE-2	Standard														45.9
STD DOLOMITE-2	Standard														45.9
STD DS9	Standard	0.84	34.0	6.8	<0.05	1.6	5.31	22.5	2.38	68	6.1	24.6	111	344	
STD DS9	Standard	0.87	32.0	6.8	<0.05	1.7	5.76	22.8	2.44	82	5.0	25.9	141	391	
STD DS9	Standard	1.01	33.6	7.5	<0.05	2.0	5.83	21.0	2.47	69	5.8	26.9	131	374	
STD DS9	Standard	0.95	32.2	5.9	<0.05	1.5	4.96	20.0	2.14	51	5.1	25.3	90	364	
STD DS9	Standard	0.98	36.4	6.5	<0.05	1.8	5.62	25.7	2.17	50	6.3	28.3	132	380	
STD OREAS45EA	Standard	0.05	7.3	0.8	<0.05	15.0	4.56	17.2	0.07	<1	0.5	2.6	58	103	





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 Vancouver BC V6C 0B3 CANADA

Project: 204700  
 Report Date: September 09, 2013

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# QUALITY CONTROL REPORT

VAN13003265.1

		1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
STD OREAS45EA	Standard	1.45	630.6	15.41	28.8	292	357.5	46.8	364	22.15	8.9	1.9	69.0	11.2	3.7	0.03	0.19	0.24	277	0.04	0.028
STD OREAS45EA	Standard	1.37	687.2	13.89	25.9	232	393.5	49.0	406	23.77	7.6	1.4	55.5	7.8	2.7	0.03	0.13	0.14	324	0.03	0.024
STD OREAS45EA	Standard	1.25	668.9	13.43	25.5	231	371.5	48.9	322	23.21	7.5	1.4	53.3	8.6	2.6	0.04	0.14	0.16	311	0.03	0.026
STD OREAS45EA	Standard	1.36	684.5	14.90	28.7	257	371.3	52.7	387	23.59	7.7	1.8	55.9	10.7	3.6	0.03	0.24	0.29	297	0.03	0.027
STD DOLOMITE-2 Expected																					
STD DS9 Expected		12.84	108	126	317	1830	40.3	7.6	575	2.33	25.5	2.69	118	6.38	69.6	2.4	4.94	6.32	40	0.7201	0.0819
STD OREAS45EA Expected		1.78	709	14.3	30.6	311	357	52	400	22.65	11.4	1.73	53	10.7	4.05	0.03	0.64	0.26	295	0.032	0.029
BLK	Blank	<0.01	0.16	0.11	<0.1	3	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	0.15	0.02	<0.1	6	0.3	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	0.09	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	<0.01	0.01	<0.1	3	0.3	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	0.07	<0.01	<0.1	4	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001



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Project: 204700  
 Report Date: September 09, 2013

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# QUALITY CONTROL REPORT

VAN13003265.1

		1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
STD OREAS45EA	Standard	7.0	797.2	0.10	146.1	0.077	<20	3.03	0.018	0.05	<0.1	73.1	<0.02	0.04	15	0.5	0.05	12.3	0.74	0.2	0.51
STD OREAS45EA	Standard	5.7	905.7	0.07	129.0	0.084	<20	3.30	0.017	0.06	<0.1	67.1	<0.02	0.03	9	0.8	0.06	10.4	0.58	0.2	0.51
STD OREAS45EA	Standard	5.9	750.0	0.07	122.1	0.086	<20	3.20	0.018	0.06	<0.1	67.3	<0.02	0.03	6	0.5	<0.02	10.4	0.55	0.2	0.56
STD OREAS45EA	Standard	6.9	813.8	0.09	149.8	0.093	<20	2.98	0.023	0.05	<0.1	77.8	0.05	0.04	23	0.4	0.07	12.6	0.65	0.3	0.68
STD DOLOMITE-2 Expected																					
STD DS9 Expected		13.3	121	0.6165	330	0.1108		0.9577	0.0853	0.395	2.89	2.5	5.3	0.1615	200	5.2	5.02	4.59	2.37	0.1	0.08
STD OREAS45EA Expected		8.19	849	0.095	148	0.106		3.32	0.027	0.053		78	0.072	0.044	340	2.09	0.11	11.7	0.77	0.26	0.82
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02

## QUALITY CONTROL REPORT

VAN13003265.1

		1F Nb ppm 0.02	1F Rb ppm 0.1	1F Sn ppm 0.1	1F Ta ppm 0.05	1F Zr ppm 0.1	1F Y ppm 0.01	1F Ce ppm 0.1	1F In ppm 0.02	1F Re ppb 1	1F Be ppm 0.1	1F Li ppm 0.1	1F Pd ppb 10	1F Pt ppb 2	LOI %
STD OREAS45EA	Standard	0.05	7.3	0.8	<0.05	16.3	4.95	18.1	0.09	<1	0.5	2.8	82	107	
STD OREAS45EA	Standard	0.04	5.8	0.9	<0.05	17.7	4.65	13.3	0.09	<1	0.4	1.9	49	88	
STD OREAS45EA	Standard	0.07	6.2	0.7	<0.05	17.7	4.79	14.1	0.07	<1	0.3	2.7	52	93	
STD OREAS45EA	Standard	0.06	7.8	0.9	<0.05	23.1	5.32	18.9	0.09	<1	0.4	2.3	91	108	
STD DOLOMITE-2 Expected															45.9
STD DS9 Expected		0.96	33.8	6.4	0.004	2	5.97	25.4	2.2	61	5.4	25.2	120	350	
STD OREAS45EA Expected		0.43	7.93	0.97		26.6	5.74	17.7	0.1		0.47	7.63	66	108	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	0.2	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	0.2	<0.01	0.2	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	0.1	<0.01	0.3	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	0.2	<0.01	0.3	<0.02	<1	<0.1	<0.1	<10	2	



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Submitted By: Michael Buchanan and Rupa Mukherjee  
Receiving Lab: Canada-Vancouver  
Received: August 20, 2013  
Report Date: September 12, 2013  
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## CERTIFICATE OF ANALYSIS

VAN13003266.1

### CLIENT JOB INFORMATION

Project: 204700  
Shipment ID: CRQ\_2013\_003  
P.O. Number  
Number of Samples: 150

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
STOR-RJT-SOIL Store Soil Reject - RJSV Charges Apply

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Teck Resources Limited  
Suite 3300, 550 Burrard St.  
Vancouver BC V6C 0B3  
CANADA

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	142	Dry at 60C			VAN
SS80	142	Dry at 60C sieve 100g to -80 mesh			VAN
RJSV	142	Saving all or part of Soil Reject			VAN
1F04	150	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	0.5	Completed	VAN
2A05	150	Loss on Ignition at 1000 C		Completed	VAN

### ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. \*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: 204700  
 Report Date: September 12, 2013

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Part: 1 of 3

# CERTIFICATE OF ANALYSIS

VAN13003266.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317151	Soil	1.51	5.32	3.50	71.7	4991	14.9	0.9	119	0.22	0.9	0.2	0.3	0.3	43.3	0.93	0.37	0.77	4	0.60	0.078
2317152	Soil	21.33	29.80	24.39	174.6	892	34.8	3.9	77	2.68	16.3	2.4	0.7	3.5	81.5	0.49	2.64	0.19	47	0.04	0.062
2317153	Soil	49.60	33.88	42.51	265.2	844	56.5	7.5	212	4.22	40.2	4.3	0.8	2.8	87.6	1.23	6.59	0.19	67	0.04	0.141
2317154	Soil	4.78	6.29	6.11	92.6	1061	19.2	1.4	109	0.33	1.9	0.3	<0.2	0.3	36.3	0.66	0.76	0.20	6	0.50	0.110
2317155	Soil	7.03	7.62	7.15	177.6	683	20.1	1.5	38	0.42	3.4	0.4	0.3	0.4	38.5	1.74	0.85	0.16	8	0.44	0.114
2317156	Soil	36.51	56.14	56.74	1614	1025	117.2	24.1	769	4.28	43.6	9.3	3.0	5.2	105.3	13.17	6.04	0.23	28	0.08	0.110
2317157	Soil	2.37	5.16	13.08	62.1	3697	12.3	1.1	24	0.24	1.2	0.2	<0.2	0.2	39.7	0.81	0.34	0.10	3	0.45	0.091
2317158	Soil	20.78	10.99	171.4	88.1	1710	9.8	1.0	14	1.21	24.1	1.1	1.3	1.4	63.5	0.20	2.99	0.19	35	0.03	0.071
2317159	Soil	1.80	8.04	11.63	115.5	830	6.7	0.8	22	0.21	0.8	0.1	<0.2	0.3	19.3	1.00	0.32	0.08	3	0.48	0.073
2317160	Soil	32.47	23.39	540.5	790.8	450	37.4	4.9	117	2.92	30.1	2.1	1.2	3.1	96.4	1.58	4.04	0.17	71	0.07	0.099
2317161 BAL-1	Rock Pulp	1.14	17.54	23.34	77.4	151	32.0	6.8	272	1.84	4.9	1.3	0.6	1.7	29.9	1.75	0.16	0.09	47	0.68	0.057
2317162	Soil	5.66	49.14	26.89	692.9	492	73.7	8.0	156	1.84	7.6	2.9	0.6	2.1	59.6	7.63	2.25	0.13	33	2.08	0.110
2317163	Soil	6.50	53.83	31.63	730.7	639	87.6	10.9	244	2.11	8.6	2.4	0.7	3.3	53.1	6.45	2.19	0.35	36	2.08	0.104
2317164	Soil	8.28	30.99	32.59	367.5	221	54.6	9.7	175	1.96	7.8	2.1	0.6	3.2	25.5	4.86	1.37	0.17	26	0.74	0.081
2317165	Soil	2.94	5.99	4.03	37.9	5138	5.6	0.8	55	0.16	0.6	<0.1	<0.2	0.3	10.1	1.55	0.19	0.16	3	0.42	0.089
2317166	Soil	8.48	9.14	24.06	115.2	275	16.5	2.8	59	1.69	10.3	0.7	<0.2	2.0	5.5	1.07	0.79	0.10	43	0.03	0.036
2317167	Soil	13.04	11.86	27.97	126.6	255	25.4	3.8	102	1.93	16.1	1.3	0.3	1.5	11.4	0.44	1.31	0.14	45	0.03	0.060
2317168	Soil	2.73	8.27	9.13	54.0	5040	8.5	1.3	56	0.25	0.8	0.4	<0.2	0.3	13.0	1.83	0.31	0.10	4	0.21	0.094

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Project: 204700  
 Report Date: September 12, 2013

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# CERTIFICATE OF ANALYSIS

VAN13003266.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
2317151	Soil	1.4	5.2	0.07	293.3	0.002	<20	0.15	0.002	0.06	<0.1	0.8	0.14	0.08	309	0.8	<0.02	0.3	0.31	<0.1	0.03
2317152	Soil	21.8	7.3	0.14	489.3	0.003	<20	0.61	0.003	0.14	<0.1	1.2	1.05	0.16	75	4.9	0.09	1.6	1.30	<0.1	0.04
2317153	Soil	28.8	9.9	0.15	470.3	0.004	<20	0.48	0.009	0.13	<0.1	1.1	1.50	0.24	76	6.5	0.18	1.5	0.94	<0.1	<0.02
2317154	Soil	2.2	7.3	0.06	302.8	0.002	<20	0.13	0.004	0.09	<0.1	1.1	0.29	0.14	319	1.0	0.03	0.5	0.53	<0.1	0.03
2317155	Soil	2.3	8.9	0.03	626.8	0.002	<20	0.21	0.003	0.07	<0.1	0.7	0.38	0.17	244	1.5	<0.02	0.6	0.39	<0.1	0.03
2317156	Soil	20.3	5.5	0.03	4154	0.001	<20	0.60	0.004	0.07	<0.1	3.7	2.90	0.19	257	4.8	0.15	0.8	1.21	<0.1	0.07
2317157	Soil	1.3	7.2	0.05	611.0	0.002	<20	0.18	0.003	0.04	<0.1	0.9	0.89	0.15	186	0.7	<0.02	0.4	0.30	<0.1	0.03
2317158	Soil	20.1	9.0	0.02	937.7	0.002	<20	0.32	0.002	0.06	<0.1	0.7	4.85	0.09	175	3.7	0.08	2.0	1.18	<0.1	<0.02
2317159	Soil	1.3	6.8	0.04	613.6	0.002	<20	0.11	0.003	0.07	<0.1	0.7	0.40	0.14	417	0.5	<0.02	0.4	0.46	<0.1	0.02
2317160	Soil	17.9	8.8	0.11	2413	0.004	<20	0.55	0.002	0.09	0.2	1.6	4.07	0.14	220	3.2	0.07	1.7	0.74	<0.1	<0.02
2317161 BAL-1	Rock Pulp	18.3	29.3	0.17	59.7	0.002	<20	1.22	0.008	0.07	<0.1	4.0	0.31	0.07	134	1.4	<0.02	3.6	0.64	<0.1	0.06
2317162	Soil	9.0	12.0	0.33	910.6	0.002	<20	0.69	0.002	0.07	<0.1	1.7	0.41	0.10	115	2.8	<0.02	1.5	0.60	<0.1	0.12
2317163	Soil	11.2	13.0	0.49	722.5	0.002	<20	0.77	0.003	0.08	<0.1	2.3	0.48	0.07	135	2.6	<0.02	1.8	0.72	<0.1	0.11
2317164	Soil	14.5	11.8	0.26	466.3	0.002	<20	0.66	<0.001	0.08	<0.1	2.1	0.28	0.03	64	2.5	0.08	1.7	0.36	<0.1	0.06
2317165	Soil	1.4	4.9	0.06	304.8	0.002	<20	0.13	0.004	0.07	<0.1	0.7	0.18	0.10	243	0.2	<0.02	0.5	0.39	<0.1	0.03
2317166	Soil	15.9	10.7	0.19	341.3	0.003	<20	0.77	0.001	0.08	<0.1	1.0	0.48	<0.02	20	0.8	<0.02	3.1	0.35	<0.1	0.02
2317167	Soil	18.4	10.4	0.23	882.4	0.005	<20	0.79	0.002	0.07	0.1	1.0	0.83	0.03	39	1.2	<0.02	3.3	0.54	<0.1	<0.02
2317168	Soil	2.5	5.4	0.06	589.2	0.002	<20	0.17	0.003	0.08	<0.1	1.2	0.30	0.10	355	0.2	<0.02	0.5	0.88	<0.1	<0.02

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# CERTIFICATE OF ANALYSIS

# VAN13003266.1

	Method Analyte Unit MDL	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317151	Soil	0.05	1.4	0.5	<0.05	1.1	0.56	2.5	<0.02	<1	0.1	0.6	<10	<2	90.0
2317152	Soil	0.22	9.3	0.2	<0.05	1.3	4.51	33.7	0.03	4	0.5	6.7	<10	<2	11.8
2317153	Soil	0.24	7.8	0.2	<0.05	0.6	5.52	36.4	0.03	8	0.2	5.6	<10	<2	12.6
2317154	Soil	0.08	2.1	0.2	<0.05	1.4	0.63	3.8	<0.02	<1	<0.1	0.7	<10	<2	87.7
2317155	Soil	0.05	1.9	0.2	<0.05	1.9	0.75	4.5	<0.02	1	<0.1	0.5	<10	<2	85.2
2317156	Soil	0.06	6.0	0.1	<0.05	3.3	15.17	37.9	0.05	2	0.3	1.5	<10	<2	12.6
2317157	Soil	0.05	2.0	0.2	<0.05	1.2	0.55	2.7	<0.02	<1	<0.1	0.3	<10	<2	90.3
2317158	Soil	0.22	6.9	0.3	<0.05	0.4	1.40	33.4	<0.02	<1	0.2	1.4	<10	<2	20.5
2317159	Soil	0.04	1.7	0.1	<0.05	1.1	0.47	2.9	<0.02	<1	<0.1	0.4	<10	3	89.7
2317160	Soil	0.24	7.8	0.3	<0.05	0.9	6.77	31.2	0.05	4	0.4	4.1	<10	3	10.5
2317161 BAL-1	Rock Pulp	0.29	7.1	0.6	<0.05	2.1	20.00	31.3	0.02	2	0.4	9.4	<10	3	13.0
2317162	Soil	0.11	5.8	<0.1	<0.05	5.5	8.99	16.7	0.05	9	0.6	9.5	<10	<2	33.8
2317163	Soil	0.11	6.3	<0.1	<0.05	5.7	10.94	20.1	0.04	6	0.3	10.8	<10	<2	25.3
2317164	Soil	0.22	5.2	0.2	<0.05	2.8	9.83	28.2	0.03	4	0.2	8.9	<10	<2	14.3
2317165	Soil	0.04	2.2	0.2	<0.05	1.1	0.33	2.9	<0.02	2	<0.1	0.4	<10	<2	88.0
2317166	Soil	0.52	9.5	0.4	<0.05	0.4	2.47	30.5	<0.02	<1	0.2	10.3	<10	<2	9.0
2317167	Soil	0.40	8.6	0.4	<0.05	0.3	3.13	34.5	<0.02	<1	0.3	8.3	<10	<2	7.7
2317168	Soil	0.05	6.4	0.1	<0.05	1.0	0.77	5.0	<0.02	<1	<0.1	0.9	<10	<2	83.9



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**Project:** 204700  
**Report Date:** September 12, 2013

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# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit	MDL	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
2317201	Soil	2.60	5.81	19.73	58.7	732	5.0	1.3	21	0.20	0.7	0.2	<0.2	0.3	30.1	3.40	0.20	0.09	3	0.20	0.056
2317202	Soil	2.38	3.81	20.05	108.3	214	9.8	2.3	59	1.02	5.9	0.4	0.6	3.0	7.4	0.77	0.18	0.21	18	0.06	0.028
2317203	Soil	2.37	7.50	9.13	31.5	1526	5.3	0.8	35	0.20	0.6	0.3	0.2	0.5	15.0	1.64	0.14	0.07	3	0.17	0.062
2317204 BAL-1	Rock Pulp	1.18	15.98	22.30	72.2	141	29.7	6.3	258	1.70	4.3	1.3	1.3	1.5	26.8	1.62	0.20	0.10	43	0.64	0.051
2317205	Soil	2.39	5.62	41.33	57.5	425	4.2	0.8	18	0.24	0.7	0.6	0.5	0.9	13.6	1.55	0.13	0.10	5	0.10	0.065
2317206	Soil	2.22	8.49	84.73	136.3	527	6.9	1.4	25	0.35	1.8	1.1	<0.2	0.4	19.1	1.22	0.20	0.15	4	0.12	0.091
2317207	Soil	7.90	23.15	8.04	440.3	363	24.9	2.3	299	0.29	0.2	10.2	0.4	0.1	364.2	16.45	1.67	0.04	3	4.83	0.063
2317208	Soil	4.40	9.91	12.40	154.0	1772	9.1	1.5	31	0.34	1.3	0.9	0.2	0.5	54.7	5.29	0.77	0.05	7	0.66	0.057
2317209	Soil	11.80	22.41	21.01	584.2	1335	59.3	6.5	222	2.26	22.5	4.4	1.2	2.8	63.8	3.44	5.29	0.17	222	0.36	0.108
2317210	Soil	1.20	5.29	64.39	195.9	245	7.6	2.5	22	0.41	5.2	0.7	0.5	0.8	26.5	2.84	0.38	0.11	2	0.33	0.067

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**Project:** 204700  
**Report Date:** September 12, 2013

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**CERTIFICATE OF ANALYSIS** **VAN13003266.1**

	Method Analyte Unit MDL	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1
2317201	Soil	2.1	4.5	0.04	227.9	0.001	<20	0.30	0.003	0.06	<0.1	0.6	0.10	0.07	144	0.4	<0.02	0.7	0.14	<0.1	<0.02
2317202	Soil	13.6	9.1	0.22	117.0	0.004	<20	0.92	<0.001	0.08	<0.1	0.8	0.39	<0.02	8	0.2	<0.02	3.1	0.61	<0.1	<0.02
2317203	Soil	2.3	6.6	0.02	197.9	0.002	<20	0.24	0.002	0.10	<0.1	0.6	0.11	0.06	117	0.3	<0.02	0.8	0.26	<0.1	<0.02
2317204 BAL-1	Rock Pulp	17.0	27.5	0.16	60.6	0.002	<20	1.09	0.006	0.07	<0.1	4.1	0.30	0.06	90	1.3	0.02	3.3	0.57	<0.1	0.06
2317205	Soil	5.7	6.0	0.04	285.3	0.002	<20	0.48	0.001	0.06	<0.1	0.9	0.16	0.05	90	0.2	<0.02	2.0	0.44	<0.1	<0.02
2317206	Soil	5.5	6.3	0.04	241.7	0.002	<20	0.38	0.001	0.07	<0.1	0.6	0.13	0.06	124	0.2	<0.02	1.4	0.45	<0.1	<0.02
2317207	Soil	2.0	3.4	0.06	1051	0.001	<20	0.19	0.002	0.03	<0.1	0.5	0.33	0.16	93	3.0	<0.02	0.4	0.22	<0.1	<0.02
2317208	Soil	2.8	7.2	0.04	3619	0.003	<20	0.29	0.002	0.04	<0.1	1.1	0.12	0.09	164	0.9	<0.02	0.9	0.23	<0.1	0.03
2317209	Soil	12.8	32.3	0.11	>10000	0.038	<20	2.12	<0.001	0.07	0.1	3.1	0.76	0.04	125	2.4	0.07	6.5	0.62	<0.1	0.05
2317210	Soil	9.2	4.4	0.04	750.6	0.001	<20	0.25	0.002	0.05	<0.1	0.5	0.07	0.11	146	0.3	<0.02	0.5	0.21	<0.1	<0.02

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**Project:** 204700  
**Report Date:** September 12, 2013

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# CERTIFICATE OF ANALYSIS

VAN13003266.1

	Method	1F														LOI
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI	
Analyte	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%	
	MDL	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1	
2317201	Soil	0.07	2.3	0.1	<0.05	0.7	1.44	4.9	<0.02	<1	0.2	0.7	<10	<2	83.5	
2317202	Soil	0.77	22.5	0.4	<0.05	1.0	2.21	28.3	<0.02	<1	0.5	12.3	<10	<2	7.7	
2317203	Soil	0.10	3.4	0.2	<0.05	0.4	1.42	5.1	<0.02	<1	0.1	0.5	<10	<2	78.7	
2317204 BAL-1	Rock Pulp	0.25	6.6	0.5	<0.05	2.1	18.77	30.2	0.02	2	0.7	8.3	<10	<2	12.5	
2317205	Soil	0.22	4.2	0.4	<0.05	0.5	2.59	12.0	<0.02	<1	0.3	1.2	<10	<2	62.9	
2317206	Soil	0.20	3.7	0.3	<0.05	0.3	4.77	12.3	<0.02	<1	0.2	1.0	<10	<2	68.7	
2317207	Soil	0.16	2.4	<0.1	<0.05	1.1	4.06	4.4	<0.02	1	0.2	0.9	10	2	82.9	
2317208	Soil	0.13	2.9	0.1	<0.05	1.1	2.33	5.6	<0.02	<1	0.1	0.7	<10	<2	82.5	
2317209	Soil	1.34	13.9	0.2	<0.05	1.3	10.78	25.3	0.03	<1	1.0	6.5	<10	<2	11.1	
2317210	Soil	0.25	1.8	<0.1	<0.05	0.7	8.26	23.6	<0.02	<1	0.2	1.1	<10	<2	84.1	

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Project: 204700  
 Report Date: September 12, 2013

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# QUALITY CONTROL REPORT

VAN13003266.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	%	%	
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
Pulp Duplicates																					
2317151	Soil	1.51	5.32	3.50	71.7	4991	14.9	0.9	119	0.22	0.9	0.2	0.3	0.3	43.3	0.93	0.37	0.77	4	0.60	0.078
REP 2317151	QC	1.57	5.08	3.67	75.0	5175	15.3	1.1	118	0.23	1.0	0.2	<0.2	0.2	43.3	0.91	0.39	0.27	4	0.62	0.077
2317185	Soil	9.84	15.57	>10000	438.7	>100000	10.9	1.3	50	1.51	8.1	1.7	0.9	1.0	17.2	1.59	4.65	0.10	25	0.05	0.115
REP 2317185	QC																				
2317187	Soil	16.45	20.24	196.4	313.8	1623	69.5	2.8	65	1.56	12.0	9.6	1.6	0.2	65.4	4.95	2.77	0.14	37	0.71	0.177
REP 2317187	QC	16.58	19.97	218.0	324.9	1573	70.4	2.9	63	1.58	11.9	9.4	1.4	0.1	65.8	4.86	2.73	0.13	38	0.70	0.171
2317221	Soil	1.53	5.44	20.19	85.3	517	12.2	2.4	46	0.89	2.0	1.3	0.5	0.4	3.6	0.26	0.36	0.19	12	0.17	0.086
REP 2317221	QC																				
2317223	Soil	3.94	29.44	32.53	41.8	1298	32.1	10.5	407	2.12	5.7	0.8	2.8	3.6	4.6	0.13	1.37	0.24	7	0.20	0.058
REP 2317223	QC	4.10	29.92	32.33	43.1	1330	33.5	11.1	426	2.20	6.1	0.8	2.8	3.6	4.6	0.12	1.38	0.24	8	0.21	0.060
2317257	Soil	37.01	58.29	290.2	234.9	1820	38.0	2.4	18	2.19	52.5	5.9	2.5	1.7	108.3	0.60	20.49	0.23	68	0.02	0.123
REP 2317257	QC																				
2317259	Soil	9.19	235.7	20.41	563.3	739	179.4	16.2	142	6.23	19.6	24.7	0.6	6.6	71.0	0.48	1.17	0.18	154	0.02	0.413
REP 2317259	QC	9.14	231.2	19.68	564.1	718	180.8	16.6	143	6.21	19.7	23.9	0.7	6.3	73.6	0.49	1.13	0.16	157	0.02	0.401
2317293	Soil	139.6	39.29	31.49	102.3	539	30.4	3.0	135	3.84	87.2	10.3	2.3	0.7	75.3	0.38	8.17	0.33	164	0.02	0.169
REP 2317293	QC																				
Reference Materials																					
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DS9	Standard	13.10	104.9	122.3	310.9	1854	40.1	7.6	550	2.21	23.3	2.6	105.2	6.2	60.9	2.26	4.04	6.42	38	0.67	0.078
STD DS9	Standard	13.21	105.8	125.9	296.0	1724	39.3	7.7	565	2.24	23.9	2.7	105.7	6.5	60.0	2.18	4.31	6.71	38	0.67	0.072
STD DS9	Standard	13.98	105.9	125.3	299.0	1771	41.6	8.2	577	2.30	25.0	2.8	111.2	6.1	60.7	2.22	3.99	6.44	38	0.69	0.075
STD DS9	Standard	12.23	109.8	129.9	311.6	1738	38.2	7.4	536	2.28	27.1	2.7	110.4	6.4	62.8	2.48	4.01	5.80	39	0.66	0.081
STD DS9	Standard	13.45	112.4	117.7	293.6	1736	41.4	7.6	575	2.38	26.4	2.5	105.5	6.0	68.0	2.46	3.67	5.32	41	0.71	0.080
STD OREAS45EA	Standard	1.12	607.5	13.53	24.2	239	331.6	48.3	368	20.90	5.2	1.7	55.3	10.0	3.2	0.02	0.09	0.22	269	0.04	0.023

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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Project: 204700  
 Report Date: September 12, 2013

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# QUALITY CONTROL REPORT

VAN13003266.1

Method	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf	
Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	
Pulp Duplicates																					
2317151	Soil	1.4	5.2	0.07	293.3	0.002	<20	0.15	0.002	0.06	<0.1	0.8	0.14	0.08	309	0.8	<0.02	0.3	0.31	<0.1	0.03
REP 2317151	QC	1.5	4.8	0.07	303.9	0.001	<20	0.16	0.002	0.06	<0.1	0.9	0.14	0.12	320	0.6	<0.02	0.3	0.31	<0.1	0.04
2317185	Soil	6.7	3.2	0.03	2534	0.002	<20	0.22	0.003	0.05	0.1	0.8	16.43	0.23	9152	1.9	<0.02	0.6	0.64	<0.1	<0.02
REP 2317185	QC																				
2317187	Soil	5.7	6.3	0.05	1313	0.003	<20	0.49	0.002	0.04	0.1	0.9	2.44	0.14	263	2.1	0.03	1.5	1.59	<0.1	0.02
REP 2317187	QC	5.8	6.5	0.05	1357	0.003	<20	0.49	0.002	0.04	<0.1	0.9	2.52	0.18	272	2.0	0.04	1.6	1.62	<0.1	<0.02
2317221	Soil	16.1	8.4	0.06	193.5	0.002	<20	0.46	<0.001	0.08	<0.1	1.3	0.13	0.03	24	0.5	<0.02	1.4	0.51	<0.1	<0.02
REP 2317221	QC																				
2317223	Soil	23.3	3.9	0.07	325.3	0.001	<20	0.25	<0.001	0.08	<0.1	3.3	0.16	<0.02	71	1.3	0.08	0.8	0.63	<0.1	0.07
REP 2317223	QC	24.2	4.2	0.07	329.3	0.001	<20	0.26	0.001	0.08	<0.1	3.4	0.17	0.04	75	1.2	0.06	0.7	0.63	<0.1	0.06
2317257	Soil	16.3	8.1	0.01	1662	0.003	<20	0.97	0.003	0.11	0.3	1.8	2.89	0.30	731	15.7	0.11	2.5	1.05	0.1	0.06
REP 2317257	QC																				
2317259	Soil	5.3	21.3	0.17	1509	0.002	<20	4.82	0.016	0.08	<0.1	12.2	0.46	0.43	114	3.8	0.06	1.9	2.67	<0.1	0.11
REP 2317259	QC	5.4	21.1	0.17	1632	0.002	<20	4.90	0.016	0.08	<0.1	12.2	0.45	0.44	125	3.9	0.03	1.9	2.66	<0.1	0.11
2317293	Soil	14.0	13.3	0.09	1312	0.002	<20	0.73	0.004	0.23	0.4	1.6	3.90	0.57	133	13.7	0.29	2.9	2.29	<0.1	0.03
REP 2317293	QC																				
Reference Materials																					
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DS9	Standard	11.0	108.8	0.58	313.9	0.096	<20	0.89	0.076	0.38	2.6	2.5	5.30	0.16	181	5.3	4.82	4.5	2.42	0.1	0.07
STD DS9	Standard	11.1	108.5	0.59	329.0	0.095	<20	0.88	0.075	0.38	2.5	2.3	5.36	0.17	207	5.2	5.07	4.4	2.50	<0.1	0.08
STD DS9	Standard	11.2	112.0	0.60	316.6	0.097	<20	0.91	0.078	0.40	2.6	2.6	5.36	0.16	206	5.4	5.10	4.6	2.39	0.1	0.09
STD DS9	Standard	10.7	113.0	0.60	346.8	0.097	<20	0.90	0.076	0.39	2.3	2.1	5.36	0.17	214	5.5	5.16	4.5	2.47	<0.1	0.08
STD DS9	Standard	12.8	109.0	0.63	307.0	0.102	<20	0.96	0.084	0.40	2.5	2.5	5.05	0.18	176	5.6	4.97	5.0	2.40	<0.1	0.07
STD OREAS45EA	Standard	6.2	811.3	0.09	137.7	0.075	<20	2.73	0.017	0.05	<0.1	67.2	0.06	0.03	<5	0.3	0.06	11.2	0.65	0.2	0.72

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## QUALITY CONTROL REPORT

VAN13003266.1

Method	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
Analyte	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%	
MDL	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1	
Pulp Duplicates															
2317151	Soil	0.05	1.4	0.5	<0.05	1.1	0.56	2.5	<0.02	<1	0.1	0.6	<10	<2	90.0
REP 2317151	QC	0.04	1.5	0.3	<0.05	1.2	0.59	2.8	<0.02	4	0.1	0.7	<10	<2	
2317185	Soil	0.09	4.6	0.2	<0.05	0.4	2.79	11.4	<0.02	<1	0.2	1.3	<10	<2	10.4
REP 2317185	QC														10.0
2317187	Soil	0.65	6.1	0.3	<0.05	0.5	7.08	10.8	0.02	4	0.3	2.3	<10	3	58.2
REP 2317187	QC	0.61	6.1	0.3	<0.05	0.5	7.07	11.1	0.02	3	0.3	2.2	<10	<2	
2317221	Soil	0.07	9.2	0.2	<0.05	0.2	8.61	34.2	0.07	<1	0.4	3.1	<10	<2	8.3
REP 2317221	QC														8.3
2317223	Soil	0.05	5.4	0.1	<0.05	1.8	17.77	45.3	<0.02	<1	0.5	1.4	<10	3	8.6
REP 2317223	QC	0.05	5.6	0.1	<0.05	1.8	18.50	46.7	0.03	1	0.5	1.4	<10	3	
2317257	Soil	0.34	8.6	0.4	<0.05	1.3	4.36	31.4	0.05	5	0.3	1.5	<10	<2	14.7
REP 2317257	QC														14.7
2317259	Soil	0.02	6.3	0.1	<0.05	5.6	13.13	13.7	0.10	10	0.8	21.5	<10	4	16.0
REP 2317259	QC	<0.02	6.3	0.1	<0.05	5.8	12.63	13.6	0.10	12	0.9	21.1	<10	3	
2317293	Soil	0.07	15.0	1.0	<0.05	0.6	6.86	27.0	0.08	2	0.2	3.1	<10	2	19.8
REP 2317293	QC														19.5
Reference Materials															
STD DOLOMITE-2	Standard														45.6
STD DOLOMITE-2	Standard														46.1
STD DOLOMITE-2	Standard														46.0
STD DOLOMITE-2	Standard														45.9
STD DOLOMITE-2	Standard														45.8
STD DS9	Standard	0.88	33.0	5.7	<0.05	1.8	5.34	22.1	1.98	56	5.3	22.6	124	344	
STD DS9	Standard	0.85	32.6	5.7	<0.05	1.7	4.87	22.0	2.04	53	5.5	24.0	130	341	
STD DS9	Standard	0.86	33.8	5.7	<0.05	1.7	5.23	22.4	1.95	65	5.2	23.8	126	353	
STD DS9	Standard	0.78	34.3	6.5	<0.05	1.7	4.94	19.7	2.36	64	5.8	25.1	111	376	
STD DS9	Standard	0.95	34.0	6.2	<0.05	1.9	5.48	24.4	2.17	59	4.9	23.6	97	332	
STD OREAS45EA	Standard	0.07	6.5	0.7	<0.05	21.7	4.82	16.9	0.07	<1	0.4	2.1	69	96	

## QUALITY CONTROL REPORT

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		1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
STD OREAS45EA	Standard	1.28	640.4	14.85	25.5	252	347.4	52.1	392	21.99	6.0	1.8	59.0	10.8	3.5	0.03	0.12	0.25	283	0.04	0.024
STD OREAS45EA	Standard	1.22	629.2	14.79	27.1	248	356.1	55.5	391	22.59	7.0	1.8	54.0	10.6	3.4	0.04	0.10	0.24	278	0.04	0.026
STD OREAS45EA	Standard	1.15	608.1	14.93	25.9	240	337.8	46.7	373	20.94	5.6	1.7	63.9	10.5	3.3	0.04	0.14	0.27	275	0.03	0.026
STD OREAS45EA	Standard	1.28	694.5	14.66	31.0	293	380.9	50.4	408	24.68	5.9	1.7	64.0	10.5	3.6	0.04	0.16	0.21	306	0.04	0.029
STD DOLOMITE-2 Expected																					
STD DS9 Expected		12.84	108	126	317	1830	40.3	7.6	575	2.33	25.5	2.69	118	6.38	69.6	2.4	4.94	6.32	40	0.7201	0.0819
STD OREAS45EA Expected		1.78	709	14.3	30.6	311	357	52	400	22.65	11.4	1.73	53	10.7	4.05	0.03	0.64	0.26	295	0.032	0.029
BLK	Blank	<0.01	0.03	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	0.2	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	0.02	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	0.2	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	<0.01	<0.01	<0.1	4	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001



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Project: 204700  
 Report Date: September 12, 2013

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# QUALITY CONTROL REPORT

VAN13003266.1

		1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
STD OREAS45EA	Standard	6.6	823.0	0.09	154.2	0.078	<20	2.94	0.020	0.05	<0.1	70.9	0.06	0.04	16	0.2	0.10	12.3	0.70	0.2	0.82
STD OREAS45EA	Standard	6.3	831.3	0.09	141.3	0.080	<20	2.95	0.015	0.05	<0.1	71.4	0.06	0.04	17	0.4	0.09	12.1	0.67	0.3	0.65
STD OREAS45EA	Standard	5.9	770.6	0.09	149.4	0.078	<20	2.75	0.019	0.05	<0.1	68.6	<0.02	<0.02	7	0.3	0.09	11.1	0.63	0.2	0.63
STD OREAS45EA	Standard	6.8	867.3	0.10	144.6	0.084	<20	3.22	0.021	0.06	<0.1	80.8	<0.02	0.04	<5	0.3	0.03	12.8	0.76	0.2	0.80
STD DOLOMITE-2 Expected																					
STD DS9 Expected		13.3	121	0.6165	330	0.1108		0.9577	0.0853	0.395	2.89	2.5	5.3	0.1615	200	5.2	5.02	4.59	2.37	0.1	0.08
STD OREAS45EA Expected		8.19	849	0.095	148	0.106		3.32	0.027	0.053		78	0.072	0.044	340	2.09	0.11	11.7	0.77	0.26	0.82
BLK	Blank	<0.5	<0.5	<0.01	1.2	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02

## QUALITY CONTROL REPORT

VAN13003266.1

		1F Nb ppm 0.02	1F Rb ppm 0.1	1F Sn ppm 0.1	1F Ta ppm 0.05	1F Zr ppm 0.1	1F Y ppm 0.01	1F Ce ppm 0.1	1F In ppm 0.02	1F Re ppb 1	1F Be ppm 0.1	1F Li ppm 0.1	1F Pd ppb 10	1F Pt ppb 2	LOI %
STD OREAS45EA	Standard	0.06	7.3	0.8	<0.05	23.8	5.18	18.4	0.08	<1	0.4	2.2	70	114	
STD OREAS45EA	Standard	0.07	7.7	0.7	<0.05	22.0	5.06	17.5	0.08	<1	0.4	2.4	45	101	
STD OREAS45EA	Standard	0.05	7.1	0.9	<0.05	20.6	4.80	15.7	0.06	<1	0.4	2.1	50	112	
STD OREAS45EA	Standard	0.10	8.0	1.0	<0.05	25.5	5.34	17.6	0.11	2	0.3	2.3	74	110	
STD DOLOMITE-2 Expected															45.9
STD DS9 Expected		0.96	33.8	6.4	0.004	2	5.97	25.4	2.2	61	5.4	25.2	120	350	
STD OREAS45EA Expected		0.43	7.93	0.97		26.6	5.74	17.7	0.1		0.47	7.63	66	108	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	0.2	<0.01	0.4	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	0.1	<0.01	0.2	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	0.2	<0.01	0.3	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	0.5	<0.01	0.3	<0.02	<1	<0.1	<0.1	<10	<2	





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PHONE (604) 253-3158

Client: **Teck Resources Limited**  
Suite 3300, 550 Burrard St.  
Vancouver BC V6C 0B3 CANADA

Submitted By: Michael Buchanan and Rupa Mukherjee  
Receiving Lab: Canada-Vancouver  
Received: August 20, 2013  
Report Date: September 17, 2013  
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## CERTIFICATE OF ANALYSIS

VAN13003267.1

### CLIENT JOB INFORMATION

Project: 204700  
Shipment ID: CRQ\_2013\_004  
P.O. Number  
Number of Samples: 150

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
STOR-RJT-SOIL Store Soil Reject - RJSV Charges Apply

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Teck Resources Limited  
Suite 3300, 550 Burrard St.  
Vancouver BC V6C 0B3  
CANADA

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	143	Dry at 60C			VAN
SS80	143	Dry at 60C sieve 100g to -80 mesh			VAN
RJSV	143	Saving all or part of Soil Reject			VAN
1F04	150	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	0.5	Completed	VAN
2A05	150	Loss on Ignition at 1000 C		Completed	VAN

### ADDITIONAL COMMENTS



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# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317451	Soil	2.34	9.93	6.64	80.3	131	12.6	2.3	39	0.50	1.0	0.3	0.9	0.6	17.8	0.53	0.50	0.07	6	0.49	0.070
2317452	Soil	4.23	24.55	32.24	298.4	265	68.2	9.9	232	2.88	4.3	0.8	0.5	2.9	24.6	1.01	1.87	0.12	7	1.17	0.074
2317453 BAL-1	Rock Pulp	1.28	18.00	25.42	87.3	157	34.5	6.9	248	1.81	4.5	1.4	1.3	1.6	32.4	1.72	0.37	0.11	48	0.67	0.058
2317454	Soil	2.33	8.27	11.00	112.4	129	16.2	3.1	38	0.63	1.9	0.4	2.1	0.7	36.9	0.98	0.54	0.09	9	1.10	0.056
2317455	Soil	3.79	26.60	42.66	300.1	477	67.0	12.3	212	2.13	5.7	0.8	1.5	3.8	26.1	0.93	1.16	0.12	11	0.93	0.081
2317456	Soil	2.69	6.81	11.25	82.2	103	17.7	2.8	54	0.62	1.9	0.3	<0.2	0.7	17.6	1.68	0.57	0.06	7	0.52	0.054
2317457	Soil	4.30	27.69	25.93	210.4	248	73.9	14.4	341	2.42	7.9	0.8	0.7	3.1	22.3	1.15	1.33	0.09	17	1.01	0.088
2317458	Soil	4.03	11.61	16.72	74.1	79	23.3	4.1	91	0.87	1.7	1.5	0.5	0.5	38.5	1.85	0.66	0.07	7	2.12	0.052
2317459	Soil	15.46	26.39	18.02	268.3	238	62.9	8.9	241	2.16	9.0	1.6	5.4	4.7	38.4	2.98	3.58	0.14	13	3.05	0.083
2317460	Soil	2.48	6.66	6.77	55.2	144	13.1	2.0	96	0.48	1.7	0.3	4.1	0.6	14.1	0.43	0.42	0.13	9	0.69	0.072
2317461	Soil	2.66	6.85	7.02	62.2	190	10.1	2.1	94	0.45	2.0	0.2	2.3	0.5	14.3	0.45	0.54	0.09	8	0.66	0.072
2317462	Soil	3.87	13.94	110.3	217.3	29	35.7	9.3	193	2.01	4.5	1.0	2.9	2.0	22.7	1.59	0.84	0.11	23	0.73	0.079
2317463	Soil	3.88	13.93	119.3	208.2	74	31.4	8.6	180	2.02	4.3	1.0	1.9	2.0	22.2	1.35	0.79	0.11	24	0.80	0.069
2317464	Soil	1.33	4.14	5.88	58.2	142	5.6	1.2	42	0.22	0.5	0.2	2.2	0.3	20.8	0.42	0.24	0.05	3	0.91	0.065
2317465	Soil	3.79	11.97	69.86	316.0	180	40.2	8.0	135	1.63	4.2	0.7	0.7	4.0	13.4	0.93	1.25	0.10	11	0.40	0.077
2317466	Soil	2.47	5.35	6.74	88.3	112	6.9	1.0	18	0.23	0.7	0.1	4.0	0.3	26.5	1.00	0.28	0.05	4	1.05	0.056
2317467	Soil	5.92	12.93	80.27	356.7	207	34.6	7.9	205	1.62	5.0	0.9	2.5	2.9	20.7	1.72	1.55	0.10	15	0.57	0.068
2317468	Soil	3.47	18.59	45.92	186.9	310	29.0	4.5	131	0.98	2.1	0.9	3.4	0.8	46.2	2.33	1.20	0.08	10	2.24	0.068
2317469	Soil	5.71	12.84	70.31	255.4	133	33.0	5.5	55	1.61	3.5	0.8	0.9	4.4	6.8	0.58	1.48	0.10	22	0.15	0.029
2317470	Soil	2.90	12.41	9.64	114.3	112	14.1	2.7	49	0.47	0.9	0.3	1.5	0.6	36.9	1.78	0.79	0.05	5	1.86	0.059

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Project: 204700  
 Report Date: September 17, 2013

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# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
2317451	Soil	3.4	9.6	0.10	144.4	0.003	<20	0.19	0.004	0.07	<0.1	1.2	0.05	0.10	193	0.5	<0.02	1.0	0.39	<0.1	0.04
2317452	Soil	15.8	23.3	0.57	115.5	0.003	<20	0.39	<0.001	0.05	<0.1	4.5	0.09	0.06	79	0.7	<0.02	0.8	0.71	<0.1	0.06
2317453 BAL-1	Rock Pulp	19.0	31.6	0.18	57.5	0.003	<20	1.29	0.007	0.08	<0.1	4.4	0.35	0.06	139	1.5	<0.02	3.8	0.67	<0.1	0.06
2317454	Soil	3.4	13.4	0.20	147.9	0.003	<20	0.40	0.003	0.03	<0.1	1.6	0.06	0.10	82	0.3	0.06	1.5	0.24	<0.1	0.07
2317455	Soil	18.0	38.3	0.65	114.7	0.007	<20	0.54	<0.001	0.07	<0.1	3.9	0.11	0.02	41	0.9	0.03	1.3	0.65	<0.1	0.02
2317456	Soil	4.0	14.1	0.22	91.0	0.003	<20	0.28	0.003	0.05	<0.1	1.4	0.04	0.09	110	0.2	<0.02	0.9	0.14	<0.1	0.06
2317457	Soil	17.4	55.4	0.92	164.7	0.007	<20	0.85	<0.001	0.08	<0.1	4.6	0.17	0.03	102	0.4	<0.02	2.0	0.52	<0.1	0.07
2317458	Soil	4.6	10.6	0.19	124.7	0.003	<20	0.35	<0.001	0.02	<0.1	1.6	0.09	0.09	86	0.2	0.03	0.8	0.19	<0.1	0.05
2317459	Soil	15.3	19.8	1.66	58.0	0.006	<20	0.29	0.003	0.05	<0.1	3.1	0.27	<0.02	117	0.9	0.03	0.5	0.41	0.1	0.17
2317460	Soil	3.1	13.8	0.13	138.3	0.004	<20	0.29	0.002	0.05	<0.1	1.4	0.07	0.09	166	0.1	<0.02	1.0	0.28	<0.1	0.03
2317461	Soil	2.8	9.4	0.14	128.4	0.004	<20	0.28	0.002	0.05	<0.1	1.2	0.07	0.10	200	0.4	0.03	1.0	0.26	<0.1	0.04
2317462	Soil	17.6	24.5	0.42	313.2	0.004	<20	0.96	0.001	0.06	<0.1	3.4	0.20	0.02	48	0.4	0.06	2.3	0.44	<0.1	<0.02
2317463	Soil	16.2	19.6	0.37	340.6	0.004	<20	0.97	0.002	0.06	<0.1	3.6	0.19	0.03	109	0.4	<0.02	2.3	0.42	<0.1	0.02
2317464	Soil	1.2	5.0	0.07	103.8	0.002	<20	0.12	0.002	0.07	<0.1	0.9	0.03	0.11	183	0.2	<0.02	0.4	0.16	<0.1	0.03
2317465	Soil	20.4	15.5	0.30	155.5	0.004	<20	0.47	<0.001	0.06	<0.1	2.9	0.22	<0.02	87	0.7	0.03	1.2	0.48	<0.1	0.03
2317466	Soil	1.2	8.9	0.12	143.6	0.002	<20	0.13	0.004	0.04	<0.1	0.8	0.04	0.14	174	<0.1	<0.02	0.4	0.24	<0.1	0.03
2317467	Soil	17.5	12.7	0.22	351.7	0.002	<20	0.50	0.001	0.05	<0.1	3.3	0.32	0.03	167	0.6	0.09	1.2	0.33	<0.1	0.12
2317468	Soil	5.1	11.2	0.29	304.1	0.002	<20	0.35	0.003	0.05	<0.1	1.8	0.17	0.07	157	0.5	<0.02	0.8	0.29	<0.1	0.07
2317469	Soil	18.4	15.4	0.27	272.3	0.002	<20	0.62	<0.001	0.07	<0.1	2.3	0.29	<0.02	86	0.6	0.03	1.5	0.24	<0.1	0.04
2317470	Soil	2.5	7.0	0.15	123.1	0.002	<20	0.18	0.004	0.04	<0.1	1.2	0.08	0.11	183	0.4	<0.02	0.5	0.19	<0.1	0.08

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Project: 204700  
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# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317451	Soil	0.13	2.7	<0.1	<0.05	1.4	2.17	6.3	<0.02	<1	<0.1	0.8	<10	<2	74.4
2317452	Soil	0.11	3.8	<0.1	<0.05	1.3	13.94	30.8	0.02	<1	0.4	3.2	<10	<2	11.6
2317453 BAL-1	Rock Pulp	0.28	7.8	0.6	<0.05	2.3	19.71	33.4	0.03	<1	0.7	9.9	33	6	12.9
2317454	Soil	0.14	1.7	0.1	<0.05	2.8	3.51	6.8	<0.02	3	0.2	1.7	<10	<2	73.0
2317455	Soil	0.26	4.5	<0.1	<0.05	2.0	12.11	37.2	0.02	<1	0.3	5.7	<10	<2	9.6
2317456	Soil	0.16	2.0	0.2	<0.05	2.7	3.14	8.0	<0.02	<1	<0.1	1.9	13	<2	69.4
2317457	Soil	0.39	5.5	<0.1	<0.05	2.8	15.59	32.8	0.03	4	0.4	9.4	<10	2	12.8
2317458	Soil	0.13	1.7	0.1	<0.05	3.0	9.80	8.1	<0.02	<1	0.2	1.7	<10	<2	60.7
2317459	Soil	0.19	2.6	<0.1	<0.05	7.5	12.24	29.7	0.04	<1	0.2	2.7	<10	<2	10.2
2317460	Soil	0.07	1.9	0.2	<0.05	1.3	1.75	6.6	<0.02	<1	0.1	1.1	<10	3	77.1
2317461	Soil	0.10	1.9	0.3	<0.05	1.4	1.32	5.7	<0.02	<1	<0.1	1.0	<10	<2	80.1
2317462	Soil	0.49	6.2	0.3	<0.05	1.2	11.64	34.8	0.03	<1	0.6	10.4	<10	<2	14.6
2317463	Soil	0.55	6.9	0.3	<0.05	1.4	11.17	32.6	0.03	<1	0.6	9.5	<10	8	16.2
2317464	Soil	0.06	1.3	0.1	<0.05	0.9	0.78	2.2	<0.02	<1	<0.1	0.6	<10	<2	90.4
2317465	Soil	0.27	3.7	<0.1	<0.05	1.7	9.12	41.6	0.03	<1	0.3	4.6	<10	<2	6.9
2317466	Soil	0.04	1.2	0.1	<0.05	1.1	0.80	2.0	<0.02	<1	<0.1	0.5	<10	<2	89.6
2317467	Soil	0.19	3.5	0.2	<0.05	3.6	11.16	33.6	<0.02	<1	0.3	4.7	<10	<2	13.4
2317468	Soil	0.13	3.1	<0.1	<0.05	3.3	8.24	9.4	0.02	4	0.2	3.3	25	<2	56.8
2317469	Soil	0.26	3.0	0.2	<0.05	2.5	6.97	36.6	0.04	<1	0.3	7.1	<10	<2	10.2
2317470	Soil	0.08	1.3	<0.1	<0.05	2.5	4.81	4.5	<0.02	<1	0.2	1.0	17	<2	78.7

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		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317471	Soil	8.53	21.88	36.10	192.3	313	48.2	8.0	261	1.83	6.4	1.0	1.4	3.1	23.6	1.25	2.18	0.11	15	1.32	0.080
2317472	Soil	2.52	11.65	7.96	99.8	110	18.0	3.3	139	0.58	1.0	0.3	1.9	0.7	39.2	1.86	0.69	0.04	5	2.38	0.061
2317473	Soil	7.44	22.56	28.10	214.6	478	58.7	11.6	214	2.04	5.5	0.8	1.2	3.4	22.6	1.23	2.06	0.11	20	1.20	0.073
2317474	Soil	33.55	9.81	14.60	73.3	887	26.4	2.2	35	0.85	9.7	0.9	1.4	0.6	13.7	0.33	2.38	0.08	21	0.36	0.098
2317475	Soil	21.67	15.30	13.90	87.4	944	19.5	2.4	36	0.74	5.4	1.1	3.0	0.6	16.8	1.08	2.46	0.07	17	0.39	0.082
2317476	Soil	106.9	40.75	58.88	160.3	1918	41.9	4.5	95	2.76	32.5	3.2	2.6	1.7	20.9	0.42	11.06	0.20	65	0.07	0.074
2317477 BAL-1	Rock Pulp	1.26	18.40	27.44	92.4	170	33.5	7.1	259	1.85	4.5	1.6	0.8	1.5	31.7	2.05	0.44	0.12	47	0.71	0.062
2317478	Soil	2.86	5.18	8.58	220.8	659	5.0	1.0	76	0.21	0.5	0.2	2.6	0.4	114.8	6.60	0.23	0.05	4	0.71	0.073
2317479	Soil	2.81	10.48	30.35	183.3	562	11.0	1.1	97	0.49	1.6	1.0	1.0	0.1	36.1	8.39	0.40	0.10	17	0.46	0.089
2317480	Soil	2.56	10.87	31.56	192.1	615	9.8	1.3	122	0.48	1.4	0.9	1.4	0.2	36.1	8.55	0.44	0.08	17	0.53	0.088
2317481	Soil	6.96	7.30	32.93	184.1	251	18.6	2.9	76	1.29	10.5	1.2	1.1	2.7	25.8	1.14	2.50	0.11	31	0.11	0.055
2317482	Soil	7.93	9.35	40.65	226.4	339	22.1	3.1	94	1.44	13.3	1.4	0.7	2.9	34.7	1.48	3.28	0.12	33	0.11	0.070
2317483	Soil	5.82	27.30	27.94	3879	1392	278.6	5.9	188	1.28	5.5	10.3	1.6	1.1	232.2	26.54	3.73	0.09	24	3.03	0.078
2317484	Soil	8.56	21.31	46.52	546.3	603	47.6	7.5	188	2.21	14.8	1.7	0.7	3.7	40.5	1.37	3.17	0.26	39	0.16	0.075
2317485	Soil	13.58	45.54	26.73	6508	750	412.0	9.9	1792	1.68	8.0	91.8	1.3	0.3	349.9	68.23	3.49	0.11	21	3.92	0.083
2317486	Soil	2.58	87.25	5.95	7032	326	930.6	2.6	171	0.49	<0.1	40.0	1.0	0.3	428.4	40.39	3.34	0.06	5	4.73	0.054
2317487	Soil	4.81	12.40	11.18	1203	286	95.5	2.8	120	0.27	1.4	3.7	2.4	0.2	114.8	12.53	1.02	<0.02	3	1.43	0.057
2317488	Soil	19.00	20.72	24.58	349.8	659	39.8	1.3	24	1.27	17.1	2.8	1.0	1.1	65.3	4.08	1.52	0.06	21	0.78	0.059
2317489	Soil	42.13	24.53	44.71	370.0	362	31.7	2.6	78	3.64	45.2	4.1	1.1	1.6	36.6	1.48	3.14	0.10	42	0.39	0.077
2317490	Soil	2.08	5.87	11.81	289.4	352	9.2	1.0	131	0.24	1.0	0.3	<0.2	0.3	76.7	3.62	0.26	0.06	4	0.58	0.109
2317491	Soil	2.36	2.98	31.75	154.7	106	7.4	2.3	154	0.82	5.9	0.4	0.5	2.8	9.9	1.25	0.54	0.25	14	0.06	0.023
2317492	Soil	3.93	29.89	30.65	112.0	8950	31.4	2.9	32	0.79	3.5	0.9	0.2	0.2	30.4	4.63	0.81	0.12	17	0.26	0.084
2317493 BAL-1	Rock Pulp	1.23	17.76	25.59	80.9	173	31.5	7.0	255	1.85	4.6	1.4	2.4	1.3	32.0	1.99	0.34	0.11	47	0.70	0.062
2317494	Soil	150.3	39.45	86.40	374.4	516	30.0	2.9	35	9.45	133.7	1.2	2.7	4.8	9.9	0.49	43.28	0.34	180	0.03	0.155
2317495	Soil	2.46	10.14	12.10	91.0	9360	17.9	1.3	78	0.31	1.8	0.3	1.4	0.3	32.5	1.79	0.57	0.62	7	0.40	0.090
2317496	Soil	2.44	6.02	7.49	78.1	8536	12.3	1.0	69	0.22	1.9	0.2	1.2	0.2	32.7	1.44	0.53	0.22	5	0.41	0.088
2317497	Soil	18.24	14.91	64.66	208.6	1143	22.8	4.0	168	1.94	18.9	1.8	1.1	0.8	29.1	0.74	3.40	0.16	71	0.03	0.056
2317498	Soil	17.39	14.45	60.71	180.5	1194	21.0	3.7	145	1.76	17.5	1.7	0.7	0.6	28.3	0.75	3.04	0.17	69	0.03	0.050
2317499	Soil	2.23	7.37	10.48	33.1	5455	7.8	0.9	18	0.27	1.5	0.4	0.3	0.6	15.0	3.80	0.32	0.12	9	0.22	0.058
2317500	Soil	13.69	18.49	61.89	193.4	746	33.5	2.6	47	3.15	20.3	1.3	1.8	4.3	20.7	0.65	4.47	0.16	72	0.01	0.078

# CERTIFICATE OF ANALYSIS

VAN13003267.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317471	Soil	14.9	12.4	0.58	132.2	0.003	<20	0.39	0.002	0.06	<0.1	3.7	0.21	<0.02	94	0.9	<0.02	0.9	0.38	<0.1	0.11
2317472	Soil	2.8	9.3	0.35	119.9	0.002	<20	0.17	0.003	0.05	<0.1	1.1	0.08	0.10	143	0.7	0.03	0.4	0.19	<0.1	0.06
2317473	Soil	17.6	18.3	0.66	249.2	0.004	<20	0.56	0.002	0.08	<0.1	3.2	0.26	<0.02	102	1.1	0.03	1.3	0.60	0.1	0.06
2317474	Soil	3.7	7.8	0.06	145.3	0.003	<20	0.21	0.003	0.06	<0.1	1.2	0.42	0.12	366	5.8	0.06	0.8	0.65	<0.1	<0.02
2317475	Soil	3.1	7.0	0.10	140.2	0.002	<20	0.22	0.003	0.06	<0.1	1.1	0.36	0.11	292	4.9	0.09	0.9	0.50	<0.1	<0.02
2317476	Soil	17.7	9.8	0.11	158.2	0.002	<20	0.39	0.002	0.08	<0.1	1.0	1.23	0.11	176	11.9	0.23	1.8	1.57	<0.1	<0.02
2317477 BAL-1	Rock Pulp	19.8	31.3	0.18	63.0	0.003	<20	1.30	0.008	0.08	<0.1	4.7	0.35	0.06	126	1.5	<0.02	3.8	0.66	<0.1	0.08
2317478	Soil	1.7	5.5	0.05	332.9	0.003	<20	0.18	0.003	0.08	<0.1	0.9	0.06	0.11	190	1.0	<0.02	0.7	0.21	0.1	0.03
2317479	Soil	8.5	8.7	0.07	1217	0.004	<20	0.43	0.003	0.08	<0.1	0.8	0.20	0.05	105	0.3	<0.02	2.2	0.50	<0.1	<0.02
2317480	Soil	8.8	8.4	0.07	1259	0.004	<20	0.42	0.002	0.09	<0.1	0.8	0.19	0.04	99	0.6	0.03	2.2	0.49	0.2	<0.02
2317481	Soil	21.0	7.0	0.17	1331	0.004	<20	0.52	<0.001	0.08	<0.1	0.9	0.66	0.04	18	0.9	<0.02	1.9	0.57	0.1	<0.02
2317482	Soil	21.0	6.9	0.18	1694	0.004	<20	0.54	<0.001	0.08	<0.1	1.3	0.85	0.05	37	1.2	0.06	1.6	0.61	<0.1	<0.02
2317483	Soil	5.1	7.7	0.18	1782	0.004	<20	0.61	0.005	0.09	<0.1	1.8	1.20	0.20	308	4.2	0.08	1.4	0.52	<0.1	0.12
2317484	Soil	18.0	15.6	0.39	1695	0.005	<20	0.92	0.002	0.11	<0.1	1.8	1.07	0.07	162	1.0	0.08	2.5	0.73	<0.1	<0.02
2317485	Soil	5.8	6.9	0.19	1167	0.005	<20	0.53	0.002	0.04	<0.1	1.2	1.84	0.13	240	5.8	<0.02	1.8	0.52	<0.1	0.06
2317486	Soil	3.8	3.5	0.13	1156	0.002	<20	0.31	0.004	0.03	<0.1	1.0	1.46	0.13	641	10.8	<0.02	0.8	1.25	0.4	0.08
2317487	Soil	2.6	8.9	0.04	719.0	0.002	<20	0.13	0.004	0.03	<0.1	0.9	0.52	0.17	119	1.5	<0.02	0.4	0.25	<0.1	0.03
2317488	Soil	4.2	8.3	0.05	474.9	0.006	<20	0.20	0.003	0.03	0.1	1.0	0.56	0.08	120	1.0	0.06	1.5	0.48	<0.1	<0.02
2317489	Soil	11.1	10.8	0.07	760.5	0.010	<20	0.51	<0.001	0.04	0.2	0.9	2.30	0.04	150	2.6	<0.02	4.0	0.84	<0.1	<0.02
2317490	Soil	1.4	12.1	0.07	182.9	0.003	<20	0.14	0.004	0.13	<0.1	0.9	0.07	0.08	147	0.2	0.06	0.7	0.14	<0.1	<0.02
2317491	Soil	13.8	4.9	0.08	102.4	0.003	<20	0.52	0.002	0.12	<0.1	0.7	0.29	<0.02	5	<0.1	<0.02	2.2	0.60	<0.1	<0.02
2317492	Soil	8.7	11.7	0.06	1264	0.004	<20	0.55	0.004	0.06	<0.1	0.7	0.45	0.05	163	1.3	0.07	2.2	0.38	<0.1	<0.02
2317493 BAL-1	Rock Pulp	19.5	29.8	0.18	62.5	0.003	<20	1.23	0.008	0.07	<0.1	4.6	0.36	0.06	100	1.0	0.06	3.6	0.63	<0.1	0.05
2317494	Soil	14.5	16.0	0.03	297.3	0.014	<20	0.67	0.002	0.06	0.8	1.2	7.98	0.05	32	10.2	0.23	9.2	1.20	<0.1	<0.02
2317495	Soil	2.1	10.2	0.05	981.5	0.003	<20	0.24	0.004	0.07	<0.1	0.6	0.28	0.10	244	0.7	0.04	0.7	0.31	<0.1	<0.02
2317496	Soil	1.2	6.0	0.04	974.0	0.002	<20	0.17	0.003	0.07	<0.1	0.7	0.27	0.11	238	0.4	0.03	0.4	0.32	<0.1	<0.02
2317497	Soil	15.0	13.2	0.23	2115	0.005	<20	0.98	<0.001	0.12	0.2	0.9	1.96	0.07	76	1.3	0.04	4.2	1.10	<0.1	<0.02
2317498	Soil	16.4	13.2	0.22	2083	0.006	<20	0.93	0.002	0.11	0.2	0.9	1.97	0.07	70	0.8	0.05	4.1	1.11	<0.1	<0.02
2317499	Soil	6.7	9.9	0.04	1231	0.003	<20	0.27	0.004	0.05	<0.1	0.8	0.21	0.05	181	0.4	<0.02	0.9	0.60	<0.1	<0.02
2317500	Soil	16.0	18.1	0.20	1524	0.002	<20	1.19	0.002	0.11	<0.1	1.5	1.11	0.07	114	2.0	0.07	2.9	0.81	<0.1	0.04

# CERTIFICATE OF ANALYSIS

VAN13003267.1

Method Analyte	Unit MDL	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	%	
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317471	Soil	0.19	3.5	<0.1	<0.05	3.3	12.57	29.7	<0.02	4	0.3	3.7	<10	<2	12.9
2317472	Soil	0.08	2.0	<0.1	<0.05	4.0	5.05	5.7	<0.02	<1	0.2	1.7	<10	<2	74.5
2317473	Soil	0.21	5.1	<0.1	<0.05	2.0	13.14	32.8	<0.02	<1	0.4	7.1	<10	3	10.0
2317474	Soil	0.12	2.2	0.1	<0.05	1.7	1.61	6.3	<0.02	<1	0.1	0.6	<10	3	77.5
2317475	Soil	0.07	1.9	0.1	<0.05	1.9	1.55	5.3	<0.02	8	<0.1	1.0	<10	5	76.3
2317476	Soil	0.15	6.3	0.3	<0.05	0.7	4.45	28.9	0.05	3	0.2	3.1	14	<2	13.3
2317477 BAL-1	Rock Pulp	0.30	7.7	0.6	<0.05	2.4	20.96	34.7	0.05	4	0.9	11.0	<10	2	12.7
2317478	Soil	0.08	2.2	0.1	<0.05	1.0	0.99	3.5	<0.02	5	0.1	0.6	<10	<2	82.2
2317479	Soil	0.26	3.7	0.3	<0.05	0.3	1.99	14.9	<0.02	<1	0.3	1.4	<10	<2	50.8
2317480	Soil	0.22	3.8	0.5	<0.05	0.2	1.82	16.5	<0.02	<1	0.2	1.5	<10	<2	48.7
2317481	Soil	0.23	7.8	0.1	<0.05	0.2	3.84	38.6	<0.02	<1	0.3	5.5	<10	<2	5.7
2317482	Soil	0.24	8.0	0.2	<0.05	0.5	5.04	40.5	<0.02	4	0.3	6.0	<10	<2	6.0
2317483	Soil	0.25	5.2	0.1	<0.05	3.8	7.01	10.5	<0.02	31	0.2	3.4	<10	<2	68.7
2317484	Soil	0.29	8.2	0.3	<0.05	0.9	7.26	39.0	0.02	<1	0.4	13.2	<10	<2	8.7
2317485	Soil	0.46	3.9	0.3	<0.05	1.7	7.02	11.2	0.03	4	0.4	4.3	<10	<2	58.6
2317486	Soil	0.09	2.0	<0.1	<0.05	3.2	14.09	5.2	<0.02	9	0.1	1.6	<10	<2	82.9
2317487	Soil	0.10	1.1	<0.1	<0.05	0.9	4.70	3.5	<0.02	<1	<0.1	0.4	<10	<2	90.3
2317488	Soil	0.37	3.3	0.4	<0.05	0.6	1.40	8.7	0.03	<1	0.1	0.7	<10	<2	64.2
2317489	Soil	1.42	10.1	0.7	<0.05	0.2	2.36	22.2	0.06	4	0.2	2.9	<10	<2	21.3
2317490	Soil	0.15	2.6	0.1	<0.05	0.6	0.52	2.6	<0.02	<1	0.1	0.9	<10	<2	82.3
2317491	Soil	0.52	20.8	0.3	<0.05	0.3	1.67	27.1	<0.02	<1	0.2	6.0	<10	<2	7.1
2317492	Soil	0.16	3.8	0.4	<0.05	0.3	2.69	17.1	<0.02	<1	0.4	1.9	50	<2	57.9
2317493 BAL-1	Rock Pulp	0.30	7.0	0.6	<0.05	2.2	21.26	33.7	0.03	<1	0.8	10.3	<10	3	12.9
2317494	Soil	1.98	12.8	1.5	<0.05	1.5	1.65	28.3	0.07	<1	0.2	1.3	<10	<2	10.8
2317495	Soil	0.10	2.7	0.6	<0.05	0.7	0.84	3.8	<0.02	<1	<0.1	0.8	<10	<2	83.0
2317496	Soil	0.07	2.3	0.5	<0.05	0.7	0.38	2.3	<0.02	2	<0.1	0.5	<10	<2	89.4
2317497	Soil	0.52	12.7	0.6	<0.05	0.6	2.69	26.6	0.02	2	0.3	8.1	<10	<2	9.8
2317498	Soil	0.54	13.4	0.6	<0.05	0.2	2.46	29.1	<0.02	<1	0.2	7.5	<10	<2	9.8
2317499	Soil	0.08	2.8	0.2	<0.05	0.3	0.97	12.6	<0.02	<1	<0.1	0.6	<10	<2	66.0
2317500	Soil	0.55	9.6	0.3	<0.05	2.2	2.54	29.1	0.03	<1	0.2	11.0	<10	<2	11.2



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Project: 204700  
 Report Date: September 17, 2013

Page: 1 of 2 Part: 1 of 3

# QUALITY CONTROL REPORT

VAN13003267.1

Method	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
Unit	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
MDL	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001	
Pulp Duplicates																					
2316023	Soil	25.43	23.81	13.65	164.5	310	57.2	6.1	279	1.52	8.9	2.8	0.3	1.2	21.3	0.96	1.54	0.12	50	0.88	0.137
REP 2316023	QC																				
2316026	Soil	59.41	177.2	157.2	770.1	661	152.4	23.8	1484	12.76	27.4	5.1	1.1	4.1	35.5	4.31	5.08	0.30	164	0.08	0.143
REP 2316026	QC	60.14	174.9	165.9	772.3	683	156.4	23.0	1506	12.98	28.2	5.0	1.3	4.2	36.4	4.44	5.20	0.31	164	0.08	0.141
2317309	Soil	22.26	18.11	33.22	126.5	639	26.0	2.5	316	1.44	16.1	1.8	1.4	0.5	56.1	0.28	7.66	0.23	63	0.05	0.067
REP 2317309	QC																				
2317312	Soil	39.95	119.1	26.43	13.7	1358	6.4	0.2	5	1.38	10.6	12.5	5.1	1.5	220.0	0.11	2.97	0.42	82	<0.01	0.070
REP 2317312	QC	39.28	116.5	26.61	13.7	1418	5.8	0.2	5	1.39	9.6	12.3	6.6	1.6	227.1	0.15	2.97	0.41	80	<0.01	0.068
2317345	Soil	24.45	47.75	73.21	182.2	717	30.0	3.0	31	2.54	31.4	5.0	1.7	1.9	68.5	0.60	6.93	0.19	70	0.02	0.092
REP 2317345	QC																				
2317348	Soil	6.74	15.18	15.18	100.3	99	25.6	4.3	57	1.54	4.6	0.5	1.0	0.1	7.5	0.08	0.87	0.16	41	<0.01	0.067
REP 2317348	QC	6.72	15.62	14.06	98.7	83	26.6	4.7	59	1.53	3.8	0.5	<0.2	<0.1	6.6	0.11	0.82	0.15	40	<0.01	0.066
2317481	Soil	6.96	7.30	32.93	184.1	251	18.6	2.9	76	1.29	10.5	1.2	1.1	2.7	25.8	1.14	2.50	0.11	31	0.11	0.055
REP 2317481	QC																				
2317484	Soil	8.56	21.31	46.52	546.3	603	47.6	7.5	188	2.21	14.8	1.7	0.7	3.7	40.5	1.37	3.17	0.26	39	0.16	0.075
REP 2317484	QC	8.43	21.00	48.57	545.1	618	48.1	7.0	185	2.24	15.1	1.8	0.8	3.9	39.9	1.44	2.98	0.17	40	0.18	0.082
2317497	Soil	18.24	14.91	64.66	208.6	1143	22.8	4.0	168	1.94	18.9	1.8	1.1	0.8	29.1	0.74	3.40	0.16	71	0.03	0.056
REP 2317497	QC	18.46	14.82	62.85	196.0	1127	22.9	4.2	164	1.95	19.0	1.7	0.6	0.8	29.6	0.74	3.26	0.17	71	0.03	0.053
2317500	Soil	13.69	18.49	61.89	193.4	746	33.5	2.6	47	3.15	20.3	1.3	1.8	4.3	20.7	0.65	4.47	0.16	72	0.01	0.078
REP 2317500	QC																				
Reference Materials																					
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DS9	Standard	12.23	109.5	132.0	338.7	1890	41.9	8.1	518	2.37	27.6	2.9	121.0	5.7	67.7	2.66	5.15	6.34	40	0.70	0.081
STD DS9	Standard	13.81	109.6	142.9	332.6	1948	38.7	7.8	517	2.38	26.0	2.7	116.3	6.2	71.5	2.43	4.91	6.50	41	0.73	0.086

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.





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Project: 204700  
 Report Date: September 17, 2013

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# QUALITY CONTROL REPORT

VAN13003267.1

Method	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf	
Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	
Pulp Duplicates																					
2316023	Soil	13.6	13.6	0.13	205.4	0.002	<20	0.29	<0.001	0.05	<0.1	2.7	0.60	0.11	138	1.6	0.07	0.8	0.39	<0.1	0.11
REP 2316023	QC																				
2316026	Soil	14.1	24.9	0.10	761.4	0.004	<20	1.08	<0.001	0.10	0.2	6.5	0.97	0.17	64	6.9	0.20	2.6	1.29	<0.1	0.03
REP 2316026	QC	14.5	27.4	0.10	769.3	0.004	<20	1.09	0.001	0.10	0.3	6.6	1.02	0.17	71	6.9	0.11	2.4	1.31	0.1	<0.02
2317309	Soil	14.2	7.9	0.02	909.6	0.002	<20	0.23	0.002	0.11	<0.1	0.7	0.87	0.17	9	4.0	0.05	0.9	1.09	<0.1	<0.02
REP 2317309	QC																				
2317312	Soil	19.4	7.5	<0.01	739.3	0.001	<20	0.30	0.005	0.16	0.2	2.0	1.67	0.33	327	4.9	0.19	0.7	0.84	<0.1	0.04
REP 2317312	QC	18.5	7.7	<0.01	734.2	0.001	<20	0.30	0.005	0.16	0.2	1.9	1.64	0.34	351	4.4	0.16	0.8	0.78	0.2	<0.02
2317345	Soil	17.4	8.4	0.03	1446	0.002	<20	0.65	0.007	0.13	<0.1	2.1	2.13	0.27	167	4.9	0.10	1.7	1.42	<0.1	0.05
REP 2317345	QC																				
2317348	Soil	16.9	7.7	0.03	188.5	0.003	<20	0.35	<0.001	0.07	0.1	0.8	0.36	0.03	10	0.5	0.11	2.1	0.79	<0.1	0.03
REP 2317348	QC	16.8	7.6	0.03	183.1	0.002	<20	0.35	<0.001	0.07	<0.1	0.6	0.29	0.03	<5	0.9	0.07	2.3	0.72	0.1	<0.02
2317481	Soil	21.0	7.0	0.17	1331	0.004	<20	0.52	<0.001	0.08	<0.1	0.9	0.66	0.04	18	0.9	<0.02	1.9	0.57	0.1	<0.02
REP 2317481	QC																				
2317484	Soil	18.0	15.6	0.39	1695	0.005	<20	0.92	0.002	0.11	<0.1	1.8	1.07	0.07	162	1.0	0.08	2.5	0.73	<0.1	<0.02
REP 2317484	QC	18.5	15.0	0.39	1776	0.005	<20	0.91	0.001	0.11	0.1	1.9	1.12	0.06	143	0.9	<0.02	2.9	0.74	<0.1	<0.02
2317497	Soil	15.0	13.2	0.23	2115	0.005	<20	0.98	<0.001	0.12	0.2	0.9	1.96	0.07	76	1.3	0.04	4.2	1.10	<0.1	<0.02
REP 2317497	QC	15.3	13.2	0.23	2092	0.005	<20	0.98	0.002	0.12	0.2	0.9	1.95	0.07	73	1.3	0.09	4.0	1.07	<0.1	<0.02
2317500	Soil	16.0	18.1	0.20	1524	0.002	<20	1.19	0.002	0.11	<0.1	1.5	1.11	0.07	114	2.0	0.07	2.9	0.81	<0.1	0.04
REP 2317500	QC																				
Reference Materials																					
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DS9	Standard	12.0	118.1	0.62	312.6	0.106	<20	0.92	0.077	0.40	3.2	2.5	5.42	0.17	237	5.8	4.76	4.6	2.40	0.2	0.07
STD DS9	Standard	13.4	118.3	0.62	310.3	0.112	<20	0.97	0.092	0.41	2.8	2.7	5.70	0.17	279	5.9	4.06	5.2	2.40	0.2	0.04

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## QUALITY CONTROL REPORT

VAN13003267.1

Method	Analyte	Unit	MDL	1F Nb	1F Rb	1F Sn	1F Ta	1F Zr	1F Y	1F Ce	1F In	1F Re	1F Be	1F Li	1F Pd	1F Pt	LOI
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
				0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
Pulp Duplicates																	
2316023	Soil			0.12	3.5	0.1	<0.05	3.8	18.60	22.3	0.03	1	0.8	2.5	<10	<2	28.2
REP 2316023	QC																27.8
2316026	Soil			0.29	10.2	0.4	<0.05	1.4	28.35	28.6	0.09	6	1.6	2.3	<10	<2	14.2
REP 2316026	QC			0.32	10.5	0.4	<0.05	1.3	30.40	32.7	0.08	3	1.8	2.4	12	<2	
2317309	Soil			0.03	7.1	0.2	<0.05	0.4	3.75	28.1	0.02	7	0.1	0.8	22	<2	9.8
REP 2317309	QC																9.2
2317312	Soil			0.03	7.1	0.1	<0.05	0.2	10.44	37.2	0.05	8	0.3	1.6	33	<2	7.7
REP 2317312	QC			<0.02	7.1	<0.1	<0.05	0.2	10.35	34.2	0.06	9	0.3	1.7	22	<2	
2317345	Soil			0.12	8.4	0.3	<0.05	0.8	7.82	33.3	0.04	15	0.2	2.4	<10	3	11.4
REP 2317345	QC																11.5
2317348	Soil			0.03	8.7	0.3	<0.05	<0.1	2.62	33.3	<0.02	<1	0.2	1.3	<10	<2	6.7
REP 2317348	QC			<0.02	8.5	0.4	<0.05	<0.1	2.71	32.1	0.03	4	0.2	1.2	<10	<2	
2317481	Soil			0.23	7.8	0.1	<0.05	0.2	3.84	38.6	<0.02	<1	0.3	5.5	<10	<2	5.7
REP 2317481	QC																5.9
2317484	Soil			0.29	8.2	0.3	<0.05	0.9	7.26	39.0	0.02	<1	0.4	13.2	<10	<2	8.7
REP 2317484	QC			0.30	8.2	0.4	<0.05	0.9	7.07	38.2	<0.02	<1	0.4	13.3	<10	5	
2317497	Soil			0.52	12.7	0.6	<0.05	0.6	2.69	26.6	0.02	2	0.3	8.1	<10	<2	9.8
REP 2317497	QC			0.50	11.7	0.5	<0.05	0.3	2.73	28.3	<0.02	<1	0.2	7.5	<10	<2	
2317500	Soil			0.55	9.6	0.3	<0.05	2.2	2.54	29.1	0.03	<1	0.2	11.0	<10	<2	11.2
REP 2317500	QC																11.6
Reference Materials																	
STD DOLOMITE-2	Standard																45.9
STD DOLOMITE-2	Standard																45.7
STD DOLOMITE-2	Standard																45.3
STD DOLOMITE-2	Standard																45.9
STD DOLOMITE-2	Standard																45.9
STD DS9	Standard			1.07	35.0	6.0	<0.05	1.5	5.54	22.4	2.34	41	6.1	27.4	157	382	
STD DS9	Standard			1.06	35.0	6.5	<0.05	1.4	6.06	24.7	2.13	55	6.2	27.8	148	400	



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Project: 204700  
 Report Date: September 17, 2013

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# QUALITY CONTROL REPORT

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		1F Mo ppm 0.01	1F Cu ppm 0.01	1F Pb ppm 0.01	1F Zn ppm 0.1	1F Ag ppb 2	1F Ni ppm 0.1	1F Co ppm 0.1	1F Mn ppm 1	1F Fe % 0.01	1F As ppm 0.1	1F U ppm 0.1	1F Au ppb 0.2	1F Th ppm 0.1	1F Sr ppm 0.5	1F Cd ppm 0.01	1F Sb ppm 0.02	1F Bi ppm 0.02	1F V ppm 2	1F Ca % 0.01	1F P % 0.001
STD DS9	Standard	13.51	108.0	137.5	317.2	1980	41.4	7.7	588	2.39	24.2	2.6	120.4	6.0	70.8	2.41	5.10	7.34	41	0.71	0.080
STD DS9	Standard	13.06	110.7	137.8	313.3	1952	42.2	7.8	611	2.35	29.0	2.7	137.1	6.6	71.9	2.56	5.23	6.54	40	0.70	0.087
STD DS9	Standard	12.86	112.5	130.8	323.4	2042	41.0	7.9	595	2.40	26.6	2.7	153.8	6.6	76.5	2.49	5.53	6.27	41	0.76	0.090
STD OREAS45EA	Standard	1.55	714.8	14.99	28.7	250	392.8	49.4	352	24.06	8.8	1.9	61.6	11.0	3.5	0.04	0.23	0.21	304	0.04	0.030
STD OREAS45EA	Standard	1.51	750.5	15.64	31.7	304	408.9	52.7	364	24.76	10.1	2.0	57.7	11.3	3.4	0.03	0.19	0.24	324	0.04	0.029
STD OREAS45EA	Standard	1.66	722.7	15.42	29.2	256	395.2	50.8	349	24.16	8.8	1.9	69.6	11.3	3.7	0.02	0.28	0.26	307	0.04	0.029
STD OREAS45EA	Standard	1.49	703.9	15.68	29.5	301	385.9	53.0	411	23.68	10.0	1.9	58.8	11.9	4.0	0.03	0.25	0.23	303	0.04	0.028
STD OREAS45EA	Standard	1.58	749.7	14.98	32.2	323	400.9	53.7	444	24.26	11.5	1.9	67.4	11.7	4.2	0.03	0.28	0.45	317	0.04	0.029
STD DS9 Expected		12.84	108	126	317	1830	40.3	7.6	575	2.33	25.5	2.69	118	6.38	69.6	2.4	4.94	6.32	40	0.7201	0.0819
STD OREAS45EA Expected		1.78	709	14.3	30.6	311	357	52	400	22.65	11.4	1.73	53	10.7	4.05	0.03	0.64	0.26	295	0.032	0.029
STD DOLOMITE-2 Expected																					
BLK	Blank	<0.01	0.03	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	0.001
BLK	Blank	<0.01	<0.01	<0.01	0.1	6	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	<0.01	0.04	<0.1	9	0.1	<0.1	<1	<0.01	0.3	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	<0.01	0.12	<0.1	21	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001



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Project: 204700  
 Report Date: September 17, 2013

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# QUALITY CONTROL REPORT

VAN13003267.1

		1F La ppm	1F Cr ppm	1F Mg %	1F Ba ppm	1F Ti %	1F B ppm	1F Al %	1F Na %	1F K %	1F W ppm	1F Sc ppm	1F Ti ppm	1F S %	1F Hg ppb	1F Se ppm	1F Te ppm	1F Ga ppm	1F Cs ppm	1F Ge ppm	1F Hf ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
STD DS9	Standard	13.2	118.9	0.63	315.1	0.112	<20	0.95	0.082	0.41	2.6	2.8	5.38	0.17	188	5.2	4.45	4.6	2.36	0.1	0.05
STD DS9	Standard	13.2	119.0	0.62	369.6	0.108	<20	0.93	0.080	0.40	2.7	2.4	5.50	0.17	219	5.6	5.50	4.8	2.53	0.1	0.06
STD DS9	Standard	13.3	121.5	0.62	340.8	0.112	<20	0.99	0.095	0.41	3.0	2.5	5.72	0.17	228	5.3	5.63	4.8	2.56	<0.1	0.05
STD OREAS45EA	Standard	6.6	829.2	0.09	146.7	0.091	<20	3.18	0.017	0.05	<0.1	77.0	0.06	0.04	21	1.1	0.16	11.7	0.68	0.1	0.59
STD OREAS45EA	Standard	7.1	871.9	0.10	143.4	0.091	<20	3.40	0.023	0.06	<0.1	77.5	0.06	0.04	<5	1.1	0.07	12.3	0.73	0.3	0.37
STD OREAS45EA	Standard	6.9	840.0	0.09	145.6	0.092	<20	3.22	0.018	0.05	<0.1	79.1	0.06	0.04	13	1.0	0.05	12.7	0.71	0.4	0.58
STD OREAS45EA	Standard	6.9	791.1	0.10	149.2	0.090	<20	3.17	0.018	0.05	<0.1	78.3	<0.02	0.04	11	0.7	0.05	13.1	0.67	0.4	0.60
STD OREAS45EA	Standard	7.1	881.1	0.10	155.4	0.091	<20	3.38	0.023	0.05	<0.1	83.6	<0.02	0.04	17	1.1	0.07	13.5	0.70	0.3	0.56
STD DS9 Expected		13.3	121	0.6165	330	0.1108		0.9577	0.0853	0.395	2.89	2.5	5.3	0.1615	200	5.2	5.02	4.59	2.37	0.1	0.08
STD OREAS45EA Expected		8.19	849	0.095	148	0.106		3.32	0.027	0.053		78	0.072	0.044	340	2.09	0.11	11.7	0.77	0.26	0.82
STD DOLOMITE-2 Expected																					
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	10	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02

## QUALITY CONTROL REPORT

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		1F Nb ppm 0.02	1F Rb ppm 0.1	1F Sn ppm 0.1	1F Ta ppm 0.05	1F Zr ppm 0.1	1F Y ppm 0.01	1F Ce ppm 0.1	1F In ppm 0.02	1F Re ppb 1	1F Be ppm 0.1	1F Li ppm 0.1	1F Pd ppb 10	1F Pt ppb 2	LOI %
STD DS9	Standard	1.12	34.1	6.8	<0.05	1.5	5.89	25.5	2.12	61	5.7	23.9	156	406	
STD DS9	Standard	0.98	36.3	6.8	<0.05	1.8	5.73	25.6	2.44	64	5.7	26.8	116	366	
STD DS9	Standard	0.95	37.0	6.7	<0.05	1.9	6.00	25.0	2.28	60	5.5	26.6	143	381	
STD OREAS45EA	Standard	0.07	7.1	0.8	<0.05	19.6	4.85	17.7	0.13	4	0.4	2.7	111	127	
STD OREAS45EA	Standard	0.12	7.2	0.9	<0.05	15.7	5.45	19.3	0.08	<1	0.4	2.8	117	100	
STD OREAS45EA	Standard	0.09	7.7	0.5	<0.05	20.9	5.35	19.5	0.04	<1	0.4	2.2	87	102	
STD OREAS45EA	Standard	0.06	7.6	0.8	<0.05	20.7	5.48	18.2	0.07	<1	0.3	2.5	84	108	
STD OREAS45EA	Standard	0.06	8.0	0.9	<0.05	20.5	5.88	17.8	0.09	1	0.4	2.6	80	122	
STD DS9 Expected		0.96	33.8	6.4	0.004	2	5.97	25.4	2.2	61	5.4	25.2	120	350	
STD OREAS45EA Expected		0.43	7.93	0.97		26.6	5.74	17.7	0.1		0.47	7.63	66	108	
STD DOLOMITE-2 Expected															45.9
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	0.1	<0.01	<0.1	<0.02	1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	



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Submitted By: Karen Weir and Rupa Mukherjee
Receiving Lab: Canada-Vancouver
Received: July 23, 2013
Report Date: August 08, 2013
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CERTIFICATE OF ANALYSIS

VAN13002776.1

CLIENT JOB INFORMATION

Project: 204700
Shipment ID: CRQ\_2013\_001a
P.O. Number
Number of Samples: 252

SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage
STOR-RJT-SOIL Store Soil Reject - RJSV Charges Apply

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Teck Resources Limited
Suite 3300, 550 Burrard St.
Vancouver BC V6C 0B3
CANADA

CC:

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Table with 6 columns: Procedure Code, Number of Samples, Code Description, Test Wgt (g), Report Status, Lab. Rows include procedures like 'Dry at 60C', 'SS80', 'RJSV', '1F04', and '2A05'.

ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. \*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: 204700  
 Report Date: August 08, 2013

Page: 2 of 10

Part: 1 of 3

# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F Mo	1F Cu	1F Pb	1F Zn	1F Ag	1F Ni	1F Co	1F Mn	1F Fe	1F As	1F U	1F Au	1F Th	1F Sr	1F Cd	1F Sb	1F Bi	1F V	1F Ca	1F P
Unit	MDL	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
2317501	Soil	5.76	11.16	8.43	72.6	172	12.3	6.9	821	0.95	0.7	0.2	2.1	0.5	12.9	1.00	0.34	0.07	11	0.79	0.152
2317502	Soil	2.67	7.94	9.09	32.0	283	12.0	4.3	326	1.16	1.9	0.4	0.7	<0.1	3.1	0.27	0.23	0.11	28	0.05	0.107
2317503 BAL-1	Rock Pulp	1.18	13.90	18.82	68.6	138	28.5	6.0	254	1.70	4.2	1.1	1.4	1.2	25.3	1.79	0.37	0.09	40	0.63	0.050
2317504	Soil	3.62	5.28	5.85	48.0	194	8.5	1.9	193	0.34	0.6	0.1	0.9	0.1	8.7	0.49	0.18	0.04	6	0.49	0.135
2317505	Soil	4.82	23.52	11.65	182.6	322	36.6	6.5	77	2.85	6.3	0.5	0.7	1.5	4.0	0.40	1.18	0.14	31	0.06	0.120
2317506 BAL-1	Rock Pulp	1.20	14.34	19.13	69.3	142	28.1	6.0	269	1.73	4.5	1.1	1.1	1.1	26.4	1.75	0.37	0.09	41	0.65	0.053
2317507	Soil	4.88	5.48	9.67	61.1	276	8.0	4.1	384	0.46	0.9	0.2	0.6	0.2	10.0	2.01	0.24	0.05	9	0.29	0.164
2317508	Soil	4.94	10.56	8.63	137.3	704	28.8	5.8	92	2.26	4.6	0.5	20.1	0.8	3.6	0.52	0.91	0.09	25	0.08	0.074
2317509	Soil	4.48	7.12	10.31	77.7	180	11.0	3.3	65	0.53	1.2	0.2	0.5	0.2	9.1	2.39	0.35	0.06	11	0.21	0.124
2317510	Soil	3.63	8.61	7.28	163.3	63	27.9	10.7	394	0.70	1.4	0.2	0.8	0.6	19.4	3.31	0.55	0.05	7	1.24	0.091
2317511	Soil	9.83	10.49	8.43	141.1	134	25.9	7.5	206	0.78	1.8	0.2	0.9	0.6	12.6	4.22	0.58	0.06	10	0.60	0.081
2317512 BAL-1	Rock Pulp	1.19	13.95	19.42	70.1	144	28.9	6.1	262	1.75	4.5	1.1	1.2	1.1	25.6	1.81	0.39	0.08	42	0.64	0.052
2317513	Soil	4.85	10.74	9.29	131.2	206	26.9	10.3	1567	0.89	2.2	0.3	0.5	0.4	19.7	3.75	0.69	0.06	11	1.09	0.088
2317514	Soil	6.17	11.50	15.25	256.3	182	81.5	27.4	388	2.38	3.9	0.5	<0.2	0.5	9.1	0.78	1.04	0.12	26	0.38	0.061
2317515	Soil	17.06	25.42	8.40	118.5	1665	23.3	3.1	47	1.01	5.5	0.6	0.6	0.4	14.0	2.30	1.65	0.07	17	0.20	0.095
2317516	Soil	13.26	23.60	8.22	125.7	2364	20.7	2.5	67	0.86	4.5	0.6	0.7	0.3	12.5	2.06	1.35	0.06	17	0.22	0.107
2317517	Soil	14.58	17.31	8.28	76.0	524	18.3	2.9	29	1.35	8.0	0.5	<0.2	0.4	5.2	0.44	1.18	0.13	75	0.02	0.048
2317518	Soil	15.40	18.28	9.07	74.4	538	21.4	2.5	21	1.36	8.5	0.6	<0.2	0.6	5.7	0.36	1.31	0.14	74	0.02	0.052
2317519	Soil	7.34	13.99	6.31	103.5	1830	16.0	2.6	249	0.72	4.8	0.3	3.3	0.5	7.5	1.10	1.12	0.07	23	0.23	0.091
2317520	Soil	16.61	42.68	15.21	164.3	1860	33.0	7.0	118	6.57	12.8	1.7	1.7	1.8	20.3	0.43	3.07	0.16	49	0.03	0.095
2317521	Soil	17.22	38.03	39.32	225.5	411	53.0	13.2	177	3.00	13.1	1.5	1.2	2.5	16.9	0.68	2.96	0.16	37	<0.01	0.057
2317522	Soil	9.27	24.44	18.77	86.6	950	37.7	10.2	59	1.12	4.1	1.6	2.8	<0.1	10.2	1.92	1.27	0.06	14	0.09	0.174
2317523 BAL-1	Rock Pulp	1.16	14.22	19.09	76.3	155	31.5	6.4	263	1.77	4.6	1.1	0.8	1.2	26.4	1.80	0.38	0.08	44	0.65	0.050
2317524	Soil	8.89	24.43	9.15	596.7	318	83.9	5.4	346	1.53	7.4	1.9	4.4	1.1	43.2	14.77	1.99	0.10	17	1.11	0.087
2317525	Soil	14.52	29.26	16.49	272.4	502	51.8	10.7	205	2.79	11.9	1.6	2.0	2.6	27.8	2.22	2.80	0.16	32	0.34	0.065
2317526	Soil	9.51	20.23	13.96	161.9	1089	42.8	6.3	96	1.69	7.0	1.0	2.3	1.0	17.1	1.43	1.97	0.10	21	0.16	0.084
2317527	Soil	16.50	59.04	26.87	215.0	625	51.2	4.0	71	2.93	16.6	3.2	1.1	2.8	13.4	1.02	3.53	0.17	48	0.05	0.084
2317528	Soil	4.02	14.71	9.06	69.7	1172	18.8	6.2	59	0.69	2.3	1.1	2.1	0.4	11.8	2.11	0.73	0.04	10	0.12	0.102
2317529	Soil	13.32	46.31	22.80	166.5	533	37.2	4.6	71	2.17	12.2	2.6	1.3	1.9	9.0	1.13	2.40	0.16	45	0.04	0.077
2317530	Soil	3.27	7.00	5.23	66.9	159	8.1	2.2	523	0.37	1.2	0.1	<0.2	0.4	9.7	1.30	0.23	0.03	5	0.54	0.123

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.01	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317501	Soil	3.7	11.1	0.42	574.9	0.003	<20	0.48	0.002	0.09	<0.1	1.0	0.08	0.16	152	0.3	<0.02	1.4	0.39	<0.1	0.06
2317502	Soil	9.5	16.8	0.32	276.3	0.001	<20	0.91	<0.001	0.07	<0.1	0.3	0.12	0.06	47	0.3	<0.02	3.6	0.50	<0.1	<0.02
2317503 BAL-1	Rock Pulp	15.4	26.2	0.17	57.5	0.001	<20	1.05	0.006	0.06	<0.1	3.8	0.28	0.06	103	1.1	<0.02	2.9	0.54	<0.1	0.06
2317504	Soil	2.3	12.4	0.13	668.1	0.003	<20	0.25	0.004	0.09	<0.1	0.6	0.03	0.11	148	0.2	<0.02	0.9	0.18	<0.1	0.03
2317505	Soil	13.6	12.0	0.22	605.8	0.003	<20	0.82	<0.001	0.10	<0.1	1.6	0.12	<0.02	29	2.2	0.05	2.4	0.33	<0.1	<0.02
2317506 BAL-1	Rock Pulp	16.1	26.3	0.15	59.2	0.001	<20	1.06	0.006	0.06	<0.1	3.9	0.29	0.06	95	1.0	<0.02	3.1	0.54	<0.1	0.07
2317507	Soil	3.9	9.7	0.14	681.0	0.002	<20	0.42	0.002	0.07	<0.1	0.5	0.06	0.11	134	0.2	<0.02	1.7	0.35	<0.1	0.03
2317508	Soil	10.9	13.1	0.26	323.9	0.002	<20	1.15	<0.001	0.07	<0.1	0.8	0.11	<0.02	42	0.7	0.03	2.0	0.43	<0.1	0.03
2317509	Soil	5.4	9.8	0.14	276.4	0.003	<20	0.47	0.002	0.07	<0.1	0.7	0.08	0.08	113	0.2	<0.02	2.3	0.54	<0.1	0.03
2317510	Soil	3.0	8.4	0.30	103.4	0.003	<20	0.36	0.003	0.09	<0.1	0.9	0.07	0.15	138	0.3	<0.02	0.9	0.50	<0.1	0.10
2317511	Soil	3.9	9.0	0.20	237.8	0.003	<20	0.38	0.002	0.07	<0.1	1.2	0.04	0.09	131	1.3	0.02	1.3	0.37	<0.1	0.05
2317512 BAL-1	Rock Pulp	16.3	27.2	0.16	58.3	0.001	<20	1.12	0.006	0.07	<0.1	3.9	0.31	0.06	102	1.2	<0.02	3.2	0.59	<0.1	0.06
2317513	Soil	4.3	8.3	0.24	275.2	0.003	<20	0.40	0.003	0.08	<0.1	0.8	0.08	0.07	125	0.4	0.03	1.4	0.42	<0.1	0.04
2317514	Soil	12.0	14.8	0.36	189.7	0.003	<20	0.99	<0.001	0.09	<0.1	1.2	0.14	0.02	25	0.5	<0.02	3.1	0.49	<0.1	<0.02
2317515	Soil	3.3	7.7	0.07	277.4	0.001	<20	0.32	0.003	0.06	<0.1	0.7	0.11	0.07	114	2.4	0.03	0.9	0.67	<0.1	0.02
2317516	Soil	2.5	6.5	0.07	289.9	0.001	<20	0.29	0.002	0.06	<0.1	0.6	0.10	0.07	119	1.9	<0.02	0.9	0.62	<0.1	<0.02
2317517	Soil	11.6	13.8	0.03	68.0	0.002	<20	0.66	<0.001	0.03	<0.1	0.5	0.20	<0.02	18	1.6	0.10	5.2	0.85	<0.1	<0.02
2317518	Soil	11.4	23.2	0.03	68.3	0.002	<20	0.64	<0.001	0.03	<0.1	0.6	0.21	<0.02	23	1.6	0.08	5.4	0.89	<0.1	<0.02
2317519	Soil	2.6	8.8	0.05	230.6	0.002	<20	0.26	0.004	0.08	<0.1	0.6	0.20	0.09	134	1.2	0.03	1.4	0.89	<0.1	<0.02
2317520	Soil	9.2	29.0	0.14	108.0	0.001	<20	0.98	0.001	0.05	<0.1	1.1	0.49	0.09	123	3.5	0.05	2.9	1.47	<0.1	0.04
2317521	Soil	14.3	20.2	0.34	200.9	<0.001	<20	1.14	0.003	0.07	<0.1	1.3	0.57	0.06	63	4.2	0.04	2.4	1.11	<0.1	0.04
2317522	Soil	3.8	7.2	0.08	336.7	<0.001	<20	0.52	0.002	0.07	<0.1	0.3	0.16	0.10	163	1.7	0.06	1.0	0.79	<0.1	<0.02
2317523 BAL-1	Rock Pulp	15.8	31.1	0.17	60.8	0.002	<20	1.20	0.007	0.07	<0.1	4.1	0.32	0.06	93	1.4	0.02	3.5	0.63	<0.1	0.07
2317524	Soil	3.9	9.5	0.30	337.0	<0.001	<20	0.51	0.004	0.08	<0.1	0.9	0.24	0.13	120	2.3	0.05	1.4	0.81	<0.1	0.05
2317525	Soil	12.0	17.6	0.38	232.2	<0.001	<20	0.95	0.003	0.07	<0.1	1.3	0.36	0.06	69	3.4	0.08	2.2	1.05	<0.1	0.03
2317526	Soil	6.9	37.3	0.22	316.0	0.001	<20	0.64	0.003	0.07	<0.1	1.1	0.24	0.07	98	1.8	0.04	1.7	1.00	<0.1	0.03
2317527	Soil	12.4	14.9	0.28	170.5	<0.001	<20	1.12	<0.001	0.06	<0.1	1.3	0.53	0.05	67	3.5	0.07	2.6	1.39	<0.1	0.03
2317528	Soil	3.5	10.7	0.06	447.2	0.001	<20	0.48	0.002	0.05	<0.1	0.9	0.12	0.10	168	0.9	<0.02	0.9	0.38	<0.1	<0.02
2317529	Soil	12.6	18.9	0.18	196.8	0.001	<20	1.04	<0.001	0.05	<0.1	1.1	0.48	0.04	74	2.5	0.10	2.5	1.08	<0.1	0.03
2317530	Soil	2.1	8.7	0.11	325.1	0.002	<20	0.29	0.003	0.09	<0.1	0.7	0.05	0.12	239	0.3	<0.02	0.8	0.24	<0.1	0.03



# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	%	
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317501	Soil	0.18	4.9	0.1	<0.05	1.7	3.00	7.6	<0.02	<1	0.1	4.9	<10	2	64.1
2317502	Soil	0.09	7.3	0.3	<0.05	0.2	2.64	19.0	<0.02	<1	0.4	7.1	<10	<2	17.3
2317503 BAL-1	Rock Pulp	0.26	5.3	0.5	<0.05	2.4	18.65	26.3	<0.02	1	0.7	8.2	<10	3	13.0
2317504	Soil	0.20	2.4	0.1	<0.05	0.8	0.95	4.5	<0.02	<1	0.1	1.5	<10	<2	79.2
2317505	Soil	0.32	8.4	0.2	<0.05	0.8	4.51	27.1	<0.02	<1	0.4	8.1	<10	<2	7.1
2317506 BAL-1	Rock Pulp	0.24	5.4	0.5	<0.05	2.3	19.57	28.4	<0.02	3	0.8	8.3	<10	<2	13.1
2317507	Soil	0.11	4.6	0.2	<0.05	0.5	1.73	8.0	<0.02	<1	0.1	2.1	<10	<2	61.7
2317508	Soil	0.23	7.8	0.2	<0.05	1.0	4.81	22.8	0.02	<1	0.3	15.7	<10	<2	8.9
2317509	Soil	0.16	4.2	0.2	<0.05	0.6	1.85	10.7	<0.02	<1	0.2	2.4	<10	<2	50.5
2317510	Soil	0.18	5.2	<0.1	<0.05	3.2	5.28	7.0	<0.02	<1	0.2	4.0	<10	<2	72.0
2317511	Soil	0.13	3.3	0.1	<0.05	2.6	3.43	8.2	<0.02	<1	0.2	2.9	<10	<2	63.0
2317512 BAL-1	Rock Pulp	0.25	5.9	0.5	<0.05	2.3	19.05	28.7	<0.02	4	0.9	8.0	<10	3	12.9
2317513	Soil	0.10	5.3	0.1	<0.05	1.1	2.91	8.8	<0.02	<1	<0.1	3.3	<10	<2	58.4
2317514	Soil	0.27	8.6	0.3	<0.05	0.7	7.32	26.5	0.03	<1	0.4	14.2	<10	<2	12.0
2317515	Soil	0.08	3.3	0.1	<0.05	0.8	1.65	6.1	<0.02	<1	0.2	0.8	<10	<2	70.1
2317516	Soil	0.07	3.2	0.1	<0.05	0.9	1.44	4.7	<0.02	<1	0.2	1.1	<10	<2	72.9
2317517	Soil	0.25	4.6	0.7	<0.05	0.2	1.88	22.5	<0.02	<1	0.2	0.9	<10	<2	10.7
2317518	Soil	0.22	4.5	0.7	<0.05	0.3	1.93	22.3	<0.02	<1	0.2	0.7	<10	<2	10.4
2317519	Soil	0.18	6.4	0.2	<0.05	1.0	1.16	5.2	<0.02	<1	0.1	0.6	<10	<2	69.5
2317520	Soil	0.24	6.3	0.2	<0.05	1.2	4.58	17.4	<0.02	<1	0.4	6.0	<10	<2	18.6
2317521	Soil	0.06	6.0	0.1	<0.05	2.6	5.35	26.5	0.02	2	0.4	17.4	<10	<2	9.4
2317522	Soil	0.09	3.7	<0.1	<0.05	0.2	6.76	7.8	<0.02	2	0.3	1.4	<10	<2	66.7
2317523 BAL-1	Rock Pulp	0.29	6.8	0.6	<0.05	2.3	18.78	27.4	<0.02	<1	0.7	9.9	<10	<2	13.0
2317524	Soil	0.07	4.6	<0.1	<0.05	2.7	3.71	7.7	<0.02	5	0.2	9.2	<10	<2	55.2
2317525	Soil	0.07	5.8	0.1	<0.05	1.4	5.79	23.7	<0.02	5	0.4	18.2	<10	<2	13.5
2317526	Soil	0.10	4.8	0.1	<0.05	1.3	3.25	13.5	<0.02	3	0.2	10.3	<10	3	41.0
2317527	Soil	0.13	8.5	0.2	<0.05	1.2	4.01	22.1	0.03	4	0.3	14.6	<10	<2	13.1
2317528	Soil	0.08	2.4	0.1	<0.05	0.7	2.85	7.1	<0.02	<1	0.2	1.6	<10	<2	75.4
2317529	Soil	0.27	8.4	0.2	<0.05	1.2	4.33	22.8	0.03	2	0.2	11.3	<10	<2	15.6
2317530	Soil	0.07	2.5	<0.1	<0.05	1.0	1.13	4.5	<0.02	<1	<0.1	1.5	<10	<2	82.5



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Project: 204700  
 Report Date: August 08, 2013

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# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317531	Soil	2.54	4.25	3.98	63.6	133	5.5	1.3	718	0.22	1.2	<0.1	<0.2	0.2	7.2	0.61	0.18	0.02	3	0.52	0.119
2317532	Soil	5.51	12.89	11.80	161.6	118	32.6	6.7	268	2.10	4.3	0.5	<0.2	0.7	4.2	0.61	0.76	0.11	40	0.08	0.084
2317533	Soil	4.82	11.54	11.73	142.3	80	29.7	7.2	533	1.98	3.8	0.4	<0.2	0.6	4.2	0.67	0.64	0.11	39	0.08	0.082
2317534 BAL-1	Rock Pulp	1.25	14.99	19.59	78.6	141	31.1	6.6	278	1.82	4.9	1.1	0.8	1.2	26.6	1.87	0.39	0.09	45	0.67	0.057
2317535	Soil	5.77	10.51	8.79	92.5	100	17.7	8.3	374	0.88	2.1	0.3	<0.2	0.7	19.9	2.12	0.59	0.06	12	1.08	0.112
2317536	Soil	7.09	7.91	4.73	116.7	142	13.6	3.7	67	0.71	1.8	0.2	<0.2	0.6	15.2	3.50	0.45	0.04	9	0.83	0.094
2317537	Soil	4.10	12.05	11.57	148.4	165	35.0	9.7	196	1.96	3.9	0.5	0.9	0.2	7.2	0.83	0.66	0.12	26	0.23	0.067
2317538	Soil	6.69	12.06	7.60	315.4	484	19.2	7.0	596	0.44	0.2	0.4	<0.2	0.5	23.0	100.7	0.15	0.07	13	0.63	0.067
2317539	Soil	12.00	11.44	7.11	168.8	413	25.4	2.9	53	0.90	3.8	0.6	3.5	<0.1	7.5	9.35	0.55	0.10	49	0.17	0.046
2317540	Soil	25.80	11.15	10.78	76.3	1416	14.8	2.2	110	0.57	1.3	0.3	<0.2	0.2	8.6	2.47	0.37	0.08	25	0.27	0.109
2317541	Soil	12.12	4.91	4.99	24.5	846	6.5	0.6	9	0.44	1.9	0.3	0.6	0.6	3.7	0.23	0.67	0.07	69	0.05	0.042
2317542	Soil	14.07	11.41	7.02	56.2	1324	13.5	1.7	22	0.78	2.4	0.4	<0.2	<0.1	5.6	0.41	0.72	0.07	44	0.11	0.071
2317543	Soil	19.26	14.91	8.75	90.8	969	13.9	2.0	11	1.42	6.2	0.5	0.4	0.6	13.2	0.28	0.83	0.12	111	0.02	0.042
2317544	Soil	14.80	15.19	7.80	87.1	14826	23.9	2.9	46	0.66	1.4	0.3	<0.2	<0.1	7.9	1.42	0.37	0.08	20	0.36	0.122
2317545	Soil	27.76	11.29	7.27	73.3	3758	19.5	2.4	18	0.94	6.2	0.5	<0.2	0.2	4.3	0.25	2.14	0.09	109	0.03	0.031
2317546	Soil	9.20	17.97	7.07	90.5	8808	16.8	2.4	76	0.79	2.0	0.4	0.3	<0.1	6.5	0.36	0.77	0.06	31	0.19	0.104
2317547	Soil	19.25	39.24	18.88	223.8	989	64.5	6.7	127	5.44	17.6	1.5	2.3	2.0	5.4	1.16	2.65	0.22	47	0.03	0.108
2317548	Soil	5.16	13.82	6.41	57.5	1839	19.7	2.5	47	0.88	3.4	0.3	<0.2	0.5	8.9	0.80	0.73	0.07	20	0.19	0.071
2317549	Soil	16.15	70.17	25.09	298.9	970	73.8	13.2	254	5.70	17.7	2.4	2.2	3.2	7.7	4.51	3.91	0.19	29	0.04	0.094
2317550	Soil	2.43	8.26	4.81	70.1	3719	13.5	1.5	122	0.44	1.9	0.2	<0.2	0.4	7.9	0.63	0.47	0.04	4	0.34	0.110
2317551	Soil	5.84	14.92	11.87	129.9	379	36.2	7.4	173	2.69	6.7	0.8	0.3	1.2	6.7	0.68	0.83	0.11	30	0.16	0.168
2317552	Soil	3.07	9.33	5.76	77.3	323	15.1	5.4	948	0.81	2.2	0.2	<0.2	0.4	21.1	1.53	0.61	0.06	14	1.48	0.132
2317553	Soil	5.20	13.01	12.33	126.6	112	31.2	8.0	254	2.23	5.7	0.5	0.4	0.2	8.1	0.33	0.79	0.14	38	0.32	0.053
2317554 BAL-1	Rock Pulp	1.20	14.39	19.92	78.6	140	33.5	7.2	272	1.81	4.5	1.2	1.2	1.2	26.0	1.86	0.29	0.08	46	0.67	0.056
2317555	Soil	3.54	11.33	9.77	106.4	152	27.5	7.4	193	1.37	3.6	0.6	<0.2	1.0	16.0	0.80	0.81	0.09	17	0.82	0.096
2317556	Soil	25.61	30.52	14.15	192.6	657	51.4	8.3	77	2.11	10.8	1.3	0.8	0.5	16.0	2.37	1.19	0.16	37	0.11	0.072
2317557	Soil	9.40	13.67	4.97	156.6	109	35.4	10.0	168	1.14	2.0	0.2	5.4	0.4	19.8	2.10	0.32	0.03	17	1.54	0.108
2317558	Soil	10.08	13.57	5.06	121.4	82	35.5	9.7	183	1.10	1.8	0.2	1.4	0.4	20.8	2.13	0.35	0.03	16	1.51	0.112
2317559	Soil	17.45	34.73	11.95	145.0	45	116.6	29.5	404	4.52	6.0	0.9	<0.2	1.2	7.0	0.51	0.41	0.08	74	0.27	0.103
2317560	Soil	16.78	34.77	11.87	141.4	44	122.4	30.1	420	4.68	5.7	0.9	5.1	1.3	6.8	0.50	0.39	0.08	77	0.25	0.106

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Project: 204700  
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# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf	
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	0.02
2317531	Soil	1.3	6.9	0.08	170.2	0.002	<20	0.16	0.003	0.11	<0.1	0.5	0.06	0.14	230	0.3	<0.02	0.5	0.24	<0.1	<0.02	
2317532	Soil	15.0	16.0	0.25	636.0	0.002	<20	1.04	<0.001	0.10	<0.1	1.2	0.14	<0.02	21	1.3	0.03	3.2	0.27	<0.1	<0.02	
2317533	Soil	16.2	17.1	0.25	694.5	0.002	<20	1.05	<0.001	0.11	<0.1	1.2	0.13	<0.02	22	0.9	0.03	3.5	0.24	<0.1	<0.02	
2317534 BAL-1	Rock Pulp	17.0	30.1	0.17	62.6	0.002	<20	1.23	0.007	0.07	<0.1	4.2	0.33	0.07	106	1.3	0.03	3.3	0.66	<0.1	0.07	
2317535	Soil	4.2	11.4	0.34	139.9	0.003	<20	0.51	0.002	0.11	<0.1	1.4	0.07	0.12	131	0.5	<0.02	1.4	0.41	<0.1	0.09	
2317536	Soil	3.3	8.7	0.17	167.2	0.003	<20	0.34	0.002	0.07	<0.1	0.9	0.05	0.13	111	0.4	<0.02	1.1	0.43	<0.1	0.07	
2317537	Soil	13.9	14.8	0.28	446.2	0.004	<20	0.88	<0.001	0.13	<0.1	0.8	0.14	0.02	22	0.5	<0.02	3.2	0.38	<0.1	<0.02	
2317538	Soil	3.7	5.6	0.13	817.7	0.003	<20	0.46	0.002	0.07	<0.1	1.0	0.08	0.05	85	3.8	<0.02	1.2	0.31	<0.1	0.02	
2317539	Soil	18.7	12.5	0.08	243.7	0.003	<20	0.83	<0.001	0.06	<0.1	0.4	0.34	<0.02	17	1.8	0.05	3.8	0.64	<0.1	<0.02	
2317540	Soil	8.8	12.6	0.12	357.5	0.003	<20	0.59	0.001	0.07	<0.1	0.4	0.19	0.05	77	0.6	<0.02	2.5	0.77	<0.1	<0.02	
2317541	Soil	22.7	15.9	0.05	127.8	0.004	<20	0.58	<0.001	0.05	<0.1	0.8	0.36	<0.02	18	0.5	0.05	4.3	1.15	<0.1	<0.02	
2317542	Soil	10.9	14.4	0.08	184.1	0.002	<20	0.63	<0.001	0.05	<0.1	0.4	0.25	0.03	60	1.0	0.03	3.1	0.99	<0.1	<0.02	
2317543	Soil	20.5	13.6	0.05	108.3	0.004	<20	0.77	<0.001	0.03	<0.1	0.9	0.46	<0.02	11	1.7	0.07	4.4	0.86	<0.1	<0.02	
2317544	Soil	4.9	19.7	0.10	340.3	<0.001	<20	0.51	0.002	0.10	<0.1	0.3	0.11	0.04	100	1.1	<0.02	1.7	0.66	<0.1	<0.02	
2317545	Soil	18.3	17.4	0.03	67.8	0.003	<20	0.53	<0.001	0.03	<0.1	0.4	0.38	<0.02	23	3.5	0.11	3.5	0.66	<0.1	<0.02	
2317546	Soil	5.1	14.9	0.09	267.7	<0.001	<20	0.62	0.002	0.15	<0.1	0.2	0.27	0.05	95	0.8	<0.02	2.5	2.52	<0.1	<0.02	
2317547	Soil	9.3	22.9	0.31	119.2	0.001	<20	1.42	<0.001	0.05	<0.1	1.3	0.38	0.05	97	4.1	0.08	2.7	1.01	<0.1	0.02	
2317548	Soil	6.8	15.3	0.06	230.9	0.002	<20	0.44	0.003	0.06	<0.1	0.9	0.12	0.07	62	0.9	<0.02	1.6	1.27	<0.1	<0.02	
2317549	Soil	9.2	22.8	0.30	145.5	<0.001	<20	1.61	<0.001	0.04	<0.1	2.3	0.41	0.06	100	3.2	0.08	2.2	1.28	<0.1	0.05	
2317550	Soil	1.7	8.8	0.08	128.2	0.002	<20	0.18	0.004	0.13	<0.1	0.6	0.22	0.11	403	0.5	<0.02	0.5	1.60	<0.1	0.04	
2317551	Soil	18.7	15.8	0.28	630.3	0.003	<20	1.11	<0.001	0.12	<0.1	1.6	0.17	<0.02	48	1.1	0.04	2.1	0.48	<0.1	<0.02	
2317552	Soil	4.0	9.0	0.32	189.9	0.004	<20	0.49	0.004	0.08	<0.1	0.8	0.10	0.15	191	0.5	<0.02	1.6	0.41	<0.1	0.06	
2317553	Soil	16.4	15.7	0.24	206.7	0.007	<20	0.90	<0.001	0.12	<0.1	0.8	0.17	<0.02	18	0.6	<0.02	3.9	0.69	<0.1	<0.02	
2317554 BAL-1	Rock Pulp	16.4	30.5	0.18	63.6	0.002	<20	1.27	0.007	0.08	<0.1	4.1	0.32	0.07	118	1.4	<0.02	3.5	0.65	<0.1	0.07	
2317555	Soil	8.1	14.6	0.30	213.2	0.003	<20	0.64	0.001	0.09	<0.1	1.6	0.11	0.08	43	0.6	0.02	1.8	0.47	<0.1	0.08	
2317556	Soil	11.0	31.3	0.09	174.4	0.001	<20	0.84	<0.001	0.07	<0.1	0.8	0.33	0.05	31	2.4	0.07	2.8	1.15	<0.1	<0.02	
2317557	Soil	3.5	37.2	0.40	104.9	0.004	<20	0.44	0.005	0.12	<0.1	1.5	0.08	0.18	116	0.5	<0.02	1.5	0.36	<0.1	0.05	
2317558	Soil	3.5	35.8	0.39	81.2	0.004	<20	0.42	0.004	0.12	<0.1	1.4	0.08	0.18	105	0.4	0.02	1.3	0.46	<0.1	0.06	
2317559	Soil	27.1	146.4	1.32	176.7	0.005	<20	2.00	<0.001	0.19	<0.1	5.5	0.35	<0.02	15	0.4	<0.02	6.2	0.51	<0.1	0.02	
2317560	Soil	25.8	160.7	1.40	181.8	0.005	<20	2.13	<0.001	0.18	<0.1	5.6	0.35	<0.02	16	0.3	0.03	6.2	0.52	<0.1	0.03	

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Project: 204700  
 Report Date: August 08, 2013

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# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	%	
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
2317531	Soil	0.05	3.0	<0.1	<0.05	0.8	0.46	2.7	<0.02	<1	<0.1	0.9	<10	<2	87.1
2317532	Soil	0.11	7.7	0.3	<0.05	0.6	4.52	30.0	0.02	<1	0.5	12.7	<10	<2	8.7
2317533	Soil	0.11	6.9	0.3	<0.05	0.4	5.18	32.5	<0.02	<1	0.4	11.0	<10	<2	9.0
2317534 BAL-1	Rock Pulp	0.28	7.4	0.5	<0.05	2.4	19.08	29.8	<0.02	2	0.8	9.7	<10	<2	13.1
2317535	Soil	0.16	6.4	0.1	<0.05	3.4	4.96	8.9	<0.02	<1	0.2	5.3	<10	<2	62.8
2317536	Soil	0.25	6.0	<0.1	<0.05	2.2	1.62	6.7	<0.02	<1	0.1	3.3	<10	<2	64.4
2317537	Soil	0.20	10.6	0.3	<0.05	0.3	5.19	28.2	0.03	<1	0.5	11.1	<10	<2	10.2
2317538	Soil	0.09	3.4	0.1	<0.05	0.6	1.92	7.3	<0.02	<1	0.3	1.4	<10	<2	78.5
2317539	Soil	0.20	6.6	0.4	<0.05	<0.1	3.33	31.9	<0.02	<1	0.2	2.3	<10	<2	10.2
2317540	Soil	0.13	4.9	0.2	<0.05	0.2	1.63	16.6	<0.02	<1	0.2	2.1	<10	<2	46.7
2317541	Soil	0.13	6.9	0.5	<0.05	0.2	1.02	37.0	<0.02	<1	0.1	1.0	<10	<2	12.5
2317542	Soil	0.16	5.0	0.4	<0.05	<0.1	1.43	19.6	<0.02	4	0.2	1.3	<10	<2	32.6
2317543	Soil	0.17	3.6	0.7	<0.05	0.1	2.51	35.8	<0.02	1	0.1	0.9	<10	<2	7.3
2317544	Soil	0.11	4.3	0.3	<0.05	<0.1	1.58	8.9	<0.02	<1	0.3	2.1	<10	<2	58.5
2317545	Soil	0.17	4.3	0.5	<0.05	<0.1	1.49	30.9	<0.02	2	0.1	0.8	<10	<2	9.0
2317546	Soil	0.09	14.6	0.3	<0.05	<0.1	1.20	9.3	<0.02	<1	0.2	1.6	<10	<2	47.9
2317547	Soil	0.78	12.3	0.2	<0.05	1.1	3.07	17.4	0.02	<1	0.3	14.9	<10	2	22.3
2317548	Soil	0.16	5.1	0.3	<0.05	0.5	1.24	13.0	<0.02	<1	0.2	1.7	<10	<2	56.0
2317549	Soil	0.28	7.7	0.1	<0.05	1.7	5.28	18.1	0.04	3	0.4	17.8	<10	<2	24.9
2317550	Soil	0.06	13.3	<0.1	<0.05	1.2	0.56	3.3	<0.02	1	<0.1	1.5	<10	<2	87.4
2317551	Soil	0.31	10.2	0.2	<0.05	0.5	7.52	42.3	0.03	1	0.4	11.5	<10	<2	8.1
2317552	Soil	0.20	5.6	0.1	<0.05	1.8	3.79	8.4	<0.02	<1	0.2	3.8	<10	<2	55.6
2317553	Soil	0.69	13.2	0.7	<0.05	0.1	5.22	32.4	<0.02	<1	0.3	7.1	<10	<2	9.0
2317554 BAL-1	Rock Pulp	0.30	7.4	0.6	<0.05	2.2	18.72	28.2	<0.02	1	0.7	9.8	<10	<2	13.0
2317555	Soil	0.43	7.2	0.2	<0.05	3.1	7.24	17.0	<0.02	2	0.4	6.1	<10	<2	28.8
2317556	Soil	0.22	8.5	0.3	<0.05	0.4	4.58	19.0	0.03	<1	0.4	2.6	<10	<2	14.8
2317557	Soil	0.26	4.5	0.1	<0.05	2.5	2.10	7.0	<0.02	<1	0.1	5.6	<10	<2	75.2
2317558	Soil	0.26	5.3	0.1	<0.05	2.5	2.45	7.1	<0.02	<1	0.1	5.1	<10	<2	76.9
2317559	Soil	0.37	11.9	0.4	<0.05	0.8	9.51	57.0	0.03	<1	0.7	29.6	<10	<2	11.0
2317560	Soil	0.39	11.0	0.4	<0.05	0.9	9.41	55.9	0.03	<1	0.6	31.2	<10	<2	10.7

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Project: 204700  
 Report Date: August 08, 2013

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# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F Mo	1F Cu	1F Pb	1F Zn	1F Ag	1F Ni	1F Co	1F Mn	1F Fe	1F As	1F U	1F Au	1F Th	1F Sr	1F Cd	1F Sb	1F Bi	1F V	1F Ca	1F P
Unit	MDL	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317561 BAL-1	Rock Pulp	1.21	15.08	19.63	80.4	138	33.0	6.9	273	1.82	4.7	1.1	0.7	1.1	26.0	1.83	0.28	0.08	47	0.67	0.052
2317562	Soil	3.02	9.61	4.73	28.4	22	21.0	5.3	84	0.81	1.2	0.2	1.1	0.6	12.2	0.25	0.24	0.04	7	1.17	0.080
2317563	Soil	6.89	104.0	6.83	65.4	10	289.6	78.2	1055	9.72	3.2	1.3	<0.2	4.9	10.9	0.14	0.15	0.06	70	0.71	0.128
2317564	Soil	3.79	27.67	4.90	54.9	53	93.3	25.3	1112	3.18	1.9	0.6	0.3	0.5	14.1	0.60	0.33	0.04	44	1.15	0.121
2317565	Soil	3.85	56.96	3.59	61.8	11	272.7	64.6	1085	7.98	2.2	0.7	<0.2	1.9	8.9	0.19	0.10	0.04	114	0.50	0.158
2317566	Soil	4.60	13.24	2.47	129.8	161	18.7	5.2	283	0.77	0.9	0.2	<0.2	0.3	52.1	2.84	0.24	0.04	11	3.21	0.106
2317567	Soil	11.03	27.15	14.08	125.5	450	61.6	13.4	498	3.05	7.0	0.8	1.3	2.1	20.8	1.04	1.04	0.10	48	0.85	0.102
2317568	Soil	6.17	12.02	6.37	183.6	252	14.8	6.7	1088	1.00	1.6	0.6	<0.2	0.7	42.7	4.55	0.37	0.05	11	2.40	0.165
2317569	Soil	8.24	18.72	18.17	100.4	627	47.2	9.6	489	2.58	5.7	0.8	0.2	1.0	23.1	0.76	0.78	0.12	42	1.42	0.113
2317570	Soil	5.56	13.95	13.63	126.3	262	26.9	6.3	86	1.92	4.7	0.4	<0.2	1.5	3.2	0.49	0.61	0.13	19	0.07	0.037
2317571	Soil	2.50	21.35	10.41	167.7	637	29.1	8.2	877	1.71	1.3	0.8	0.3	0.3	24.5	6.27	0.61	0.10	36	0.97	0.120
2317572	Soil	6.66	28.29	10.12	291.3	267	61.2	6.0	35	1.81	3.7	0.8	<0.2	<0.1	6.7	1.07	1.55	0.12	85	0.09	0.100
2317573	Soil	9.26	9.62	5.71	88.2	247	18.0	2.9	35	0.74	1.6	0.2	1.4	0.4	9.5	0.86	0.66	0.08	24	0.38	0.089
2317574	Soil	4.18	26.01	10.72	293.4	722	51.6	8.9	89	2.65	4.3	0.6	0.6	1.1	6.9	1.36	0.99	0.15	38	0.16	0.093
2317575	Soil	17.01	26.48	16.67	89.4	2315	20.9	2.1	38	3.66	15.2	1.0	1.6	0.5	8.2	0.48	2.06	0.21	58	0.01	0.099
2317576	Soil	4.43	30.93	14.13	54.4	1318	28.6	4.6	35	1.23	2.9	1.1	0.5	<0.1	6.1	5.47	0.79	0.09	18	0.10	0.110
2317577	Soil	15.98	38.69	20.84	142.6	407	32.6	3.4	61	4.43	16.7	1.3	1.6	1.1	10.4	0.98	2.60	0.22	40	0.01	0.094
2317578	Soil	3.69	13.40	6.73	57.9	1860	16.2	2.3	17	0.76	2.8	0.6	0.3	0.3	9.8	1.80	0.70	0.05	12	0.25	0.085
2317579	Soil	17.27	42.98	20.32	342.0	480	61.1	5.7	86	3.97	18.1	1.6	1.9	1.6	10.7	1.88	2.83	0.23	49	0.04	0.082
2317580	Soil	7.60	11.13	8.61	158.7	634	16.9	5.2	1864	0.97	2.1	0.2	0.7	0.6	31.4	15.34	0.52	0.08	16	0.97	0.073
2317581 BAL-1	Rock Pulp	1.23	13.73	19.22	70.6	145	29.7	6.2	262	1.74	4.4	1.1	0.6	1.1	25.1	1.78	0.29	0.08	42	0.64	0.052
2317582	Soil	4.19	16.06	15.14	146.4	146	38.2	9.5	285	2.68	7.8	0.7	1.1	4.9	11.2	1.37	0.51	0.14	35	0.19	0.043
2317583	Soil	2.99	8.69	9.25	81.1	967	10.7	1.6	22	0.43	1.0	0.3	0.7	0.2	15.2	8.24	0.26	0.06	15	0.21	0.092
2317584	Soil	8.90	11.55	11.89	272.5	670	50.8	7.2	127	3.23	6.8	0.6	0.5	3.4	4.5	1.14	0.65	0.11	42	0.06	0.071
2317585	Soil	1.64	5.61	5.56	69.7	368	8.3	1.2	28	0.26	0.3	0.1	<0.2	0.3	13.6	13.89	0.13	0.03	8	0.43	0.062
2317586	Soil	1.67	6.32	5.51	74.0	377	9.4	1.3	29	0.28	0.3	0.1	<0.2	0.3	13.4	14.44	0.14	0.04	8	0.41	0.060
2317587	Soil	8.51	13.08	12.71	330.7	401	52.7	7.3	181	3.36	9.1	0.7	0.6	2.9	7.9	3.89	0.85	0.10	35	0.12	0.086
2317588	Soil	8.37	12.89	13.82	368.6	474	57.6	8.0	187	3.38	9.3	0.7	0.6	3.1	7.7	4.41	1.00	0.11	33	0.13	0.084
2317589	Soil	1.81	15.46	20.19	88.2	748	15.4	1.7	81	0.44	0.2	0.8	0.2	0.6	25.0	9.17	0.19	0.06	11	0.89	0.060
2317590	Soil	6.62	11.66	95.83	490.8	620	54.0	10.3	517	2.99	6.8	1.2	1.0	2.8	17.8	3.00	1.04	0.09	23	0.74	0.112

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Project: 204700  
 Report Date: August 08, 2013

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Part: 2 of 3

# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	Unit	MDL	1F La	1F Cr	1F Mg	1F Ba	1F Ti	1F B	1F Al	1F Na	1F K	1F W	1F Sc	1F Ti	1F S	1F Hg	1F Se	1F Te	1F Ga	1F Cs	1F Ge	1F Hf
				ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
				0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
2317561 BAL-1	Rock Pulp			16.2	30.8	0.18	62.3	0.002	<20	1.31	0.006	0.08	<0.1	4.0	0.34	0.07	109	1.2	0.02	3.6	0.69	<0.1	0.05
2317562	Soil			3.1	12.8	0.27	48.4	0.002	<20	0.28	0.002	0.09	<0.1	1.5	0.03	0.11	113	0.3	<0.02	0.8	0.36	<0.1	0.06
2317563	Soil			54.1	93.2	0.48	322.8	0.003	<20	1.35	<0.001	0.11	<0.1	23.7	0.13	<0.02	21	0.4	<0.02	3.0	0.87	<0.1	0.05
2317564	Soil			10.1	87.6	0.83	119.8	0.005	<20	1.12	<0.001	0.10	<0.1	4.7	0.10	0.08	86	0.2	<0.02	3.5	0.73	<0.1	0.04
2317565	Soil			34.9	309.6	2.37	135.8	0.005	<20	2.97	<0.001	0.18	<0.1	15.2	0.17	0.02	17	0.1	<0.02	7.8	0.52	<0.1	0.07
2317566	Soil			2.9	20.2	0.38	147.4	0.003	<20	0.38	0.003	0.04	<0.1	1.0	0.04	0.22	58	0.5	<0.02	1.0	0.39	<0.1	0.04
2317567	Soil			22.3	48.2	1.33	312.5	0.018	<20	1.37	<0.001	0.14	<0.1	5.1	0.30	0.03	106	0.9	0.03	3.8	0.96	<0.1	0.04
2317568	Soil			5.5	12.5	0.40	157.4	0.003	<20	0.50	0.003	0.07	<0.1	1.2	0.08	0.22	93	0.5	<0.02	1.3	0.39	<0.1	0.08
2317569	Soil			19.1	27.0	0.91	308.5	0.004	<20	1.08	<0.001	0.10	<0.1	3.4	0.23	0.04	136	0.8	0.03	2.8	0.58	<0.1	0.04
2317570	Soil			18.4	11.4	0.14	279.3	0.003	<20	0.50	<0.001	0.13	<0.1	1.2	0.14	<0.02	19	0.6	<0.02	1.9	0.24	<0.1	<0.02
2317571	Soil			12.2	19.6	0.37	2048	0.004	<20	1.04	<0.001	0.09	<0.1	1.2	0.09	0.06	82	0.8	0.03	3.5	0.46	<0.1	0.02
2317572	Soil			10.7	20.0	0.12	957.6	0.002	<20	0.62	<0.001	0.11	<0.1	0.4	0.13	0.03	38	4.4	0.04	3.1	0.39	<0.1	<0.02
2317573	Soil			4.0	12.1	0.13	925.2	0.003	<20	0.40	<0.001	0.06	<0.1	0.9	0.06	0.08	127	1.1	<0.02	1.6	0.37	<0.1	0.03
2317574	Soil			13.3	23.5	0.28	872.3	0.004	<20	0.90	<0.001	0.12	<0.1	1.8	0.14	<0.02	44	2.7	0.03	2.9	0.38	<0.1	<0.02
2317575	Soil			7.3	17.2	0.15	209.3	0.001	<20	1.09	<0.001	0.05	<0.1	0.7	0.43	0.07	109	2.6	0.08	3.8	1.07	<0.1	<0.02
2317576	Soil			5.5	12.1	0.07	1267	0.001	<20	0.62	<0.001	0.05	<0.1	0.3	0.12	0.07	178	1.0	<0.02	1.6	0.72	<0.1	<0.02
2317577	Soil			7.5	20.2	0.26	590.2	0.001	<20	1.20	<0.001	0.05	<0.1	1.0	0.47	0.07	92	2.9	0.06	3.3	1.11	<0.1	0.02
2317578	Soil			3.0	14.2	0.08	632.1	0.002	<20	0.33	0.002	0.05	<0.1	0.9	0.14	0.09	185	0.8	<0.02	1.1	0.93	<0.1	<0.02
2317579	Soil			9.8	18.5	0.28	500.4	0.001	<20	1.12	<0.001	0.05	<0.1	1.3	0.49	0.05	116	2.7	0.10	2.9	0.93	<0.1	<0.02
2317580	Soil			4.1	11.3	0.19	364.6	0.002	<20	0.54	0.003	0.07	<0.1	0.9	0.09	0.06	155	0.6	0.03	1.7	0.27	<0.1	0.03
2317581 BAL-1	Rock Pulp			15.7	26.8	0.16	61.6	0.002	<20	1.14	0.005	0.07	<0.1	3.7	0.31	0.06	98	1.3	<0.02	3.0	0.57	<0.1	0.07
2317582	Soil			23.2	20.9	0.77	293.8	0.002	<20	1.56	<0.001	0.14	<0.1	3.4	0.20	<0.02	55	0.6	0.03	3.8	0.49	<0.1	0.02
2317583	Soil			6.8	15.8	0.07	476.4	0.004	<20	0.54	0.001	0.05	<0.1	0.8	0.09	0.04	112	0.5	<0.02	3.0	0.24	<0.1	<0.02
2317584	Soil			16.4	35.0	0.66	246.1	0.002	<20	1.72	<0.001	0.08	<0.1	1.6	0.26	<0.02	41	0.6	0.05	4.1	0.79	<0.1	<0.02
2317585	Soil			2.8	9.7	0.08	476.0	0.003	<20	0.36	0.002	0.04	<0.1	0.9	0.06	0.06	145	0.4	<0.02	1.5	0.19	<0.1	<0.02
2317586	Soil			2.9	10.2	0.08	476.2	0.003	<20	0.38	0.001	0.04	<0.1	0.8	0.06	0.06	131	0.5	<0.02	1.5	0.19	<0.1	<0.02
2317587	Soil			14.7	37.9	0.72	410.4	0.002	<20	1.70	<0.001	0.07	<0.1	1.6	0.25	<0.02	51	0.9	0.03	3.6	0.60	<0.1	<0.02
2317588	Soil			15.4	36.6	0.74	392.8	0.002	<20	1.75	<0.001	0.07	<0.1	1.7	0.26	<0.02	60	0.9	0.02	3.4	0.78	<0.1	<0.02
2317589	Soil			9.1	16.8	0.08	552.5	0.003	<20	0.50	<0.001	0.03	<0.1	1.5	0.09	0.03	76	0.5	<0.02	2.4	0.45	<0.1	<0.02
2317590	Soil			17.2	31.7	0.76	360.5	0.002	<20	1.53	<0.001	0.06	<0.1	3.7	0.25	0.03	124	1.2	<0.02	2.4	0.51	<0.1	0.05



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Project: 204700  
 Report Date: August 08, 2013

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# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
2317561 BAL-1	Rock Pulp	0.29	7.4	0.6	<0.05	2.1	18.43	28.3	<0.02	1	0.7	10.8	<10	<2	13.0
2317562	Soil	0.13	3.1	<0.1	<0.05	2.1	1.57	6.4	<0.02	1	<0.1	3.1	<10	<2	77.7
2317563	Soil	0.17	5.7	0.2	<0.05	2.6	20.95	124.4	0.08	<1	0.9	12.1	<10	2	12.3
2317564	Soil	0.24	6.5	0.2	<0.05	1.2	5.12	20.5	0.03	<1	0.4	12.6	<10	<2	47.4
2317565	Soil	0.20	9.5	0.5	<0.05	2.1	12.60	80.2	0.07	<1	1.2	42.7	<10	2	18.1
2317566	Soil	0.21	3.0	<0.1	<0.05	1.9	3.22	5.6	<0.02	<1	0.1	3.7	<10	<2	78.3
2317567	Soil	0.86	9.9	0.2	<0.05	1.4	16.96	42.3	0.03	<1	0.5	19.5	<10	<2	10.5
2317568	Soil	0.19	5.9	<0.1	<0.05	2.1	5.08	11.8	<0.02	<1	0.2	5.2	<10	<2	64.4
2317569	Soil	0.27	8.8	0.2	<0.05	1.3	16.82	36.3	0.03	<1	0.5	13.1	<10	<2	14.0
2317570	Soil	0.15	12.8	0.2	<0.05	0.4	2.25	35.3	<0.02	<1	0.2	5.3	<10	<2	7.7
2317571	Soil	0.37	8.3	0.3	<0.05	0.7	17.93	23.7	0.02	<1	0.8	7.6	<10	<2	35.3
2317572	Soil	0.05	12.1	0.3	<0.05	<0.1	5.51	18.7	0.02	2	0.5	7.7	<10	<2	9.7
2317573	Soil	0.16	4.5	0.2	<0.05	1.2	1.38	7.6	<0.02	<1	0.2	2.9	<10	<2	61.4
2317574	Soil	0.46	13.9	0.3	<0.05	0.4	6.98	25.1	0.02	1	0.5	16.2	<10	2	10.0
2317575	Soil	0.25	5.5	0.2	<0.05	0.5	1.60	13.7	0.03	1	0.2	7.9	<10	<2	22.6
2317576	Soil	0.10	3.0	0.2	<0.05	0.2	5.80	11.0	<0.02	1	0.5	1.4	<10	<2	65.2
2317577	Soil	0.46	6.9	0.2	<0.05	0.6	2.63	14.1	0.03	2	0.5	14.2	<10	<2	20.5
2317578	Soil	0.10	3.6	0.1	<0.05	0.6	1.86	5.8	<0.02	<1	0.2	1.8	<10	<2	73.6
2317579	Soil	0.30	5.7	0.2	<0.05	0.9	6.21	18.3	0.03	<1	0.4	13.3	<10	2	16.6
2317580	Soil	0.15	3.9	0.1	<0.05	0.9	1.97	8.7	<0.02	<1	0.3	4.1	<10	<2	60.0
2317581 BAL-1	Rock Pulp	0.26	6.3	0.5	<0.05	2.0	18.06	26.7	<0.02	2	0.7	9.5	<10	<2	12.8
2317582	Soil	0.19	9.2	0.2	<0.05	0.8	8.78	47.1	0.02	<1	0.9	20.6	<10	<2	7.0
2317583	Soil	0.14	2.0	0.3	<0.05	0.2	1.20	12.9	<0.02	<1	0.2	1.2	<10	<2	60.1
2317584	Soil	0.56	13.7	0.2	<0.05	1.1	2.56	32.2	0.03	<1	0.4	32.5	<10	<2	8.7
2317585	Soil	0.10	1.5	0.2	<0.05	0.5	0.83	5.2	<0.02	<1	0.2	1.0	<10	<2	79.2
2317586	Soil	0.10	1.5	0.1	<0.05	0.5	0.84	5.3	<0.02	<1	0.1	1.0	<10	<2	80.1
2317587	Soil	0.61	11.1	0.2	<0.05	0.7	3.40	28.9	0.03	<1	0.5	27.5	<10	<2	9.4
2317588	Soil	0.48	11.1	0.2	<0.05	0.7	3.87	30.3	0.05	<1	0.6	28.8	<10	<2	8.8
2317589	Soil	0.09	2.5	0.3	<0.05	0.3	3.81	17.8	<0.02	<1	0.3	1.3	<10	<2	49.4
2317590	Soil	0.24	6.5	<0.1	<0.05	1.4	15.52	35.8	0.03	1	0.6	17.2	<10	<2	15.0

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method Analyte	Unit MDL	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317591	Soil	6.55	96.18	16.58	1530	708	607.3	12.6	161	0.46	0.2	21.9	0.5	0.4	172.5	28.51	2.33	0.03	4	4.00	0.097
2317592	Soil	4.89	6.62	22.76	223.3	153	19.3	3.6	108	0.59	2.7	0.4	<0.2	0.7	41.0	4.67	0.55	0.08	5	1.37	0.093
2317593	Soil	8.16	19.96	134.4	296.4	354	59.9	10.7	339	2.21	8.8	1.0	0.6	3.5	77.9	2.04	1.52	0.10	19	4.03	0.093
2317594	Soil	9.77	13.85	59.36	181.4	496	55.2	10.7	709	3.09	8.5	0.8	0.7	1.3	69.7	1.44	1.23	0.10	21	8.42	0.034
2317595	Soil	6.40	8.83	12.75	61.4	155	18.4	3.4	269	0.89	2.3	0.3	0.5	0.3	38.7	1.35	0.59	0.03	6	5.12	0.055
2317596	Soil	11.99	22.10	66.51	183.8	739	63.2	10.4	759	4.00	10.2	1.1	0.7	1.5	74.6	1.35	2.43	0.09	22	9.85	0.070
2317597 BAL-1	Rock Pulp	1.23	14.44	18.80	78.0	141	32.5	6.8	269	1.82	4.6	1.2	0.8	1.1	25.7	1.88	0.28	0.08	46	0.66	0.054
2317598	Soil	2.51	8.76	9.70	63.8	233	14.2	4.5	250	0.99	2.8	0.2	0.2	1.2	10.2	1.16	0.38	0.07	12	0.35	0.098
2317599	Soil	3.12	27.24	18.63	126.5	119	47.7	18.0	403	3.72	10.1	0.7	1.3	6.3	15.5	0.71	0.44	0.21	41	0.47	0.050
2317600	Soil	2.31	7.60	2.45	60.3	267	8.3	1.8	41	0.39	1.1	0.3	0.2	0.3	61.5	3.56	0.40	0.03	6	2.06	0.051
2317601	Soil	5.80	23.42	6.11	77.8	2891	14.6	1.6	55	0.97	4.3	0.3	3.5	0.7	5.8	1.19	1.39	0.06	12	0.15	0.096
2317602	Soil	17.33	30.90	13.63	169.6	535	38.4	4.0	64	3.38	13.5	1.2	2.5	4.5	10.1	0.78	2.05	0.18	46	<0.01	0.050
2317603	Soil	11.26	14.47	29.88	57.5	699	13.6	1.6	178	1.29	7.0	0.6	0.9	0.1	8.0	0.78	1.84	0.09	28	0.15	0.116
2317604	Soil	33.98	37.89	49.65	115.7	1228	27.0	2.6	60	4.18	28.2	2.6	2.0	1.2	17.0	0.84	4.83	0.20	57	0.02	0.109
2317605	Soil	19.17	21.79	39.55	77.4	1237	20.1	2.3	79	1.44	10.6	1.1	1.3	0.1	21.8	1.37	2.22	0.11	34	0.12	0.120
2317606	Soil	25.80	29.47	38.22	110.2	1351	25.7	3.0	44	2.27	20.7	2.2	1.3	0.5	27.1	0.89	3.38	0.19	62	0.03	0.098
2317607	Soil	7.50	23.29	12.71	609.8	402	35.6	8.0	82	1.38	6.8	0.8	1.7	0.8	13.0	14.98	1.85	0.07	17	0.34	0.100
2317608	Soil	15.40	72.28	26.01	1146	527	90.6	15.7	280	3.48	15.9	2.8	1.3	2.2	12.8	17.97	3.12	0.15	39	0.21	0.085
2317609	Soil	20.67	43.84	22.84	293.8	408	64.8	11.8	170	3.43	19.1	2.4	3.4	3.2	26.8	2.49	2.74	0.19	52	0.04	0.067
2317610	Soil	20.56	45.47	23.34	303.2	419	69.0	12.3	173	3.58	19.3	2.4	2.3	3.4	27.5	2.48	2.42	0.20	53	0.03	0.071
2317611	Soil	9.26	18.79	10.36	215.9	1680	31.5	8.4	188	1.27	8.1	0.9	1.3	0.8	20.9	6.03	1.84	0.08	23	0.30	0.107
2317612	Soil	7.47	14.10	8.67	188.3	996	25.6	9.3	194	0.91	5.4	0.8	0.7	0.6	21.3	7.80	1.35	0.06	17	0.33	0.112
2317613	Soil	2.93	17.80	6.57	108.8	1648	25.1	5.0	69	0.49	1.4	0.3	1.5	0.3	23.2	6.15	0.52	0.05	13	0.53	0.129
2317614	Soil	20.54	50.48	25.40	165.9	808	41.3	4.4	69	4.64	20.6	1.3	1.4	1.2	14.3	2.00	4.06	0.21	45	0.10	0.103
2317615	Soil	5.55	15.76	8.85	286.3	647	32.8	10.7	893	0.73	2.7	0.4	1.1	0.5	52.5	61.17	0.73	0.07	9	1.75	0.113
2317616	Soil	15.23	29.99	20.20	155.3	327	35.8	4.8	98	3.04	13.9	1.4	1.1	2.1	22.6	3.16	2.20	0.18	42	0.20	0.078
2317617 BAL-1	Rock Pulp	1.22	13.96	19.01	77.4	142	31.5	6.5	261	1.73	4.7	1.1	1.3	1.0	26.0	1.79	0.31	0.08	44	0.64	0.052
2317618	Soil	6.37	11.34	5.82	57.8	2350	11.1	1.9	69	0.38	1.9	0.3	2.4	0.3	9.4	3.05	0.57	0.03	7	0.19	0.127
2317619	Soil	17.83	29.26	11.65	143.0	718	37.4	5.0	76	2.41	12.1	1.2	2.8	1.5	13.2	0.82	2.91	0.12	32	0.04	0.066
2317620	Soil	7.74	12.11	4.74	122.7	1008	18.4	2.8	105	0.42	2.2	0.3	1.8	0.3	13.2	13.76	0.65	0.07	7	0.36	0.127



# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F La	1F Cr	1F Mg	1F Ba	1F Ti	1F B	1F Al	1F Na	1F K	1F W	1F Sc	1F Ti	1F S	1F Hg	1F Se	1F Te	1F Ga	1F Cs	1F Ge	1F Hf
Unit	MDL	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
2317591	Soil	15.1	5.2	0.15	693.0	0.001	<20	0.34	<0.001	0.04	<0.1	0.9	0.81	0.20	212	10.2	<0.02	0.4	0.13	<0.1	0.08
2317592	Soil	2.6	7.0	0.26	319.0	0.001	<20	0.27	0.001	0.05	<0.1	0.7	0.10	0.15	172	1.6	<0.02	0.7	0.25	<0.1	0.05
2317593	Soil	12.1	22.5	1.29	924.7	0.002	<20	0.86	<0.001	0.08	<0.1	2.2	0.30	0.05	137	1.5	0.05	2.1	0.48	<0.1	0.05
2317594	Soil	9.2	12.1	0.88	332.9	0.001	<20	0.32	0.002	0.04	<0.1	1.9	0.51	0.04	108	0.6	0.03	0.8	0.35	<0.1	0.03
2317595	Soil	2.3	7.1	0.38	185.2	<0.001	<20	0.14	0.003	0.03	<0.1	0.5	0.14	0.13	126	0.7	<0.02	0.3	0.16	<0.1	0.03
2317596	Soil	8.6	13.1	1.83	250.7	<0.001	<20	0.23	0.004	0.05	<0.1	2.0	0.57	0.04	154	1.3	0.05	0.5	0.43	<0.1	0.03
2317597 BAL-1	Rock Pulp	16.3	30.0	0.17	61.9	0.002	<20	1.25	0.006	0.08	<0.1	4.1	0.33	0.07	107	1.1	0.04	3.5	0.63	<0.1	0.06
2317598	Soil	4.3	11.8	0.22	119.1	0.003	<20	0.53	0.001	0.14	<0.1	1.1	0.05	0.06	145	0.2	0.03	1.6	0.26	<0.1	0.03
2317599	Soil	21.3	26.6	0.87	301.2	0.004	<20	2.12	<0.001	0.19	<0.1	4.4	0.21	<0.02	45	0.3	<0.02	5.4	0.89	<0.1	0.04
2317600	Soil	1.9	6.9	0.10	205.2	0.003	<20	0.30	0.001	0.04	<0.1	0.6	0.03	0.12	64	0.7	0.02	0.9	0.23	<0.1	0.04
2317601	Soil	2.5	8.3	0.14	138.3	0.001	<20	0.35	0.002	0.07	<0.1	0.5	0.12	0.16	340	3.1	0.05	0.9	0.39	<0.1	0.03
2317602	Soil	14.7	17.4	0.39	185.6	0.001	<20	1.32	<0.001	0.06	<0.1	1.5	0.34	0.04	79	3.1	0.05	3.5	0.93	<0.1	0.03
2317603	Soil	6.9	11.6	0.10	265.0	0.001	<20	0.48	0.003	0.10	<0.1	0.4	1.36	0.11	147	1.8	0.06	1.8	0.84	<0.1	<0.02
2317604	Soil	14.7	17.9	0.22	265.9	0.004	<20	1.01	0.002	0.10	<0.1	0.9	2.85	0.21	159	5.9	0.13	3.1	1.79	<0.1	<0.02
2317605	Soil	9.2	12.8	0.10	460.2	0.001	<20	0.50	0.003	0.11	<0.1	0.3	0.93	0.12	145	2.9	0.09	2.6	0.83	<0.1	<0.02
2317606	Soil	20.4	12.4	0.16	498.4	0.004	<20	0.81	<0.001	0.09	<0.1	0.6	1.55	0.12	182	4.8	0.08	2.9	1.06	<0.1	0.02
2317607	Soil	3.9	9.7	0.17	404.4	0.001	<20	0.38	<0.001	0.07	<0.1	0.8	0.24	0.11	103	1.3	0.04	0.8	0.39	<0.1	0.04
2317608	Soil	12.4	11.7	0.31	829.6	<0.001	<20	0.96	<0.001	0.06	<0.1	1.8	0.52	0.04	100	2.7	0.11	1.9	0.89	<0.1	<0.02
2317609	Soil	16.2	19.1	0.41	421.9	<0.001	<20	1.45	0.002	0.06	<0.1	1.6	0.90	0.02	80	4.2	0.15	2.7	1.33	<0.1	0.02
2317610	Soil	16.6	19.7	0.44	410.6	<0.001	<20	1.53	0.002	0.07	<0.1	1.6	0.94	0.04	90	3.8	0.15	2.9	1.28	<0.1	0.02
2317611	Soil	5.0	12.6	0.17	652.3	0.001	<20	0.51	0.002	0.12	<0.1	0.9	0.42	0.08	152	2.2	0.06	1.1	0.59	<0.1	0.03
2317612	Soil	3.8	9.9	0.15	785.1	0.001	<20	0.43	0.002	0.15	<0.1	0.7	0.34	0.08	120	1.8	0.02	0.9	0.52	<0.1	0.04
2317613	Soil	1.8	8.1	0.11	1079	0.002	<20	0.38	0.003	0.07	<0.1	0.8	0.08	0.10	145	0.7	<0.02	1.0	0.32	<0.1	0.03
2317614	Soil	7.6	17.0	0.28	576.8	0.001	<20	1.04	0.002	0.06	<0.1	1.0	0.52	0.12	82	4.8	0.08	2.9	0.97	<0.1	<0.02
2317615	Soil	2.1	5.5	0.20	2140	0.002	<20	0.33	0.002	0.10	<0.1	0.5	0.29	0.17	164	1.1	0.03	0.8	0.57	<0.1	0.04
2317616	Soil	12.9	15.2	0.39	817.8	<0.001	<20	1.07	0.002	0.08	<0.1	1.1	0.50	0.06	33	2.6	0.08	2.9	0.55	<0.1	0.03
2317617 BAL-1	Rock Pulp	15.9	29.2	0.17	62.4	0.002	<20	1.21	0.008	0.07	<0.1	3.8	0.34	0.06	112	1.3	0.02	3.5	0.65	<0.1	0.05
2317618	Soil	2.3	7.6	0.10	401.9	0.002	<20	0.26	0.002	0.10	<0.1	0.7	0.12	0.08	212	0.8	0.02	0.8	0.59	<0.1	0.02
2317619	Soil	15.7	11.6	0.24	174.3	0.001	<20	0.66	0.002	0.07	<0.1	0.9	0.35	0.05	33	3.8	0.05	1.8	0.62	<0.1	0.02
2317620	Soil	2.4	7.0	0.08	372.4	0.001	<20	0.18	0.002	0.15	<0.1	0.7	0.08	0.09	226	1.2	<0.02	0.5	0.33	<0.1	<0.02



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Project: 204700  
 Report Date: August 08, 2013

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# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	%	
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
2317591	Soil	0.09	1.7	<0.1	<0.05	2.8	23.08	15.5	<0.02	58	0.5	1.7	<10	<2	82.8
2317592	Soil	0.04	2.0	<0.1	<0.05	2.2	2.74	5.4	<0.02	<1	0.1	3.5	<10	<2	76.0
2317593	Soil	0.14	4.3	<0.1	<0.05	2.2	10.18	24.0	0.02	1	0.3	12.0	<10	<2	15.0
2317594	Soil	0.16	3.6	0.1	<0.05	1.3	8.99	17.6	0.03	<1	0.3	3.7	<10	<2	25.5
2317595	Soil	0.04	1.3	<0.1	<0.05	1.5	2.95	4.3	<0.02	<1	<0.1	1.4	<10	<2	75.8
2317596	Soil	0.06	3.1	<0.1	<0.05	1.3	9.92	15.4	0.03	1	0.3	3.1	<10	<2	28.1
2317597 BAL-1	Rock Pulp	0.27	7.0	0.5	<0.05	2.1	18.85	27.4	<0.02	<1	0.7	8.8	<10	<2	12.8
2317598	Soil	0.22	3.0	0.1	<0.05	1.4	1.60	9.1	<0.02	<1	0.2	5.6	<10	<2	71.5
2317599	Soil	0.30	12.3	0.3	<0.05	1.4	9.29	47.0	0.02	<1	1.1	28.9	<10	<2	10.3
2317600	Soil	0.13	1.9	<0.1	<0.05	1.4	1.65	3.5	<0.02	<1	0.1	1.2	<10	<2	85.7
2317601	Soil	0.09	3.4	<0.1	<0.05	1.5	0.87	4.7	<0.02	1	0.1	4.1	<10	<2	74.5
2317602	Soil	0.13	6.3	0.1	<0.05	2.0	3.81	29.9	0.03	<1	0.4	20.9	<10	<2	9.0
2317603	Soil	0.08	4.8	0.1	<0.05	0.2	1.13	12.1	<0.02	2	0.2	2.9	<10	<2	51.6
2317604	Soil	0.20	8.4	0.2	<0.05	1.1	2.93	24.6	0.04	3	0.3	9.8	<10	<2	19.3
2317605	Soil	0.17	5.8	0.2	<0.05	0.4	1.89	15.9	0.21	2	0.3	2.7	<10	<2	47.4
2317606	Soil	0.32	7.3	0.2	<0.05	0.7	3.58	33.5	0.13	4	0.3	5.9	<10	<2	17.3
2317607	Soil	0.09	2.6	<0.1	<0.05	1.7	2.84	7.0	0.04	<1	0.2	4.4	<10	<2	63.0
2317608	Soil	0.05	4.1	<0.1	<0.05	0.7	9.56	22.7	0.11	3	0.4	13.0	<10	<2	11.6
2317609	Soil	0.14	7.6	0.2	<0.05	1.0	6.56	30.4	0.04	2	0.4	26.9	<10	3	10.1
2317610	Soil	0.16	8.1	0.2	<0.05	1.3	6.33	31.0	0.05	<1	0.5	28.9	<10	<2	9.9
2317611	Soil	0.14	4.5	<0.1	<0.05	1.4	2.65	9.4	<0.02	1	0.2	7.3	<10	<2	61.8
2317612	Soil	0.11	4.3	0.1	<0.05	1.5	2.38	6.8	<0.02	<1	0.2	5.5	<10	<2	73.4
2317613	Soil	0.07	2.1	0.1	<0.05	1.0	1.59	3.5	<0.02	2	0.2	1.6	<10	<2	83.1
2317614	Soil	0.22	5.3	0.2	<0.05	0.7	2.95	14.5	0.03	3	0.3	14.3	<10	<2	23.8
2317615	Soil	0.06	4.3	0.1	<0.05	1.4	1.62	4.2	<0.02	<1	0.2	3.6	<10	<2	76.1
2317616	Soil	0.11	7.0	0.2	<0.05	1.0	3.28	24.1	0.02	1	0.3	18.1	<10	<2	12.2
2317617 BAL-1	Rock Pulp	0.29	7.3	0.5	<0.05	2.0	18.73	28.1	<0.02	4	0.6	9.7	<10	<2	13.1
2317618	Soil	0.05	4.1	0.1	<0.05	0.8	0.67	4.1	<0.02	<1	<0.1	1.5	<10	<2	83.3
2317619	Soil	0.06	5.0	<0.1	<0.05	1.2	4.45	28.7	<0.02	1	0.2	9.5	<10	<2	8.5
2317620	Soil	0.06	4.0	0.1	<0.05	0.9	1.20	4.4	<0.02	<1	<0.1	1.5	<10	<2	83.4

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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Project: 204700

Report Date: August 08, 2013

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# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317621	Soil	26.73	28.48	11.26	264.3	242	70.4	7.6	46	1.99	11.3	1.1	1.3	0.3	8.1	1.81	2.42	0.11	38	0.04	0.065
2317622	Soil	16.50	21.75	10.14	165.2	560	45.0	5.7	152	0.90	4.0	0.7	0.5	<0.1	9.3	9.73	1.37	0.07	30	0.27	0.118
2317623	Soil	43.99	38.71	14.55	591.7	1082	156.7	17.2	378	2.37	17.5	2.0	1.3	1.5	16.0	9.58	4.46	0.12	66	0.47	0.100
2317624	Soil	4.69	12.50	3.83	43.8	84	33.5	9.3	673	1.22	1.3	0.3	1.8	0.4	17.8	1.15	0.30	0.03	22	2.67	0.103
2317625	Soil	3.67	33.15	4.89	89.4	71	231.2	38.2	433	7.13	3.1	0.6	0.4	0.8	9.1	0.34	0.18	0.05	170	1.06	0.107
2317626	Soil	11.00	13.41	4.48	73.3	492	58.5	9.8	162	1.90	1.8	0.2	0.7	0.4	11.1	1.15	0.38	0.04	42	0.80	0.101
2317627	Soil	12.20	23.28	13.96	274.3	534	53.0	13.1	245	3.46	8.7	0.6	1.1	0.5	5.0	2.09	0.96	0.09	54	0.16	0.066
2317628	Soil	10.57	16.48	8.10	101.8	249	28.6	5.7	102	1.22	3.6	0.2	1.4	0.5	13.1	2.00	0.65	0.06	22	0.53	0.082
2317629	Soil	7.10	11.71	12.83	158.8	102	41.6	9.9	129	2.69	5.3	0.5	0.3	1.2	5.8	0.74	0.43	0.10	41	0.13	0.032
2317630	Soil	5.02	8.19	9.98	100.8	100	29.3	5.5	99	1.45	3.2	0.5	1.0	0.7	17.0	1.29	0.50	0.07	25	0.74	0.063
2317631	Soil	4.13	6.07	7.82	72.0	160	17.3	3.8	71	0.91	1.8	0.4	0.5	0.6	22.0	1.57	0.37	0.05	18	0.97	0.068
2317632	Soil	7.67	23.24	16.34	167.8	270	90.7	19.5	415	3.40	7.7	0.5	0.3	2.7	18.6	0.78	0.73	0.11	49	0.85	0.080
2317633	Soil	7.21	21.58	14.91	154.9	259	85.0	19.1	405	3.26	7.3	0.5	0.4	2.3	17.3	0.75	0.71	0.10	46	0.83	0.079
2317634	Soil	8.74	20.75	11.86	117.3	186	48.9	11.5	172	3.36	6.2	0.5	<0.2	0.5	4.8	0.80	0.72	0.10	59	0.10	0.062
2317635	Soil	4.97	11.79	9.49	79.3	148	37.5	6.6	82	1.45	3.7	0.3	0.7	0.5	9.2	0.79	0.66	0.06	23	0.39	0.075
2317636	Soil	7.69	18.38	16.23	153.6	544	57.1	15.5	664	2.96	6.9	1.0	0.7	1.3	12.9	0.94	0.70	0.12	51	0.55	0.121
2317637 BAL-1	Rock Pulp	1.25	14.28	20.34	75.3	146	32.7	7.0	273	1.81	5.1	1.2	1.3	1.1	26.9	1.92	0.29	0.08	45	0.66	0.056
2317638	Soil	4.16	14.31	3.88	182.9	834	25.7	6.4	806	0.70	1.6	0.3	0.5	0.5	39.2	11.43	0.35	0.03	10	2.88	0.115
2317639	Soil	7.79	15.00	5.99	67.4	831	15.5	8.7	1230	0.66	1.2	0.2	1.0	0.4	30.3	8.61	0.39	0.04	7	1.55	0.145
2317640	Soil	7.38	14.98	12.34	130.6	699	36.8	7.4	235	2.12	5.4	0.6	0.7	0.9	9.6	1.00	0.99	0.10	24	0.33	0.064
2317641	Soil	16.35	23.36	6535	482.6	4796	8.2	1.4	41	1.02	5.3	0.4	0.2	0.5	257.2	10.95	0.90	0.03	15	0.41	0.062
2317642	Soil	12.55	357.4	>10000	7423	36501	53.2	8.5	974	6.87	26.7	2.5	1.1	1.8	618.1	75.04	4.77	0.10	92	2.95	0.097
2317643	Soil	6.10	9.98	354.0	138.9	1422	13.0	2.0	272	0.49	1.8	0.2	0.4	0.2	27.5	9.91	0.50	0.04	13	0.88	0.085
2317644	Soil	14.11	56.75	5481	978.4	3520	68.8	16.8	294	5.06	19.5	1.6	1.1	2.9	118.9	9.88	2.32	0.19	50	0.36	0.094
2317645	Soil	3.31	6.89	41.45	39.4	135	20.7	7.2	223	1.67	3.2	0.4	2.8	2.4	9.0	0.68	0.67	0.12	17	0.58	0.030
2317646	Soil	7.65	32.36	97.37	166.1	949	41.7	6.7	62	2.09	6.5	1.9	1.7	1.4	13.8	15.47	1.28	0.16	33	0.37	0.073
2317647	Soil	7.32	33.10	177.0	169.5	986	42.9	6.8	66	2.10	6.4	2.0	0.8	1.2	15.5	15.64	1.22	0.15	34	0.37	0.075
2317648	Soil	9.53	20.19	57.86	212.4	393	31.7	4.8	74	2.40	10.1	0.9	0.8	1.2	11.5	2.75	1.27	0.17	42	0.25	0.053
2317649	Soil	8.65	17.42	109.4	203.0	403	28.5	4.7	76	2.23	9.3	0.9	1.0	1.2	12.6	2.71	1.18	0.17	41	0.28	0.055
2317650	Soil	5.57	8.07	22.28	131.7	145	17.3	3.7	214	1.08	2.3	0.3	0.7	0.7	18.4	1.84	0.48	0.05	14	1.30	0.035



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Project: 204700  
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# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.01	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	0.02
2317621	Soil	16.9	10.1	0.13	186.9	0.001	<20	0.59	0.001	0.10	<0.1	0.6	0.37	0.03	70	4.8	0.08	1.5	0.47	<0.1	<0.02
2317622	Soil	7.3	8.6	0.10	547.3	0.001	<20	0.41	0.002	0.09	<0.1	0.6	0.17	0.05	136	1.7	0.04	1.2	0.29	<0.1	<0.02
2317623	Soil	23.9	13.5	0.24	387.8	0.002	<20	0.75	0.001	0.16	<0.1	3.2	0.72	0.03	260	7.8	0.12	1.2	0.45	<0.1	0.03
2317624	Soil	4.1	65.9	0.67	98.7	0.004	<20	0.68	0.004	0.05	<0.1	1.7	0.07	0.14	166	0.2	<0.02	1.9	0.98	<0.1	0.05
2317625	Soil	15.6	533.6	5.01	96.1	0.014	<20	4.34	0.002	0.07	<0.1	11.1	0.11	0.04	32	0.2	<0.02	10.5	1.63	<0.1	0.04
2317626	Soil	5.0	119.0	1.15	278.8	0.007	<20	1.09	0.003	0.07	<0.1	2.6	0.12	0.11	256	0.3	<0.02	3.3	0.80	<0.1	0.04
2317627	Soil	18.0	63.2	1.28	306.2	0.006	<20	1.59	<0.001	0.11	<0.1	1.7	0.31	0.02	56	0.7	<0.02	5.2	0.66	<0.1	<0.02
2317628	Soil	5.8	45.8	0.42	248.7	0.005	<20	0.62	0.002	0.11	<0.1	1.1	0.12	0.08	162	0.4	0.02	2.2	0.30	<0.1	0.03
2317629	Soil	19.3	30.2	0.61	377.5	0.006	<20	1.41	0.002	0.10	<0.1	1.9	0.22	<0.02	29	0.4	0.03	4.1	0.61	<0.1	<0.02
2317630	Soil	8.9	33.5	0.37	186.1	0.005	<20	0.86	0.003	0.06	<0.1	1.8	0.12	0.06	98	0.4	<0.02	2.8	0.36	<0.1	0.04
2317631	Soil	6.1	17.1	0.26	138.0	0.003	<20	0.64	0.004	0.05	<0.1	1.5	0.08	0.08	138	0.5	<0.02	2.1	0.34	<0.1	0.05
2317632	Soil	23.4	75.8	1.53	269.2	0.006	<20	1.70	0.002	0.11	<0.1	5.9	0.30	<0.02	101	0.7	0.03	4.5	0.82	<0.1	0.04
2317633	Soil	22.3	69.6	1.44	252.8	0.006	<20	1.61	0.002	0.10	<0.1	5.6	0.27	<0.02	93	0.6	0.03	4.1	0.85	<0.1	0.04
2317634	Soil	17.2	48.5	0.90	213.9	0.006	<20	1.47	0.001	0.10	<0.1	1.7	0.20	0.03	28	0.9	0.02	5.3	0.50	<0.1	<0.02
2317635	Soil	8.1	41.5	0.46	142.6	0.004	<20	0.65	0.003	0.07	<0.1	1.6	0.12	0.07	91	0.7	<0.02	2.5	0.50	<0.1	0.03
2317636	Soil	15.7	40.0	0.96	390.0	0.003	<20	1.36	0.002	0.11	<0.1	3.6	0.25	0.04	90	0.8	0.03	3.4	0.50	<0.1	0.07
2317637 BAL-1	Rock Pulp	16.3	31.7	0.18	64.8	0.002	<20	1.25	0.009	0.07	<0.1	4.1	0.33	0.06	97	1.4	0.03	3.5	0.65	<0.1	0.07
2317638	Soil	2.5	10.3	0.47	356.3	0.002	<20	0.38	0.002	0.03	<0.1	1.0	0.07	0.24	88	0.8	<0.02	0.9	0.28	<0.1	0.07
2317639	Soil	2.7	10.7	0.26	461.9	0.003	<20	0.32	0.003	0.13	<0.1	0.6	0.07	0.23	138	0.9	<0.02	1.0	0.25	<0.1	0.04
2317640	Soil	11.5	11.9	0.34	367.1	0.002	<20	0.80	<0.001	0.10	<0.1	1.6	0.16	0.03	42	1.7	0.02	2.1	0.31	<0.1	0.02
2317641	Soil	4.6	7.1	0.04	3923	0.002	<20	0.28	0.004	0.05	<0.1	0.9	1.54	0.18	446	0.7	<0.02	0.8	0.17	0.2	0.04
2317642	Soil	72.6	10.3	0.08	1103	0.003	<20	0.72	0.005	0.08	0.3	4.5	11.78	0.35	3620	3.5	0.03	3.3	0.45	0.1	<0.02
2317643	Soil	2.6	9.4	0.07	986.2	0.003	<20	0.26	0.001	0.06	<0.1	0.7	0.32	0.11	246	0.5	<0.02	1.3	0.56	<0.1	<0.02
2317644	Soil	14.4	28.5	0.29	3065	0.001	<20	1.36	0.002	0.05	<0.1	2.2	1.64	0.11	377	2.8	0.10	3.3	0.78	<0.1	0.03
2317645	Soil	13.3	11.7	0.19	187.0	0.002	<20	0.52	0.002	0.08	<0.1	3.0	0.11	<0.02	33	<0.1	<0.02	1.4	0.27	<0.1	<0.02
2317646	Soil	8.1	14.4	0.13	850.5	0.003	<20	0.74	0.003	0.07	<0.1	1.6	0.23	0.05	98	1.2	0.04	2.5	0.65	<0.1	0.04
2317647	Soil	8.7	15.4	0.13	975.4	0.003	<20	0.77	0.004	0.07	<0.1	1.7	0.26	0.05	90	1.1	0.03	2.8	0.71	<0.1	0.02
2317648	Soil	11.4	10.9	0.13	721.5	0.002	<20	0.68	0.002	0.07	<0.1	1.0	0.27	0.02	38	1.0	0.03	2.7	0.49	<0.1	<0.02
2317649	Soil	11.4	13.9	0.11	847.6	0.002	<20	0.67	0.003	0.07	<0.1	1.0	0.29	0.02	33	1.1	0.02	2.5	0.46	<0.1	<0.02
2317650	Soil	3.9	8.4	0.09	163.1	0.002	<20	0.37	0.003	0.03	<0.1	1.2	0.12	0.09	139	0.3	<0.02	1.0	0.24	<0.1	0.05

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	%	
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317621	Soil	0.07	6.5	0.2	<0.05	0.3	5.56	29.3	<0.02	2	0.3	4.8	<10	<2	11.5
2317622	Soil	0.21	3.6	0.1	<0.05	0.4	7.06	13.3	<0.02	1	0.3	1.9	<10	<2	62.2
2317623	Soil	0.35	7.6	0.2	<0.05	0.9	26.42	39.7	<0.02	1	0.5	5.3	<10	<2	10.3
2317624	Soil	0.21	3.0	0.1	<0.05	1.5	4.33	7.7	<0.02	<1	0.2	6.7	<10	<2	73.2
2317625	Soil	0.57	7.0	0.6	<0.05	1.2	7.50	29.7	0.04	<1	0.8	47.2	<10	<2	23.4
2317626	Soil	0.46	4.0	0.3	<0.05	1.4	2.25	9.9	<0.02	1	0.2	11.5	<10	<2	64.0
2317627	Soil	0.50	8.2	0.2	<0.05	0.3	4.08	36.2	0.03	<1	0.4	20.1	<10	2	13.4
2317628	Soil	0.56	3.9	0.2	<0.05	1.8	1.65	11.6	<0.02	<1	0.2	6.6	<10	<2	62.4
2317629	Soil	0.43	10.4	0.3	<0.05	0.3	4.06	44.2	0.02	<1	0.6	17.1	<10	<2	8.3
2317630	Soil	0.44	4.3	0.2	<0.05	2.3	5.00	18.0	<0.02	<1	0.4	9.2	<10	<2	51.3
2317631	Soil	0.19	2.9	0.2	<0.05	2.2	4.19	11.9	<0.02	<1	0.2	5.4	<10	<2	65.9
2317632	Soil	0.31	8.4	0.2	<0.05	1.9	15.49	49.4	0.04	<1	0.6	21.3	<10	<2	10.2
2317633	Soil	0.29	8.2	0.2	<0.05	1.7	14.84	46.7	0.02	<1	0.8	19.1	<10	<2	10.2
2317634	Soil	0.53	8.1	0.3	<0.05	0.3	4.02	37.3	0.02	<1	0.5	17.0	<10	<2	15.0
2317635	Soil	0.34	5.2	0.2	<0.05	1.2	4.09	17.4	<0.02	<1	0.2	6.6	<10	<2	52.5
2317636	Soil	0.25	9.5	0.2	<0.05	2.3	13.58	32.7	<0.02	<1	0.5	17.2	<10	<2	14.4
2317637 BAL-1	Rock Pulp	0.28	7.5	0.5	<0.05	2.2	19.68	28.4	0.02	2	0.7	9.5	<10	<2	13.2
2317638	Soil	0.14	2.5	0.1	<0.05	2.4	3.36	5.6	<0.02	<1	0.1	2.8	<10	<2	75.2
2317639	Soil	0.15	4.3	<0.1	<0.05	1.5	2.00	5.9	<0.02	<1	0.2	2.4	<10	<2	73.4
2317640	Soil	0.24	7.4	0.2	<0.05	0.8	7.31	25.7	<0.02	<1	0.4	9.9	<10	<2	12.5
2317641	Soil	0.08	2.2	0.4	<0.05	1.6	5.54	12.1	0.33	<1	<0.1	0.7	11	<2	82.6
2317642	Soil	0.41	5.5	2.0	<0.05	1.0	138.1	197.9	4.24	<1	0.3	2.8	<10	<2	22.3
2317643	Soil	0.11	3.0	0.2	<0.05	0.7	1.32	5.1	0.03	<1	<0.1	0.9	15	<2	73.8
2317644	Soil	0.56	7.4	0.4	<0.05	1.5	16.32	33.6	0.44	2	0.6	22.7	<10	<2	14.4
2317645	Soil	0.21	4.5	0.2	<0.05	1.3	9.86	26.6	0.02	<1	0.3	5.2	<10	<2	13.5
2317646	Soil	0.40	7.6	0.3	<0.05	1.6	4.83	15.4	0.03	<1	0.3	3.8	<10	<2	34.4
2317647	Soil	0.35	7.5	0.3	<0.05	1.4	4.84	16.2	0.04	<1	0.5	4.0	<10	<2	33.1
2317648	Soil	0.38	7.0	0.2	<0.05	0.3	3.41	21.6	0.03	<1	0.3	7.1	<10	<2	10.0
2317649	Soil	0.39	6.5	0.2	<0.05	0.3	3.70	21.3	0.02	<1	0.3	6.3	<10	<2	10.2
2317650	Soil	0.12	1.7	0.1	<0.05	2.0	3.30	7.7	<0.02	1	0.3	2.2	<10	<2	69.6

# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317651	Soil	4.25	8.30	9.41	128.0	1172	15.7	4.2	410	0.60	1.6	0.2	1.2	0.3	17.4	1.84	0.56	0.09	10	0.72	0.155
2317652	Soil	4.46	20.31	9.28	213.0	1385	33.6	7.5	410	1.81	4.6	0.6	0.7	0.2	6.8	0.87	0.98	0.12	35	0.19	0.138
2317653	Soil	3.36	10.23	9.49	163.4	186	34.1	7.0	140	1.50	2.3	0.4	0.3	0.2	13.4	0.46	0.50	0.11	33	0.52	0.045
2317654	Soil	4.05	9.07	9.39	200.8	175	19.5	6.1	521	0.77	1.6	0.2	0.2	0.3	26.8	1.08	0.53	0.07	14	1.57	0.103
2317655 BAL-1	Rock Pulp	1.25	14.81	19.63	80.7	139	31.9	6.3	267	1.76	4.3	1.2	1.3	1.0	26.3	1.91	0.29	0.09	45	0.65	0.056
2317656	Soil	17.05	20.58	10.17	93.7	302	20.0	2.7	27	1.33	8.2	0.8	2.2	0.1	5.9	0.36	1.18	0.16	71	0.02	0.064
2317657	Soil	17.02	21.39	10.71	95.3	304	19.8	2.8	29	1.40	7.7	0.8	0.5	0.1	6.2	0.36	1.11	0.16	75	0.02	0.068
2317658	Soil	5.27	18.09	9.89	79.8	631	29.3	6.7	79	0.59	2.3	0.6	<0.2	0.1	11.0	3.21	0.66	0.07	12	0.16	0.155
2317659	Soil	16.36	37.88	12.91	143.6	442	40.1	5.0	91	2.89	14.4	1.7	1.5	0.8	15.0	1.30	3.47	0.16	44	0.02	0.077
2317660	Soil	5.33	13.18	8.59	71.5	1228	14.1	1.9	69	0.91	4.3	0.4	0.4	0.5	12.7	1.51	1.13	0.07	15	0.30	0.093
2317661	Soil	4.02	11.18	7.98	74.0	1018	11.5	1.8	155	0.50	1.8	0.2	<0.2	0.3	12.0	1.20	0.62	0.06	8	0.36	0.110
2317662	Soil	14.07	23.17	21.63	90.6	1372	26.8	2.2	77	4.87	18.0	0.8	1.3	2.3	13.7	0.80	3.85	0.28	52	0.03	0.090
2317663	Soil	12.94	22.93	21.48	91.0	1594	27.2	2.4	76	4.77	18.8	0.8	1.4	2.1	14.4	0.83	4.18	0.28	49	0.04	0.093
2317664 BAL-1	Rock Pulp	1.25	14.75	19.18	84.5	142	32.4	6.6	278	1.81	4.7	1.2	1.1	1.0	26.4	1.87	0.28	0.08	47	0.67	0.057
2317665	Soil	5.13	4.60	37.45	272.3	110	9.2	1.9	50	0.37	1.8	0.2	<0.2	0.3	36.5	3.76	0.38	0.02	5	1.61	0.089
2317666	Soil	9.59	26.22	259.6	368.2	476	50.1	10.8	321	2.05	10.7	1.2	0.4	2.8	71.5	2.68	2.29	0.10	18	3.52	0.107
2317667	Soil	9.04	6.03	17.67	208.9	239	11.8	1.7	99	0.20	<0.1	7.8	<0.2	0.1	77.9	7.38	0.47	<0.02	<2	3.77	0.080
2317668	Soil	8.17	19.94	172.7	306.7	475	41.5	6.3	226	1.76	8.6	1.5	<0.2	2.5	99.7	2.63	2.01	0.08	17	4.40	0.086
2317669	Soil	9.61	11.83	15.46	237.3	89	19.6	4.2	309	0.42	<0.1	21.7	<0.2	0.3	80.8	4.37	1.47	0.03	8	2.63	0.067
2317670	Soil	4.25	23.61	28.62	245.5	597	49.2	9.6	532	2.16	7.6	1.2	0.9	2.5	55.6	2.43	1.42	0.12	24	2.15	0.070
2317671	Soil	2.58	19.70	10.75	58.1	293	26.0	4.3	221	0.91	2.2	4.0	<0.2	0.2	98.4	4.49	0.88	0.05	12	3.71	0.065
2317672	Soil	8.35	29.88	21.98	326.5	620	81.1	14.2	685	2.66	10.9	1.0	1.7	3.5	46.5	3.20	2.10	0.13	27	2.11	0.091
2317673	Soil	2.05	12.52	6.02	78.0	335	17.2	3.4	240	0.53	0.8	2.7	<0.2	0.1	119.7	2.43	0.78	0.03	6	4.26	0.065
2317674	Soil	3.99	14.24	15.44	163.6	475	36.4	6.6	336	1.65	7.2	0.8	0.3	2.4	146.8	1.48	1.38	0.08	23	5.94	0.093
2317675	Soil	5.33	15.49	10.16	339.2	358	21.8	2.8	126	0.63	1.4	3.7	<0.2	0.4	44.0	7.60	1.00	0.04	11	1.88	0.069
2317676	Soil	5.43	16.00	7.36	326.1	96	43.2	7.2	102	0.94	3.2	2.0	0.4	0.5	35.2	3.54	1.07	0.05	14	2.15	0.054
2317677 BAL-1	Rock Pulp	1.27	14.79	20.33	85.2	156	32.1	6.7	279	1.87	5.2	1.2	0.9	1.0	27.8	1.96	0.30	0.09	48	0.68	0.058
2317678	Soil	9.05	31.65	22.40	987.1	387	106.8	14.6	379	2.44	9.1	1.8	1.2	1.7	31.7	6.26	2.13	0.13	34	1.31	0.065
2317679	Soil	2.56	7.40	4.63	159.8	266	14.0	1.7	209	0.35	1.4	0.4	<0.2	0.2	18.4	1.57	0.44	0.03	5	1.04	0.089
2317680	Soil	10.20	42.41	20.48	561.6	440	62.1	7.2	180	2.47	9.9	3.1	1.4	2.0	32.3	7.61	2.20	0.16	35	0.69	0.070



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Project: 204700  
 Report Date: August 08, 2013

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317651	Soil	3.5	11.6	0.20	300.8	0.003	<20	0.37	0.006	0.09	<0.1	0.8	0.06	0.14	258	0.7	<0.02	1.3	0.43	<0.1	0.03
2317652	Soil	14.6	14.8	0.19	489.6	0.004	<20	0.95	0.003	0.10	<0.1	0.8	0.23	0.02	80	2.2	0.03	3.3	0.97	<0.1	<0.02
2317653	Soil	12.6	22.5	0.26	298.3	0.006	<20	1.02	0.004	0.10	<0.1	0.7	0.17	0.02	31	0.4	0.03	4.9	0.69	<0.1	<0.02
2317654	Soil	3.3	12.1	0.22	174.5	0.005	<20	0.44	0.005	0.08	<0.1	0.7	0.09	0.13	186	0.3	<0.02	2.0	0.39	<0.1	0.05
2317655 BAL-1	Rock Pulp	16.1	30.2	0.18	61.5	0.002	<20	1.21	0.010	0.08	<0.1	4.1	0.37	0.06	115	1.3	<0.02	3.7	0.77	<0.1	0.06
2317656	Soil	15.1	14.0	0.05	133.4	0.002	<20	0.81	0.003	0.04	<0.1	0.4	0.39	<0.02	34	4.3	0.11	4.9	1.05	<0.1	<0.02
2317657	Soil	14.4	13.6	0.05	137.8	0.002	<20	0.88	0.003	0.05	<0.1	0.3	0.38	<0.02	30	4.4	0.08	5.0	1.03	<0.1	<0.02
2317658	Soil	2.7	13.5	0.11	565.4	0.002	<20	0.48	0.004	0.07	<0.1	0.5	0.10	0.08	199	1.4	0.03	1.1	0.49	<0.1	<0.02
2317659	Soil	11.3	19.3	0.37	219.9	0.001	<20	1.16	0.004	0.06	<0.1	0.9	0.43	0.07	74	5.2	0.09	3.2	1.13	<0.1	<0.02
2317660	Soil	2.9	10.7	0.11	275.5	0.002	<20	0.40	0.005	0.08	<0.1	0.7	0.15	0.09	124	1.2	<0.02	1.2	0.81	<0.1	<0.02
2317661	Soil	2.3	7.6	0.09	335.3	0.002	<20	0.27	0.005	0.12	<0.1	0.6	0.20	0.09	157	0.8	<0.02	0.9	0.90	<0.1	<0.02
2317662	Soil	6.6	26.0	0.36	215.8	<0.001	<20	1.42	0.005	0.05	<0.1	1.2	0.49	0.09	114	4.1	0.09	4.0	1.28	<0.1	0.03
2317663	Soil	6.2	28.9	0.36	215.2	<0.001	<20	1.41	0.005	0.05	<0.1	1.1	0.51	0.10	113	4.9	0.08	3.8	1.38	<0.1	<0.02
2317664 BAL-1	Rock Pulp	16.1	31.8	0.18	61.5	0.002	<20	1.29	0.011	0.08	<0.1	4.1	0.36	0.06	120	1.3	0.03	3.7	0.77	<0.1	0.07
2317665	Soil	1.4	4.8	0.18	446.9	0.001	<20	0.18	0.004	0.05	<0.1	0.4	0.10	0.15	145	2.3	<0.02	0.4	0.14	<0.1	0.03
2317666	Soil	9.6	13.1	0.97	1290	0.002	<20	0.58	0.003	0.06	<0.1	2.0	0.68	0.09	123	2.1	0.04	1.4	0.51	<0.1	0.04
2317667	Soil	1.1	3.5	0.24	389.3	<0.001	<20	0.09	0.006	0.07	<0.1	0.3	0.19	0.17	156	6.3	<0.02	0.2	0.15	<0.1	0.02
2317668	Soil	8.6	11.8	1.06	1329	0.002	<20	0.57	0.004	0.06	<0.1	1.9	0.54	0.08	122	2.3	0.04	1.4	0.47	<0.1	0.04
2317669	Soil	2.0	8.7	0.20	596.3	0.001	<20	0.20	0.008	0.05	<0.1	0.7	0.17	0.22	125	8.0	<0.02	0.6	0.20	<0.1	0.06
2317670	Soil	12.2	21.5	0.71	673.3	0.002	<20	1.01	0.005	0.10	<0.1	3.4	0.35	0.05	143	1.6	0.02	2.7	0.54	<0.1	0.07
2317671	Soil	4.7	11.7	0.25	723.3	0.002	<20	0.61	0.004	0.04	<0.1	0.9	0.12	0.12	144	3.0	<0.02	1.5	0.28	<0.1	0.04
2317672	Soil	14.5	19.2	0.96	595.5	0.003	<20	1.10	0.004	0.11	<0.1	3.5	0.61	0.03	145	1.3	0.08	2.6	0.76	<0.1	0.06
2317673	Soil	4.5	6.9	0.16	575.3	0.002	<20	0.37	0.006	0.03	<0.1	0.5	0.07	0.13	103	2.7	<0.02	1.0	0.23	<0.1	0.04
2317674	Soil	11.6	17.8	0.74	534.2	0.002	<20	0.74	0.005	0.09	<0.1	2.4	0.25	<0.02	101	0.7	<0.02	1.8	0.47	<0.1	0.04
2317675	Soil	2.4	6.2	0.20	222.6	0.001	<20	0.27	0.006	0.04	<0.1	0.6	0.16	0.18	124	1.5	<0.02	0.7	0.39	<0.1	0.07
2317676	Soil	2.2	9.2	0.12	237.0	0.001	<20	0.35	0.004	0.04	<0.1	0.7	0.30	0.15	119	1.6	0.03	0.8	0.52	<0.1	0.07
2317677 BAL-1	Rock Pulp	16.7	30.7	0.18	63.3	0.002	<20	1.32	0.011	0.08	<0.1	4.1	0.37	0.06	118	1.3	0.02	3.7	0.77	<0.1	0.07
2317678	Soil	8.4	15.6	0.31	589.6	0.001	<20	0.83	0.004	0.09	<0.1	1.8	0.68	0.07	141	2.5	0.06	1.9	0.72	<0.1	0.10
2317679	Soil	1.1	8.3	0.11	298.9	0.001	<20	0.17	0.005	0.07	<0.1	0.4	0.18	0.13	268	0.9	<0.02	0.4	0.36	<0.1	0.03
2317680	Soil	10.6	17.2	0.37	959.8	0.001	<20	0.98	0.003	0.09	<0.1	2.0	0.46	0.05	145	3.2	0.05	2.4	0.87	<0.1	0.11

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317651	Soil	0.18	4.8	0.2	<0.05	1.0	3.06	7.4	<0.02	<1	0.1	2.8	<10	<2	68.6
2317652	Soil	0.08	12.4	0.3	<0.05	0.3	8.96	30.1	0.02	<1	0.4	8.4	<10	<2	9.3
2317653	Soil	0.48	9.6	0.6	<0.05	0.1	3.99	23.6	<0.02	2	0.3	9.0	<10	<2	12.4
2317654	Soil	0.37	5.7	0.3	<0.05	1.5	3.16	6.9	<0.02	<1	0.2	3.2	<10	<2	59.9
2317655 BAL-1	Rock Pulp	0.27	7.5	0.5	<0.05	2.0	18.76	27.9	<0.02	<1	0.8	10.3	<10	3	12.4
2317656	Soil	0.14	4.9	0.5	<0.05	0.2	1.93	26.6	<0.02	1	0.2	1.3	<10	<2	11.9
2317657	Soil	0.15	4.9	0.5	<0.05	0.2	2.00	24.9	<0.02	<1	0.2	1.3	<10	<2	12.9
2317658	Soil	0.10	3.0	0.5	<0.05	0.4	2.35	5.1	<0.02	2	0.2	1.9	<10	<2	78.7
2317659	Soil	0.13	6.2	0.2	<0.05	0.4	4.01	21.6	0.04	6	0.4	19.0	<10	<2	12.5
2317660	Soil	0.08	3.4	0.2	<0.05	0.9	1.29	5.7	<0.02	<1	<0.1	2.8	<10	<2	71.6
2317661	Soil	0.06	3.6	0.1	<0.05	0.6	1.09	4.5	<0.02	<1	0.1	1.7	<10	<2	82.5
2317662	Soil	0.16	6.8	0.2	<0.05	1.2	2.43	13.7	0.03	2	0.2	20.0	<10	<2	21.0
2317663	Soil	0.16	6.6	0.2	<0.05	1.4	2.20	12.5	0.03	2	0.2	19.4	<10	<2	22.7
2317664 BAL-1	Rock Pulp	0.28	8.3	0.5	<0.05	2.0	18.68	27.9	<0.02	3	0.8	11.0	<10	<2	13.7
2317665	Soil	0.04	1.0	<0.1	<0.05	1.2	1.65	2.8	<0.02	<1	<0.1	1.9	<10	<2	81.9
2317666	Soil	0.09	3.4	<0.1	<0.05	1.7	9.14	19.7	<0.02	1	0.2	9.5	<10	<2	13.3
2317667	Soil	0.02	1.2	<0.1	<0.05	1.0	1.98	2.1	<0.02	2	<0.1	1.2	<10	<2	85.8
2317668	Soil	0.10	3.3	<0.1	<0.05	2.4	9.06	17.3	0.02	4	0.2	9.6	<10	<2	16.2
2317669	Soil	0.08	2.0	<0.1	<0.05	1.9	3.45	4.0	<0.02	12	<0.1	1.7	<10	<2	83.4
2317670	Soil	0.37	7.2	0.1	<0.05	3.3	13.51	24.9	0.02	2	0.4	15.9	<10	<2	20.3
2317671	Soil	0.15	2.8	<0.1	<0.05	1.7	7.54	9.1	<0.02	3	0.5	4.6	<10	2	67.3
2317672	Soil	0.18	7.0	0.1	<0.05	2.4	13.24	29.1	0.02	<1	0.5	17.3	<10	2	10.6
2317673	Soil	0.12	2.8	<0.1	<0.05	1.3	8.96	6.9	<0.02	2	0.3	2.3	<10	<2	76.9
2317674	Soil	0.12	5.7	<0.1	<0.05	1.3	10.23	24.1	<0.02	2	0.4	11.5	<10	<2	13.0
2317675	Soil	0.05	3.1	<0.1	<0.05	2.5	3.73	4.5	0.02	3	<0.1	2.1	<10	<2	78.9
2317676	Soil	0.08	3.4	<0.1	<0.05	2.6	2.37	4.2	<0.02	5	<0.1	3.5	<10	<2	68.8
2317677 BAL-1	Rock Pulp	0.29	8.5	0.5	<0.05	2.2	19.85	29.6	<0.02	1	0.7	11.1	<10	<2	12.7
2317678	Soil	0.16	8.1	<0.1	<0.05	3.4	7.32	15.5	0.04	3	0.4	12.9	<10	<2	26.1
2317679	Soil	0.06	2.1	<0.1	<0.05	1.3	1.10	2.1	<0.02	<1	<0.1	1.5	<10	<2	87.2
2317680	Soil	0.14	7.1	0.1	<0.05	3.9	10.16	20.3	0.03	17	0.3	17.3	<10	2	20.2





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Project: 204700  
 Report Date: August 08, 2013

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# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317681	Soil	6.16	9.77	9.29	118.2	569	16.0	2.2	76	0.73	2.3	0.9	0.7	0.4	21.0	2.53	0.92	0.06	11	0.82	0.089
2317682	Soil	13.71	25.45	22.91	315.9	440	37.1	6.1	165	2.35	11.0	1.2	1.0	1.6	14.1	2.70	2.01	0.16	37	0.22	0.056
2317683	Soil	5.64	15.23	6.10	326.0	346	24.6	4.2	45	0.39	<0.1	1.0	0.7	0.3	28.2	17.62	0.86	0.04	5	0.84	0.076
2317684	Soil	14.05	42.78	23.21	586.0	409	70.6	10.8	231	2.70	11.1	2.3	1.7	2.6	20.9	6.86	2.70	0.16	34	0.24	0.071
2317685	Soil	6.00	22.58	18.08	273.8	687	48.6	9.2	54	1.24	4.7	1.3	0.9	0.5	13.2	4.95	1.42	0.08	14	0.16	0.108
2317686	Soil	5.08	23.26	20.92	222.3	1008	40.5	10.5	47	1.19	3.7	1.7	1.0	0.4	13.0	5.37	1.29	0.07	12	0.16	0.130
2317687	Soil	14.29	34.10	28.21	403.1	802	50.8	7.8	110	2.67	12.5	1.7	1.6	1.7	13.2	2.14	2.35	0.15	35	0.09	0.092
2317688	Soil	13.54	33.50	28.32	411.4	774	52.6	7.7	121	2.69	12.3	1.7	1.6	1.5	13.4	2.04	2.30	0.16	35	0.09	0.095
2317689	Soil	3.20	9.74	6.26	48.0	1103	9.6	1.4	27	0.36	1.8	0.2	<0.2	0.3	9.3	0.95	0.31	0.04	9	0.24	0.063
2317690	Soil	14.53	29.19	23.39	250.7	246	45.6	5.7	141	4.33	15.8	1.3	0.8	1.1	7.9	1.08	3.12	0.18	45	0.04	0.180
2317691	Soil	3.46	28.59	13.65	122.6	449	38.4	10.0	321	2.76	8.4	4.6	0.6	2.2	48.7	1.61	0.75	0.17	33	1.67	0.074
2317692	Soil	8.46	9.81	2.50	159.0	91	57.7	0.8	73	0.17	1.0	17.3	<0.2	0.1	140.7	5.09	0.84	<0.02	24	4.81	0.060
2317693	Soil	4.62	26.30	13.24	347.4	367	53.4	5.5	71	1.34	8.3	6.1	0.8	0.8	74.7	10.10	2.30	0.11	17	2.65	0.073
2317694	Soil	1.59	3.82	3.04	99.2	217	3.9	0.8	17	0.15	1.0	0.1	<0.2	0.1	17.2	6.16	0.14	0.03	3	0.34	0.049
2317695	Soil	1.97	8.55	8.01	105.9	252	6.9	1.4	22	0.33	0.8	0.5	<0.2	0.6	23.0	8.67	0.23	0.05	10	0.42	0.045
2317696	Soil	3.63	6.55	14.87	203.7	227	31.2	5.7	268	1.78	6.7	0.7	<0.2	2.4	11.7	1.79	0.74	0.09	30	0.21	0.052
2317697	Soil	3.45	6.22	14.17	191.7	201	29.7	5.4	249	1.65	6.3	0.7	<0.2	2.5	9.4	1.50	0.66	0.08	29	0.17	0.040
2317698	Soil	4.12	13.30	5.62	32.8	39	32.9	11.3	88	1.01	2.1	0.3	0.2	0.6	11.0	0.36	0.41	0.05	17	0.98	0.054
2317699	Soil	3.58	63.05	7.11	44.9	50	170.4	72.8	738	4.06	4.1	0.6	<0.2	2.7	10.5	0.17	0.19	0.07	44	1.20	0.092
2317700 BAL-1	Rock Pulp	1.19	14.09	19.35	72.8	141	31.0	6.5	257	1.72	4.9	1.1	0.7	1.0	25.2	1.73	0.29	0.08	42	0.64	0.050
2317701	Soil	4.13	7.22	4.77	214.0	349	13.2	1.9	50	0.40	2.4	0.2	4.3	0.3	16.8	13.65	0.56	0.03	6	0.88	0.081
2317702	Soil	12.61	29.16	22.26	560.7	638	63.6	14.1	252	2.51	10.3	1.7	1.8	1.5	14.8	6.64	2.07	0.13	35	0.25	0.074
2317703 BAL-1	Rock Pulp	1.25	14.75	25.66	76.3	149	30.6	6.4	265	1.74	5.1	1.2	1.2	1.1	25.1	1.91	0.32	0.08	42	0.65	0.051
2317704	Soil	3.06	5.36	2.75	93.2	1288	8.9	1.0	88	0.18	1.5	<0.1	4.6	0.1	10.0	1.46	0.22	<0.02	3	0.85	0.077
2317705	Soil	11.08	14.60	25.44	214.9	387	32.3	4.5	100	3.12	13.6	0.8	1.0	0.8	7.1	1.18	1.65	0.15	53	0.11	0.144
2317706	Soil	4.79	14.51	11.09	339.9	455	28.7	6.1	610	0.87	3.7	0.7	2.0	0.4	19.8	4.56	0.77	0.05	11	1.26	0.086
2317707	Soil	6.87	33.82	24.46	652.4	719	71.0	10.4	255	2.01	8.4	2.0	1.6	1.0	29.7	5.54	1.88	0.11	27	1.86	0.096
2317708	Soil	5.71	15.30	12.57	238.5	127	32.1	5.4	136	0.76	2.9	1.5	2.3	0.5	26.0	4.89	1.04	0.04	10	1.18	0.059
2317709	Soil	5.46	25.98	24.71	446.5	390	83.0	11.2	369	1.78	8.7	1.1	1.1	2.4	20.3	3.32	1.84	0.10	20	0.75	0.086
2317710	Soil	8.42	33.85	20.31	385.4	692	79.6	11.2	254	2.11	9.6	5.2	3.1	2.1	31.4	4.47	2.59	0.12	23	1.32	0.069

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Project: 204700  
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# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317681	Soil	2.7	9.8	0.09	617.5	0.001	<20	0.30	0.004	0.07	<0.1	0.7	0.13	0.09	230	1.2	0.02	0.9	0.35	<0.1	0.02
2317682	Soil	11.3	14.3	0.24	487.7	0.001	<20	0.71	0.003	0.07	<0.1	1.2	0.35	0.03	59	2.4	0.05	2.1	0.50	<0.1	<0.02
2317683	Soil	1.5	8.6	0.09	754.5	<0.001	<20	0.19	0.004	0.05	<0.1	0.6	0.09	0.14	116	8.6	0.04	0.4	0.19	<0.1	0.04
2317684	Soil	12.8	30.5	0.38	915.5	0.001	<20	0.90	0.002	0.07	<0.1	1.9	0.44	0.03	101	3.4	0.07	2.0	0.72	<0.1	0.04
2317685	Soil	4.7	15.4	0.15	1095	0.001	<20	0.49	0.004	0.06	<0.1	1.0	0.30	0.10	169	1.4	0.02	0.9	0.38	<0.1	0.02
2317686	Soil	4.9	9.0	0.12	1111	0.001	<20	0.52	0.004	0.07	<0.1	1.1	0.29	0.12	208	1.5	0.02	0.8	0.36	<0.1	0.03
2317687	Soil	10.7	15.1	0.29	393.7	0.001	<20	0.90	0.002	0.07	<0.1	1.5	0.48	0.04	112	2.5	0.05	2.1	0.84	<0.1	0.05
2317688	Soil	10.6	17.0	0.27	389.2	0.001	<20	0.90	0.002	0.07	<0.1	1.4	0.47	0.04	128	2.6	0.06	2.1	0.80	<0.1	0.04
2317689	Soil	3.2	8.8	0.05	476.8	0.002	<20	0.23	0.004	0.04	<0.1	0.6	0.10	0.05	135	0.3	0.02	0.8	0.85	<0.1	<0.02
2317690	Soil	8.4	19.9	0.27	283.0	0.002	<20	1.02	0.002	0.05	<0.1	1.0	0.38	0.06	65	3.4	0.03	2.3	0.69	<0.1	0.04
2317691	Soil	13.3	21.5	0.61	443.6	0.004	<20	1.46	0.004	0.16	<0.1	3.0	0.15	0.05	85	1.2	0.04	3.7	0.61	<0.1	0.09
2317692	Soil	0.5	8.0	0.15	436.9	<0.001	<20	0.07	0.004	0.04	<0.1	0.3	0.03	0.16	97	2.9	<0.02	0.2	0.06	<0.1	0.03
2317693	Soil	5.2	8.7	0.30	641.2	0.003	<20	0.46	0.003	0.05	<0.1	1.1	0.41	0.32	105	14.7	0.02	1.2	0.31	<0.1	0.09
2317694	Soil	0.9	4.0	0.05	218.9	0.002	<20	0.11	0.003	0.05	<0.1	0.3	0.02	0.09	159	0.3	<0.02	0.4	0.16	<0.1	<0.02
2317695	Soil	5.2	7.0	0.07	368.2	0.002	<20	0.32	0.003	0.05	<0.1	0.9	0.07	0.06	84	0.3	0.02	1.6	0.28	<0.1	<0.02
2317696	Soil	14.6	19.7	0.39	405.9	0.002	<20	0.94	0.002	0.07	<0.1	1.7	0.24	<0.02	38	0.4	0.03	2.1	0.38	<0.1	<0.02
2317697	Soil	14.2	18.3	0.35	347.1	0.002	<20	0.86	0.002	0.07	<0.1	1.7	0.23	<0.02	30	0.4	0.04	2.1	0.32	<0.1	0.02
2317698	Soil	3.6	14.4	0.23	114.4	0.003	<20	0.53	0.002	0.03	<0.1	2.1	0.05	0.08	141	0.3	<0.02	1.7	0.64	<0.1	<0.02
2317699	Soil	16.7	44.5	1.05	165.7	0.002	<20	1.18	0.002	0.07	<0.1	13.1	0.10	0.02	34	<0.1	<0.02	2.4	1.32	<0.1	0.04
2317700 BAL-1	Rock Pulp	15.5	28.4	0.16	59.9	0.002	<20	1.15	0.009	0.07	<0.1	3.9	0.31	0.06	98	1.2	0.04	3.1	0.62	<0.1	0.06
2317701	Soil	1.2	6.0	0.09	283.8	0.001	<20	0.15	0.004	0.06	<0.1	0.5	0.10	0.14	171	0.8	<0.02	0.4	0.20	<0.1	0.04
2317702	Soil	11.0	12.6	0.25	588.1	0.001	<20	0.85	0.002	0.07	<0.1	1.7	0.45	0.04	79	2.5	0.06	1.9	0.76	<0.1	0.05
2317703 BAL-1	Rock Pulp	15.9	29.3	0.17	60.3	0.002	<20	1.15	0.009	0.07	<0.1	3.9	0.32	0.06	102	1.4	<0.02	3.0	0.69	<0.1	0.08
2317704	Soil	0.8	5.2	0.06	160.0	0.002	<20	0.11	0.003	0.08	<0.1	0.4	0.10	0.11	228	0.3	<0.02	0.4	0.29	<0.1	0.02
2317705	Soil	9.8	13.7	0.18	143.8	0.003	<20	0.93	0.002	0.07	<0.1	0.9	0.36	0.03	51	1.0	0.06	3.2	0.65	<0.1	<0.02
2317706	Soil	2.6	6.8	0.14	299.4	0.001	<20	0.26	0.004	0.06	<0.1	0.5	0.26	0.13	195	1.6	0.03	0.7	0.28	<0.1	0.04
2317707	Soil	7.6	9.7	0.51	485.5	0.001	<20	0.61	0.002	0.07	<0.1	1.4	0.45	0.07	128	2.1	0.06	1.4	0.44	<0.1	0.05
2317708	Soil	2.8	8.0	0.12	374.2	0.001	<20	0.28	0.005	0.03	<0.1	0.8	0.11	0.14	114	1.5	0.02	0.6	0.21	<0.1	0.06
2317709	Soil	11.9	7.9	0.26	899.1	0.001	<20	0.55	0.002	0.05	<0.1	1.8	0.25	0.03	97	1.3	0.05	1.2	0.40	<0.1	0.08
2317710	Soil	7.8	11.6	0.34	735.2	0.001	<20	0.74	0.002	0.05	<0.1	1.6	0.37	0.05	145	1.9	0.08	1.4	0.60	<0.1	0.09

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# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317681	Soil	0.09	2.2	0.1	<0.05	0.8	2.87	4.8	<0.02	<1	0.1	1.4	<10	<2	75.7
2317682	Soil	0.16	5.1	0.1	<0.05	0.6	4.35	19.8	0.03	3	0.2	10.3	<10	<2	12.5
2317683	Soil	0.04	1.5	<0.1	<0.05	1.5	3.51	2.9	<0.02	2	0.1	1.2	<10	<2	88.6
2317684	Soil	0.08	4.5	<0.1	<0.05	1.3	8.69	24.1	0.04	7	0.4	16.8	<10	<2	8.9
2317685	Soil	0.07	2.5	0.1	<0.05	0.8	7.38	9.3	0.02	1	0.2	4.6	<10	<2	66.0
2317686	Soil	0.07	2.4	<0.1	<0.05	0.8	8.98	9.5	0.02	2	0.3	3.4	<10	<2	73.7
2317687	Soil	0.10	5.7	0.1	<0.05	1.3	6.65	20.3	0.03	2	0.3	12.6	<10	<2	15.0
2317688	Soil	0.11	5.5	0.1	<0.05	1.3	6.60	19.6	0.04	3	0.2	13.4	<10	<2	15.3
2317689	Soil	0.06	4.6	0.2	<0.05	0.4	0.99	6.1	<0.02	<1	<0.1	0.7	<10	<2	70.2
2317690	Soil	0.41	11.1	0.1	<0.05	1.3	3.58	15.3	0.02	2	0.2	11.2	<10	<2	20.5
2317691	Soil	0.57	9.6	0.3	<0.05	2.8	10.64	22.9	0.02	2	1.0	17.7	<10	<2	27.8
2317692	Soil	0.05	1.0	<0.1	<0.05	0.9	0.92	1.0	<0.02	81	<0.1	0.7	<10	<2	88.7
2317693	Soil	0.52	4.3	0.1	<0.05	3.8	6.83	10.7	<0.02	62	0.3	6.9	<10	4	41.7
2317694	Soil	0.04	1.6	<0.1	<0.05	0.5	0.39	1.8	<0.02	<1	<0.1	0.5	<10	<2	88.8
2317695	Soil	0.13	3.4	0.2	<0.05	0.5	2.40	9.8	<0.02	<1	0.2	1.2	<10	<2	64.3
2317696	Soil	0.25	7.6	0.1	<0.05	0.9	7.07	31.7	0.02	<1	0.4	14.5	<10	<2	7.7
2317697	Soil	0.24	7.4	0.2	<0.05	0.7	5.95	30.6	0.02	<1	0.4	13.3	<10	<2	6.3
2317698	Soil	0.13	2.3	0.1	<0.05	1.4	2.43	7.3	<0.02	<1	0.1	3.1	<10	<2	67.4
2317699	Soil	0.15	5.1	<0.1	<0.05	1.2	13.05	34.8	0.04	<1	0.5	13.6	<10	<2	14.7
2317700 BAL-1	Rock Pulp	0.24	6.7	0.5	<0.05	1.9	18.06	26.7	<0.02	2	0.8	9.0	<10	<2	12.9
2317701	Soil	0.05	1.7	<0.1	<0.05	1.7	1.07	2.1	<0.02	<1	0.1	1.4	<10	<2	85.1
2317702	Soil	0.12	6.4	0.1	<0.05	1.9	8.70	20.3	0.03	2	0.3	11.1	<10	<2	16.4
2317703 BAL-1	Rock Pulp	0.24	6.7	11.8	<0.05	2.4	18.88	27.5	0.03	3	0.7	9.2	<10	<2	13.0
2317704	Soil	0.04	1.7	0.1	<0.05	0.8	0.43	1.6	<0.02	<1	<0.1	0.5	<10	<2	89.3
2317705	Soil	0.85	6.9	0.3	<0.05	0.5	2.43	18.3	0.02	<1	0.1	7.6	<10	<2	15.8
2317706	Soil	0.10	3.2	<0.1	<0.05	1.7	3.15	4.8	<0.02	<1	0.2	3.1	<10	<2	69.1
2317707	Soil	0.13	4.7	0.1	<0.05	2.1	8.78	13.7	0.03	5	0.3	7.9	<10	<2	26.0
2317708	Soil	0.07	1.7	<0.1	<0.05	2.5	4.61	5.6	<0.02	<1	0.2	2.7	<10	<2	72.1
2317709	Soil	0.10	3.2	<0.1	<0.05	2.9	8.57	22.6	0.02	<1	0.4	9.4	<10	<2	10.9
2317710	Soil	0.14	4.5	<0.1	<0.05	3.5	8.06	14.9	<0.02	7	0.3	14.8	<10	<2	21.3

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317711	Soil	6.11	9.37	7.49	295.2	202	17.2	2.8	92	0.51	2.5	0.6	1.9	0.3	15.1	10.21	0.62	0.04	7	0.96	0.075
2317712	Soil	8.77	30.89	21.98	602.7	574	71.5	8.9	265	2.07	9.7	3.4	1.2	0.8	25.9	6.32	2.32	0.11	28	1.28	0.083
2317713	Soil	4.83	45.80	15.52	193.6	767	81.1	16.1	1515	1.87	6.6	3.6	2.7	0.5	41.3	12.40	1.78	0.10	19	3.46	0.070
2317714	Soil	3.96	28.65	23.36	324.8	631	71.6	13.5	544	1.96	8.0	2.2	1.7	0.9	28.4	5.37	1.41	0.12	24	2.13	0.063
2317715	Soil	6.40	16.14	17.44	421.9	253	43.0	9.2	252	1.29	4.4	1.4	2.9	0.6	21.9	10.81	1.15	0.07	17	1.26	0.085
2317716	Soil	5.58	10.05	9.02	319.0	178	23.3	5.0	105	0.60	1.8	0.7	5.3	0.4	20.2	13.27	0.63	0.04	8	1.20	0.072
2317717	Soil	7.14	34.84	29.92	771.7	552	92.2	14.6	381	2.16	9.0	1.9	1.7	1.4	32.2	6.44	2.06	0.12	26	2.41	0.125
2317718	Soil	5.95	32.58	25.82	694.3	615	96.8	12.7	315	2.02	8.0	1.7	1.1	1.2	33.2	5.52	1.99	0.12	24	2.47	0.103
2317719	Soil	4.16	13.00	9.96	196.7	224	28.3	3.9	71	0.86	3.6	1.1	4.0	0.7	19.8	2.01	0.99	0.05	10	1.05	0.062
2317720	Soil	7.52	27.77	24.87	401.5	409	70.2	9.3	197	2.12	10.4	2.1	1.6	1.7	20.5	5.07	1.85	0.13	23	0.74	0.073
2317721 BAL-1	Rock Pulp	1.22	14.02	19.74	65.3	149	29.2	6.1	258	1.72	5.0	1.2	1.0	1.2	24.2	1.93	0.31	0.08	40	0.64	0.055
2317722	Soil	5.76	16.14	8.12	187.8	919	31.6	4.5	846	0.76	3.0	2.7	1.3	0.6	31.5	10.98	0.80	0.05	11	1.32	0.067
2317723	Soil	12.14	15.53	24.77	295.3	347	38.2	4.9	103	1.54	13.8	2.0	1.8	2.7	26.6	1.47	3.67	0.14	22	0.32	0.072
2317724	Soil	3.32	8.13	5.03	72.4	714	12.2	1.3	39	0.34	1.9	0.7	4.0	0.4	16.0	4.15	0.65	0.06	6	0.56	0.078
2317725	Soil	4.81	17.00	18.65	122.1	401	24.0	2.6	44	1.18	6.0	3.0	2.1	1.3	18.9	3.20	0.93	0.13	24	0.55	0.056
2317726	Soil	3.61	10.17	7.29	114.6	427	14.6	2.1	46	0.49	2.2	0.8	4.4	0.5	27.5	3.32	0.85	0.05	9	0.65	0.073
2317727	Soil	7.11	20.75	20.06	232.7	548	44.6	6.7	226	1.68	8.5	2.7	2.3	1.3	32.2	3.25	1.51	0.14	27	0.64	0.055
2317728	Soil	3.43	8.40	4.22	232.3	192	15.7	2.0	35	0.34	2.0	0.5	15.5	0.3	29.2	14.89	0.53	0.03	5	1.20	0.053
2317729	Soil	9.84	62.74	28.01	521.5	1281	133.4	15.7	522	2.62	12.7	2.1	4.9	2.1	28.6	6.43	2.91	0.17	26	1.14	0.068
2317730	Soil	3.76	16.95	11.70	102.7	4480	27.2	2.8	80	0.70	3.4	0.6	1.5	0.2	10.0	2.55	0.67	0.07	17	0.24	0.071
2317731	Soil	11.52	13.89	29.00	200.6	824	31.1	3.2	61	3.35	23.7	1.3	2.1	3.0	8.9	0.72	3.32	0.29	61	0.07	0.149
2317732	Soil	2.33	6.19	14.07	46.4	1261	7.1	0.8	174	0.37	1.0	0.3	<0.2	0.2	10.7	2.57	0.19	0.06	10	0.24	0.112
2317733	Soil	6.61	20.23	23.92	262.5	113	50.2	6.9	211	4.01	15.4	1.1	0.9	4.7	8.9	0.98	1.82	0.13	36	0.13	0.173
2317734	Soil	2.97	21.09	16.61	86.8	2542	20.8	1.9	21	0.73	2.0	1.0	<0.2	<0.1	11.6	12.71	0.38	0.06	13	0.07	0.100
2317735	Soil	6.11	11.73	17.66	233.2	924	26.7	7.2	287	3.51	8.4	0.7	<0.2	2.7	8.3	2.08	0.92	0.17	44	0.10	0.084
2317736	Soil	1.80	8.81	8.75	42.3	812	8.5	1.4	623	0.56	1.1	0.2	<0.2	<0.1	9.7	4.03	0.18	0.06	15	0.09	0.073
2317737	Soil	1.84	8.16	8.47	41.8	809	8.4	1.3	572	0.55	1.2	0.2	<0.2	<0.1	9.2	4.08	0.18	0.05	14	0.08	0.068
2317738	Soil	4.40	13.63	17.65	242.4	137	49.9	9.3	348	2.74	10.1	1.0	<0.2	5.3	8.3	1.63	1.00	0.10	30	0.16	0.143
2317739	Soil	4.51	13.08	17.74	253.1	126	44.7	8.7	387	2.78	10.0	0.9	0.4	4.8	8.5	2.38	0.98	0.10	33	0.18	0.157
2317740	Soil	1.78	7.59	7.07	35.1	1019	9.9	1.1	75	0.37	1.3	0.2	<0.2	0.2	10.0	3.89	0.14	0.04	7	0.09	0.094

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317711	Soil	1.6	7.7	0.10	179.3	<0.001	<20	0.19	0.003	0.04	<0.1	0.4	0.14	0.16	154	0.9	<0.02	0.6	0.24	<0.1	0.04
2317712	Soil	6.1	11.2	0.20	496.4	0.001	<20	0.65	0.002	0.05	<0.1	1.0	0.50	0.08	103	2.3	0.05	1.4	0.58	<0.1	0.05
2317713	Soil	4.7	7.8	0.18	789.3	0.001	<20	0.54	0.003	0.03	<0.1	1.1	0.13	0.12	169	2.9	0.03	1.1	0.31	<0.1	0.04
2317714	Soil	6.1	9.0	0.29	631.2	0.001	<20	0.64	0.002	0.05	<0.1	1.5	0.30	0.08	128	1.6	0.06	1.3	0.45	<0.1	0.05
2317715	Soil	3.9	10.7	0.20	246.7	0.001	<20	0.40	0.003	0.05	<0.1	1.0	0.27	0.12	89	2.8	0.03	0.9	0.32	<0.1	0.08
2317716	Soil	1.8	6.5	0.17	134.5	<0.001	<20	0.21	0.002	0.03	<0.1	0.6	0.13	0.15	80	2.8	0.02	0.5	0.19	<0.1	0.07
2317717	Soil	7.3	9.0	0.91	491.4	0.001	<20	0.51	0.002	0.07	<0.1	1.8	0.48	0.07	110	2.8	0.06	1.0	0.47	<0.1	0.06
2317718	Soil	6.4	8.7	0.77	551.6	0.001	<20	0.58	0.001	0.06	<0.1	1.5	0.43	0.07	120	2.4	0.06	1.2	0.45	<0.1	0.07
2317719	Soil	2.7	9.3	0.17	308.7	0.002	<20	0.27	0.003	0.04	<0.1	0.6	0.13	0.10	115	1.0	0.02	0.7	0.27	<0.1	0.05
2317720	Soil	9.0	11.5	0.30	685.2	0.002	<20	0.72	<0.001	0.05	<0.1	1.7	0.34	0.04	126	1.2	0.05	1.5	0.50	<0.1	0.05
2317721 BAL-1	Rock Pulp	16.4	26.6	0.16	61.0	0.001	<20	1.03	0.006	0.06	<0.1	3.8	0.29	0.06	104	1.2	0.04	2.8	0.48	<0.1	0.08
2317722	Soil	3.0	12.9	0.12	609.1	0.002	<20	0.41	0.003	0.03	<0.1	0.8	0.09	0.11	122	0.9	0.03	1.0	0.23	<0.1	0.05
2317723	Soil	11.5	7.5	0.16	1140	0.002	<20	0.44	<0.001	0.07	0.2	0.9	0.58	0.04	63	1.8	<0.02	1.0	0.49	<0.1	<0.02
2317724	Soil	2.1	9.3	0.04	361.7	0.001	<20	0.17	0.004	0.05	<0.1	0.5	0.10	0.11	150	0.5	<0.02	0.6	0.48	<0.1	0.03
2317725	Soil	8.9	7.8	0.10	603.7	0.002	<20	0.57	0.002	0.06	<0.1	0.9	0.34	0.04	78	0.7	0.05	1.9	0.57	<0.1	0.03
2317726	Soil	2.2	6.3	0.09	365.1	0.002	<20	0.24	0.003	0.06	<0.1	0.7	0.14	0.11	204	0.9	0.03	0.7	0.39	<0.1	0.04
2317727	Soil	8.9	9.3	0.26	714.7	0.002	<20	0.74	<0.001	0.06	<0.1	1.2	0.36	0.03	95	1.3	0.07	1.9	0.54	<0.1	0.04
2317728	Soil	1.3	9.9	0.11	217.8	0.001	<20	0.14	0.003	0.03	<0.1	0.4	0.08	0.14	78	1.6	0.02	0.4	0.18	<0.1	0.03
2317729	Soil	8.3	12.0	0.38	1283	0.001	<20	0.82	0.001	0.06	<0.1	2.0	0.38	0.05	154	2.6	<0.02	1.9	0.60	<0.1	0.08
2317730	Soil	4.1	10.2	0.08	451.6	0.002	<20	0.43	0.002	0.08	<0.1	0.6	0.09	0.04	93	0.6	0.03	1.6	0.44	<0.1	0.02
2317731	Soil	12.0	12.0	0.12	223.9	0.003	<20	0.86	<0.001	0.05	0.1	0.9	0.55	0.02	35	1.4	0.11	2.9	0.71	<0.1	<0.02
2317732	Soil	4.4	9.5	0.06	444.3	0.003	<20	0.45	0.002	0.07	<0.1	0.5	0.09	0.04	147	0.2	<0.02	2.3	0.34	<0.1	<0.02
2317733	Soil	11.6	30.3	0.55	182.4	0.002	<20	1.52	<0.001	0.06	<0.1	1.8	0.40	<0.02	35	1.1	0.04	2.7	0.63	<0.1	0.06
2317734	Soil	6.1	14.2	0.06	576.0	<0.001	<20	0.53	0.003	0.06	<0.1	0.2	0.10	0.05	88	0.4	0.03	2.2	0.70	<0.1	<0.02
2317735	Soil	14.8	23.4	0.47	259.1	0.012	<20	1.37	0.002	0.08	<0.1	1.3	0.25	<0.02	35	0.7	0.02	5.8	0.62	<0.1	<0.02
2317736	Soil	6.4	12.7	0.06	598.3	0.001	<20	0.73	0.002	0.04	<0.1	0.3	0.11	0.03	88	0.2	<0.02	2.9	0.22	<0.1	<0.02
2317737	Soil	6.3	11.6	0.06	600.1	0.001	<20	0.71	0.003	0.04	<0.1	0.2	0.10	0.03	101	0.2	0.02	2.7	0.22	<0.1	<0.02
2317738	Soil	14.4	25.6	0.52	228.3	0.003	<20	1.62	<0.001	0.06	<0.1	2.2	0.27	<0.02	32	0.4	0.03	2.7	0.52	<0.1	0.04
2317739	Soil	14.0	25.6	0.52	282.3	0.003	<20	1.62	<0.001	0.06	<0.1	2.1	0.27	<0.02	46	0.6	0.02	3.0	0.54	<0.1	0.03
2317740	Soil	6.4	15.5	0.06	450.3	0.003	<20	0.45	0.003	0.04	<0.1	0.5	0.08	0.03	96	0.2	<0.02	2.4	0.42	<0.1	<0.02

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
2317711	Soil	0.05	1.9	<0.1	<0.05	1.5	1.67	2.8	<0.02	3	<0.1	2.5	<10	<2	80.7
2317712	Soil	0.16	5.4	0.1	<0.05	1.7	6.78	11.1	0.03	<1	0.3	8.9	<10	<2	28.3
2317713	Soil	0.20	2.4	0.1	<0.05	1.7	9.33	8.7	<0.02	5	0.7	2.9	<10	<2	59.6
2317714	Soil	0.23	5.5	0.1	<0.05	1.8	7.60	11.9	0.03	1	0.4	8.4	11	<2	31.7
2317715	Soil	0.11	3.5	<0.1	<0.05	3.0	5.02	7.5	<0.02	1	0.2	4.3	<10	<2	56.7
2317716	Soil	0.06	1.8	<0.1	<0.05	2.4	2.55	3.6	<0.02	<1	<0.1	2.1	<10	<2	77.2
2317717	Soil	0.10	4.5	<0.1	<0.05	2.7	10.41	13.1	0.03	<1	0.4	6.5	<10	<2	23.4
2317718	Soil	0.14	4.2	<0.1	<0.05	2.7	8.54	11.7	0.03	3	0.4	7.4	<10	<2	25.9
2317719	Soil	0.15	2.4	<0.1	<0.05	2.0	3.12	5.3	<0.02	1	0.2	3.5	<10	<2	64.4
2317720	Soil	0.41	5.4	0.2	<0.05	2.3	8.47	17.6	<0.02	<1	0.3	11.9	<10	<2	14.7
2317721 BAL-1	Rock Pulp	0.22	5.4	0.5	<0.05	2.2	18.77	28.6	<0.02	1	0.8	7.5	<10	<2	12.9
2317722	Soil	0.17	2.2	0.1	<0.05	1.5	3.26	6.5	<0.02	<1	0.3	3.0	<10	<2	74.2
2317723	Soil	0.14	5.8	<0.1	<0.05	1.1	6.42	21.1	<0.02	<1	0.2	6.2	<10	<2	7.8
2317724	Soil	0.07	3.7	0.1	<0.05	1.0	1.44	3.9	<0.02	<1	0.1	1.2	<10	<2	77.5
2317725	Soil	0.35	8.6	0.2	<0.05	0.8	4.09	16.3	<0.02	1	0.3	5.8	<10	<2	20.5
2317726	Soil	0.15	3.6	0.1	<0.05	1.3	2.09	4.3	<0.02	<1	0.1	2.0	<10	<2	76.6
2317727	Soil	0.37	6.7	0.2	<0.05	1.1	5.96	16.8	<0.02	2	0.3	10.0	<10	<2	15.8
2317728	Soil	0.08	1.7	<0.1	<0.05	1.2	1.48	2.4	<0.02	<1	<0.1	1.5	<10	<2	84.8
2317729	Soil	0.18	4.7	<0.1	<0.05	3.4	10.24	15.9	0.02	6	0.4	13.8	<10	<2	20.1
2317730	Soil	0.09	4.4	0.3	<0.05	0.5	2.55	7.8	<0.02	<1	0.2	2.3	<10	<2	58.6
2317731	Soil	0.95	10.5	0.3	<0.05	1.1	3.66	21.6	0.03	<1	0.2	6.6	<10	<2	11.0
2317732	Soil	0.08	2.3	0.2	<0.05	1.2	0.83	7.8	<0.02	<1	0.1	0.9	<10	<2	62.2
2317733	Soil	0.32	8.9	0.2	<0.05	3.3	4.54	23.9	0.05	<1	0.6	24.0	<10	<2	7.1
2317734	Soil	0.16	4.5	0.2	<0.05	<0.1	3.25	11.9	<0.02	<1	0.3	1.8	<10	<2	49.7
2317735	Soil	2.57	11.3	0.7	<0.05	0.8	2.70	29.6	0.03	<1	0.4	24.9	<10	<2	9.6
2317736	Soil	0.13	1.9	0.3	<0.05	<0.1	1.63	12.3	<0.02	<1	0.3	1.5	<10	<2	50.5
2317737	Soil	0.12	1.6	0.3	<0.05	<0.1	1.59	11.7	<0.02	1	0.3	1.4	<10	<2	52.8
2317738	Soil	0.35	11.5	0.2	<0.05	2.3	5.14	29.3	0.04	<1	0.7	20.7	<10	<2	6.0
2317739	Soil	0.32	11.0	0.2	<0.05	1.3	5.01	29.8	0.04	<1	0.8	20.6	<10	<2	6.2
2317740	Soil	0.07	2.7	0.3	<0.05	0.3	1.17	11.7	<0.02	<1	0.2	1.2	<10	<2	59.8



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# CERTIFICATE OF ANALYSIS

VAN13002776.1

Method	Analyte	1F Mo	1F Cu	1F Pb	1F Zn	1F Ag	1F Ni	1F Co	1F Mn	1F Fe	1F As	1F U	1F Au	1F Th	1F Sr	1F Cd	1F Sb	1F Bi	1F V	1F Ca	1F P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317741	Soil	4.78	8.65	17.92	147.7	238	29.6	4.5	200	3.49	10.6	0.7	<0.2	3.3	5.3	1.17	1.09	0.12	44	0.08	0.254
2317742	Soil	9.15	7.56	7.92	52.9	4847	8.5	1.6	47	0.33	1.3	0.2	<0.2	0.4	11.4	2.99	0.39	0.04	7	0.59	0.085
2317743	Soil	10.20	14.86	6.96	103.3	318	23.6	3.1	19	1.02	4.9	0.8	<0.2	0.8	6.4	2.19	0.85	0.08	31	0.03	0.046
2317744 BAL-1	Rock Pulp	1.30	15.23	20.73	75.2	150	32.7	6.8	278	1.80	4.9	1.2	0.6	1.3	25.5	1.81	0.32	0.08	43	0.67	0.050
2317745	Soil	13.30	5.45	2.49	70.6	957	8.5	1.3	86	0.23	1.4	0.1	<0.2	0.2	11.5	2.19	0.27	<0.02	5	0.56	0.081
2317746	Soil	45.16	33.46	15.19	168.0	824	39.9	4.4	42	2.95	33.7	1.9	0.5	1.9	19.3	1.53	4.51	0.15	80	0.02	0.088
2317747 BAL-1	Rock Pulp	1.25	15.00	20.24	74.5	141	32.6	6.5	277	1.78	5.0	1.2	0.7	1.2	25.6	1.75	0.29	0.08	43	0.66	0.050
2317748	Soil	6.47	15.08	5.58	84.9	2201	12.8	1.8	70	0.42	2.2	0.2	<0.2	0.3	12.8	4.15	0.36	0.05	10	0.41	0.111
2317749	Soil	17.35	14.42	5.95	103.1	647	21.8	4.3	92	0.82	2.5	0.3	<0.2	0.4	17.5	3.97	0.47	0.05	15	0.61	0.088
2317750	Soil	18.48	25.17	13.45	114.0	182	51.3	9.5	154	2.55	8.1	0.8	<0.2	0.2	8.8	0.97	1.12	0.11	38	0.22	0.065
2317001	Soil	3.23	7.33	20.68	83.1	153	12.7	1.5	518	0.38	2.3	0.1	<0.2	0.3	6.2	0.61	0.40	0.03	5	0.44	0.102
2317002	Soil	4.29	6.75	20.11	161.5	67	30.7	5.2	74	1.35	2.4	0.3	<0.2	1.1	5.5	0.48	0.43	0.08	26	0.13	0.027



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# CERTIFICATE OF ANALYSIS

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Method	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf	
Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	
2317741	Soil	10.7	28.1	0.46	153.0	0.003	<20	1.35	<0.001	0.05	<0.1	1.4	0.20	<0.02	25	0.4	0.06	3.6	0.43	<0.1	0.03
2317742	Soil	2.2	7.1	0.08	336.7	0.003	<20	0.24	0.002	0.08	<0.1	0.6	0.07	0.09	299	2.1	<0.02	1.0	0.38	<0.1	<0.02
2317743	Soil	19.0	16.4	0.06	565.5	0.002	<20	0.59	<0.001	0.06	<0.1	0.7	0.20	<0.02	22	1.9	0.03	2.4	0.32	<0.1	<0.02
2317744 BAL-1	Rock Pulp	17.1	30.7	0.18	64.8	0.002	<20	1.20	0.008	0.07	<0.1	4.1	0.32	0.06	107	1.4	<0.02	3.3	0.61	<0.1	0.06
2317745	Soil	1.3	8.5	0.08	202.2	0.002	<20	0.15	0.004	0.08	<0.1	0.5	0.08	0.11	202	0.4	<0.02	0.5	0.40	<0.1	<0.02
2317746	Soil	21.6	29.2	0.04	161.3	0.009	<20	0.50	0.002	0.07	<0.1	0.9	0.67	0.06	28	5.3	0.09	3.1	0.53	<0.1	<0.02
2317747 BAL-1	Rock Pulp	15.8	29.8	0.17	60.8	0.002	<20	1.21	0.008	0.07	<0.1	3.8	0.32	0.06	120	1.4	<0.02	3.4	0.56	<0.1	0.07
2317748	Soil	2.2	14.8	0.07	373.5	0.001	<20	0.31	0.004	0.13	<0.1	0.6	0.07	0.10	292	0.6	<0.02	1.0	0.45	<0.1	<0.02
2317749	Soil	3.2	12.7	0.12	553.2	0.003	<20	0.47	0.003	0.06	<0.1	0.8	0.08	0.11	241	0.7	0.02	1.4	0.22	<0.1	0.04
2317750	Soil	17.0	30.4	0.52	249.9	0.008	<20	1.02	<0.001	0.09	<0.1	0.8	0.24	0.04	54	1.2	0.06	3.5	0.55	<0.1	<0.02
2317001	Soil	1.7	13.6	0.11	129.2	0.001	<20	0.16	0.004	0.09	<0.1	0.4	0.13	0.11	193	0.4	0.02	0.5	0.30	<0.1	0.02
2317002	Soil	12.4	27.8	0.20	224.2	0.002	<20	0.98	<0.001	0.05	<0.1	1.1	0.14	<0.02	143	0.2	<0.02	3.0	0.38	<0.1	<0.02





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# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	%	
MDL		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
2317741	Soil	0.61	11.0	0.2	<0.05	1.2	2.92	21.4	0.03	<1	0.4	17.4	<10	<2	8.4
2317742	Soil	0.09	2.3	0.1	<0.05	0.9	0.71	4.1	<0.02	1	<0.1	0.9	<10	<2	77.0
2317743	Soil	0.11	6.9	0.2	<0.05	0.2	2.83	34.6	<0.02	<1	0.2	2.6	<10	<2	6.9
2317744 BAL-1	Rock Pulp	0.25	6.8	0.5	<0.05	2.1	19.12	28.5	0.02	1	0.8	9.4	<10	<2	12.8
2317745	Soil	0.05	2.5	<0.1	<0.05	0.8	0.41	2.4	<0.02	<1	<0.1	0.4	<10	<2	86.7
2317746	Soil	0.57	7.4	0.3	<0.05	0.2	2.64	37.5	0.03	1	0.4	1.3	<10	<2	7.0
2317747 BAL-1	Rock Pulp	0.28	6.7	0.5	<0.05	2.1	18.63	27.9	<0.02	1	0.8	9.1	<10	<2	13.4
2317748	Soil	0.07	3.6	0.1	<0.05	0.7	0.71	3.8	<0.02	<1	<0.1	0.8	<10	<2	72.8
2317749	Soil	0.45	2.3	0.1	<0.05	1.4	1.71	6.1	<0.02	<1	0.2	2.5	<10	<2	67.4
2317750	Soil	0.76	7.6	0.2	<0.05	<0.1	5.25	33.5	0.02	<1	0.3	10.3	<10	<2	14.7
2317001	Soil	0.09	3.4	<0.1	<0.05	0.7	0.82	3.3	<0.02	<1	<0.1	1.3	<10	<2	84.4
2317002	Soil	0.24	5.4	0.3	<0.05	0.5	2.50	23.6	<0.02	<1	0.2	10.6	<10	<2	10.2

# QUALITY CONTROL REPORT

VAN13002776.1

Method	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
Unit	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
MDL	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001	
Pulp Duplicates																					
2317509	Soil	4.48	7.12	10.31	77.7	180	11.0	3.3	65	0.53	1.2	0.2	0.5	0.2	9.1	2.39	0.35	0.06	11	0.21	0.124
REP 2317509	QC	4.76	7.53	10.57	77.0	181	11.9	3.7	71	0.55	1.2	0.2	0.8	0.2	9.7	2.35	0.35	0.06	12	0.22	0.124
2317517	Soil	14.58	17.31	8.28	76.0	524	18.3	2.9	29	1.35	8.0	0.5	<0.2	0.4	5.2	0.44	1.18	0.13	75	0.02	0.048
REP 2317517	QC																				
2317545	Soil	27.76	11.29	7.27	73.3	3758	19.5	2.4	18	0.94	6.2	0.5	<0.2	0.2	4.3	0.25	2.14	0.09	109	0.03	0.031
REP 2317545	QC	28.06	11.84	7.39	75.3	3783	19.9	2.5	19	0.95	6.4	0.5	<0.2	0.2	4.4	0.29	2.23	0.09	111	0.03	0.033
2317555	Soil	3.54	11.33	9.77	106.4	152	27.5	7.4	193	1.37	3.6	0.6	<0.2	1.0	16.0	0.80	0.81	0.09	17	0.82	0.096
REP 2317555	QC																				
2317581 BAL-1	Rock Pulp	1.23	13.73	19.22	70.6	145	29.7	6.2	262	1.74	4.4	1.1	0.6	1.1	25.1	1.78	0.29	0.08	42	0.64	0.052
REP 2317581 BAL-1	QC	1.23	13.96	18.87	71.6	144	29.8	6.0	266	1.70	4.2	1.1	1.2	1.1	24.8	1.79	0.29	0.08	42	0.63	0.052
2317593	Soil	8.16	19.96	134.4	296.4	354	59.9	10.7	339	2.21	8.8	1.0	0.6	3.5	77.9	2.04	1.52	0.10	19	4.03	0.093
REP 2317593	QC																				
2317611	Soil	9.26	18.79	10.36	215.9	1680	31.5	8.4	188	1.27	8.1	0.9	1.3	0.8	20.9	6.03	1.84	0.08	23	0.30	0.107
REP 2317611	QC	9.79	18.97	10.94	210.6	1682	31.7	8.4	191	1.34	8.4	1.0	1.9	0.8	21.7	6.05	1.85	0.08	24	0.29	0.105
2317631	Soil	4.13	6.07	7.82	72.0	160	17.3	3.8	71	0.91	1.8	0.4	0.5	0.6	22.0	1.57	0.37	0.05	18	0.97	0.068
REP 2317631	QC																				
2317647	Soil	7.32	33.10	177.0	169.5	986	42.9	6.8	66	2.10	6.4	2.0	0.8	1.2	15.5	15.64	1.22	0.15	34	0.37	0.075
REP 2317647	QC	7.49	33.32	182.0	173.4	998	41.9	6.4	67	2.11	6.5	1.9	0.7	1.4	15.4	16.21	1.25	0.15	34	0.36	0.074
2317665	Soil	5.13	4.60	37.45	272.3	110	9.2	1.9	50	0.37	1.8	0.2	<0.2	0.3	36.5	3.76	0.38	0.02	5	1.61	0.089
REP 2317665	QC																				
2317669	Soil	9.61	11.83	15.46	237.3	89	19.6	4.2	309	0.42	<0.1	21.7	<0.2	0.3	80.8	4.37	1.47	0.03	8	2.63	0.067
REP 2317669	QC																				
2317683	Soil	5.64	15.23	6.10	326.0	346	24.6	4.2	45	0.39	<0.1	1.0	0.7	0.3	28.2	17.62	0.86	0.04	5	0.84	0.076
REP 2317683	QC	5.61	15.41	5.94	319.7	333	23.7	4.2	45	0.40	0.1	1.0	0.3	0.2	27.7	16.71	0.88	0.03	5	0.83	0.074
2317707	Soil	6.87	33.82	24.46	652.4	719	71.0	10.4	255	2.01	8.4	2.0	1.6	1.0	29.7	5.54	1.88	0.11	27	1.86	0.096
REP 2317707	QC																				
2317719	Soil	4.16	13.00	9.96	196.7	224	28.3	3.9	71	0.86	3.6	1.1	4.0	0.7	19.8	2.01	0.99	0.05	10	1.05	0.062
REP 2317719	QC	3.97	12.38	9.82	200.1	226	27.5	3.8	67	0.84	3.7	1.0	4.7	0.6	20.4	2.04	0.98	0.05	9	1.10	0.065

## QUALITY CONTROL REPORT

VAN13002776.1

Method	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf	
Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	
Pulp Duplicates																					
2317509	Soil	5.4	9.8	0.14	276.4	0.003	<20	0.47	0.002	0.07	<0.1	0.7	0.08	0.08	113	0.2	<0.02	2.3	0.54	<0.1	0.03
REP 2317509	QC	6.2	11.9	0.15	292.3	0.003	<20	0.50	0.002	0.07	<0.1	0.7	0.09	0.08	105	0.4	0.02	2.5	0.56	<0.1	<0.02
2317517	Soil	11.6	13.8	0.03	68.0	0.002	<20	0.66	<0.001	0.03	<0.1	0.5	0.20	<0.02	18	1.6	0.10	5.2	0.85	<0.1	<0.02
REP 2317517	QC																				
2317545	Soil	18.3	17.4	0.03	67.8	0.003	<20	0.53	<0.001	0.03	<0.1	0.4	0.38	<0.02	23	3.5	0.11	3.5	0.66	<0.1	<0.02
REP 2317545	QC	18.3	17.8	0.03	76.0	0.003	<20	0.53	<0.001	0.03	<0.1	0.5	0.39	<0.02	25	3.7	0.10	3.7	0.67	<0.1	<0.02
2317555	Soil	8.1	14.6	0.30	213.2	0.003	<20	0.64	0.001	0.09	<0.1	1.6	0.11	0.08	43	0.6	0.02	1.8	0.47	<0.1	0.08
REP 2317555	QC																				
2317581 BAL-1	Rock Pulp	15.7	26.8	0.16	61.6	0.002	<20	1.14	0.005	0.07	<0.1	3.7	0.31	0.06	98	1.3	<0.02	3.0	0.57	<0.1	0.07
REP 2317581 BAL-1	QC	15.6	27.3	0.16	60.6	0.002	<20	1.11	0.005	0.07	<0.1	3.8	0.30	0.06	105	1.3	<0.02	3.0	0.57	<0.1	0.06
2317593	Soil	12.1	22.5	1.29	924.7	0.002	<20	0.86	<0.001	0.08	<0.1	2.2	0.30	0.05	137	1.5	0.05	2.1	0.48	<0.1	0.05
REP 2317593	QC																				
2317611	Soil	5.0	12.6	0.17	652.3	0.001	<20	0.51	0.002	0.12	<0.1	0.9	0.42	0.08	152	2.2	0.06	1.1	0.59	<0.1	0.03
REP 2317611	QC	5.5	14.1	0.18	656.4	0.001	<20	0.53	0.002	0.12	<0.1	0.8	0.46	0.08	133	2.1	0.07	1.1	0.61	<0.1	0.03
2317631	Soil	6.1	17.1	0.26	138.0	0.003	<20	0.64	0.004	0.05	<0.1	1.5	0.08	0.08	138	0.5	<0.02	2.1	0.34	<0.1	0.05
REP 2317631	QC																				
2317647	Soil	8.7	15.4	0.13	975.4	0.003	<20	0.77	0.004	0.07	<0.1	1.7	0.26	0.05	90	1.1	0.03	2.8	0.71	<0.1	0.02
REP 2317647	QC	8.5	15.3	0.13	942.0	0.003	<20	0.76	0.004	0.07	<0.1	1.6	0.25	0.05	100	1.2	0.06	2.6	0.70	<0.1	0.02
2317665	Soil	1.4	4.8	0.18	446.9	0.001	<20	0.18	0.004	0.05	<0.1	0.4	0.10	0.15	145	2.3	<0.02	0.4	0.14	<0.1	0.03
REP 2317665	QC																				
2317669	Soil	2.0	8.7	0.20	596.3	0.001	<20	0.20	0.008	0.05	<0.1	0.7	0.17	0.22	125	8.0	<0.02	0.6	0.20	<0.1	0.06
REP 2317669	QC																				
2317683	Soil	1.5	8.6	0.09	754.5	<0.001	<20	0.19	0.004	0.05	<0.1	0.6	0.09	0.14	116	8.6	0.04	0.4	0.19	<0.1	0.04
REP 2317683	QC	1.5	8.9	0.09	739.7	<0.001	<20	0.19	0.004	0.05	<0.1	0.6	0.09	0.13	121	8.3	<0.02	0.3	0.19	<0.1	0.03
2317707	Soil	7.6	9.7	0.51	485.5	0.001	<20	0.61	0.002	0.07	<0.1	1.4	0.45	0.07	128	2.1	0.06	1.4	0.44	<0.1	0.05
REP 2317707	QC																				
2317719	Soil	2.7	9.3	0.17	308.7	0.002	<20	0.27	0.003	0.04	<0.1	0.6	0.13	0.10	115	1.0	0.02	0.7	0.27	<0.1	0.05
REP 2317719	QC	2.7	9.3	0.17	310.9	0.002	<20	0.27	0.004	0.03	<0.1	0.7	0.14	0.10	110	1.0	<0.02	0.6	0.27	<0.1	0.04

## QUALITY CONTROL REPORT

VAN13002776.1

Method Analyte	Unit	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
MDL		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
Pulp Duplicates															
2317509	Soil	0.16	4.2	0.2	<0.05	0.6	1.85	10.7	<0.02	<1	0.2	2.4	<10	<2	50.5
REP 2317509	QC	0.17	4.5	0.3	<0.05	0.7	2.02	11.8	<0.02	<1	0.3	2.6	<10	<2	
2317517	Soil	0.25	4.6	0.7	<0.05	0.2	1.88	22.5	<0.02	<1	0.2	0.9	<10	<2	10.7
REP 2317517	QC														10.7
2317545	Soil	0.17	4.3	0.5	<0.05	<0.1	1.49	30.9	<0.02	2	0.1	0.8	<10	<2	9.0
REP 2317545	QC	0.16	4.6	0.5	<0.05	<0.1	1.54	30.7	<0.02	<1	0.1	0.7	<10	<2	
2317555	Soil	0.43	7.2	0.2	<0.05	3.1	7.24	17.0	<0.02	2	0.4	6.1	<10	<2	28.8
REP 2317555	QC														28.2
2317581 BAL-1	Rock Pulp	0.26	6.3	0.5	<0.05	2.0	18.06	26.7	<0.02	2	0.7	9.5	<10	<2	12.8
REP 2317581 BAL-1	QC	0.27	6.3	0.5	<0.05	2.0	18.16	26.9	0.02	3	0.8	8.7	<10	<2	
2317593	Soil	0.14	4.3	<0.1	<0.05	2.2	10.18	24.0	0.02	1	0.3	12.0	<10	<2	15.0
REP 2317593	QC														14.6
2317611	Soil	0.14	4.5	<0.1	<0.05	1.4	2.65	9.4	<0.02	1	0.2	7.3	<10	<2	61.8
REP 2317611	QC	0.15	4.9	<0.1	<0.05	1.4	2.79	9.9	<0.02	1	0.2	7.8	<10	<2	
2317631	Soil	0.19	2.9	0.2	<0.05	2.2	4.19	11.9	<0.02	<1	0.2	5.4	<10	<2	65.9
REP 2317631	QC														65.9
2317647	Soil	0.35	7.5	0.3	<0.05	1.4	4.84	16.2	0.04	<1	0.5	4.0	<10	<2	33.1
REP 2317647	QC	0.40	7.6	0.3	<0.05	1.5	4.98	16.6	0.03	<1	0.6	4.0	<10	<2	
2317665	Soil	0.04	1.0	<0.1	<0.05	1.2	1.65	2.8	<0.02	<1	<0.1	1.9	<10	<2	81.9
REP 2317665	QC														82.5
2317669	Soil	0.08	2.0	<0.1	<0.05	1.9	3.45	4.0	<0.02	12	<0.1	1.7	<10	<2	83.4
REP 2317669	QC														83.5
2317683	Soil	0.04	1.5	<0.1	<0.05	1.5	3.51	2.9	<0.02	2	0.1	1.2	<10	<2	88.6
REP 2317683	QC	0.04	1.4	<0.1	<0.05	1.3	3.45	2.9	<0.02	<1	<0.1	1.4	14	<2	
2317707	Soil	0.13	4.7	0.1	<0.05	2.1	8.78	13.7	0.03	5	0.3	7.9	<10	<2	26.0
REP 2317707	QC														25.8
2317719	Soil	0.15	2.4	<0.1	<0.05	2.0	3.12	5.3	<0.02	1	0.2	3.5	<10	<2	64.4
REP 2317719	QC	0.16	2.4	<0.1	<0.05	2.0	3.16	5.1	<0.02	<1	0.1	3.4	<10	<2	



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Project: 204700  
 Report Date: August 08, 2013

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# QUALITY CONTROL REPORT

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		1F Mo ppm 0.01	1F Cu ppm 0.01	1F Pb ppm 0.01	1F Zn ppm 0.1	1F Ag ppb 2	1F Ni ppm 0.1	1F Co ppm 0.1	1F Mn ppm 1	1F Fe % 0.01	1F As ppm 0.1	1F U ppm 0.1	1F Au ppb 0.2	1F Th ppm 0.1	1F Sr ppm 0.5	1F Cd ppm 0.01	1F Sb ppm 0.02	1F Bi ppm 0.02	1F V ppm 2	1F Ca % 0.01	1F P % 0.001
2317742	Soil	9.15	7.56	7.92	52.9	4847	8.5	1.6	47	0.33	1.3	0.2	<0.2	0.4	11.4	2.99	0.39	0.04	7	0.59	0.085
REP 2317742	QC																				
Reference Materials																					
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DS9	Standard	13.32	95.03	140.6	322.6	1913	40.4	7.8	600	2.38	26.0	2.1	120.1	5.1	60.4	2.44	4.83	6.19	40	0.71	0.081
STD DS9	Standard	14.71	100.6	144.6	318.3	1880	43.2	8.4	629	2.44	26.1	2.3	124.5	5.6	65.8	2.59	4.27	5.91	41	0.75	0.084
STD DS9	Standard	14.46	98.21	132.5	325.6	1907	43.9	8.2	638	2.45	28.1	2.3	111.8	5.5	64.6	2.57	4.47	5.93	41	0.73	0.082
STD DS9	Standard	12.49	94.14	109.7	299.3	1687	41.9	7.8	569	2.34	24.4	2.6	150.1	5.0	55.6	2.31	4.07	5.41	38	0.68	0.072
STD DS9	Standard	13.49	95.87	109.6	323.9	1864	41.8	8.1	603	2.38	27.4	2.5	115.9	5.3	62.1	2.52	4.34	5.67	40	0.72	0.079
STD DS9	Standard	13.55	92.32	106.3	307.7	1886	41.0	7.4	587	2.30	26.7	2.3	120.4	5.1	61.4	2.45	4.45	5.67	39	0.69	0.082
STD DS9	Standard	13.45	99.90	119.3	319.9	1917	43.4	8.1	611	2.38	26.7	2.5	122.1	5.5	58.8	2.57	4.43	5.82	38	0.69	0.085
STD OREAS45EA	Standard	1.57	694.5	11.11	28.4	252	389.1	51.0	400	23.84	11.1	1.4	55.8	7.9	3.0	0.02	0.23	0.19	300	0.03	0.025
STD OREAS45EA	Standard	1.56	684.3	11.48	28.7	250	384.7	51.5	392	24.37	10.3	1.4	59.5	8.2	3.0	0.01	0.15	0.19	296	0.03	0.027
STD OREAS45EA	Standard	1.51	682.2	10.90	28.0	265	381.6	50.9	386	23.91	9.8	1.4	56.4	8.2	2.9	0.02	0.16	0.20	297	0.04	0.028
STD OREAS45EA	Standard	1.40	663.8	10.46	28.4	252	360.8	48.0	373	23.06	9.3	1.3	61.7	7.6	2.8	<0.01	0.12	0.18	276	0.03	0.024
STD OREAS45EA	Standard	1.59	704.1	11.26	33.2	279	393.4	52.6	395	24.61	10.8	1.4	60.6	8.0	3.0	0.02	0.15	0.18	294	0.04	0.028
STD OREAS45EA	Standard	1.48	681.9	10.55	28.5	258	379.7	48.1	395	23.60	10.2	1.3	53.0	7.5	3.0	0.02	0.15	0.18	285	0.03	0.026
STD OREAS45EA	Standard	1.35	654.7	11.38	27.9	246	357.8	48.0	390	23.41	8.1	1.4	52.7	7.9	2.8	0.03	0.16	0.19	288	0.04	0.025
STD DS9 Expected		12.84	108	126	317	1830	40.3	7.6	575	2.33	25.5	2.69	118	6.38	69.6	2.4	4.94	6.32	40	0.7201	0.0819
STD OREAS45EA Expected		1.78	709	14.3	30.6	311	357	52	400	22.65	11.4	1.73	53	10.7	4.05	0.03	0.64	0.26	295	0.032	0.029
STD DOLOMITE-2 Expected																					
BLK	Blank	<0.01	<0.01	0.02	0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001

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Project: 204700  
 Report Date: August 08, 2013

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# QUALITY CONTROL REPORT

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		1F La ppm	1F Cr ppm	1F Mg %	1F Ba ppm	1F Ti %	1F B ppm	1F Al %	1F Na %	1F K %	1F W ppm	1F Sc ppm	1F Ti ppm	1F S %	1F Hg ppb	1F Se ppm	1F Te ppm	1F Ga ppm	1F Cs ppm	1F Ge ppm	1F Hf ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
2317742	Soil	2.2	7.1	0.08	336.7	0.003	<20	0.24	0.002	0.08	<0.1	0.6	0.07	0.09	299	2.1	<0.02	1.0	0.38	<0.1	<0.02
REP 2317742	QC																				
Reference Materials																					
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DS9	Standard	11.9	123.4	0.62	343.3	0.101	<20	0.95	0.082	0.40	3.2	2.5	5.51	0.17	203	5.6	5.31	4.6	2.55	<0.1	0.06
STD DS9	Standard	12.5	123.7	0.64	346.2	0.111	<20	0.98	0.090	0.42	2.9	2.6	5.79	0.18	227	5.7	5.89	4.9	2.56	<0.1	0.07
STD DS9	Standard	12.4	126.8	0.64	368.2	0.106	<20	0.98	0.087	0.42	2.7	2.5	5.85	0.18	243	5.8	5.53	4.8	2.63	0.1	0.05
STD DS9	Standard	10.3	117.1	0.60	296.5	0.099	<20	0.91	0.080	0.39	2.9	2.3	5.38	0.17	192	5.2	5.17	4.4	2.39	0.1	0.06
STD DS9	Standard	12.1	121.9	0.62	351.4	0.105	<20	0.96	0.089	0.40	2.8	2.6	5.70	0.17	223	5.8	5.41	4.7	2.57	<0.1	0.06
STD DS9	Standard	11.8	119.2	0.61	342.6	0.098	<20	0.92	0.082	0.39	2.7	2.4	5.67	0.17	212	5.5	5.21	4.8	2.54	<0.1	0.06
STD DS9	Standard	10.4	123.4	0.62	348.0	0.101	<20	0.91	0.081	0.41	3.0	2.4	5.67	0.17	234	5.3	5.31	4.6	2.59	0.1	0.06
STD OREAS45EA	Standard	5.6	961.5	0.09	139.1	0.078	<20	3.23	0.017	0.06	<0.1	76.3	0.06	0.04	13	0.9	0.07	12.4	0.67	0.2	0.48
STD OREAS45EA	Standard	5.6	924.6	0.09	139.6	0.083	<20	3.24	0.016	0.06	<0.1	74.1	0.06	0.04	7	1.2	0.09	12.2	0.64	0.2	0.39
STD OREAS45EA	Standard	5.4	931.1	0.10	140.1	0.081	<20	3.18	0.016	0.06	<0.1	73.3	0.06	0.04	9	0.8	0.08	11.8	0.63	0.3	0.54
STD OREAS45EA	Standard	5.2	937.4	0.08	132.3	0.074	<20	3.06	0.023	0.05	<0.1	71.9	0.06	0.04	14	0.8	0.07	11.3	0.61	0.2	0.34
STD OREAS45EA	Standard	5.6	975.8	0.09	142.4	0.084	<20	3.32	0.024	0.06	<0.1	79.2	0.06	0.04	16	1.3	0.14	12.3	0.67	0.3	0.41
STD OREAS45EA	Standard	5.5	915.2	0.09	135.4	0.074	<20	3.21	0.025	0.05	<0.1	73.8	0.05	0.04	20	1.0	0.08	12.0	0.67	0.3	0.33
STD OREAS45EA	Standard	5.5	878.8	0.09	138.9	0.078	<20	2.99	0.018	0.05	<0.1	70.3	0.05	0.04	15	0.5	0.07	11.3	0.59	0.2	0.46
STD DS9 Expected		13.3	121	0.6165	330	0.1108		0.9577	0.0853	0.395	2.89	2.5	5.3	0.1615	200	5.2	5.02	4.59	2.37	0.1	0.08
STD OREAS45EA Expected		8.19	849	0.095	148	0.106		3.32	0.027	0.053		78	0.072	0.044	340	2.09	0.11	11.7	0.77	0.26	0.82
STD DOLOMITE-2 Expected																					
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02

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Project: 204700  
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# QUALITY CONTROL REPORT

VAN13002776.1

		1F Nb ppm 0.02	1F Rb ppm 0.1	1F Sn ppm 0.1	1F Ta ppm 0.05	1F Zr ppm 0.1	1F Y ppm 0.01	1F Ce ppm 0.1	1F In ppm 0.02	1F Re ppb 1	1F Be ppm 0.1	1F Li ppm 0.1	1F Pd ppb 10	1F Pt ppb 2	LOI LOI %
2317742	Soil	0.09	2.3	0.1	<0.05	0.9	0.71	4.1	<0.02	1	<0.1	0.9	<10	<2	77.0
REP 2317742	QC														77.2
Reference Materials															
STD DOLOMITE-2	Standard														45.8
STD DOLOMITE-2	Standard														46.1
STD DOLOMITE-2	Standard														46.2
STD DOLOMITE-2	Standard														45.9
STD DOLOMITE-2	Standard														45.7
STD DOLOMITE-2	Standard														45.9
STD DOLOMITE-2	Standard														46.0
STD DOLOMITE-2	Standard														44.4
STD DS9	Standard	1.17	34.9	5.8	<0.05	1.8	5.84	22.8	1.98	62	6.2	25.6	131	386	
STD DS9	Standard	1.24	35.9	5.8	<0.05	1.7	6.08	24.0	1.96	76	5.9	29.1	134	392	
STD DS9	Standard	1.12	37.0	6.0	<0.05	1.6	5.87	23.2	1.97	61	6.3	27.5	130	390	
STD DS9	Standard	1.06	32.8	5.4	<0.05	1.5	5.29	19.1	1.82	61	4.8	25.0	125	370	
STD DS9	Standard	1.14	35.1	5.7	<0.05	1.6	5.87	22.7	1.90	71	5.9	26.6	135	405	
STD DS9	Standard	1.22	33.1	5.9	<0.05	1.4	5.62	22.0	1.88	72	5.9	26.6	119	402	
STD DS9	Standard	0.96	36.3	5.8	<0.05	1.5	5.21	20.1	2.03	69	6.1	26.4	129	372	
STD OREAS45EA	Standard	0.05	7.1	0.7	<0.05	18.3	4.84	15.3	0.07	<1	0.3	2.3	73	113	
STD OREAS45EA	Standard	0.05	7.1	0.7	<0.05	14.5	4.74	14.7	0.08	<1	0.4	2.6	67	103	
STD OREAS45EA	Standard	0.05	6.9	0.6	<0.05	18.3	4.73	14.2	0.06	<1	0.3	2.3	78	104	
STD OREAS45EA	Standard	0.05	6.7	0.7	<0.05	13.2	4.52	13.6	0.06	<1	0.4	2.3	69	96	
STD OREAS45EA	Standard	0.07	7.3	0.7	<0.05	15.6	5.07	14.9	0.07	<1	0.5	2.5	70	110	
STD OREAS45EA	Standard	0.05	7.1	0.7	<0.05	13.0	4.64	14.2	0.06	<1	0.5	2.4	70	107	
STD OREAS45EA	Standard	0.05	6.4	0.6	<0.05	16.6	4.57	13.8	0.06	<1	0.4	2.2	74	91	
STD DS9 Expected		0.96	33.8	6.4	0.004	2	5.97	25.4	2.2	61	5.4	25.2	120	350	
STD OREAS45EA Expected		0.43	7.93	0.97		26.6	5.74	17.7	0.1		0.47	7.63	66	108	
STD DOLOMITE-2 Expected															45.9
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	



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**Client: Teck Resources Limited**  
 Suite 3300, 550 Burrard St.  
 Vancouver BC V6C 0B3 CANADA

Project: 204700  
 Report Date: August 08, 2013

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## QUALITY CONTROL REPORT

VAN13002776.1

		1F Mo ppm 0.01	1F Cu ppm 0.01	1F Pb ppm 0.01	1F Zn ppm 0.1	1F Ag ppb 2	1F Ni ppm 0.1	1F Co ppm 0.1	1F Mn ppm 1	1F Fe % 0.01	1F As ppm 0.1	1F U ppm 0.1	1F Au ppb 0.2	1F Th ppm 0.1	1F Sr ppm 0.5	1F Cd ppm 0.01	1F Sb ppm 0.02	1F Bi ppm 0.02	1F V ppm 2	1F Ca % 0.01	1F P % 0.001
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	<0.01	<0.01	<0.1	7	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	<0.01	<0.01	<0.1	4	<0.1	<0.1	<1	<0.01	0.3	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	<0.01	0.50	0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	0.05	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	0.02	<0.01	<0.1	3	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001





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Project: 204700  
 Report Date: August 08, 2013

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# QUALITY CONTROL REPORT

VAN13002776.1

		1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	6	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02



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Project: 204700  
 Report Date: August 08, 2013

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## QUALITY CONTROL REPORT

VAN13002776.1

		1F Nb ppm 0.02	1F Rb ppm 0.1	1F Sn ppm 0.1	1F Ta ppm 0.05	1F Zr ppm 0.1	1F Y ppm 0.01	1F Ce ppm 0.1	1F In ppm 0.02	1F Re ppb 1	1F Be ppm 0.1	1F Li ppm 0.1	1F Pd ppb 10	1F Pt ppb 2	LOI %
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	



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Submitted By: Karen Weir and Rupa Mukherjee  
Receiving Lab: Canada-Vancouver  
Received: July 23, 2013  
Report Date: August 06, 2013  
Page: 1 of 10

## CERTIFICATE OF ANALYSIS

VAN13002779.1

### CLIENT JOB INFORMATION

Project: 204700  
Shipment ID: CRQ\_2013\_001  
P.O. Number  
Number of Samples: 250

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
STOR-RJT-SOIL Store Soil Reject - RJSV Charges Apply

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

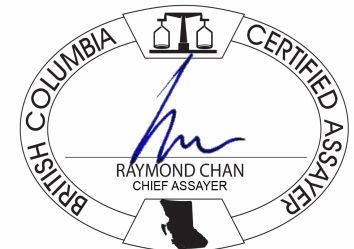
Invoice To: Teck Resources Limited  
Suite 3300, 550 Burrard St.  
Vancouver BC V6C 0B3  
CANADA

CC:

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	237	Dry at 60C			VAN
SS80	237	Dry at 60C sieve 100g to -80 mesh			VAN
RJSV	237	Saving all or part of Soil Reject			VAN
1F04	250	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	0.5	Completed	VAN
2A05	250	Loss on Ignition at 1000 C		Completed	VAN

### ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. \*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317751	Soil	2.18	12.36	5.07	42.7	272	15.1	3.0	314	0.53	<0.1	11.2	1.4	0.3	123.7	1.45	1.43	0.05	6	4.44	0.072
2317752	Soil	7.07	25.42	31.80	248.3	525	51.1	8.7	308	2.39	9.7	1.3	1.9	2.3	59.3	2.17	2.29	0.13	20	2.80	0.077
2317753	Soil	3.42	11.00	11.37	147.8	1289	17.8	6.2	1539	0.68	1.7	0.7	0.5	0.4	47.8	20.28	0.54	0.05	8	1.46	0.097
2317754	Soil	7.27	16.72	31.82	286.0	275	41.1	9.5	773	2.88	10.3	1.0	1.4	1.1	18.0	2.63	1.59	0.13	28	0.46	0.085
2317755	Soil	1.91	16.36	16.78	40.1	1996	8.6	1.1	68	0.60	0.7	0.5	0.4	0.8	7.5	4.00	0.19	0.09	11	0.10	0.073
2317756	Soil	6.10	10.72	13.06	298.3	519	30.8	5.5	181	2.88	7.7	0.5	0.8	2.9	6.9	1.11	1.16	0.10	28	0.06	0.097
2317757	Soil	2.66	8.80	10.63	68.4	1432	11.2	1.5	202	0.62	1.6	0.3	<0.2	0.5	9.4	3.23	0.32	0.06	11	0.20	0.102
2317758	Soil	5.15	8.75	8.79	281.3	509	34.7	4.4	76	2.16	5.2	0.6	0.6	3.1	5.2	0.90	0.92	0.07	22	0.05	0.083
2317759	Soil	4.92	12.56	6.52	89.5	674	14.5	4.4	487	0.92	2.0	1.0	1.5	0.4	58.5	3.49	0.69	0.06	13	2.46	0.078
2317760	Soil	2.60	16.80	6.27	133.7	1039	13.8	5.5	1411	0.94	1.4	1.8	0.2	0.3	90.8	5.68	0.70	0.06	13	3.38	0.108
2317761	Soil	1.78	10.05	11.93	99.2	408	20.7	4.5	201	1.84	3.9	2.2	1.5	2.1	16.5	0.58	0.42	0.12	25	0.50	0.050
2317762	Soil	2.31	16.16	14.11	118.0	471	26.5	7.4	441	2.50	5.5	3.2	0.6	2.3	21.0	0.81	0.46	0.15	32	0.71	0.056
2317763	Soil	1.84	15.11	7.23	88.0	415	20.4	4.7	579	1.08	3.1	1.8	<0.2	0.3	99.1	2.23	0.84	0.06	14	3.67	0.069
2317764	Soil	2.78	13.51	11.28	91.5	230	25.0	5.6	349	1.50	6.0	0.5	0.5	2.7	155.7	0.57	1.03	0.07	18	6.25	0.093
2317765 Limerick 2011	Rock Pulp	4.34	31.66	18.35	84.9	86	53.9	18.5	1034	3.89	6.8	0.7	1.7	0.7	17.1	0.52	0.36	0.08	52	0.84	0.152
2317766	Soil	3.46	11.32	8.13	92.5	279	17.4	4.5	76	0.80	2.1	0.4	2.8	0.8	32.0	3.06	0.52	0.06	16	0.94	0.059
2317767	Soil	4.16	20.33	15.38	125.9	295	36.8	9.9	455	2.11	8.6	0.7	<0.2	4.1	193.2	1.14	1.13	0.11	24	8.39	0.080
2317768	Soil	1.57	15.67	3.67	186.0	384	21.4	3.6	436	0.58	0.5	12.8	0.5	0.2	179.5	5.00	0.99	0.03	6	5.58	0.066
2317769	Soil	4.33	18.39	13.85	189.1	365	39.0	9.0	345	1.86	6.7	1.0	0.9	3.4	113.0	1.43	1.31	0.09	21	4.35	0.092
2317770	Soil	3.66	8.52	7.27	186.0	358	18.2	2.3	52	0.41	1.0	1.2	<0.2	0.4	20.5	13.33	0.35	0.04	10	0.38	0.066
2317771	Soil	6.69	12.55	14.69	1386	394	124.3	8.8	436	2.83	7.0	1.5	0.7	3.0	7.6	4.98	1.23	0.11	33	0.14	0.057
2317772	Soil	3.45	13.92	6.11	105.2	3694	21.3	1.6	23	0.50	1.2	0.4	<0.2	0.2	21.2	9.07	0.48	0.05	17	0.10	0.100
2317773	Soil	19.23	30.30	16.43	471.1	2181	87.9	7.5	164	4.96	21.9	1.8	0.8	4.3	5.4	1.32	4.38	0.14	70	0.03	0.157
2317774 Limerick 2011	Rock Pulp	4.19	29.50	17.73	80.1	86	53.3	18.8	1025	3.82	6.4	0.7	2.6	0.6	16.1	0.49	0.35	0.08	52	0.83	0.158
2317775	Soil	2.64	7.46	9.20	40.6	850	13.5	1.6	60	0.47	1.0	0.3	0.7	0.5	11.0	5.79	0.26	0.06	13	0.15	0.082
2317776	Soil	8.26	13.90	18.29	386.1	415	45.6	8.4	204	3.86	11.2	0.7	0.6	4.2	6.0	1.72	1.29	0.15	44	0.07	0.133
2317777	Soil	3.35	9.04	7.60	69.6	1506	12.0	2.1	229	0.45	1.6	0.2	<0.2	0.3	11.2	4.01	0.27	0.05	10	0.27	0.078
2317778	Soil	7.46	16.72	21.13	236.7	361	44.4	10.6	207	3.33	9.6	0.7	1.5	4.7	5.4	1.30	1.18	0.14	33	0.08	0.115
2317779	Soil	3.43	8.66	11.90	48.8	1567	12.6	2.1	59	0.48	1.5	0.3	0.4	0.4	11.4	12.15	0.29	0.05	12	0.15	0.098
2317780	Soil	6.65	12.50	14.90	200.5	274	42.4	6.6	94	2.54	7.4	0.6	0.7	3.5	6.6	1.42	0.95	0.09	28	0.11	0.090

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317751	Soil	2.1	7.6	0.20	788.2	0.001	<20	0.31	0.003	0.03	<0.1	0.5	0.10	0.17	156	9.9	<0.02	0.8	0.22	<0.1	0.05
2317752	Soil	9.0	19.3	0.75	664.8	0.002	<20	0.79	<0.001	0.07	<0.1	3.0	0.36	0.04	137	1.8	<0.02	1.7	0.50	<0.1	0.07
2317753	Soil	3.7	6.8	0.16	524.4	0.002	<20	0.38	0.002	0.04	<0.1	0.8	0.10	0.12	127	1.1	<0.02	0.9	0.43	<0.1	0.03
2317754	Soil	9.9	18.5	0.54	645.9	0.003	<20	1.06	<0.001	0.06	<0.1	2.0	0.33	0.02	69	1.1	0.07	2.9	0.34	<0.1	0.02
2317755	Soil	8.9	13.0	0.07	484.4	0.003	<20	0.64	<0.001	0.04	<0.1	1.2	0.12	0.02	111	0.3	<0.02	3.8	0.64	<0.1	<0.02
2317756	Soil	11.4	23.1	0.59	219.1	0.001	<20	1.30	<0.001	0.05	<0.1	1.2	0.23	<0.02	39	0.8	0.03	3.2	0.48	<0.1	0.05
2317757	Soil	4.3	11.3	0.11	468.1	0.003	<20	0.59	<0.001	0.06	<0.1	0.9	0.09	0.04	216	0.6	0.03	2.1	0.28	<0.1	0.02
2317758	Soil	13.4	19.5	0.59	252.2	0.002	<20	1.22	<0.001	0.05	<0.1	1.2	0.24	<0.02	33	0.5	0.03	2.7	0.62	<0.1	0.03
2317759	Soil	6.0	13.5	0.22	328.6	0.003	<20	0.53	0.003	0.06	<0.1	1.0	0.07	0.07	120	0.7	0.02	1.7	0.26	<0.1	0.03
2317760	Soil	8.6	8.4	0.24	583.1	0.003	<20	0.68	0.003	0.05	<0.1	0.7	0.07	0.10	127	1.4	0.03	1.9	0.34	<0.1	0.02
2317761	Soil	15.0	14.6	0.47	347.0	0.005	<20	1.06	<0.001	0.08	<0.1	2.4	0.14	<0.02	65	0.4	0.02	3.4	0.41	<0.1	0.03
2317762	Soil	17.7	18.3	0.58	440.1	0.006	<20	1.38	<0.001	0.11	<0.1	3.2	0.14	<0.02	71	0.5	0.03	4.4	0.44	<0.1	0.05
2317763	Soil	6.7	12.9	0.28	489.2	0.002	<20	0.65	0.003	0.07	<0.1	0.7	0.08	0.09	105	1.1	<0.02	1.6	0.25	<0.1	0.04
2317764	Soil	11.0	8.3	0.62	198.7	0.002	<20	0.58	0.002	0.07	<0.1	2.4	0.14	<0.02	85	0.3	0.04	1.4	0.35	<0.1	0.03
2317765 Limerick 2011	Rock Pulp	22.9	50.8	0.70	86.0	0.014	<20	1.64	0.009	0.18	0.3	4.6	0.13	0.05	95	0.4	0.02	6.1	0.91	<0.1	0.03
2317766	Soil	3.5	12.8	0.14	365.8	0.002	<20	0.49	0.005	0.05	<0.1	1.2	0.05	0.09	178	1.4	<0.02	1.5	0.19	<0.1	0.04
2317767	Soil	12.1	13.0	0.99	404.5	0.004	<20	0.90	0.003	0.11	<0.1	3.2	0.24	<0.02	94	0.9	0.02	2.3	0.61	<0.1	0.07
2317768	Soil	1.7	8.9	0.18	802.2	0.001	<20	0.29	0.004	0.02	<0.1	0.5	0.07	0.18	87	4.9	0.02	0.7	0.19	<0.1	0.03
2317769	Soil	11.4	14.0	0.82	573.7	0.004	<20	0.80	0.002	0.08	<0.1	2.5	0.20	<0.02	80	0.6	0.03	2.0	0.55	<0.1	0.07
2317770	Soil	3.0	9.1	0.08	429.2	0.003	<20	0.39	0.003	0.06	<0.1	0.9	0.05	0.07	134	1.3	<0.02	1.6	0.24	<0.1	0.02
2317771	Soil	14.0	34.1	0.63	304.9	0.005	<20	1.27	<0.001	0.06	<0.1	1.9	0.20	<0.02	43	1.1	0.05	3.1	0.55	<0.1	0.03
2317772	Soil	3.9	12.9	0.03	486.1	0.003	<20	0.56	0.002	0.06	<0.1	0.6	0.11	0.05	113	1.3	<0.02	1.9	0.17	<0.1	0.02
2317773	Soil	12.0	24.3	0.33	131.3	0.006	<20	1.48	<0.001	0.06	<0.1	1.6	0.40	0.02	91	2.8	0.06	5.1	0.87	<0.1	0.06
2317774 Limerick 2011	Rock Pulp	21.9	48.7	0.69	84.6	0.014	<20	1.64	0.008	0.18	<0.1	4.5	0.12	0.05	88	0.4	<0.02	6.0	0.88	<0.1	0.03
2317775	Soil	5.4	17.1	0.06	463.7	0.003	<20	0.56	0.005	0.05	<0.1	1.1	0.07	0.04	149	0.5	<0.02	2.7	0.20	<0.1	0.02
2317776	Soil	13.5	33.3	0.63	195.5	0.006	<20	1.63	<0.001	0.07	<0.1	1.6	0.22	<0.02	35	0.8	0.04	4.9	0.70	<0.1	0.06
2317777	Soil	3.5	10.4	0.07	483.4	0.003	<20	0.48	0.003	0.05	<0.1	0.8	0.06	0.04	227	0.8	<0.02	1.8	0.20	<0.1	0.02
2317778	Soil	14.3	39.5	0.64	159.8	0.004	<20	1.63	<0.001	0.06	<0.1	1.7	0.19	<0.02	67	1.0	0.03	3.8	0.53	<0.1	0.07
2317779	Soil	4.9	14.8	0.07	545.4	0.003	<20	0.51	0.003	0.05	<0.1	1.0	0.06	0.04	135	0.4	<0.02	2.1	0.31	<0.1	<0.02
2317780	Soil	15.4	26.9	0.64	165.7	0.002	<20	1.33	<0.001	0.06	<0.1	1.4	0.20	<0.02	32	0.8	0.03	2.9	0.44	<0.1	0.03



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Project: 204700  
 Report Date: August 06, 2013

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# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317751	Soil	0.09	1.9	<0.1	<0.05	1.7	4.21	3.6	<0.02	12	0.3	3.0	<10	<2	77.5
2317752	Soil	0.20	4.5	<0.1	<0.05	2.6	12.22	17.6	<0.02	2	0.5	12.5	<10	<2	16.7
2317753	Soil	0.14	2.7	<0.1	<0.05	1.2	5.48	8.1	<0.02	<1	0.2	2.4	<10	<2	76.6
2317754	Soil	0.44	7.8	0.3	<0.05	0.6	8.24	20.4	0.03	<1	0.4	15.5	<10	<2	10.3
2317755	Soil	0.15	3.5	0.4	<0.05	0.5	2.10	16.9	<0.02	<1	0.3	1.7	<10	<2	39.6
2317756	Soil	0.37	9.1	0.2	<0.05	1.6	2.28	22.2	0.02	<1	0.4	23.8	<10	<2	7.9
2317757	Soil	0.13	2.7	0.2	<0.05	0.6	1.33	8.4	<0.02	<1	0.3	3.4	<10	<2	60.5
2317758	Soil	0.19	10.7	0.2	<0.05	1.5	2.46	25.8	0.02	<1	0.3	24.5	<10	<2	5.0
2317759	Soil	0.47	3.4	0.2	<0.05	1.1	5.37	10.7	<0.02	<1	0.4	4.0	<10	<2	65.7
2317760	Soil	0.44	4.4	0.1	<0.05	1.0	9.76	12.6	<0.02	<1	0.6	3.9	<10	<2	62.4
2317761	Soil	0.88	10.2	0.3	<0.05	1.3	8.21	26.6	0.03	<1	0.5	11.2	<10	<2	8.1
2317762	Soil	1.32	10.2	0.5	<0.05	2.1	11.73	29.2	0.03	<1	1.0	14.0	<10	<2	12.8
2317763	Soil	0.28	4.7	0.1	<0.05	1.2	8.43	10.4	<0.02	<1	0.4	5.6	<10	<2	58.7
2317764	Soil	0.06	3.5	0.1	<0.05	1.4	9.74	22.0	<0.02	<1	0.4	7.9	<10	<2	11.2
2317765 Limerick 2011	Rock Pulp	0.90	17.4	1.5	<0.05	1.2	13.99	50.5	0.03	<1	1.1	21.7	<10	<2	12.9
2317766	Soil	0.17	1.9	0.2	<0.05	1.3	2.60	6.8	<0.02	<1	0.4	2.8	<10	<2	71.4
2317767	Soil	0.12	5.6	0.2	<0.05	3.2	9.94	24.7	0.02	<1	0.6	13.3	<10	<2	14.6
2317768	Soil	0.13	1.8	<0.1	<0.05	1.1	2.69	3.3	<0.02	6	0.3	2.8	<10	<2	77.0
2317769	Soil	0.26	4.7	0.1	<0.05	2.4	9.35	23.4	<0.02	<1	0.4	12.6	<10	<2	10.9
2317770	Soil	0.11	1.8	0.2	<0.05	0.7	1.59	5.6	<0.02	<1	0.2	1.3	<10	<2	70.1
2317771	Soil	0.82	8.3	0.2	<0.05	1.4	7.09	28.0	0.03	1	0.5	18.0	<10	<2	9.7
2317772	Soil	0.14	2.3	0.3	<0.05	0.3	1.59	7.5	<0.02	<1	0.4	0.7	<10	<2	67.7
2317773	Soil	1.48	11.6	0.6	<0.05	4.2	3.35	22.7	0.03	<1	1.0	18.2	<10	<2	9.7
2317774 Limerick 2011	Rock Pulp	0.87	16.6	1.4	<0.05	1.0	12.59	47.3	0.03	<1	1.3	22.1	<10	<2	12.7
2317775	Soil	0.12	1.3	0.3	<0.05	0.4	1.32	10.4	<0.02	<1	0.4	1.2	<10	<2	59.0
2317776	Soil	0.98	11.3	0.5	<0.05	3.1	2.78	26.5	0.03	<1	0.5	26.2	<10	<2	8.2
2317777	Soil	0.11	1.3	0.2	<0.05	0.6	1.05	6.7	<0.02	<1	0.2	1.2	<10	<2	66.7
2317778	Soil	0.60	10.6	0.3	<0.05	3.0	3.37	28.0	0.03	<1	0.6	24.7	<10	<2	7.9
2317779	Soil	0.12	1.9	0.2	<0.05	1.2	1.57	9.3	<0.02	<1	0.3	1.4	<10	<2	63.4
2317780	Soil	0.27	8.2	0.2	<0.05	1.1	3.58	29.9	0.02	<1	0.5	23.3	<10	<2	7.0

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317781	Soil	5.11	8.79	4.91	48.6	210	13.3	2.2	23	0.54	2.8	0.3	<0.2	0.6	11.5	1.07	0.56	0.07	13	0.49	0.071
2317782	Soil	25.05	19.22	10.58	247.9	90	64.0	6.4	50	1.96	10.5	0.7	0.3	1.3	7.1	1.62	2.56	0.11	55	0.13	0.032
2317783	Soil	2.50	5.38	2.89	38.6	91	6.0	1.3	24	0.26	1.5	0.1	0.2	0.2	9.8	1.07	0.22	0.03	4	0.48	0.096
2317784	Soil	11.16	17.42	11.10	184.3	148	46.3	8.5	121	2.36	8.9	0.7	<0.2	2.2	9.5	2.39	1.53	0.10	37	0.21	0.040
2317785	Soil	9.60	7.32	3.52	70.7	450	15.4	2.0	14	0.44	3.1	0.2	0.3	0.4	16.3	4.43	0.88	0.03	17	0.47	0.079
2317786	Soil	22.36	33.30	12.24	307.6	881	98.6	8.8	214	2.14	26.0	1.4	0.9	1.8	10.9	7.29	5.58	0.11	117	0.27	0.108
2317787	Soil	45.79	37.59	9.46	164.1	511	54.3	4.0	48	1.09	5.1	1.3	1.3	0.8	15.8	19.23	1.85	0.11	48	0.38	0.100
2317788	Soil	39.66	29.28	8.04	142.7	608	41.7	3.3	42	0.79	4.7	0.9	1.4	0.6	17.6	14.16	1.44	0.08	30	0.49	0.105
2317789	Soil	34.91	51.59	12.74	274.0	264	84.6	9.0	87	2.79	16.0	1.5	1.3	2.5	14.8	2.90	3.18	0.14	48	0.11	0.072
2317790	Soil	31.47	52.70	13.49	263.5	314	82.9	9.7	171	2.62	14.2	1.7	1.1	2.3	15.4	8.79	2.87	0.13	55	0.13	0.084
2317791	Soil	7.29	8.66	5.81	232.6	192	12.9	2.6	23	0.38	1.4	0.6	3.1	0.4	47.8	11.05	0.79	0.03	6	0.90	0.064
2317792	Soil	8.83	29.87	73.73	369.2	494	66.0	10.4	503	2.04	9.4	1.8	1.4	2.4	68.0	4.38	2.39	0.11	22	3.05	0.093
2317793	Soil	6.32	19.61	14.16	219.3	549	29.2	3.2	43	0.98	4.4	2.0	0.8	0.8	53.1	6.36	2.37	0.07	18	1.24	0.069
2317794	Soil	14.05	42.25	19.67	477.9	613	77.2	10.1	140	2.10	13.9	2.3	2.8	2.9	39.3	6.24	4.85	0.15	37	0.58	0.076
2317795	Soil	4.62	12.33	6.09	181.1	2228	24.8	2.7	32	0.52	2.5	0.6	1.8	0.6	38.7	4.59	1.71	0.04	11	1.22	0.073
2317796	Soil	14.41	51.02	20.42	554.1	1275	93.7	10.5	123	2.27	15.9	1.6	2.6	3.7	36.7	6.67	5.79	0.16	41	0.66	0.076
2317797	Soil	5.67	32.39	12.49	328.3	561	53.1	6.0	122	1.18	3.7	4.5	1.0	1.0	64.2	9.17	2.30	0.11	17	1.55	0.069
2317798	Soil	9.50	41.40	21.38	461.7	758	74.7	8.8	135	2.14	11.8	1.7	2.3	3.2	37.4	6.07	4.11	0.14	28	0.55	0.086
2317799	Soil	5.67	42.92	8.86	439.8	430	81.3	5.2	354	0.92	2.9	12.4	1.5	0.2	145.1	14.34	2.43	0.07	14	3.31	0.076
2317800	Soil	7.16	36.65	21.76	382.8	1382	61.1	8.3	135	1.84	11.5	2.7	1.9	2.6	55.3	4.53	3.12	0.15	31	1.05	0.073
2317801	Soil	8.55	35.79	32.21	496.2	430	66.7	8.0	229	1.65	8.8	1.9	1.8	1.4	42.6	6.74	2.97	0.11	21	1.02	0.082
2317802	Soil	12.32	35.85	30.65	519.1	423	83.5	13.7	281	2.52	13.3	2.4	2.4	2.3	32.4	3.58	3.21	0.15	28	0.77	0.075
2317803	Soil	11.14	41.22	43.31	674.4	805	82.4	8.3	202	2.04	13.9	1.8	1.7	1.6	59.7	6.44	3.76	0.13	23	2.59	0.087
2317804	Soil	10.51	18.78	14.84	402.6	640	29.4	2.8	295	0.68	4.7	0.9	2.2	0.6	70.6	3.64	1.67	0.04	10	2.69	0.074
2317805	Soil	12.60	30.97	64.59	748.0	738	61.7	7.1	177	2.11	16.5	3.1	0.9	2.0	39.2	4.51	4.00	0.12	27	0.94	0.088
2317806	Soil	7.20	19.88	3.67	26.6	121	35.4	8.5	61	0.93	2.1	0.6	0.7	0.6	29.6	1.10	0.36	0.03	9	1.69	0.078
2317807	Soil	7.63	18.25	4.43	31.9	111	37.0	9.1	55	1.17	2.7	0.6	0.7	0.7	25.3	1.02	0.41	0.04	11	1.51	0.068
2317808	Soil	6.99	42.04	10.64	63.9	128	116.6	34.5	386	3.70	10.8	1.0	0.9	3.2	20.0	0.45	0.56	0.09	24	0.93	0.091
2317809	Soil	7.10	42.89	10.16	61.4	128	118.8	33.0	386	3.64	10.6	0.9	1.0	3.1	19.7	0.40	0.60	0.08	24	1.09	0.103
2317810	Soil	5.63	12.36	9.65	447.4	249	72.9	7.5	298	1.26	4.5	2.0	0.7	0.5	46.1	6.00	0.83	0.05	14	5.20	0.083



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# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317781	Soil	2.6	13.9	0.08	169.5	0.003	<20	0.40	0.002	0.04	<0.1	1.0	0.07	0.10	193	0.7	<0.02	1.5	0.26	<0.1	0.03
2317782	Soil	13.7	11.8	0.11	335.0	0.002	<20	0.70	<0.001	0.06	<0.1	1.0	0.29	<0.02	33	4.8	0.06	2.3	0.45	<0.1	<0.02
2317783	Soil	0.9	7.7	0.06	212.4	0.002	<20	0.19	0.004	0.07	<0.1	0.5	0.04	0.13	241	0.5	<0.02	0.5	0.24	<0.1	0.02
2317784	Soil	12.7	16.8	0.42	450.9	0.001	<20	1.07	<0.001	0.09	<0.1	1.8	0.24	0.02	36	2.4	0.03	2.3	0.45	<0.1	0.06
2317785	Soil	2.1	9.9	0.09	226.7	0.002	<20	0.34	0.002	0.05	<0.1	0.8	0.09	0.11	209	1.9	<0.02	1.0	0.19	<0.1	0.03
2317786	Soil	15.1	34.8	0.38	286.2	0.002	<20	0.92	<0.001	0.08	<0.1	2.6	0.36	0.03	105	6.0	0.09	2.5	0.55	<0.1	0.04
2317787	Soil	7.6	16.8	0.09	344.1	0.003	<20	0.58	0.002	0.07	<0.1	1.6	0.31	0.07	192	6.1	0.04	2.6	0.84	<0.1	0.05
2317788	Soil	5.9	13.2	0.09	318.2	0.003	<20	0.43	0.004	0.06	<0.1	1.5	0.24	0.09	219	5.3	0.03	2.2	0.68	<0.1	0.03
2317789	Soil	19.0	29.5	0.37	171.8	0.003	<20	0.83	0.002	0.09	<0.1	1.5	0.58	0.05	73	5.1	0.13	2.4	0.55	<0.1	0.02
2317790	Soil	17.5	32.1	0.42	258.4	0.004	<20	0.91	0.002	0.09	<0.1	1.8	0.48	0.05	73	5.1	0.07	2.6	0.53	<0.1	0.03
2317791	Soil	1.7	5.6	0.10	284.0	0.001	<20	0.18	0.003	0.04	<0.1	0.8	0.10	0.16	123	4.3	<0.02	0.5	0.35	<0.1	0.06
2317792	Soil	9.1	14.4	0.89	954.7	0.002	<20	0.75	<0.001	0.08	<0.1	1.9	0.38	0.06	141	2.5	<0.02	1.7	0.61	<0.1	0.06
2317793	Soil	3.6	8.8	0.12	365.3	0.001	<20	0.33	0.001	0.08	<0.1	1.0	0.24	0.14	160	6.5	0.06	0.8	0.46	<0.1	0.08
2317794	Soil	12.1	13.8	0.25	956.8	0.001	<20	0.68	<0.001	0.11	<0.1	2.1	0.56	0.05	160	3.9	0.08	1.5	0.90	<0.1	0.08
2317795	Soil	1.8	5.9	0.10	358.8	<0.001	<20	0.22	0.002	0.09	<0.1	0.6	0.17	0.17	207	6.5	<0.02	0.5	0.53	<0.1	0.09
2317796	Soil	13.5	17.1	0.23	962.5	0.001	<20	0.71	<0.001	0.14	<0.1	2.4	0.69	0.06	212	4.7	0.07	1.4	1.07	<0.1	0.09
2317797	Soil	4.2	7.0	0.17	898.9	<0.001	<20	0.45	0.003	0.06	<0.1	1.1	0.36	0.15	205	6.8	<0.02	1.0	0.63	<0.1	0.11
2317798	Soil	14.5	13.5	0.26	1651	0.002	<20	0.64	<0.001	0.07	<0.1	1.8	0.51	0.05	149	3.2	0.09	1.4	0.82	<0.1	0.06
2317799	Soil	2.5	12.3	0.18	1011	<0.001	<20	0.32	0.002	0.05	<0.1	0.5	0.33	0.18	130	9.5	<0.02	0.7	0.45	<0.1	0.05
2317800	Soil	10.9	16.5	0.24	853.4	0.001	<20	0.64	<0.001	0.09	<0.1	1.9	0.51	0.06	176	3.0	0.09	1.3	0.81	<0.1	0.10
2317801	Soil	7.0	13.5	0.20	1157	0.001	<20	0.49	0.001	0.09	<0.1	1.6	0.48	0.09	179	2.7	0.04	1.0	0.52	<0.1	0.09
2317802	Soil	11.3	12.5	0.31	846.6	0.002	<20	0.74	<0.001	0.08	<0.1	2.1	0.53	0.04	99	3.1	0.12	1.7	0.70	<0.1	0.09
2317803	Soil	7.7	12.3	0.53	1384	0.001	<20	0.49	0.001	0.09	0.1	1.6	0.79	0.08	176	3.4	0.05	1.0	0.54	<0.1	0.05
2317804	Soil	2.4	10.9	0.21	614.7	0.001	<20	0.22	0.003	0.07	<0.1	0.7	0.36	0.15	230	2.7	0.04	0.5	0.41	<0.1	0.06
2317805	Soil	11.6	11.4	0.24	1202	0.001	<20	0.51	0.001	0.09	<0.1	1.9	0.71	0.06	138	3.4	0.09	1.2	0.61	<0.1	0.08
2317806	Soil	4.7	14.9	0.22	69.5	0.002	<20	0.45	0.001	0.05	<0.1	1.9	0.07	0.13	147	0.7	<0.02	1.2	0.57	<0.1	0.06
2317807	Soil	5.3	17.3	0.26	72.6	0.002	<20	0.53	0.002	0.05	<0.1	2.2	0.09	0.11	113	0.7	0.02	1.3	0.65	<0.1	0.05
2317808	Soil	19.0	32.1	0.96	154.1	0.002	<20	1.30	<0.001	0.11	<0.1	7.1	0.22	0.03	41	0.7	0.03	3.0	0.65	<0.1	0.04
2317809	Soil	18.3	31.3	0.99	147.2	0.002	<20	1.26	<0.001	0.11	<0.1	6.8	0.23	0.03	54	0.8	0.02	3.0	0.76	<0.1	0.05
2317810	Soil	5.4	16.0	0.45	214.4	0.001	<20	0.44	0.002	0.06	<0.1	1.2	0.56	0.15	166	1.9	0.02	1.1	0.68	<0.1	0.05

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
2317781	Soil	0.13	2.1	0.2	<0.05	1.4	1.12	5.0	<0.02	<1	0.1	1.7	<10	<2	71.5
2317782	Soil	0.32	7.6	0.2	<0.05	0.5	3.47	23.0	<0.02	<1	0.3	4.9	<10	2	10.3
2317783	Soil	0.07	1.8	<0.1	<0.05	0.9	0.57	1.9	<0.02	<1	<0.1	0.6	<10	<2	88.8
2317784	Soil	0.22	7.6	0.1	<0.05	1.6	5.36	26.2	0.02	<1	0.7	13.9	<10	<2	9.3
2317785	Soil	0.09	1.3	0.1	<0.05	1.3	1.81	3.9	<0.02	<1	0.2	1.0	<10	<2	83.7
2317786	Soil	0.29	6.6	0.2	<0.05	1.9	11.52	27.4	<0.02	2	0.5	10.8	<10	<2	13.0
2317787	Soil	0.65	3.5	0.3	<0.05	1.4	3.97	13.8	<0.02	<1	0.3	1.7	<10	<2	56.3
2317788	Soil	0.50	3.0	0.2	<0.05	1.4	3.12	10.9	<0.02	<1	0.2	1.5	<10	<2	67.3
2317789	Soil	0.67	5.5	0.1	<0.05	1.1	6.15	35.5	<0.02	3	0.4	8.5	<10	<2	10.6
2317790	Soil	0.82	5.4	0.2	<0.05	1.4	6.73	31.2	<0.02	4	0.3	8.1	11	<2	14.1
2317791	Soil	0.06	2.2	<0.1	<0.05	1.9	1.68	3.4	<0.02	<1	<0.1	1.1	<10	<2	83.8
2317792	Soil	0.12	5.4	<0.1	<0.05	2.7	9.35	19.7	0.02	7	0.2	10.9	<10	<2	17.5
2317793	Soil	0.07	4.7	<0.1	<0.05	3.5	4.26	6.9	<0.02	6	0.2	2.8	<10	<2	62.9
2317794	Soil	0.12	7.2	0.1	<0.05	4.1	9.25	22.7	0.02	3	0.4	12.3	<10	<2	14.2
2317795	Soil	0.05	4.5	<0.1	<0.05	3.4	2.27	3.4	<0.02	<1	0.1	1.8	<10	<2	82.0
2317796	Soil	0.12	8.7	0.2	<0.05	5.7	10.61	25.5	0.02	9	0.4	13.3	17	4	12.0
2317797	Soil	0.11	5.3	<0.1	<0.05	4.4	5.68	8.0	<0.02	14	0.3	5.3	<10	<2	55.8
2317798	Soil	0.13	5.8	0.1	<0.05	2.8	9.68	27.3	0.02	8	0.3	13.3	<10	<2	11.1
2317799	Soil	0.08	3.6	<0.1	<0.05	1.6	5.18	5.1	<0.02	16	0.2	4.4	<10	2	62.5
2317800	Soil	0.11	7.2	0.1	<0.05	4.5	8.87	20.9	0.03	15	0.4	13.8	<10	<2	17.7
2317801	Soil	0.14	5.1	0.1	<0.05	3.5	7.82	13.2	<0.02	10	0.3	7.5	<10	<2	35.4
2317802	Soil	0.24	6.5	0.1	<0.05	3.0	9.10	22.5	0.02	10	0.4	12.1	<10	<2	16.3
2317803	Soil	0.12	4.9	0.1	<0.05	2.8	9.51	15.0	0.02	9	0.3	7.8	<10	2	20.0
2317804	Soil	0.06	4.4	<0.1	<0.05	2.4	2.71	4.8	<0.02	13	0.2	2.5	<10	<2	69.9
2317805	Soil	0.11	5.9	0.1	<0.05	2.8	9.47	22.2	0.03	3	0.4	7.9	<10	<2	15.4
2317806	Soil	0.11	3.1	<0.1	<0.05	2.1	6.10	8.9	<0.02	<1	0.2	3.0	<10	<2	75.6
2317807	Soil	0.11	4.1	<0.1	<0.05	2.5	5.80	10.0	<0.02	<1	0.2	4.1	<10	<2	68.2
2317808	Soil	0.13	6.8	0.1	<0.05	1.9	11.95	40.9	<0.02	<1	0.5	15.6	<10	<2	12.8
2317809	Soil	0.11	6.5	0.1	<0.05	1.7	11.79	39.5	<0.02	<1	0.4	14.7	<10	<2	12.8
2317810	Soil	0.11	4.8	<0.1	<0.05	2.1	6.84	10.8	<0.02	2	0.3	5.8	<10	<2	50.7



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Project: 204700  
 Report Date: August 06, 2013

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Part: 1 of 3

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317811	Soil	8.28	15.18	12.42	422.9	334	87.5	10.3	310	1.53	7.9	1.9	0.4	1.0	96.4	2.92	1.00	0.06	21	13.20	0.073
2317812	Soil	1.58	9.88	5.52	636.9	264	51.3	5.8	314	1.12	1.2	3.1	0.5	0.3	33.6	4.36	0.30	0.05	13	4.58	0.085
2317813	Soil	0.82	9.92	4.37	512.1	275	50.3	5.8	244	1.17	0.9	1.0	0.3	0.6	129.8	3.45	0.16	0.04	8	17.99	0.072
2317814	Soil	1.87	16.34	3.84	176.6	395	15.6	2.6	37	0.56	1.2	0.9	1.0	0.4	41.5	3.18	0.40	0.03	8	2.52	0.092
2317815 Limerick 2011	Rock Pulp	4.06	35.27	18.29	87.9	87	51.4	18.5	1039	3.90	6.3	0.7	2.4	0.6	16.3	0.50	0.37	0.08	54	0.86	0.162
2317816	Soil	4.50	28.82	15.06	296.0	1440	63.5	12.2	267	2.67	9.7	1.0	2.0	3.0	26.3	1.65	1.38	0.13	34	1.37	0.140
2317817	Soil	1.56	11.29	6.66	112.1	338	22.7	5.4	144	1.38	2.2	1.0	0.3	0.5	34.4	1.25	0.42	0.07	16	3.31	0.077
2317818	Soil	3.89	19.21	9.02	100.7	331	39.1	9.8	298	2.05	4.9	0.6	0.8	2.1	82.7	0.91	0.79	0.08	20	6.91	0.080
2317819	Soil	3.20	15.94	9.49	55.5	4429	9.7	1.5	12	0.35	1.4	0.4	0.7	0.7	15.2	3.91	0.48	0.05	10	0.17	0.052
2317820	Soil	12.00	24.33	18.31	269.0	583	42.6	4.8	59	2.65	17.1	0.9	1.6	2.6	11.5	0.96	3.64	0.18	41	0.03	0.078
2317821	Soil	2.10	7.15	4.32	127.5	2635	9.8	1.7	60	0.27	1.3	0.1	0.6	0.3	10.7	1.50	0.34	0.02	5	0.33	0.090
2317822	Soil	8.85	19.79	15.10	200.6	323	37.4	8.6	208	2.09	10.6	1.0	2.0	3.3	14.7	1.44	2.80	0.13	25	0.09	0.067
2317823	Soil	3.51	12.59	13.80	81.8	3445	12.9	1.5	15	0.48	1.5	0.5	0.8	0.4	34.7	5.42	0.86	0.07	16	0.34	0.081
2317824	Soil	9.16	17.73	13.97	224.8	356	32.4	2.9	34	2.08	13.5	0.8	2.1	2.4	9.1	1.07	4.68	0.16	31	0.07	0.073
2317825	Soil	10.00	8.94	7.26	46.6	4454	8.2	1.2	14	0.35	1.9	0.3	0.4	0.4	10.3	1.62	0.61	0.06	12	0.16	0.092
2317826	Soil	7.29	5.18	10.01	48.2	359	9.3	0.7	7	1.03	8.8	0.5	1.3	1.8	6.1	0.22	1.90	0.12	22	0.02	0.065
2317827	Soil	7.87	9.07	5.32	76.1	1742	13.2	1.3	46	0.36	2.0	0.2	0.3	0.3	15.7	2.14	0.95	0.04	9	0.26	0.086
2317828	Soil	7.56	8.83	5.73	77.3	1723	13.0	1.3	44	0.35	2.3	0.2	0.5	0.3	15.7	2.09	0.98	0.04	9	0.26	0.085
2317829	Soil	14.14	16.44	12.80	111.2	342	21.2	1.9	15	1.15	11.2	1.1	1.8	2.8	24.5	0.67	5.07	0.14	14	0.03	0.046
2317830	Soil	17.09	19.75	14.04	139.3	326	27.5	2.5	20	1.39	14.0	1.2	1.7	3.3	30.0	0.81	6.34	0.16	16	0.04	0.057
2317831	Soil	4.13	6.12	9.45	112.2	6673	14.2	1.1	17	0.35	2.9	0.1	0.3	0.3	33.5	1.33	0.57	0.04	8	0.73	0.076
2317832	Soil	47.75	27.03	190.7	307.1	1644	43.4	4.5	67	3.35	32.3	1.2	2.0	1.3	43.2	1.06	6.83	0.18	49	0.08	0.109
2317833	Soil	3.17	7.56	67.85	93.2	398	12.1	2.0	59	0.41	0.8	0.4	<0.2	0.3	21.2	2.81	0.63	0.04	5	0.68	0.108
2317834	Soil	8.48	16.76	135.4	234.0	305	35.7	7.7	234	2.10	7.6	0.9	0.7	1.5	13.0	1.59	1.55	0.12	27	0.26	0.063
2317835	Soil	2.93	7.33	12.65	76.2	1352	7.6	1.5	25	0.35	1.2	0.1	<0.2	0.4	11.0	1.44	0.38	0.03	9	0.46	0.083
2317836	Soil	5.58	9.67	49.73	119.5	94	17.8	3.6	56	1.33	4.9	0.4	0.5	0.4	5.5	0.70	0.77	0.09	32	0.10	0.046
2317837 Limerick 2011	Rock Pulp	3.88	34.41	17.00	80.3	84	50.5	17.7	1007	3.71	6.2	0.6	1.9	0.6	15.4	0.47	0.29	0.08	54	0.85	0.159
2317838	Soil	3.68	9.57	25.37	77.4	240	11.3	2.4	39	0.65	1.8	0.2	1.1	0.5	16.8	3.91	0.38	0.05	12	0.55	0.090
2317839	Soil	3.74	17.99	139.9	211.5	225	32.6	9.4	443	2.54	4.8	0.7	1.0	1.2	11.6	1.59	0.80	0.10	32	0.40	0.124
2317840	Soil	4.15	8.82	76.03	76.3	504	10.4	2.0	22	0.59	1.7	0.4	<0.2	0.5	25.2	3.18	0.41	0.04	10	1.08	0.063

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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**Project:** 204700  
**Report Date:** August 06, 2013

**Page:** 4 of 10

**Part:** 2 of 3

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.01	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	
2317811	Soil	6.5	15.9	1.90	185.7	0.001	<20	0.38	0.003	0.06	<0.1	1.9	0.81	0.05	108	1.0	<0.02	0.8	1.09	<0.1	0.06
2317812	Soil	4.7	13.5	0.41	221.2	0.002	<20	0.82	<0.001	0.04	<0.1	1.2	0.47	0.10	87	0.8	<0.02	1.8	0.77	<0.1	0.02
2317813	Soil	3.9	14.5	0.86	155.7	0.002	<20	0.76	0.001	0.04	<0.1	1.3	0.51	0.04	47	0.5	<0.02	1.5	0.84	<0.1	0.04
2317814	Soil	3.1	8.9	0.13	493.0	0.002	<20	0.34	0.002	0.04	<0.1	1.5	0.06	0.12	142	0.7	<0.02	0.9	0.26	<0.1	0.05
2317815 Limerick 2011	Rock Pulp	22.5	51.6	0.74	90.7	0.017	<20	1.77	0.009	0.21	<0.1	4.7	0.14	0.05	95	0.6	<0.02	6.5	1.25	<0.1	0.03
2317816	Soil	15.5	24.1	0.77	644.7	0.002	<20	0.80	<0.001	0.12	<0.1	5.0	0.18	0.03	127	1.4	0.04	2.2	0.53	<0.1	0.07
2317817	Soil	6.6	20.4	0.47	316.2	0.002	<20	0.84	0.001	0.06	<0.1	1.5	0.08	0.09	99	1.3	0.02	1.8	0.33	<0.1	0.03
2317818	Soil	10.1	27.9	1.41	168.1	0.004	<20	1.00	0.002	0.09	<0.1	2.8	0.13	0.03	65	0.8	<0.02	2.2	0.49	<0.1	0.06
2317819	Soil	9.1	11.0	0.03	400.5	0.002	<20	0.36	0.003	0.04	<0.1	1.0	0.11	0.03	102	0.3	<0.02	1.4	1.01	<0.1	<0.02
2317820	Soil	15.7	17.2	0.16	166.3	0.001	<20	0.78	0.001	0.08	<0.1	1.2	0.51	0.03	42	2.6	0.06	2.4	0.93	<0.1	<0.02
2317821	Soil	2.1	11.2	0.08	214.9	0.002	<20	0.17	0.003	0.10	<0.1	0.5	0.07	0.08	208	0.4	<0.02	0.5	0.42	<0.1	<0.02
2317822	Soil	19.8	16.6	0.31	198.4	0.002	<20	0.80	0.001	0.07	<0.1	1.3	0.27	<0.02	56	0.9	0.06	1.9	0.73	<0.1	<0.02
2317823	Soil	2.9	9.5	0.07	588.8	0.002	<20	0.43	0.002	0.04	<0.1	1.1	0.10	0.04	137	1.2	<0.02	1.1	0.40	<0.1	0.02
2317824	Soil	14.8	10.5	0.13	164.8	<0.001	<20	0.70	<0.001	0.05	<0.1	0.9	0.29	<0.02	43	2.4	0.06	1.1	0.71	<0.1	<0.02
2317825	Soil	4.7	7.1	0.04	328.9	0.001	<20	0.35	0.002	0.06	<0.1	0.8	0.13	0.04	98	0.4	0.02	1.4	1.29	<0.1	<0.02
2317826	Soil	14.4	7.4	0.04	139.1	<0.001	<20	0.42	<0.001	0.05	<0.1	0.4	0.20	<0.02	40	0.7	0.03	1.0	0.63	<0.1	<0.02
2317827	Soil	2.1	13.0	0.05	548.9	0.002	<20	0.28	0.002	0.06	<0.1	0.7	0.11	0.08	140	1.0	<0.02	0.8	0.73	<0.1	<0.02
2317828	Soil	2.2	11.2	0.05	559.4	0.002	<20	0.29	0.001	0.06	<0.1	0.8	0.11	0.08	121	1.2	<0.02	0.7	0.75	<0.1	<0.02
2317829	Soil	12.4	8.1	0.05	127.0	<0.001	<20	0.29	0.002	0.06	<0.1	0.7	0.29	0.03	51	1.8	0.08	0.6	0.66	<0.1	0.02
2317830	Soil	13.5	6.5	0.06	134.7	<0.001	<20	0.33	0.002	0.06	<0.1	0.9	0.33	0.04	47	1.9	0.06	0.6	0.69	<0.1	0.04
2317831	Soil	1.3	5.9	0.06	638.7	0.002	<20	0.17	0.003	0.05	<0.1	0.6	0.36	0.13	422	0.8	0.03	0.6	0.57	<0.1	<0.02
2317832	Soil	13.8	14.7	0.11	457.1	0.002	<20	0.55	0.002	0.09	<0.1	0.8	2.44	0.11	158	4.1	0.13	1.5	0.76	<0.1	<0.02
2317833	Soil	3.3	11.3	0.09	644.3	0.002	<20	0.25	0.003	0.09	<0.1	0.8	0.29	0.13	284	0.5	0.02	0.6	0.19	<0.1	0.04
2317834	Soil	14.8	15.5	0.21	722.5	0.003	<20	0.66	<0.001	0.07	<0.1	1.6	0.51	0.02	67	1.1	0.08	1.8	0.39	<0.1	<0.02
2317835	Soil	2.7	6.5	0.07	452.3	0.002	<20	0.21	0.003	0.05	<0.1	0.6	0.14	0.11	388	0.5	<0.02	0.8	0.29	<0.1	0.02
2317836	Soil	13.6	7.9	0.06	364.5	0.003	<20	0.59	<0.001	0.05	<0.1	0.6	0.30	<0.02	26	0.6	<0.02	2.5	0.49	<0.1	<0.02
2317837 Limerick 2011	Rock Pulp	21.7	49.8	0.68	84.8	0.016	<20	1.65	0.009	0.19	<0.1	4.3	0.12	0.05	91	0.6	<0.02	5.9	0.86	<0.1	0.02
2317838	Soil	3.6	11.4	0.11	251.1	0.003	<20	0.43	0.002	0.04	<0.1	1.3	0.05	0.10	138	0.6	<0.02	1.6	0.27	<0.1	0.05
2317839	Soil	14.6	17.1	0.41	428.1	0.004	<20	0.85	<0.001	0.04	<0.1	3.0	0.14	0.02	64	0.8	0.02	2.3	0.38	<0.1	0.04
2317840	Soil	4.2	9.1	0.08	431.5	0.003	<20	0.40	0.001	0.03	<0.1	1.2	0.07	0.11	159	0.7	<0.02	1.4	0.31	<0.1	0.04

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Project: 204700  
 Report Date: August 06, 2013

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# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	%	
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
2317811	Soil	0.05	4.8	<0.1	<0.05	2.1	8.74	13.3	<0.02	<1	0.3	5.3	<10	<2	28.1
2317812	Soil	0.15	5.2	0.1	<0.05	1.3	7.20	9.0	<0.02	<1	0.4	7.1	<10	<2	55.2
2317813	Soil	0.10	3.6	<0.1	<0.05	1.6	6.27	8.4	<0.02	<1	0.2	8.3	<10	<2	33.0
2317814	Soil	0.09	2.8	<0.1	<0.05	1.9	7.44	5.5	<0.02	<1	0.2	1.8	<10	3	78.1
2317815 Limerick 2011	Rock Pulp	0.91	20.1	1.4	<0.05	0.8	13.21	51.4	0.03	<1	1.0	23.5	<10	<2	12.8
2317816	Soil	0.14	8.8	0.1	<0.05	2.3	18.32	30.4	0.02	<1	0.5	11.3	<10	2	13.5
2317817	Soil	0.17	4.9	<0.1	<0.05	1.5	8.68	14.0	<0.02	<1	0.4	7.4	<10	<2	49.5
2317818	Soil	0.32	5.4	<0.1	<0.05	2.4	9.74	21.3	<0.02	<1	0.4	12.5	<10	3	20.1
2317819	Soil	0.07	3.5	0.3	<0.05	0.6	1.41	17.9	<0.02	<1	0.2	0.9	<10	<2	54.5
2317820	Soil	0.29	10.5	0.2	<0.05	0.8	2.96	28.3	0.03	1	0.2	10.1	<10	2	9.1
2317821	Soil	0.07	2.3	0.1	<0.05	0.7	0.52	4.0	<0.02	<1	<0.1	0.8	<10	<2	83.6
2317822	Soil	0.09	5.6	0.1	<0.05	0.5	5.89	38.1	0.02	2	0.4	15.6	<10	<2	6.0
2317823	Soil	0.13	1.7	0.2	<0.05	0.8	3.04	5.8	<0.02	2	0.5	1.1	<10	<2	78.9
2317824	Soil	0.10	7.1	0.1	<0.05	0.6	4.28	25.5	0.03	<1	0.5	15.3	<10	<2	6.1
2317825	Soil	0.05	4.1	0.2	<0.05	0.5	0.98	9.0	<0.02	<1	0.1	1.0	<10	<2	53.5
2317826	Soil	0.12	7.1	0.1	<0.05	0.6	1.34	25.0	<0.02	<1	0.1	3.4	<10	<2	9.4
2317827	Soil	0.06	3.2	0.1	<0.05	0.7	0.65	3.9	<0.02	<1	0.3	0.7	<10	<2	74.7
2317828	Soil	0.05	3.1	0.1	<0.05	0.6	0.68	4.0	<0.02	<1	0.2	0.7	<10	<2	74.9
2317829	Soil	0.05	4.8	<0.1	<0.05	1.3	2.74	21.3	<0.02	2	0.2	4.8	<10	<2	6.9
2317830	Soil	0.04	4.9	<0.1	<0.05	1.9	3.21	23.2	<0.02	2	0.2	5.7	<10	<2	6.6
2317831	Soil	0.07	2.5	<0.1	<0.05	0.9	0.64	2.6	<0.02	<1	0.1	0.7	<10	<2	83.3
2317832	Soil	0.34	7.1	0.1	<0.05	0.9	3.11	24.8	0.02	<1	0.4	3.0	<10	2	10.7
2317833	Soil	0.10	2.9	<0.1	<0.05	1.2	5.19	7.2	<0.02	<1	0.2	1.3	<10	<2	85.7
2317834	Soil	0.37	6.1	0.2	<0.05	0.5	5.98	29.6	0.02	<1	0.3	7.6	<10	<2	8.0
2317835	Soil	0.14	2.4	<0.1	<0.05	0.9	0.70	5.2	<0.02	<1	0.1	0.9	<10	<2	72.4
2317836	Soil	0.19	5.3	0.2	<0.05	0.2	2.17	26.7	<0.02	<1	0.2	2.9	<10	<2	7.8
2317837 Limerick 2011	Rock Pulp	0.92	16.6	1.4	<0.05	0.8	12.91	48.2	0.04	<1	0.8	20.7	<10	8	12.6
2317838	Soil	0.20	2.4	0.1	<0.05	1.7	2.52	6.8	<0.02	<1	0.1	2.1	<10	<2	69.7
2317839	Soil	0.28	3.9	0.2	<0.05	1.2	11.97	30.9	0.04	<1	0.5	8.6	<10	<2	10.1
2317840	Soil	0.17	1.9	0.1	<0.05	1.8	4.69	7.3	<0.02	<1	0.2	1.4	<10	<2	77.3

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Project: 204700

Report Date: August 06, 2013

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Part: 1 of 3

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method Analyte	Unit	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
MDL		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317841	Soil	5.98	25.06	234.5	312.0	384	54.6	11.3	524	3.07	7.6	0.9	3.6	2.5	17.6	3.18	1.33	0.12	37	0.69	0.101
2317842	Soil	8.85	8.10	18.96	88.5	365	13.9	2.4	52	0.73	2.6	0.2	<0.2	0.7	17.7	3.33	0.48	0.04	14	0.54	0.065
2317843	Soil	7.82	19.05	216.8	302.5	496	47.4	9.5	578	3.19	8.3	0.9	1.0	2.2	19.0	3.16	1.39	0.12	37	0.65	0.072
2317844	Soil	5.26	9.70	18.45	151.4	163	12.5	2.7	54	0.89	1.7	0.3	<0.2	0.4	26.5	3.56	0.41	0.03	12	1.26	0.057
2317845	Soil	7.24	26.32	104.5	401.4	585	52.0	10.7	670	4.10	6.6	0.8	0.7	2.6	48.4	4.16	1.44	0.09	38	3.83	0.092
2317846	Soil	2.04	4.25	4.34	39.1	570	4.2	0.8	83	0.19	0.7	<0.1	0.3	0.2	6.5	0.35	0.16	0.02	2	0.33	0.098
2317847	Soil	8.26	14.61	9.86	106.6	355	31.2	4.7	53	1.72	6.3	0.4	0.3	0.3	3.7	0.21	1.04	0.11	40	0.06	0.072
2317848	Soil	4.01	10.71	8.93	152.7	1677	17.9	5.5	1628	1.09	3.0	0.4	<0.2	0.2	13.3	3.41	0.80	0.10	34	0.78	0.181
2317849	Soil	6.96	10.94	7.29	93.9	776	13.4	3.0	366	0.66	2.0	0.2	0.4	0.2	8.2	2.20	0.51	0.07	18	0.49	0.154
2317850	Soil	10.91	39.50	16.84	515.9	299	79.1	9.9	242	2.70	18.7	0.8	0.4	0.4	5.5	1.06	2.93	0.16	62	0.12	0.123
2317851	Soil	3.66	31.52	12.34	382.1	3669	81.4	9.8	449	1.29	2.7	2.1	0.3	0.4	206.6	13.70	2.01	0.07	18	2.82	0.115
2317852	Soil	5.68	11.80	17.18	231.0	342	29.7	5.9	216	2.16	8.6	0.8	0.6	3.2	25.3	1.41	1.09	0.13	36	0.35	0.053
2317853	Soil	5.22	23.16	11.96	175.5	3515	45.9	7.2	352	1.05	3.7	1.3	0.7	0.5	57.3	11.24	1.81	0.07	21	1.88	0.098
2317854	Soil	3.33	3.58	5.78	51.2	339	11.7	1.4	43	0.86	3.9	0.4	<0.2	3.0	11.6	0.47	0.45	0.06	22	0.28	0.094
2317855	Soil	2.74	16.74	15.75	109.6	708	19.3	2.7	30	0.53	2.5	0.5	<0.2	0.8	29.3	17.84	0.43	0.05	15	0.47	0.070
2317856 Limerick 2011	Rock Pulp	4.37	38.07	18.65	90.7	110	56.0	19.3	1097	4.00	7.1	0.7	1.4	0.8	17.4	0.52	0.32	0.08	58	0.89	0.158
2317857	Soil	4.43	17.67	13.67	172.3	314	34.8	4.6	102	2.09	7.8	0.6	0.8	4.2	10.8	0.83	1.10	0.10	30	0.21	0.103
2317858	Soil	3.69	18.92	21.68	61.8	3992	25.7	3.4	18	0.61	2.1	1.0	<0.2	0.6	17.4	4.25	0.35	0.06	18	0.21	0.115
2317859	Soil	4.56	12.37	12.64	68.6	1218	12.5	2.3	22	0.69	2.0	0.6	0.8	1.0	20.7	3.89	0.41	0.09	26	0.44	0.073
2317860	Soil	5.66	13.71	12.51	215.1	382	34.9	6.9	124	2.61	9.3	0.6	0.9	3.8	8.6	1.49	1.10	0.13	37	0.14	0.042
2317861	Soil	6.54	11.97	6.03	47.9	1770	13.8	1.9	18	0.36	1.9	0.4	0.3	0.2	19.5	5.33	0.32	0.06	14	0.16	0.081
2317862	Soil	18.43	51.88	12.76	211.6	411	66.2	5.4	70	3.09	15.4	3.7	0.5	6.5	6.9	1.62	1.99	0.14	49	0.06	0.121
2317863	Soil	5.42	19.24	787.1	201.5	13564	14.4	1.5	16	0.91	6.7	0.3	0.8	0.5	34.8	5.88	1.31	0.07	22	0.17	0.062
2317864	Soil	30.41	32.60	6000	464.0	9826	19.0	1.8	30	6.52	54.1	0.9	3.2	2.6	48.5	1.22	13.95	0.24	61	0.03	0.109
2317865	Soil	17.63	16.88	934.7	533.6	1040	22.9	3.7	102	1.25	10.4	1.7	3.5	0.7	40.9	7.01	2.88	0.06	15	1.01	0.088
2317866	Soil	18.70	69.65	5963	4616	3981	112.7	8.3	302	4.30	22.7	2.8	3.5	2.3	52.4	17.84	4.46	0.14	31	1.68	0.094
2317867	Soil	2.59	25.74	268.6	708.7	680	49.2	3.0	30	0.81	2.0	13.1	1.0	0.3	67.2	18.01	2.63	0.05	17	3.36	0.069
2317868	Soil	11.88	29.76	794.6	1120	1750	56.5	7.0	279	1.88	12.6	2.8	3.6	2.3	37.7	6.11	4.97	0.12	37	0.93	0.078
2317869	Soil	8.10	28.81	319.1	432.0	492	58.0	9.7	422	1.63	5.1	6.4	2.5	1.1	38.7	7.27	2.19	0.11	32	1.15	0.099
2317870	Soil	13.33	26.74	514.5	850.7	1102	60.4	8.7	489	2.08	10.9	3.0	2.7	2.1	31.5	6.22	3.18	0.12	35	0.71	0.098

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Project: 204700  
 Report Date: August 06, 2013

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# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317841	Soil	17.2	27.2	0.60	781.3	0.004	<20	1.04	<0.001	0.05	<0.1	4.3	0.24	0.02	111	1.4	0.04	2.3	0.49	<0.1	0.04
2317842	Soil	3.1	14.5	0.10	218.0	0.003	<20	0.43	0.002	0.04	<0.1	1.1	0.07	0.09	171	0.8	<0.02	1.5	0.38	<0.1	0.07
2317843	Soil	21.8	27.6	0.43	531.6	0.005	<20	0.93	<0.001	0.06	<0.1	4.1	0.25	0.03	114	1.1	<0.02	2.2	0.36	<0.1	0.03
2317844	Soil	2.8	13.1	0.16	350.9	0.003	<20	0.43	0.003	0.03	<0.1	0.9	0.06	0.11	212	0.7	<0.02	1.2	0.22	<0.1	0.06
2317845	Soil	14.3	25.6	1.86	376.5	0.005	<20	0.95	0.002	0.09	<0.1	3.5	0.26	0.03	178	1.5	0.02	2.3	0.55	<0.1	0.06
2317846	Soil	1.1	5.3	0.06	176.9	0.002	<20	0.15	0.005	0.08	<0.1	0.6	0.08	0.11	258	0.3	<0.02	0.4	0.29	<0.1	<0.02
2317847	Soil	16.1	15.0	0.27	417.8	0.003	<20	0.83	<0.001	0.10	<0.1	0.5	0.19	<0.02	32	1.2	<0.02	3.3	0.41	<0.1	<0.02
2317848	Soil	8.3	10.9	0.14	843.4	0.002	<20	0.74	<0.001	0.08	<0.1	0.5	0.08	0.09	158	0.8	<0.02	2.1	0.29	<0.1	<0.02
2317849	Soil	5.2	11.4	0.15	442.9	0.003	<20	0.48	0.002	0.08	<0.1	0.5	0.08	0.08	130	0.6	0.02	1.7	0.32	<0.1	<0.02
2317850	Soil	13.7	23.9	0.25	388.6	0.002	<20	0.76	<0.001	0.13	<0.1	0.8	0.27	<0.02	40	4.0	0.05	2.5	0.69	<0.1	<0.02
2317851	Soil	8.0	10.6	0.29	1089	0.002	<20	0.84	0.003	0.07	<0.1	1.3	0.22	0.15	193	3.3	<0.02	1.7	0.52	<0.1	0.06
2317852	Soil	20.1	16.8	0.53	461.2	0.004	<20	1.00	0.002	0.09	<0.1	1.4	0.32	<0.02	40	0.9	0.02	2.8	0.54	<0.1	<0.02
2317853	Soil	4.8	12.2	0.26	879.9	0.002	<20	0.73	0.003	0.09	<0.1	1.1	0.24	0.11	142	0.9	<0.02	1.9	0.47	<0.1	0.05
2317854	Soil	21.7	8.1	0.40	242.5	0.003	<20	0.61	<0.001	0.07	<0.1	0.7	0.21	<0.02	18	<0.1	<0.02	2.3	0.49	<0.1	<0.02
2317855	Soil	6.2	12.1	0.07	629.7	0.002	<20	0.42	0.005	0.06	<0.1	1.2	0.07	0.06	130	0.4	<0.02	1.5	0.48	<0.1	<0.02
2317856 Limerick 2011	Rock Pulp	23.6	53.7	0.75	90.6	0.016	<20	1.85	0.010	0.21	<0.1	4.8	0.14	0.05	94	0.7	<0.02	6.8	0.98	<0.1	0.03
2317857	Soil	20.5	13.2	0.54	257.7	0.002	<20	1.01	<0.001	0.10	<0.1	1.7	0.23	<0.02	42	0.4	0.03	2.5	0.49	<0.1	<0.02
2317858	Soil	7.3	11.4	0.07	921.9	0.002	<20	0.70	0.002	0.05	<0.1	1.2	0.13	0.06	130	0.6	<0.02	2.2	0.43	<0.1	<0.02
2317859	Soil	8.5	12.2	0.11	420.5	0.002	<20	0.74	0.001	0.06	<0.1	1.6	0.11	<0.02	107	0.6	<0.02	3.1	0.41	<0.1	<0.02
2317860	Soil	17.8	16.4	0.61	191.2	0.002	<20	1.32	<0.001	0.10	<0.1	1.5	0.23	<0.02	23	0.9	0.04	3.2	0.65	<0.1	<0.02
2317861	Soil	5.5	10.7	0.05	511.4	0.006	<20	0.46	0.002	0.06	<0.1	0.8	0.07	0.06	135	0.8	<0.02	1.7	0.19	<0.1	<0.02
2317862	Soil	14.4	15.0	0.32	137.5	0.003	<20	1.27	<0.001	0.08	<0.1	1.7	0.38	<0.02	36	1.4	0.06	3.2	0.79	<0.1	0.02
2317863	Soil	4.4	12.3	0.04	2772	0.003	<20	0.33	0.002	0.04	<0.1	1.0	1.07	0.10	445	1.1	0.03	1.4	0.40	<0.1	<0.02
2317864	Soil	11.1	20.6	0.05	1884	0.004	<20	0.74	0.005	0.10	0.3	1.1	24.11	0.31	657	5.8	0.08	3.9	0.74	<0.1	0.03
2317865	Soil	3.2	9.8	0.08	1233	0.002	<20	0.25	0.003	0.06	<0.1	0.9	2.28	0.18	233	3.6	0.03	0.8	0.38	<0.1	0.08
2317866	Soil	10.3	10.2	0.67	2894	0.001	<20	0.73	0.005	0.07	<0.1	2.9	6.10	0.16	744	5.3	0.09	1.5	0.62	<0.1	0.03
2317867	Soil	3.8	6.2	0.16	1570	0.002	<20	0.41	0.002	0.03	<0.1	0.7	0.31	0.14	121	2.1	<0.02	1.1	0.32	<0.1	0.05
2317868	Soil	14.0	12.4	0.24	1902	0.002	<20	0.58	0.002	0.07	0.2	2.2	1.57	0.06	305	2.9	0.04	1.3	0.57	<0.1	0.06
2317869	Soil	7.9	8.3	0.21	1336	0.001	<20	0.69	<0.001	0.06	0.1	1.5	0.60	0.11	203	1.8	0.02	1.5	0.61	<0.1	0.07
2317870	Soil	13.2	13.2	0.26	1656	0.001	<20	0.64	0.002	0.08	0.1	2.1	1.11	0.06	210	2.2	0.02	1.4	0.55	<0.1	0.07

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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Project: 204700  
 Report Date: August 06, 2013

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# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317841	Soil	0.44	5.0	0.1	<0.05	1.5	16.21	33.4	0.05	<1	0.3	14.5	<10	<2	10.7
2317842	Soil	0.22	2.1	0.2	<0.05	2.5	1.65	6.1	<0.02	<1	<0.1	1.8	<10	<2	74.7
2317843	Soil	0.74	4.9	0.2	<0.05	1.9	19.90	41.4	0.07	<1	0.8	9.4	<10	<2	14.5
2317844	Soil	0.15	1.6	0.1	<0.05	2.1	2.82	5.8	<0.02	2	0.2	2.5	15	<2	76.7
2317845	Soil	0.31	5.6	0.1	<0.05	2.5	14.11	28.3	0.04	<1	0.5	10.5	<10	<2	19.9
2317846	Soil	0.04	3.0	<0.1	<0.05	0.7	0.41	2.2	<0.02	<1	<0.1	0.5	<10	<2	91.5
2317847	Soil	0.13	10.7	0.2	<0.05	0.2	2.27	30.4	<0.02	<1	0.2	6.7	<10	<2	9.6
2317848	Soil	0.19	6.2	0.2	<0.05	0.5	5.77	13.9	<0.02	<1	0.3	4.7	<10	<2	44.1
2317849	Soil	0.16	4.2	0.2	<0.05	0.6	1.85	9.6	<0.02	<1	0.2	2.9	<10	<2	57.0
2317850	Soil	0.11	12.9	0.2	<0.05	0.3	4.70	29.6	0.03	<1	0.4	7.7	<10	<2	10.2
2317851	Soil	0.37	6.0	0.2	<0.05	1.9	13.87	16.3	<0.02	7	0.5	5.5	<10	<2	68.9
2317852	Soil	0.51	8.4	0.3	<0.05	0.5	4.27	39.1	<0.02	<1	0.4	16.8	<10	<2	7.1
2317853	Soil	0.38	5.5	0.2	<0.05	2.1	6.82	10.2	<0.02	<1	0.3	4.5	<10	<2	70.3
2317854	Soil	0.17	8.5	0.1	<0.05	0.1	3.41	43.8	<0.02	1	0.1	9.0	<10	<2	3.4
2317855	Soil	0.11	3.4	0.2	<0.05	0.9	3.27	11.7	<0.02	<1	0.5	1.2	<10	<2	72.0
2317856 Limerick 2011	Rock Pulp	1.05	19.2	1.5	<0.05	1.3	13.83	51.5	0.04	<1	1.2	23.3	<10	<2	12.7
2317857	Soil	0.12	6.4	0.2	<0.05	0.9	6.49	40.8	0.02	<1	0.5	13.6	<10	<2	5.3
2317858	Soil	0.16	3.0	0.2	<0.05	0.7	5.86	14.7	<0.02	<1	0.6	1.4	13	<2	73.6
2317859	Soil	0.21	3.2	0.3	<0.05	0.8	3.75	17.0	<0.02	<1	0.7	2.3	<10	<2	61.6
2317860	Soil	0.21	10.8	0.2	<0.05	0.9	2.89	36.7	<0.02	<1	0.6	24.5	<10	<2	5.8
2317861	Soil	0.15	2.4	0.3	<0.05	0.3	1.78	10.2	<0.02	<1	0.3	0.7	<10	<2	77.2
2317862	Soil	0.38	9.8	0.2	<0.05	1.3	4.45	30.2	0.04	2	0.6	14.8	<10	<2	8.2
2317863	Soil	0.15	2.3	0.5	<0.05	0.6	1.22	8.3	0.20	<1	0.2	0.7	13	<2	70.7
2317864	Soil	0.85	6.5	1.1	<0.05	1.3	3.03	21.8	0.59	1	0.3	2.7	<10	<2	20.3
2317865	Soil	0.14	2.8	0.2	<0.05	2.8	3.00	6.3	0.07	4	0.1	1.6	<10	<2	73.0
2317866	Soil	0.11	4.4	0.5	<0.05	1.8	12.98	20.0	0.34	14	0.3	7.3	<10	3	15.1
2317867	Soil	0.15	2.8	0.1	<0.05	2.2	5.02	7.3	0.02	2	0.3	2.5	<10	<2	67.8
2317868	Soil	0.18	5.2	0.2	<0.05	2.6	11.24	25.8	0.07	4	0.5	7.1	<10	3	13.7
2317869	Soil	0.19	5.8	0.2	<0.05	2.4	9.50	14.9	0.03	5	0.6	7.8	<10	<2	43.5
2317870	Soil	0.19	6.3	0.2	<0.05	2.3	10.35	25.4	0.05	2	0.3	8.3	<10	2	15.2

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Project: 204700

Report Date: August 06, 2013

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Part: 1 of 3

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method Analyte	Unit MDL	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001	
2317871	Soil	3.90	27.75	307.6	282.8	593	49.3	8.0	45	1.61	4.7	2.5	1.9	1.3	22.6	3.46	1.25	0.13	23	0.71	0.078	
2317872	Soil	15.33	19.17	269.5	366.9	884	48.3	6.8	86	1.86	12.2	1.9	8.7	3.1	34.0	2.17	3.03	0.14	35	0.36	0.071	
2317873	Soil	5.96	9.52	42.44	168.0	738	19.7	2.4	51	0.67	4.2	0.5	11.5	0.8	16.9	2.10	1.16	0.05	12	0.50	0.089	
2317874	Soil	13.03	29.24	78.30	469.3	384	58.5	11.8	192	2.70	12.6	2.0	3.0	2.1	13.5	3.29	2.55	0.13	36	0.14	0.088	
2317875	Limerick 2011	Rock Pulp	4.07	36.31	18.86	85.3	93	55.0	18.4	1070	3.90	6.4	0.7	64.4	0.7	16.8	0.50	0.31	0.09	57	0.87	0.161
2317876	Soil	5.73	13.39	20.96	198.6	782	19.8	3.1	41	0.81	3.8	0.4	1.5	0.6	13.4	4.60	0.91	0.05	21	0.42	0.078	
2317877	Soil	11.38	22.32	69.66	722.7	418	62.0	9.5	138	3.29	12.5	0.8	1.6	1.6	11.3	1.79	1.79	0.16	62	0.11	0.073	
2317878	Soil	9.13	26.82	18.99	374.4	994	38.9	12.7	1938	1.34	3.8	1.0	0.9	0.6	27.8	16.15	1.14	0.08	29	1.41	0.104	
2317879	Soil	14.09	44.70	32.20	193.5	2458	74.9	14.4	303	3.71	13.5	2.0	1.4	1.7	25.5	3.12	2.22	0.18	41	1.14	0.241	
2317880	Soil	10.05	22.95	14.83	373.3	1667	64.7	18.3	465	1.94	3.4	0.9	1.4	0.7	15.8	3.47	1.83	0.06	13	0.86	0.170	
2317881	Soil	10.34	22.83	13.98	364.3	1715	63.1	18.0	451	1.90	3.0	0.9	0.3	0.7	15.8	3.51	1.72	0.06	12	0.89	0.160	
2317882	Soil	12.33	57.54	16.19	415.9	601	96.5	27.9	764	2.98	11.1	2.1	0.9	1.8	18.7	9.79	2.01	0.15	54	0.38	0.154	
2317883	Soil	11.56	55.46	15.69	397.3	611	94.0	26.9	769	2.94	10.2	2.0	0.9	1.8	17.5	9.32	2.08	0.15	52	0.38	0.152	
2317884	Soil	9.47	39.40	11.97	1138	4451	211.1	69.5	818	4.49	7.8	2.3	0.6	0.4	16.1	5.97	3.30	0.05	13	0.23	0.189	
2317885	Soil	17.31	35.47	21.25	553.9	1441	105.3	19.5	134	6.19	14.5	1.8	0.5	2.2	13.9	1.99	2.48	0.21	74	0.02	0.155	
2317886	Soil	45.88	42.61	15.91	2065	2719	268.0	99.6	968	17.32	22.1	7.4	1.8	3.4	6.9	9.77	3.58	0.12	82	0.03	0.106	
2317887	Soil	9.61	12.40	5.35	182.6	2212	29.2	5.8	234	1.23	3.7	0.5	1.5	0.6	13.0	2.17	1.13	0.04	12	0.38	0.110	
2317888	Soil	27.11	29.66	14.24	308.1	380	56.6	8.5	90	3.27	14.5	1.2	0.6	2.0	14.1	4.05	1.98	0.17	49	0.03	0.065	
2317889	Soil	10.48	6.87	6.37	86.4	101	19.7	2.2	48	0.40	2.5	0.4	1.0	0.6	12.0	1.53	0.79	0.03	6	0.77	0.075	
2317890	Soil	17.27	24.01	12.43	407.9	463	90.4	7.7	422	1.53	11.1	1.3	0.6	1.8	35.1	6.42	4.27	0.11	21	3.25	0.047	
2317891	Soil	4.03	13.02	2.40	125.6	146	17.6	1.7	115	0.36	0.5	1.0	0.3	0.3	60.2	2.78	0.72	<0.02	7	3.24	0.070	
2317892	Soil	4.58	12.54	2.43	122.4	151	15.8	1.9	101	0.37	0.9	0.9	<0.2	0.3	57.8	2.64	0.71	<0.02	7	3.23	0.077	
2317893	Soil	16.80	21.39	12.02	323.4	408	86.9	10.4	375	1.92	9.7	1.3	0.8	1.4	36.2	2.44	2.15	0.09	32	3.05	0.080	
2317894	Soil	4.68	6.51	3.27	67.1	410	7.6	1.2	14	0.29	0.7	0.2	<0.2	0.3	22.3	0.83	0.45	0.02	5	1.03	0.070	
2317895	Limerick 2011	Rock Pulp	4.02	35.44	18.37	83.7	88	51.2	18.5	1068	3.88	5.9	0.7	4.0	0.7	16.4	0.51	0.33	0.11	55	0.85	0.169
2317896	Soil	22.57	19.71	13.52	250.7	75	69.0	8.5	96	1.91	12.8	1.1	1.9	0.8	8.4	1.51	2.29	0.14	57	0.32	0.039	
2317897	Soil	4.29	15.92	6.01	162.2	333	34.9	4.1	253	0.78	1.6	1.4	0.9	0.6	25.7	2.66	0.50	0.06	12	2.50	0.063	
2317898	Soil	9.18	36.54	11.83	397.4	394	96.5	9.1	391	2.11	5.6	2.1	0.5	1.0	27.8	3.91	1.01	0.12	22	2.25	0.076	
2317899	Soil	10.10	30.65	11.29	323.6	450	84.8	8.3	272	1.94	5.6	1.9	0.7	0.9	35.9	2.53	1.01	0.11	19	3.16	0.077	
2317900	Soil	4.39	9.06	4.37	74.6	128	11.7	2.1	26	0.49	1.5	0.6	0.4	0.4	24.1	2.79	0.37	0.03	7	1.11	0.064	





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Project: 204700  
 Report Date: August 06, 2013

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# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F		
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf	
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm		
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.01	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02		
2317871	Soil	9.0	9.6	0.13	1013	<0.001	<20	0.73	0.002	0.05	<0.1	1.6	0.59	0.10	177	2.4	0.04	1.7	0.72	<0.1	0.06	
2317872	Soil	14.1	14.1	0.21	1542	<0.001	<20	0.62	0.002	0.07	0.2	1.6	1.05	0.07	146	2.4	0.04	1.5	0.68	<0.1	0.03	
2317873	Soil	3.8	12.1	0.09	579.6	0.002	<20	0.29	0.002	0.06	<0.1	0.8	0.34	0.11	215	1.2	<0.02	0.9	0.48	<0.1	0.03	
2317874	Soil	14.1	14.3	0.25	1078	0.001	<20	0.85	<0.001	0.07	<0.1	1.7	0.58	0.04	60	2.0	0.05	1.9	0.62	<0.1	0.04	
2317875	Limerick 2011	Rock Pulp	23.6	54.5	0.72	92.1	0.017	<20	1.78	0.009	0.20	<0.1	4.8	0.14	0.05	104	0.6	<0.02	6.4	0.95	<0.1	0.03
2317876	Soil	4.9	11.2	0.08	525.4	0.002	<20	0.39	0.001	0.06	<0.1	1.0	0.21	0.08	105	0.9	0.03	1.4	0.31	<0.1	0.03	
2317877	Soil	13.9	14.5	0.17	358.5	0.001	<20	1.02	<0.001	0.07	<0.1	1.4	0.58	0.03	48	1.6	0.08	2.6	0.69	<0.1	0.02	
2317878	Soil	5.9	11.8	0.16	942.5	0.003	<20	0.48	0.001	0.08	<0.1	1.1	0.20	0.08	237	1.5	<0.02	1.6	0.61	<0.1	0.03	
2317879	Soil	13.1	21.0	0.17	591.5	0.002	<20	0.98	<0.001	0.08	<0.1	2.3	0.36	0.05	196	2.7	0.07	1.5	0.73	<0.1	0.03	
2317880	Soil	3.0	9.7	0.14	265.7	0.001	<20	0.33	0.002	0.11	<0.1	1.0	0.24	0.15	277	10.8	0.03	0.8	0.59	<0.1	0.04	
2317881	Soil	3.1	10.4	0.14	272.9	0.001	<20	0.31	0.003	0.11	<0.1	0.9	0.23	0.14	306	11.6	<0.02	0.7	0.56	<0.1	0.03	
2317882	Soil	17.2	18.3	0.39	918.4	0.002	<20	1.18	<0.001	0.15	<0.1	2.7	0.32	0.03	104	6.7	0.06	3.0	0.73	<0.1	0.06	
2317883	Soil	16.3	17.6	0.36	919.8	0.002	<20	1.14	<0.001	0.15	<0.1	2.7	0.31	0.03	106	7.0	0.06	2.8	0.73	<0.1	0.06	
2317884	Soil	2.5	8.6	0.11	228.6	0.001	<20	0.44	0.002	0.09	<0.1	0.8	0.35	0.14	239	4.0	<0.02	0.9	1.86	<0.1	<0.02	
2317885	Soil	11.2	20.0	0.17	211.5	0.002	<20	1.32	<0.001	0.07	<0.1	1.5	0.39	0.05	58	2.6	0.08	5.2	1.85	<0.1	0.03	
2317886	Soil	9.7	17.5	0.12	207.7	0.003	<20	1.29	<0.001	0.07	<0.1	1.4	1.29	<0.02	100	8.8	0.07	3.4	1.37	<0.1	0.06	
2317887	Soil	3.0	9.8	0.09	157.8	0.002	<20	0.21	0.002	0.08	<0.1	0.7	0.32	0.11	286	1.2	0.06	0.8	0.97	<0.1	0.03	
2317888	Soil	14.9	14.7	0.08	199.0	0.002	<20	0.70	<0.001	0.10	<0.1	1.1	0.45	0.03	38	2.8	0.09	2.9	0.55	<0.1	<0.02	
2317889	Soil	2.6	7.1	0.20	165.2	0.002	<20	0.18	0.003	0.06	<0.1	0.9	0.11	0.09	221	0.9	<0.02	0.5	0.25	<0.1	0.04	
2317890	Soil	10.3	15.0	1.37	113.9	0.001	<20	0.30	0.002	0.05	<0.1	3.0	0.37	0.04	156	2.5	0.04	0.7	0.29	<0.1	0.10	
2317891	Soil	2.3	4.4	0.48	181.9	0.001	<20	0.25	0.003	0.02	<0.1	0.5	0.07	0.17	176	0.9	<0.02	0.5	0.15	<0.1	0.05	
2317892	Soil	2.2	4.5	0.45	182.0	0.001	<20	0.24	0.002	0.03	<0.1	0.5	0.07	0.18	165	0.9	<0.02	0.5	0.15	<0.1	0.04	
2317893	Soil	12.2	28.1	1.64	169.6	0.002	<20	0.72	0.002	0.08	<0.1	2.9	0.42	0.05	166	2.2	0.03	1.6	0.37	<0.1	0.04	
2317894	Soil	1.7	6.2	0.07	269.6	0.002	<20	0.21	0.002	0.03	<0.1	0.6	0.07	0.12	207	0.6	<0.02	0.8	0.37	<0.1	0.04	
2317895	Limerick 2011	Rock Pulp	21.2	47.5	0.71	84.7	0.014	<20	1.66	0.009	0.18	<0.1	4.2	0.13	<0.02	84	0.4	0.02	6.0	0.76	<0.1	0.04
2317896	Soil	10.0	16.5	0.14	288.1	0.001	<20	0.64	<0.001	0.04	<0.1	1.3	0.36	<0.02	34	2.3	0.06	1.9	0.42	<0.1	0.02	
2317897	Soil	2.7	8.1	0.17	234.9	0.002	<20	0.48	0.002	0.05	<0.1	1.0	0.22	0.09	141	0.8	<0.02	1.1	0.41	<0.1	0.06	
2317898	Soil	6.7	18.8	0.51	306.2	0.002	<20	0.90	0.001	0.08	<0.1	2.0	0.48	0.07	102	1.5	0.04	1.7	0.39	<0.1	0.06	
2317899	Soil	6.3	15.7	0.99	232.3	0.002	<20	0.73	0.003	0.07	<0.1	2.2	0.47	0.07	101	1.4	0.04	1.4	0.38	<0.1	0.07	
2317900	Soil	2.4	7.7	0.14	80.6	0.002	<20	0.25	0.002	0.04	<0.1	0.8	0.06	0.11	148	0.4	<0.02	0.8	0.23	<0.1	0.05	

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**Project:** 204700  
**Report Date:** August 06, 2013

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**Part:** 3 of 3

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	%	
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317871	Soil	0.12	6.8	0.2	<0.05	2.0	7.83	16.5	0.03	1	0.6	6.2	<10	<2	34.8
2317872	Soil	0.08	6.0	0.2	<0.05	1.3	6.62	25.5	0.05	4	0.2	9.9	<10	2	9.5
2317873	Soil	0.10	3.4	0.1	<0.05	2.4	1.65	6.9	<0.02	2	<0.1	2.6	<10	<2	69.2
2317874	Soil	0.24	6.0	0.2	<0.05	1.3	7.58	27.5	0.05	<1	0.4	12.1	<10	<2	12.6
2317875 Limerick 2011	Rock Pulp	1.02	18.5	1.5	<0.05	1.1	13.65	52.2	0.04	1	1.0	24.3	<10	<2	12.6
2317876	Soil	0.10	2.5	0.2	<0.05	1.2	1.78	8.9	<0.02	<1	0.2	2.3	<10	<2	60.2
2317877	Soil	0.26	7.3	0.2	<0.05	0.9	4.16	26.3	0.05	2	0.3	12.0	<10	<2	12.8
2317878	Soil	0.17	6.8	0.2	<0.05	0.9	5.48	11.2	<0.02	<1	0.3	2.7	24	<2	51.5
2317879	Soil	0.46	8.8	0.2	<0.05	1.2	15.96	25.1	0.04	<1	0.8	12.6	<10	<2	20.0
2317880	Soil	0.13	4.4	<0.1	<0.05	1.8	3.93	6.1	<0.02	<1	0.3	3.1	<10	<2	71.0
2317881	Soil	0.12	4.3	0.1	<0.05	1.9	4.05	6.2	<0.02	<1	0.2	3.2	<10	<2	71.9
2317882	Soil	0.22	9.9	0.2	<0.05	1.9	17.01	33.4	0.03	2	0.8	12.7	<10	<2	13.7
2317883	Soil	0.20	9.4	0.2	<0.05	2.2	16.62	31.8	0.02	4	0.6	12.2	<10	<2	14.1
2317884	Soil	0.08	5.2	0.1	<0.05	0.4	6.24	4.8	<0.02	<1	0.6	2.8	<10	2	71.8
2317885	Soil	0.41	7.4	0.3	<0.05	1.3	3.05	20.8	0.03	<1	0.5	5.9	<10	<2	19.4
2317886	Soil	0.39	8.3	0.3	<0.05	3.0	3.65	17.9	0.02	<1	0.5	8.7	<10	<2	12.3
2317887	Soil	0.14	5.6	0.1	<0.05	1.5	0.87	5.4	<0.02	<1	0.1	1.2	<10	<2	74.3
2317888	Soil	0.45	8.3	0.2	<0.05	0.5	2.68	25.8	<0.02	<1	0.4	5.5	<10	<2	14.1
2317889	Soil	0.08	2.8	<0.1	<0.05	2.3	2.21	5.0	<0.02	<1	<0.1	0.9	<10	<2	80.1
2317890	Soil	0.25	4.7	<0.1	<0.05	3.3	16.34	18.9	<0.02	<1	0.4	2.6	<10	<2	23.0
2317891	Soil	0.09	1.1	<0.1	<0.05	1.9	5.75	3.8	<0.02	2	0.2	0.9	<10	<2	86.5
2317892	Soil	0.10	1.1	<0.1	<0.05	1.8	5.34	3.8	<0.02	2	0.2	1.0	<10	<2	85.5
2317893	Soil	0.47	6.1	0.1	<0.05	1.9	14.02	23.1	<0.02	<1	0.5	9.1	<10	<2	20.4
2317894	Soil	0.07	1.6	0.1	<0.05	1.7	1.33	3.5	<0.02	<1	<0.1	0.6	<10	2	85.4
2317895 Limerick 2011	Rock Pulp	0.94	16.4	1.4	<0.05	1.2	13.11	47.0	0.04	1	1.1	21.8	<10	<2	13.3
2317896	Soil	0.30	4.3	0.2	<0.05	1.0	5.21	18.9	0.02	1	0.1	5.7	<10	<2	12.0
2317897	Soil	0.14	2.8	0.1	<0.05	2.4	4.94	5.6	<0.02	1	0.3	2.4	<10	<2	69.7
2317898	Soil	0.30	5.7	0.1	<0.05	2.7	10.99	13.1	<0.02	<1	0.6	7.9	<10	<2	30.2
2317899	Soil	0.29	5.3	<0.1	<0.05	3.0	10.90	11.9	<0.02	<1	0.5	7.3	<10	<2	30.0
2317900	Soil	0.17	1.9	<0.1	<0.05	1.9	2.53	4.8	<0.02	<1	0.1	1.8	<10	<2	78.6

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Project: 204700  
 Report Date: August 06, 2013

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Part: 1 of 3

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method Analyte	Unit MDL	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.2	0.1	0.5	0.01	0.02	0.02	0.02	2	0.01	0.001
2317901	Soil	7.03	12.16	4.92	93.2	325	13.0	2.8	33	0.60	2.9	0.3	0.6	0.4	11.4	3.08	0.85	0.05	11	0.41	0.095
2317902	Limerick 2011 Rock Pulp	3.89	34.12	17.77	83.5	80	48.8	17.8	1004	3.70	6.0	0.6	1.3	0.6	15.2	0.47	0.32	0.08	52	0.82	0.154
2317903	Soil	11.88	26.78	16.44	233.3	281	48.0	8.2	151	2.59	9.8	0.8	1.0	1.6	9.1	3.44	1.96	0.15	43	0.18	0.055
2317904	Soil	2.71	14.73	4.49	84.8	139	14.4	3.3	384	0.69	1.9	3.2	0.5	0.4	86.1	2.26	0.65	0.04	9	3.47	0.076
2317905	Soil	3.77	26.07	16.91	147.8	488	37.3	11.1	398	2.68	8.7	1.4	1.4	4.1	27.9	1.11	0.93	0.16	32	0.83	0.091
2317906	Soil	13.03	7.81	5.29	154.5	275	11.7	2.1	76	0.44	0.9	1.2	0.2	0.4	56.0	8.82	0.80	0.04	8	1.48	0.083
2317907	Soil	5.80	25.73	16.50	168.0	498	47.7	11.4	389	2.42	8.9	0.9	1.5	4.8	121.0	1.64	1.33	0.12	34	5.07	0.083
2317908	Soil	3.62	6.12	6.32	44.3	3351	9.2	0.9	37	0.28	0.5	0.3	<0.2	0.2	12.9	2.21	0.20	0.03	14	0.20	0.089
2317909	Soil	7.89	9.09	11.21	129.2	281	20.0	3.4	48	2.01	7.6	0.4	0.2	3.6	4.2	0.53	0.74	0.09	37	0.02	0.050
2317910	Soil	5.19	11.61	7.56	306.6	313	19.5	3.6	303	0.81	3.2	5.0	0.4	0.3	95.2	5.45	0.82	0.07	10	3.42	0.074
2317911	Soil	2.40	10.55	10.71	91.7	913	8.1	1.3	13	0.48	0.4	1.3	0.6	0.9	49.0	8.60	0.26	0.06	14	0.94	0.051
2317912	Soil	4.66	8.34	14.09	241.7	435	32.1	6.3	457	1.88	6.4	1.3	0.8	2.8	20.8	0.98	1.14	0.09	31	0.41	0.097
2317913	Soil	3.59	17.00	7.87	132.7	680	26.4	3.5	261	0.68	1.8	7.5	0.8	0.1	133.3	18.86	1.60	0.05	12	3.92	0.076
2317914	Soil	4.37	10.00	4.55	197.5	407	14.3	2.0	143	0.34	0.4	7.0	0.6	0.1	153.9	16.64	0.94	0.02	6	4.54	0.068
2317915	Soil	2.31	5.82	7.05	190.4	1084	11.2	1.6	37	0.24	0.7	0.1	0.5	0.2	37.5	26.42	0.25	0.02	4	1.05	0.083
2317916	Soil	6.44	9.64	21.74	234.4	309	25.9	3.2	109	2.44	10.7	0.6	1.1	1.8	7.7	1.05	1.26	0.13	52	0.10	0.101
2317917	Soil	1.89	11.73	6.74	220.3	2628	10.8	1.6	50	0.23	0.3	0.1	0.3	0.3	29.2	23.74	0.19	0.03	5	0.47	0.067
2317918	Soil	11.32	26.68	29.32	299.8	342	44.7	7.2	145	3.27	18.5	1.1	1.1	2.5	10.5	1.80	2.77	0.19	45	0.11	0.150
2317919	Soil	5.80	16.72	10.36	176.2	1792	28.9	6.0	74	0.87	2.0	3.6	0.4	0.7	91.9	7.56	1.95	0.07	14	1.07	0.093
2317920	Soil	12.75	19.71	17.86	255.6	264	42.8	8.8	102	1.96	10.3	2.7	1.1	3.1	31.2	2.30	2.29	0.13	25	0.35	0.078
2317921	Soil	3.09	20.81	5.95	602.2	2544	90.5	1.5	17	0.37	1.6	0.5	0.7	0.4	178.7	13.06	1.61	0.03	6	1.49	0.058
2317922	Soil	10.85	47.40	23.50	503.3	1626	78.1	7.1	91	2.11	10.5	2.3	2.5	1.7	88.9	8.78	3.35	0.20	38	0.74	0.061
2317923	Limerick 2011 Rock Pulp	4.28	34.16	18.57	89.0	88	54.3	18.9	1069	3.92	6.1	0.7	1.8	0.7	16.8	0.53	0.31	0.09	56	0.86	0.162
2317924	Soil	7.60	6.36	3.85	121.5	3206	7.8	1.0	35	0.22	0.6	0.1	2.7	0.2	13.2	0.89	0.34	0.02	5	0.36	0.104
2317925	Soil	1.73	1.16	1.35	16.7	95	1.3	0.1	1	0.06	0.4	0.3	<0.2	0.7	1.7	0.09	0.43	0.02	13	0.02	0.008
2317926	Soil	7.21	12.04	5.36	83.9	13507	13.8	1.4	18	0.35	0.8	0.2	1.1	0.3	18.2	5.04	0.45	0.04	10	0.34	0.090
2317927	Soil	11.45	9.23	15.21	142.4	4656	14.7	1.6	15	1.78	14.0	0.5	0.8	2.6	24.1	0.47	2.84	0.13	106	0.02	0.132
2317928	Soil	3.66	8.74	4.50	165.8	3734	13.5	1.3	81	0.43	1.8	0.3	2.5	0.3	21.5	5.36	0.82	0.04	9	0.33	0.133
2317929	Soil	18.92	28.25	20.17	492.9	1335	48.3	3.7	36	3.47	34.1	1.2	0.7	3.1	38.2	1.56	5.03	0.22	57	0.03	0.090
2317930	Soil	4.83	7.95	5.01	133.7	4098	14.5	1.2	47	0.54	4.2	0.2	3.3	0.4	22.7	3.56	1.24	0.05	10	0.42	0.093

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# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317901	Soil	1.8	8.0	0.07	519.5	0.002	<20	0.26	0.003	0.06	<0.1	0.8	0.08	0.11	402	1.0	<0.02	0.9	0.16	<0.1	0.04
2317902	Limerick 2011	21.4	47.3	0.67	86.8	0.013	<20	1.56	0.008	0.17	<0.1	4.2	0.12	0.05	89	0.3	<0.02	6.0	0.75	<0.1	0.03
2317903	Soil	10.3	20.0	0.25	596.6	0.002	<20	0.87	<0.001	0.06	<0.1	1.2	0.27	0.03	45	1.9	0.06	2.5	0.47	<0.1	0.02
2317904	Soil	2.9	7.7	0.30	337.9	0.002	<20	0.40	0.004	0.08	<0.1	0.6	0.08	0.21	106	1.2	<0.02	1.0	0.27	<0.1	0.04
2317905	Soil	16.8	18.2	0.74	347.4	0.004	<20	1.27	0.002	0.15	<0.1	3.6	0.19	0.03	96	1.1	0.03	3.4	0.74	<0.1	0.09
2317906	Soil	2.3	5.8	0.11	313.3	0.002	<20	0.31	0.004	0.06	<0.1	0.7	0.05	0.15	157	1.3	<0.02	0.9	0.28	<0.1	0.04
2317907	Soil	14.6	15.1	0.87	374.2	0.004	<20	1.22	0.004	0.14	<0.1	3.1	0.22	<0.02	100	0.7	0.05	2.8	0.53	<0.1	0.05
2317908	Soil	2.1	5.4	0.04	293.1	0.002	<20	0.31	0.003	0.06	<0.1	0.8	0.10	0.05	170	0.6	<0.02	1.2	0.24	<0.1	<0.02
2317909	Soil	21.0	10.5	0.38	84.3	0.002	<20	0.86	<0.001	0.06	<0.1	0.9	0.20	<0.02	13	0.5	<0.02	3.2	0.46	<0.1	<0.02
2317910	Soil	3.4	6.2	0.22	649.0	0.001	<20	0.31	0.002	0.04	<0.1	0.6	0.09	0.13	107	3.2	<0.02	0.8	0.19	<0.1	0.05
2317911	Soil	5.8	8.7	0.06	445.3	0.003	<20	0.50	0.002	0.03	<0.1	1.3	0.09	0.07	103	1.8	<0.02	1.8	0.20	<0.1	0.03
2317912	Soil	16.6	16.6	0.45	413.1	0.002	<20	1.00	<0.001	0.08	<0.1	2.2	0.24	<0.02	69	1.1	0.04	2.2	0.48	<0.1	<0.02
2317913	Soil	3.1	7.2	0.19	1044	0.002	<20	0.35	0.002	0.04	<0.1	0.4	0.14	0.14	113	4.2	<0.02	1.0	0.25	<0.1	<0.02
2317914	Soil	1.3	4.6	0.14	958.5	0.001	<20	0.19	0.003	0.04	<0.1	0.3	0.07	0.17	83	3.3	<0.02	0.5	0.17	<0.1	0.02
2317915	Soil	1.1	6.0	0.08	341.9	0.002	<20	0.15	0.005	0.08	<0.1	0.6	0.05	0.12	141	0.5	<0.02	0.5	0.24	<0.1	<0.02
2317916	Soil	12.2	11.4	0.23	228.4	0.002	<20	0.94	<0.001	0.07	<0.1	1.0	0.35	<0.02	29	0.7	0.03	2.7	0.48	<0.1	<0.02
2317917	Soil	1.9	6.3	0.06	430.5	0.002	<20	0.17	0.005	0.05	<0.1	0.8	0.04	0.08	125	0.4	<0.02	0.7	0.31	<0.1	0.02
2317918	Soil	15.4	16.4	0.27	193.3	0.001	<20	0.88	0.002	0.08	<0.1	1.2	0.39	<0.02	34	2.0	0.04	2.6	0.47	<0.1	<0.02
2317919	Soil	3.6	8.5	0.11	911.9	0.001	<20	0.42	0.004	0.10	<0.1	1.2	0.18	0.13	182	3.6	<0.02	1.0	0.37	<0.1	0.05
2317920	Soil	15.9	14.9	0.33	500.8	0.002	<20	0.70	0.001	0.08	<0.1	1.3	0.39	<0.02	82	1.7	<0.02	1.6	0.86	<0.1	0.04
2317921	Soil	1.5	7.6	0.09	905.2	<0.001	<20	0.19	0.005	0.06	<0.1	0.6	0.11	0.14	151	2.7	<0.02	0.4	0.40	<0.1	0.05
2317922	Soil	8.8	10.8	0.21	1195	0.001	<20	0.94	0.002	0.14	<0.1	2.2	0.52	0.05	257	5.5	0.05	2.4	1.07	<0.1	0.07
2317923	Limerick 2011	24.2	53.2	0.72	93.6	0.016	<20	1.73	0.010	0.20	<0.1	4.8	0.14	0.05	92	0.4	0.02	6.5	0.94	<0.1	0.03
2317924	Soil	1.7	6.3	0.08	292.1	0.002	<20	0.19	0.004	0.08	<0.1	0.6	0.09	0.09	148	0.8	<0.02	0.6	0.45	<0.1	<0.02
2317925	Soil	22.5	2.4	0.01	82.4	<0.001	<20	0.35	<0.001	0.05	<0.1	0.3	0.33	<0.02	9	<0.1	<0.02	1.4	1.54	<0.1	<0.02
2317926	Soil	4.2	10.5	0.05	613.4	0.002	<20	0.32	0.003	0.08	<0.1	0.9	0.12	0.07	147	1.7	<0.02	1.1	0.77	<0.1	<0.02
2317927	Soil	18.8	8.7	0.03	294.5	0.002	<20	0.72	0.002	0.05	<0.1	0.9	0.39	0.03	69	2.5	0.04	2.5	0.93	<0.1	<0.02
2317928	Soil	1.5	8.7	0.06	498.6	0.001	<20	0.18	0.005	0.12	<0.1	0.6	0.09	0.12	237	1.7	<0.02	0.5	0.50	<0.1	<0.02
2317929	Soil	17.1	14.5	0.03	320.5	0.002	<20	0.58	0.004	0.08	<0.1	1.1	0.66	0.06	59	3.2	0.07	1.6	1.12	<0.1	<0.02
2317930	Soil	2.0	11.7	0.04	214.2	0.002	<20	0.17	0.002	0.09	<0.1	0.5	0.19	0.10	243	0.7	0.02	0.6	0.65	<0.1	0.02



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Project: 204700  
 Report Date: August 06, 2013

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# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317901	Soil	0.14	1.4	0.1	<0.05	1.2	1.09	3.7	<0.02	<1	0.1	1.4	<10	<2	80.5
2317902	Limerick 2011 Rock Pulp	0.98	15.4	1.5	<0.05	1.2	12.56	48.6	0.04	<1	1.0	21.2	<10	<2	12.7
2317903	Soil	0.24	4.7	0.2	<0.05	0.9	4.68	21.2	<0.02	<1	0.3	12.5	<10	<2	11.4
2317904	Soil	0.19	3.3	<0.1	<0.05	1.8	3.37	5.2	<0.02	7	0.2	4.1	<10	<2	76.5
2317905	Soil	0.40	7.9	0.2	<0.05	3.3	11.14	34.1	0.02	7	0.8	18.5	<10	<2	12.6
2317906	Soil	0.13	2.5	0.1	<0.05	1.6	2.70	4.4	<0.02	<1	0.1	1.3	<10	<2	85.5
2317907	Soil	0.11	5.5	0.2	<0.05	2.9	9.75	29.5	<0.02	<1	0.7	16.9	<10	<2	11.2
2317908	Soil	0.06	1.7	0.1	<0.05	0.3	0.72	4.3	<0.02	<1	0.3	0.5	<10	<2	83.3
2317909	Soil	0.16	7.7	0.2	<0.05	0.4	1.52	41.0	<0.02	<1	0.2	9.3	<10	<2	5.6
2317910	Soil	0.17	2.8	<0.1	<0.05	1.6	4.46	6.7	<0.02	15	0.1	4.2	<10	<2	60.3
2317911	Soil	0.25	1.9	0.2	<0.05	1.0	2.90	12.1	<0.02	<1	0.4	2.2	<10	<2	58.7
2317912	Soil	0.42	7.8	0.2	<0.05	0.9	9.35	39.2	0.03	3	0.6	18.0	<10	<2	7.8
2317913	Soil	0.24	3.2	<0.1	<0.05	0.9	3.87	6.1	<0.02	18	0.2	4.8	<10	2	65.2
2317914	Soil	0.10	1.5	<0.1	<0.05	1.0	1.81	2.6	<0.02	6	<0.1	2.0	<10	<2	82.0
2317915	Soil	0.07	2.3	<0.1	<0.05	0.7	0.54	2.1	<0.02	<1	0.1	0.7	<10	<2	88.4
2317916	Soil	0.48	7.7	0.2	<0.05	0.6	2.56	23.5	<0.02	<1	0.2	11.4	<10	<2	9.1
2317917	Soil	0.07	1.9	<0.1	<0.05	0.7	0.73	3.7	<0.02	<1	0.1	0.5	25	<2	84.8
2317918	Soil	0.26	7.5	0.2	<0.05	0.6	4.19	28.4	0.02	<1	0.3	11.6	<10	<2	8.7
2317919	Soil	0.16	3.4	0.1	<0.05	2.5	5.88	6.8	<0.02	5	0.2	2.7	<10	<2	74.9
2317920	Soil	0.13	6.4	0.1	<0.05	1.6	6.74	30.6	<0.02	3	0.2	12.5	<10	<2	7.4
2317921	Soil	0.06	2.0	<0.1	<0.05	2.1	3.84	2.7	<0.02	<1	0.1	1.1	<10	<2	88.5
2317922	Soil	0.26	10.2	0.2	<0.05	2.2	8.73	15.9	0.03	10	0.7	9.8	10	2	27.8
2317923	Limerick 2011 Rock Pulp	1.05	18.2	1.6	<0.05	1.2	13.55	52.3	0.03	<1	1.1	22.8	<10	<2	12.5
2317924	Soil	0.04	3.0	0.1	<0.05	0.7	0.49	3.2	<0.02	<1	<0.1	0.6	<10	<2	85.7
2317925	Soil	<0.02	8.5	0.1	<0.05	<0.1	1.13	40.0	<0.02	<1	0.1	1.3	<10	<2	5.8
2317926	Soil	0.09	3.7	0.2	<0.05	0.5	0.94	7.8	<0.02	<1	0.2	0.9	<10	<2	69.0
2317927	Soil	0.40	6.8	0.3	<0.05	0.5	1.53	32.3	<0.02	<1	0.2	2.3	<10	<2	8.1
2317928	Soil	0.05	2.6	<0.1	<0.05	0.8	0.59	2.9	<0.02	<1	<0.1	0.7	<10	<2	83.4
2317929	Soil	0.21	9.1	0.3	<0.05	0.3	2.71	29.4	0.03	<1	0.2	1.5	<10	<2	9.4
2317930	Soil	0.08	3.0	<0.1	<0.05	0.8	0.58	3.6	<0.02	<1	<0.1	0.6	<10	<2	76.9

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

# CERTIFICATE OF ANALYSIS

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317931	Soil	3.25	6.14	4.83	106.0	2172	11.3	1.2	56	0.30	2.3	0.1	6.6	0.3	30.0	1.38	0.86	0.19	6	0.56	0.086
2317932	Soil	11.48	19.50	48.95	304.2	898	31.2	4.6	72	2.13	16.7	1.3	1.5	2.5	26.9	1.42	6.16	0.29	33	0.05	0.095
2317933	Soil	3.31	6.22	10.29	85.1	2444	8.5	1.4	72	0.31	1.8	0.2	7.0	0.5	33.2	1.19	0.58	0.10	5	0.39	0.112
2317934	Soil	3.87	6.70	6.97	89.7	1927	8.7	1.5	188	0.29	2.0	0.2	2.7	0.4	37.7	1.32	0.62	0.05	4	0.50	0.144
2317935	Soil	8.34	14.97	45.85	199.6	422	25.1	4.3	96	1.71	11.1	1.4	0.6	4.2	18.8	0.83	2.08	0.30	25	0.08	0.087
2317936	Soil	8.36	14.46	46.27	213.8	274	26.8	4.4	117	2.01	12.3	1.4	<0.2	3.9	21.3	0.97	2.25	0.32	26	0.08	0.092
2317937	Soil	2.26	5.81	4.67	83.8	2959	8.0	1.2	260	0.20	1.0	<0.1	4.6	0.3	25.5	1.56	0.57	0.06	4	0.59	0.138
2317938	Soil	14.17	16.48	28.69	234.2	471	26.6	3.2	35	1.41	16.3	0.9	0.8	2.1	29.8	0.75	5.01	0.30	22	0.01	0.053
2317939	Soil	2.93	5.96	5.59	76.2	7431	13.8	1.1	156	0.31	2.3	0.1	2.8	0.4	48.5	0.72	0.59	0.05	7	0.56	0.079
2317940	Soil	11.24	11.92	30.01	207.7	1864	76.2	3.2	77	0.85	4.2	2.6	3.2	0.7	36.2	2.18	2.15	0.05	9	0.33	0.134
2317941	Soil	2.92	6.41	57.43	45.6	484	6.5	1.8	14	0.39	0.7	0.3	<0.2	0.3	33.6	1.11	0.52	0.04	7	1.00	0.089
2317942	Soil	4.21	11.72	119.1	89.0	419	15.8	3.0	48	1.10	3.9	0.7	0.5	0.2	19.6	0.48	0.60	0.11	35	0.51	0.052
2317943	Soil	2.39	15.33	57.36	61.5	557	8.3	2.7	591	0.47	0.7	1.6	<0.2	0.3	97.2	3.32	1.03	0.04	7	3.68	0.091
2317944	Soil	6.71	15.98	593.9	301.1	570	26.3	6.7	386	2.66	10.7	1.1	1.0	1.7	77.4	1.91	1.87	0.16	37	0.40	0.075
2317945	Soil	1.19	28.32	168.0	103.5	1156	17.4	3.0	144	0.74	1.0	1.1	0.8	0.6	115.0	2.91	1.56	0.06	5	4.83	0.096
2317946	Soil	7.77	21.66	487.1	385.4	555	40.6	9.7	550	2.34	6.9	1.1	<0.2	2.4	23.1	2.02	1.28	0.13	33	0.42	0.096
2317947 Limerick 2011	Rock Pulp	3.83	36.77	22.08	83.4	80	51.8	19.0	989	3.72	6.5	0.8	0.9	0.8	18.7	0.50	0.36	0.09	51	0.81	0.154
2317948	Soil	2.00	10.91	52.64	36.5	325	8.4	3.0	111	0.59	0.9	0.5	<0.2	0.4	75.0	1.13	0.93	0.05	4	3.22	0.078
2317949	Soil	56.96	30.08	90.38	318.7	1001	85.3	7.9	178	1.94	15.9	2.0	1.7	4.9	46.9	3.18	7.35	0.16	36	0.29	0.061
2317950	Soil	10.14	18.36	170.2	309.1	182	37.9	6.1	153	2.41	7.5	0.7	0.4	1.4	9.7	0.76	1.63	0.12	32	0.12	0.102
2317951	Soil	2.54	23.38	24.87	302.2	280	27.8	3.4	185	0.69	1.8	5.4	<0.2	0.3	172.3	13.15	1.74	0.05	6	7.13	0.071
2317952	Soil	9.48	42.55	54.16	444.8	607	67.2	9.2	235	2.18	10.8	1.9	0.8	1.9	81.5	5.62	3.17	0.15	22	2.61	0.071
2317953	Soil	5.89	11.59	15.43	191.1	283	12.0	1.8	30	0.40	0.8	2.6	<0.2	0.5	48.5	5.33	0.83	0.03	6	1.38	0.066
2317954 Limerick 2011	Rock Pulp	4.16	39.57	22.72	88.0	82	53.4	19.0	1013	3.74	6.8	0.8	1.9	0.8	20.0	0.50	0.39	0.09	51	0.82	0.160
2317955	Soil	12.45	57.85	42.01	580.9	641	96.1	12.9	218	3.03	15.6	2.8	1.4	3.5	25.8	7.17	4.47	0.17	32	0.46	0.073
2317956	Soil	4.93	10.31	8.27	262.5	402	15.3	2.8	58	0.47	1.5	0.5	<0.2	0.4	34.0	8.61	0.79	0.04	7	1.33	0.078
2317957	Soil	9.22	42.30	35.47	630.6	517	89.6	11.3	244	2.36	10.2	1.7	0.9	2.0	31.2	6.60	2.72	0.24	30	1.09	0.088
2317958	Soil	3.69	15.12	11.46	177.0	259	21.0	3.0	43	0.62	2.1	0.5	0.6	0.7	18.3	2.40	0.73	0.10	10	0.80	0.069
2317959	Soil	10.85	28.27	54.07	1097	444	97.5	34.2	533	3.59	13.5	2.5	0.6	2.5	20.4	5.10	2.24	0.20	43	0.47	0.087
2317960	Soil	2.64	14.03	12.32	86.3	1424	14.5	1.6	27	0.48	1.9	0.5	0.3	0.4	14.8	3.25	0.46	0.07	10	0.18	0.071

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.02	
2317931	Soil	1.3	9.3	0.06	188.2	0.002	<20	0.13	0.002	0.06	<0.1	0.9	0.15	0.12	238	0.6	0.02	0.3	0.38	<0.1	<0.02
2317932	Soil	16.8	7.3	0.05	202.9	0.001	<20	0.51	<0.001	0.07	<0.1	0.8	0.52	0.05	58	2.2	0.07	1.1	0.76	<0.1	0.04
2317933	Soil	1.8	5.0	0.06	317.1	0.002	<20	0.17	0.002	0.13	<0.1	0.8	0.09	0.10	317	0.5	<0.02	0.4	0.20	<0.1	0.03
2317934	Soil	1.4	4.2	0.07	365.5	0.002	<20	0.15	0.004	0.17	<0.1	0.8	0.07	0.10	354	0.4	<0.02	0.3	0.22	<0.1	<0.02
2317935	Soil	20.5	8.7	0.23	294.1	0.002	<20	0.71	<0.001	0.08	<0.1	1.0	0.40	0.03	33	1.2	0.03	1.7	0.65	<0.1	<0.02
2317936	Soil	17.9	8.9	0.22	316.4	0.002	<20	0.76	<0.001	0.09	<0.1	1.0	0.38	0.03	34	1.1	0.04	1.8	0.59	<0.1	<0.02
2317937	Soil	1.4	3.7	0.08	363.8	0.002	<20	0.13	0.001	0.16	<0.1	0.7	0.17	0.10	276	0.4	<0.02	0.4	0.20	<0.1	<0.02
2317938	Soil	19.5	3.6	0.03	227.4	0.001	<20	0.46	<0.001	0.08	<0.1	0.8	0.53	0.04	31	2.0	0.08	1.0	0.70	<0.1	<0.02
2317939	Soil	2.4	3.8	0.06	840.9	0.002	<20	0.18	0.002	0.09	<0.1	1.0	0.51	0.11	395	0.9	<0.02	0.5	0.74	<0.1	0.02
2317940	Soil	4.5	3.7	0.05	390.5	0.003	<20	0.28	0.002	0.09	<0.1	1.5	0.71	0.13	319	2.0	<0.02	0.4	0.68	<0.1	0.04
2317941	Soil	2.5	4.4	0.15	453.5	0.003	<20	0.26	0.003	0.04	<0.1	0.9	0.06	0.11	136	0.3	<0.02	0.8	0.19	<0.1	0.02
2317942	Soil	18.9	7.5	0.15	761.0	0.004	<20	0.64	<0.001	0.04	<0.1	0.5	0.20	<0.02	32	0.4	0.04	2.6	0.21	<0.1	<0.02
2317943	Soil	3.6	5.2	0.23	1141	0.003	<20	0.31	0.003	0.02	<0.1	0.8	0.10	0.14	164	1.1	<0.02	1.0	0.16	<0.1	0.05
2317944	Soil	15.0	11.9	0.21	3177	0.005	<20	0.59	<0.001	0.06	<0.1	1.3	1.37	0.08	241	0.7	0.05	2.2	0.34	<0.1	<0.02
2317945	Soil	8.5	6.3	0.33	1371	0.003	<20	0.44	0.002	0.03	<0.1	1.0	0.09	0.15	197	1.8	0.02	0.7	0.18	<0.1	0.07
2317946	Soil	20.0	25.6	0.52	1177	0.005	<20	0.90	<0.001	0.09	<0.1	2.4	0.45	0.03	113	0.9	0.02	2.4	0.45	<0.1	<0.02
2317947 Limerick 2011	Rock Pulp	25.2	49.6	0.68	85.0	0.020	<20	1.64	0.007	0.18	<0.1	4.4	0.10	0.05	82	0.5	<0.02	5.5	0.84	<0.1	<0.02
2317948	Soil	2.0	3.2	0.36	418.0	0.003	<20	0.27	<0.001	0.03	<0.1	0.8	0.06	0.16	156	1.0	<0.02	0.7	0.19	<0.1	0.05
2317949	Soil	22.0	13.3	0.13	314.3	0.003	<20	0.28	<0.001	0.08	<0.1	1.9	1.10	0.09	408	4.3	0.16	0.7	0.34	<0.1	0.04
2317950	Soil	15.3	17.4	0.31	176.5	0.003	<20	0.79	<0.001	0.07	<0.1	1.2	0.27	0.02	45	1.2	0.04	1.9	0.38	<0.1	<0.02
2317951	Soil	1.6	6.7	0.45	440.1	<0.001	<20	0.20	0.003	0.03	<0.1	0.4	0.17	0.25	93	3.8	0.03	0.4	0.22	<0.1	0.03
2317952	Soil	7.4	17.7	0.59	1077	0.001	<20	0.62	<0.001	0.06	<0.1	1.6	0.45	0.09	131	2.4	0.07	1.2	0.39	<0.1	0.06
2317953	Soil	1.5	5.6	0.08	726.6	0.002	<20	0.21	0.002	0.04	<0.1	0.8	0.06	0.15	300	3.7	<0.02	0.5	0.25	<0.1	0.04
2317954 Limerick 2011	Rock Pulp	25.4	49.6	0.68	90.1	0.019	<20	1.65	0.007	0.18	<0.1	4.2	0.11	0.05	98	0.5	<0.02	5.8	0.84	<0.1	0.04
2317955	Soil	13.9	20.0	0.34	1092	0.002	<20	0.84	<0.001	0.07	<0.1	2.4	0.43	0.04	147	2.4	0.04	1.5	0.59	<0.1	0.03
2317956	Soil	1.5	6.3	0.10	289.2	0.001	<20	0.19	0.002	0.04	<0.1	0.7	0.12	0.15	141	3.4	0.04	0.3	0.18	<0.1	0.04
2317957	Soil	10.3	16.7	0.31	811.5	0.001	<20	0.72	<0.001	0.06	<0.1	1.9	0.43	0.05	120	2.6	0.05	1.5	0.41	<0.1	0.08
2317958	Soil	3.0	7.3	0.07	489.0	0.002	<20	0.29	0.001	0.05	<0.1	1.1	0.11	0.10	161	1.0	0.03	0.8	0.42	<0.1	0.05
2317959	Soil	13.5	23.8	0.26	908.2	0.001	<20	1.18	<0.001	0.07	<0.1	2.0	0.50	0.03	75	1.6	0.05	2.2	0.70	<0.1	0.05
2317960	Soil	5.2	8.5	0.04	635.4	0.003	<20	0.41	0.004	0.06	<0.1	0.8	0.06	0.05	79	0.5	<0.02	1.2	0.32	<0.1	<0.02

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
2317931	Soil	0.06	2.9	<0.1	<0.05	0.7	0.44	2.5	<0.02	<1	<0.1	0.4	<10	<2	86.0
2317932	Soil	0.23	10.4	0.2	<0.05	1.3	4.10	29.6	0.03	2	0.3	2.9	<10	<2	11.9
2317933	Soil	0.06	2.9	0.1	<0.05	0.8	0.84	3.4	<0.02	<1	0.2	0.6	<10	<2	83.8
2317934	Soil	0.04	4.8	0.1	<0.05	0.7	0.56	2.6	<0.02	<1	0.2	0.7	<10	<2	87.7
2317935	Soil	0.25	10.2	0.2	<0.05	0.6	4.57	38.0	0.03	<1	0.3	8.4	<10	<2	7.5
2317936	Soil	0.26	10.2	0.3	<0.05	0.8	4.81	33.6	0.03	<1	0.2	10.0	<10	<2	8.4
2317937	Soil	0.04	3.1	0.1	<0.05	0.7	0.38	2.4	<0.02	<1	<0.1	0.5	<10	<2	86.2
2317938	Soil	0.08	8.9	0.2	<0.05	0.3	3.26	32.2	<0.02	<1	0.2	2.2	<10	<2	7.2
2317939	Soil	0.05	3.5	<0.1	<0.05	0.7	0.67	4.2	<0.02	<1	0.1	0.5	<10	<2	80.0
2317940	Soil	0.07	4.3	<0.1	<0.05	1.2	2.73	7.3	<0.02	<1	0.1	0.7	<10	<2	87.0
2317941	Soil	0.06	1.1	0.1	<0.05	1.0	1.90	4.7	<0.02	<1	<0.1	1.1	<10	<2	84.2
2317942	Soil	0.19	2.9	0.4	<0.05	<0.1	3.33	31.3	0.03	<1	0.1	3.2	<10	<2	8.1
2317943	Soil	0.15	1.0	<0.1	<0.05	1.8	5.37	5.4	<0.02	<1	<0.1	1.1	<10	3	81.7
2317944	Soil	0.22	4.9	0.4	<0.05	0.2	5.37	28.2	0.11	<1	0.1	6.4	<10	<2	8.1
2317945	Soil	0.15	1.9	<0.1	<0.05	3.2	15.50	11.3	<0.02	<1	0.6	1.5	<10	<2	77.7
2317946	Soil	0.22	5.7	0.3	<0.05	0.6	9.79	38.5	0.04	<1	0.6	10.2	<10	<2	7.3
2317947 Limerick 2011	Rock Pulp	0.92	16.0	1.7	<0.05	0.9	12.74	49.8	0.03	<1	1.1	22.2	<10	<2	12.8
2317948	Soil	0.19	1.5	<0.1	<0.05	2.0	3.29	4.7	<0.02	<1	0.2	1.1	<10	<2	79.2
2317949	Soil	0.12	3.7	0.1	<0.05	1.6	8.26	31.4	0.04	<1	0.1	2.4	<10	<2	7.4
2317950	Soil	0.19	6.2	0.1	<0.05	0.7	4.00	28.1	0.02	<1	0.3	8.7	<10	<2	8.6
2317951	Soil	0.05	1.8	<0.1	<0.05	1.2	2.89	2.9	<0.02	11	0.1	3.4	<10	<2	68.5
2317952	Soil	0.11	3.9	0.1	<0.05	2.4	8.68	14.4	0.03	7	0.1	12.6	<10	<2	19.6
2317953	Soil	0.05	1.5	<0.1	<0.05	1.6	2.00	3.0	<0.02	<1	0.1	1.7	<10	<2	84.3
2317954 Limerick 2011	Rock Pulp	0.89	15.6	1.6	<0.05	1.0	12.99	52.4	0.03	<1	1.4	22.5	<10	<2	12.5
2317955	Soil	0.06	4.2	0.1	<0.05	2.0	10.82	24.7	0.03	3	0.3	15.2	<10	<2	7.7
2317956	Soil	0.04	1.5	<0.1	<0.05	1.6	1.39	2.6	<0.02	<1	0.1	1.8	<10	<2	82.4
2317957	Soil	0.10	4.0	0.2	<0.05	2.7	9.59	18.4	0.03	2	0.4	9.3	<10	4	17.8
2317958	Soil	0.06	2.6	0.1	<0.05	1.6	2.11	5.3	<0.02	<1	0.2	1.7	<10	<2	72.1
2317959	Soil	0.13	7.8	0.2	<0.05	1.9	9.99	23.9	0.08	<1	0.6	13.9	<10	<2	14.4
2317960	Soil	0.08	2.2	0.3	<0.05	0.4	2.11	9.9	<0.02	<1	0.3	0.6	<10	<2	64.6





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Project: 204700  
 Report Date: August 06, 2013

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# CERTIFICATE OF ANALYSIS

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Method Analyte	Unit	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
MDL		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
2317961	Soil	7.80	20.67	36.64	274.7	1502	45.8	7.8	329	4.47	16.2	1.4	1.0	3.7	11.3	2.15	2.98	0.15	42	0.15	0.230
2317962	Soil	2.75	64.32	13.43	372.1	1952	97.4	4.5	154	1.17	1.6	8.0	1.5	0.6	301.1	13.73	6.29	0.10	10	3.96	0.091
2317963	Soil	8.44	43.45	26.91	305.5	787	52.9	12.4	448	2.73	12.6	5.9	1.7	2.1	58.8	5.37	2.64	0.20	33	0.74	0.084
2317964	Soil	6.20	37.58	7.42	545.1	2285	85.2	2.6	50	0.65	1.2	1.1	3.0	0.6	288.0	11.80	5.28	0.05	8	3.14	0.065
2317965	Soil	5.64	19.34	10.07	244.4	794	34.1	2.8	86	0.83	3.2	1.3	7.7	0.9	140.6	6.90	2.38	0.06	11	1.57	0.073
2317966	Soil	11.41	49.95	31.22	453.0	1212	66.5	8.1	217	2.28	12.9	2.7	1.1	2.1	87.1	7.83	3.74	0.23	32	0.82	0.072
2317967	Soil	11.83	39.78	23.60	424.5	1006	63.0	8.1	197	2.35	13.5	2.0	3.5	2.2	61.1	6.59	3.41	0.20	34	0.66	0.063
2317968	Soil	4.98	21.61	11.84	106.9	4049	23.6	2.3	57	0.65	2.6	0.7	1.0	0.3	24.7	5.91	1.01	0.09	18	0.24	0.164
2317969	Soil	11.44	22.09	15.16	230.9	611	37.1	3.8	48	2.01	13.0	0.7	2.3	1.5	10.7	1.29	3.29	0.15	33	0.05	0.061
2317970	Soil	7.50	22.91	10.60	138.2	327	47.8	10.7	460	2.25	5.1	1.1	0.5	1.2	37.4	3.07	1.00	0.10	31	1.90	0.093
2317971 Limerick 2011	Rock Pulp	4.12	33.85	18.38	88.0	94	53.3	18.4	1055	3.88	6.6	0.7	1.9	0.7	16.8	0.54	0.33	0.09	55	0.88	0.163
2317972	Soil	3.73	7.92	4.51	41.9	170	9.5	2.2	26	0.49	0.5	0.2	<0.2	0.5	17.8	1.17	0.31	0.04	11	0.56	0.072
2317973	Soil	7.59	24.21	13.43	118.9	268	58.8	15.8	626	3.57	6.4	0.8	0.5	1.7	17.4	1.52	0.88	0.08	47	0.64	0.088
2317974	Soil	3.51	5.69	5.52	56.2	383	6.9	1.6	157	0.32	1.2	0.1	<0.2	0.4	9.8	1.18	0.32	0.04	4	0.50	0.114
2317975	Soil	4.54	16.27	11.88	166.2	275	44.6	14.2	271	2.58	5.2	0.7	0.4	2.4	9.0	1.81	0.80	0.11	30	0.27	0.073
2317976	Soil	3.82	8.34	138.2	73.4	2130	10.5	3.0	20	0.79	1.4	0.9	0.4	0.4	19.4	2.04	0.56	0.06	7	0.61	0.131
2317977	Soil	9.69	11.58	205.2	217.6	475	28.1	6.4	204	1.98	10.1	0.7	0.4	1.6	18.4	0.59	1.74	0.12	32	0.19	0.088
2317978	Soil	2.17	31.30	11.93	161.4	700	27.3	5.0	1093	0.68	0.8	0.6	0.7	0.3	69.9	5.19	1.41	0.04	9	4.13	0.109
2317979	Soil	6.22	21.11	78.63	425.4	305	46.5	12.9	384	2.87	8.6	1.0	0.9	1.9	13.5	2.07	1.34	0.18	36	0.41	0.104
2317980	Soil	1.88	16.40	11.98	86.3	478	13.5	3.3	917	0.59	0.7	0.6	0.4	0.3	62.5	0.92	0.95	0.03	4	3.86	0.117
2317981	Soil	5.82	29.13	67.46	446.2	797	61.1	13.4	376	2.87	8.3	1.0	1.5	2.1	15.5	1.89	1.65	0.17	25	0.59	0.102
2317982	Soil	3.90	5.08	7.37	37.5	230	6.8	1.5	57	0.31	0.3	0.1	<0.2	0.4	23.8	1.89	0.27	0.04	4	0.77	0.096
2317983	Soil	2.16	14.67	23.00	63.6	76	31.5	4.9	119	1.75	3.3	0.4	<0.2	0.2	5.5	0.50	0.76	0.18	23	0.17	0.120
2317984	Soil	1.77	5.38	5.66	32.0	304	6.9	1.4	80	0.45	0.9	0.1	0.3	0.5	12.6	0.69	0.33	0.06	8	0.39	0.065
2317985	Soil	10.43	18.25	44.07	60.3	186	36.6	5.9	1671	5.78	8.0	0.7	0.5	1.7	6.4	0.68	1.86	0.14	88	0.33	0.073
2317986	Soil	2.65	5.23	18.39	32.8	533	6.1	1.1	59	0.39	0.7	<0.1	<0.2	0.4	11.8	0.45	0.26	0.04	6	0.47	0.068
2317987	Soil	4.71	20.39	907.0	442.5	911	36.8	7.9	407	3.10	6.0	0.8	0.9	2.4	17.8	2.01	0.77	0.12	38	0.70	0.055
2317988	Soil	2.72	6.14	4.39	69.8	78	8.2	1.6	48	0.50	0.9	0.2	0.5	0.8	22.1	0.69	0.38	0.04	10	0.92	0.076
2317989	Soil	5.72	10.44	10.39	54.9	163	17.4	4.5	698	0.77	1.8	1.3	<0.2	0.8	21.1	6.47	0.89	0.07	16	1.35	0.090
2317990	Soil	23.04	29.71	14.95	288.7	1087	73.8	8.5	351	1.99	12.0	1.6	0.7	0.9	25.7	5.27	4.08	0.13	33	2.37	0.098

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F La	1F Cr	1F Mg	1F Ba	1F Ti	1F B	1F Al	1F Na	1F K	1F W	1F Sc	1F Ti	1F S	1F Hg	1F Se	1F Te	1F Ga	1F Cs	1F Ge	1F Hf
Unit	MDL	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
2317961	Soil	11.0	24.7	0.36	211.1	0.003	<20	1.45	<0.001	0.04	<0.1	1.4	0.27	0.02	82	1.5	0.05	2.4	0.53	<0.1	0.05
2317962	Soil	8.0	5.9	0.25	1701	0.002	<20	0.70	0.003	0.06	<0.1	1.1	0.18	0.17	159	8.7	0.03	1.1	0.30	<0.1	0.10
2317963	Soil	13.1	14.6	0.47	810.6	0.003	<20	1.11	<0.001	0.11	<0.1	2.3	0.25	0.04	155	2.7	0.06	2.5	0.62	<0.1	0.07
2317964	Soil	2.2	3.9	0.16	924.8	0.002	<20	0.28	0.005	0.04	<0.1	0.8	0.09	0.17	112	6.9	0.04	0.5	0.20	<0.1	0.09
2317965	Soil	2.8	8.1	0.18	387.8	0.002	<20	0.35	0.007	0.05	<0.1	0.8	0.09	0.14	100	3.1	0.02	0.8	0.22	<0.1	0.08
2317966	Soil	8.5	9.8	0.24	849.9	0.001	<20	0.80	<0.001	0.10	<0.1	2.1	0.36	0.04	211	3.5	0.07	1.5	0.72	<0.1	0.07
2317967	Soil	11.1	10.5	0.27	777.8	0.001	<20	0.84	<0.001	0.10	<0.1	2.0	0.42	0.03	177	3.4	0.04	1.9	0.87	<0.1	0.06
2317968	Soil	3.6	10.4	0.06	812.2	0.002	<20	0.46	0.002	0.07	<0.1	0.8	0.13	0.05	128	1.0	0.02	1.4	0.60	<0.1	0.03
2317969	Soil	17.8	9.7	0.20	188.3	0.001	<20	0.70	<0.001	0.08	<0.1	0.8	0.38	<0.02	52	1.4	0.07	1.9	0.80	<0.1	<0.02
2317970	Soil	12.9	26.5	0.89	281.2	0.006	<20	1.09	<0.001	0.10	<0.1	3.4	0.27	0.06	127	1.1	<0.02	2.8	0.61	<0.1	0.07
2317971 Limerick 2011	Rock Pulp	24.5	52.5	0.75	94.1	0.017	<20	1.78	0.009	0.21	<0.1	4.9	0.15	0.05	105	0.5	<0.02	6.3	1.01	<0.1	0.03
2317972	Soil	2.6	10.1	0.11	283.5	0.004	<20	0.36	0.001	0.04	<0.1	1.0	0.05	0.10	220	0.3	<0.02	1.2	0.24	<0.1	0.04
2317973	Soil	18.8	51.0	1.20	326.1	0.009	<20	1.94	<0.001	0.08	<0.1	4.6	0.20	0.03	92	1.3	0.03	3.7	0.83	<0.1	<0.02
2317974	Soil	2.0	7.6	0.12	137.8	0.002	<20	0.19	0.003	0.14	<0.1	0.7	0.08	0.10	251	0.7	<0.02	0.6	0.23	<0.1	<0.02
2317975	Soil	18.1	33.5	0.79	305.8	0.002	<20	1.39	<0.001	0.08	<0.1	2.9	0.15	<0.02	51	0.8	<0.02	3.4	0.47	<0.1	0.03
2317976	Soil	4.5	7.7	0.11	694.0	0.002	<20	0.34	0.002	0.06	<0.1	1.3	0.25	0.12	241	0.5	<0.02	0.8	0.44	<0.1	<0.02
2317977	Soil	19.9	21.9	0.44	466.1	0.004	<20	0.78	<0.001	0.09	<0.1	1.1	1.32	0.03	62	0.9	0.03	2.2	0.56	<0.1	<0.02
2317978	Soil	3.8	6.4	0.38	860.2	0.002	<20	0.36	0.003	0.02	<0.1	0.8	0.09	0.16	191	1.4	<0.02	0.9	0.28	<0.1	0.08
2317979	Soil	12.8	18.5	0.36	467.4	0.001	<20	0.86	<0.001	0.05	<0.1	1.9	0.33	<0.02	59	1.1	0.04	2.3	0.60	<0.1	<0.02
2317980	Soil	3.8	5.6	0.55	502.7	0.002	<20	0.33	0.002	0.02	<0.1	1.0	0.07	0.16	169	1.0	<0.02	0.7	0.19	<0.1	0.06
2317981	Soil	12.6	20.9	0.39	901.3	0.001	<20	0.88	<0.001	0.06	<0.1	3.5	0.36	0.02	105	0.9	0.07	1.7	0.80	<0.1	0.05
2317982	Soil	2.0	7.1	0.06	297.4	0.002	<20	0.21	0.002	0.05	<0.1	0.7	0.05	0.13	269	1.8	<0.02	0.7	0.33	<0.1	0.04
2317983	Soil	9.5	11.1	0.04	82.0	0.002	<20	0.31	<0.001	0.04	<0.1	0.6	0.08	<0.02	25	1.2	0.06	1.5	0.34	<0.1	<0.02
2317984	Soil	2.7	8.2	0.10	259.8	0.003	<20	0.26	0.001	0.04	<0.1	0.8	0.16	0.08	243	0.3	<0.02	1.0	0.30	<0.1	<0.02
2317985	Soil	10.6	20.0	0.14	233.1	0.003	<20	0.70	<0.001	0.02	<0.1	1.7	0.32	0.03	60	1.4	0.04	2.1	0.35	<0.1	0.06
2317986	Soil	1.8	8.9	0.08	218.9	0.003	<20	0.22	0.001	0.05	<0.1	0.7	0.08	0.08	175	0.3	<0.02	0.8	0.31	<0.1	<0.02
2317987	Soil	19.7	18.0	0.45	1296	0.005	<20	1.46	<0.001	0.07	<0.1	3.5	0.44	0.03	144	0.7	0.03	3.9	0.58	<0.1	<0.02
2317988	Soil	4.0	10.9	0.13	396.2	0.003	<20	0.47	0.002	0.04	<0.1	1.3	0.07	0.11	227	0.5	<0.02	1.8	0.62	<0.1	0.04
2317989	Soil	6.8	11.4	0.25	173.2	0.003	<20	0.53	0.001	0.06	<0.1	2.1	0.17	0.10	224	2.3	0.04	1.8	0.47	<0.1	0.11
2317990	Soil	13.0	9.8	0.93	158.5	0.002	<20	0.63	<0.001	0.05	<0.1	3.8	0.41	0.05	214	7.8	0.04	0.8	0.41	<0.1	0.06

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
2317961	Soil	0.74	7.0	0.2	<0.05	1.9	4.92	23.7	0.06	<1	0.4	16.2	<10	<2	12.4
2317962	Soil	0.22	3.5	0.1	<0.05	4.1	14.76	14.1	0.02	21	0.6	3.5	<10	<2	72.1
2317963	Soil	0.37	7.3	0.2	<0.05	2.1	8.72	25.0	0.03	9	0.6	15.6	<10	2	14.2
2317964	Soil	0.09	1.6	<0.1	<0.05	3.8	5.41	4.0	<0.02	12	0.2	1.7	<10	<2	83.5
2317965	Soil	0.20	2.4	0.1	<0.05	2.9	3.29	5.6	<0.02	5	<0.1	3.8	<10	<2	73.1
2317966	Soil	0.15	6.7	0.2	<0.05	2.3	7.69	15.4	0.03	6	0.5	12.4	<10	<2	18.0
2317967	Soil	0.18	8.2	0.2	<0.05	2.0	7.63	19.7	0.04	8	0.5	15.1	<10	<2	13.2
2317968	Soil	0.11	3.3	0.2	<0.05	0.7	1.90	6.8	<0.02	3	0.3	1.2	<10	3	71.2
2317969	Soil	0.09	7.1	0.2	<0.05	0.6	3.49	32.2	0.02	<1	0.2	11.5	<10	<2	7.9
2317970	Soil	0.70	8.0	0.1	<0.05	2.6	11.48	24.3	0.03	1	0.5	14.0	<10	<2	26.4
2317971 Limerick 2011	Rock Pulp	1.07	19.0	1.7	<0.05	1.2	13.58	53.8	0.04	<1	1.1	22.3	<10	<2	12.7
2317972	Soil	0.36	2.4	0.1	<0.05	1.5	1.20	5.1	<0.02	<1	<0.1	2.0	<10	<2	77.9
2317973	Soil	1.00	9.0	0.2	<0.05	0.9	15.00	52.2	0.05	<1	0.8	24.1	<10	<2	17.4
2317974	Soil	0.06	2.8	<0.1	<0.05	1.0	0.67	3.7	<0.02	1	<0.1	1.5	<10	<2	83.0
2317975	Soil	0.30	7.6	0.2	<0.05	1.0	9.98	38.9	0.03	<1	0.6	18.1	<10	<2	10.8
2317976	Soil	0.15	2.9	0.1	<0.05	0.9	4.07	8.6	<0.02	1	0.1	1.1	<10	<2	80.9
2317977	Soil	0.30	7.4	0.2	<0.05	0.3	4.20	38.1	0.02	<1	0.3	8.5	<10	<2	7.5
2317978	Soil	0.16	1.5	<0.1	<0.05	2.6	8.51	6.8	<0.02	<1	0.3	1.5	<10	<2	78.3
2317979	Soil	0.15	7.1	0.2	<0.05	1.0	6.06	26.0	0.03	<1	0.3	18.2	<10	3	9.3
2317980	Soil	0.10	1.1	<0.1	<0.05	2.1	8.86	6.7	<0.02	<1	0.2	1.1	<10	<2	84.1
2317981	Soil	0.10	6.7	0.1	<0.05	1.5	10.29	25.7	0.04	<1	0.3	16.0	<10	<2	11.6
2317982	Soil	0.08	2.9	0.1	<0.05	1.6	1.58	4.3	<0.02	<1	<0.1	0.5	<10	<2	87.2
2317983	Soil	0.13	7.2	0.2	<0.05	<0.1	3.81	16.4	<0.02	<1	0.2	3.1	<10	<2	9.5
2317984	Soil	0.08	1.8	0.1	<0.05	1.1	1.05	5.1	<0.02	<1	<0.1	0.9	<10	<2	82.6
2317985	Soil	0.11	3.2	0.2	<0.05	1.8	9.22	22.9	0.07	<1	0.5	2.8	<10	2	15.9
2317986	Soil	0.06	1.7	0.1	<0.05	1.0	0.72	3.8	<0.02	<1	<0.1	0.7	<10	<2	87.2
2317987	Soil	0.80	10.3	0.5	<0.05	0.6	14.30	41.5	0.07	<1	0.7	11.7	<10	<2	10.1
2317988	Soil	0.11	3.7	0.2	<0.05	2.3	2.19	8.2	<0.02	<1	0.1	1.4	<10	<2	71.9
2317989	Soil	0.13	3.7	0.2	<0.05	3.8	13.43	11.5	<0.02	1	0.3	3.3	<10	<2	70.4
2317990	Soil	0.13	6.0	0.2	<0.05	2.0	29.15	25.0	0.04	<1	0.4	5.3	<10	<2	19.2



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Project: 204700

Report Date: August 06, 2013

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# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
Unit	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
MDL	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001	
2317991 Limerick 2011 Rock Pulp	4.32	34.75	19.30	92.9	87	53.5	19.5	1094	4.05	6.8	0.7	1.6	0.8	17.1	0.56	0.30	0.09	57	0.90	0.170	
2317992 Soil	8.70	18.98	27.96	231.9	163	41.4	13.0	480	2.37	6.7	0.7	0.3	0.7	5.4	1.83	2.12	0.13	29	0.13	0.138	
2317993 Soil	14.31	54.48	7.47	263.7	1458	72.9	5.2	278	0.96	4.9	4.3	0.7	1.1	22.0	12.02	2.42	0.08	113	1.43	0.124	
2317994 Soil	15.84	53.21	7.59	258.8	1443	75.2	4.9	277	0.99	5.0	4.2	0.6	1.3	22.0	11.65	2.62	0.09	111	1.34	0.123	
2317995 Soil	23.76	43.92	13.30	332.4	1230	86.1	7.7	924	1.58	12.1	2.8	1.2	1.0	15.2	11.36	2.89	0.15	84	0.71	0.109	
2317996 Soil	24.33	43.87	12.61	324.8	1131	90.6	7.1	830	1.54	11.7	2.6	0.9	1.0	14.5	10.72	2.88	0.15	88	0.67	0.105	
2317997 Soil	2.84	5.64	3.48	32.3	121	4.9	0.8	222	0.19	0.6	<0.1	<0.2	0.3	5.8	0.31	0.19	0.02	3	0.44	0.082	
2317998 Soil	8.23	11.86	19.15	128.7	36	28.8	4.8	86	2.27	5.2	0.5	0.4	1.9	2.8	0.29	0.70	0.10	35	0.05	0.027	
2317999 Soil	1.86	11.82	5.84	39.0	459	11.3	3.7	376	0.82	0.7	2.2	<0.2	0.8	39.0	2.69	0.34	0.06	19	1.81	0.136	
2318000 Soil	9.86	12.09	8.84	123.7	41	28.6	4.2	52	1.43	5.1	0.4	<0.2	0.6	3.6	0.29	0.96	0.09	36	0.10	0.031	

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
2317991 Limerick 2011	Rock Pulp	24.7	53.8	0.77	96.2	0.017	<20	1.88	0.009	0.22	<0.1	5.0	0.15	0.05	108	0.5	<0.02	6.6	1.08	<0.1	0.02
2317992	Soil	17.6	22.4	0.14	176.6	0.002	<20	0.96	<0.001	0.05	<0.1	1.5	0.23	0.03	82	1.2	<0.02	2.0	0.62	<0.1	0.04
2317993	Soil	13.6	14.9	0.24	526.9	0.002	<20	0.68	<0.001	0.07	0.1	2.8	1.13	0.11	438	10.2	0.03	1.6	0.60	<0.1	0.16
2317994	Soil	12.9	15.8	0.25	503.4	0.002	<20	0.65	<0.001	0.07	0.1	2.7	1.07	0.10	459	9.5	0.06	1.6	0.55	<0.1	0.15
2317995	Soil	16.5	12.8	0.13	468.3	0.002	<20	0.55	<0.001	0.07	0.1	2.9	0.98	0.05	439	5.6	0.08	1.2	0.58	<0.1	0.09
2317996	Soil	17.1	12.6	0.13	458.0	0.002	<20	0.54	<0.001	0.08	0.1	2.7	1.00	0.05	378	5.9	0.07	1.3	0.62	<0.1	0.08
2317997	Soil	1.4	6.3	0.08	93.2	0.002	<20	0.12	0.002	0.06	<0.1	0.9	0.08	0.10	227	0.4	<0.02	0.4	0.45	<0.1	0.02
2317998	Soil	19.3	21.7	0.25	179.7	0.004	<20	0.96	<0.001	0.06	<0.1	1.3	0.20	<0.02	48	0.7	<0.02	3.1	0.46	<0.1	<0.02
2317999	Soil	11.0	12.1	0.33	456.5	0.004	<20	1.13	<0.001	0.04	<0.1	2.6	0.19	0.09	208	1.4	<0.02	4.2	0.69	<0.1	0.07
2318000	Soil	17.4	22.3	0.07	153.8	0.002	<20	0.60	<0.001	0.05	<0.1	0.9	0.24	<0.02	41	0.6	<0.02	2.5	0.53	<0.1	<0.02

# CERTIFICATE OF ANALYSIS

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
2317991 Limerick 2011	Rock Pulp	1.06	20.3	1.7	<0.05	1.2	13.69	53.7	0.03	<1	1.1	24.9	<10	<2	13.0
2317992	Soil	0.25	5.3	0.1	<0.05	1.5	10.80	39.6	0.04	<1	0.4	3.9	<10	3	16.5
2317993	Soil	0.68	7.3	0.4	<0.05	4.9	21.09	19.3	0.02	4	0.4	5.3	15	3	36.5
2317994	Soil	0.64	6.4	0.4	<0.05	5.1	20.14	19.0	0.02	3	0.4	5.0	<10	2	34.8
2317995	Soil	0.39	7.7	0.3	<0.05	2.6	20.70	26.3	0.02	2	0.3	3.8	<10	3	16.1
2317996	Soil	0.38	8.0	0.4	<0.05	3.2	18.72	27.3	0.03	4	0.4	3.5	<10	<2	15.6
2317997	Soil	0.04	2.5	<0.1	<0.05	0.9	0.49	2.9	<0.02	<1	<0.1	0.6	<10	<2	89.5
2317998	Soil	0.49	8.3	0.3	<0.05	0.4	3.01	37.7	0.02	<1	0.2	9.0	<10	<2	8.9
2317999	Soil	0.34	4.4	0.3	<0.05	1.9	15.22	19.9	<0.02	1	0.5	5.5	<10	<2	43.8
2318000	Soil	0.21	5.7	0.3	<0.05	0.4	2.35	34.4	<0.02	<1	0.1	2.1	<10	<2	9.5



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Project: 204700  
 Report Date: August 06, 2013

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# QUALITY CONTROL REPORT

VAN13002779.1

Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	%	%	
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
Pulp Duplicates																					
2317773	Soil	19.23	30.30	16.43	471.1	2181	87.9	7.5	164	4.96	21.9	1.8	0.8	4.3	5.4	1.32	4.38	0.14	70	0.03	0.157
REP 2317773	QC																				
2317776	Soil	8.26	13.90	18.29	386.1	415	45.6	8.4	204	3.86	11.2	0.7	0.6	4.2	6.0	1.72	1.29	0.15	44	0.07	0.133
REP 2317776	QC	7.93	14.06	18.14	384.1	389	45.1	7.9	203	3.89	11.2	0.6	2.5	4.2	5.8	1.57	1.18	0.15	44	0.07	0.131
2317789	Soil	34.91	51.59	12.74	274.0	264	84.6	9.0	87	2.79	16.0	1.5	1.3	2.5	14.8	2.90	3.18	0.14	48	0.11	0.072
REP 2317789	QC	36.53	52.69	13.43	280.8	289	87.2	9.5	95	2.84	17.1	1.6	1.5	2.6	16.1	3.20	3.21	0.14	49	0.12	0.076
2317812	Soil	1.58	9.88	5.52	636.9	264	51.3	5.8	314	1.12	1.2	3.1	0.5	0.3	33.6	4.36	0.30	0.05	13	4.58	0.085
REP 2317812	QC																				
2317825	Soil	10.00	8.94	7.26	46.6	4454	8.2	1.2	14	0.35	1.9	0.3	0.4	0.4	10.3	1.62	0.61	0.06	12	0.16	0.092
REP 2317825	QC	10.66	9.36	8.07	53.2	4426	8.2	1.3	15	0.36	1.6	0.3	<0.2	0.3	10.7	1.81	0.64	0.05	12	0.16	0.099
2317850	Soil	10.91	39.50	16.84	515.9	299	79.1	9.9	242	2.70	18.7	0.8	0.4	0.4	5.5	1.06	2.93	0.16	62	0.12	0.123
REP 2317850	QC																				
2317861	Soil	6.54	11.97	6.03	47.9	1770	13.8	1.9	18	0.36	1.9	0.4	0.3	0.2	19.5	5.33	0.32	0.06	14	0.16	0.081
REP 2317861	QC	6.58	12.36	6.17	48.4	1829	14.5	2.0	19	0.37	1.8	0.4	0.7	0.2	20.6	5.46	0.34	0.06	15	0.16	0.084
2317888	Soil	27.11	29.66	14.24	308.1	380	56.6	8.5	90	3.27	14.5	1.2	0.6	2.0	14.1	4.05	1.98	0.17	49	0.03	0.065
REP 2317888	QC																				
2317897	Soil	4.29	15.92	6.01	162.2	333	34.9	4.1	253	0.78	1.6	1.4	0.9	0.6	25.7	2.66	0.50	0.06	12	2.50	0.063
REP 2317897	QC	4.30	15.91	5.93	157.8	312	34.3	4.0	245	0.79	1.7	1.4	1.1	0.5	24.2	2.48	0.44	0.06	11	2.47	0.061
2317926	Soil	7.21	12.04	5.36	83.9	13507	13.8	1.4	18	0.35	0.8	0.2	1.1	0.3	18.2	5.04	0.45	0.04	10	0.34	0.090
REP 2317926	QC																				
2317933	Soil	3.31	6.22	10.29	85.1	2444	8.5	1.4	72	0.31	1.8	0.2	7.0	0.5	33.2	1.19	0.58	0.10	5	0.39	0.112
REP 2317933	QC	3.21	5.94	9.60	90.3	2476	9.0	1.3	71	0.31	1.9	0.2	6.6	0.5	32.1	1.24	0.60	0.07	5	0.40	0.109
2317964	Soil	6.20	37.58	7.42	545.1	2285	85.2	2.6	50	0.65	1.2	1.1	3.0	0.6	288.0	11.80	5.28	0.05	8	3.14	0.065
REP 2317964	QC																				
2317993	Soil	14.31	54.48	7.47	263.7	1458	72.9	5.2	278	0.96	4.9	4.3	0.7	1.1	22.0	12.02	2.42	0.08	113	1.43	0.124
REP 2317993	QC	14.15	54.56	7.26	267.1	1501	70.6	4.9	267	0.94	4.7	4.4	0.8	1.2	21.7	12.18	2.47	0.08	109	1.40	0.124
2317999	Soil	1.86	11.82	5.84	39.0	459	11.3	3.7	376	0.82	0.7	2.2	<0.2	0.8	39.0	2.69	0.34	0.06	19	1.81	0.136
REP 2317999	QC																				

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Method	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf	
Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	
Pulp Duplicates																					
2317773	Soil	12.0	24.3	0.33	131.3	0.006	<20	1.48	<0.001	0.06	<0.1	1.6	0.40	0.02	91	2.8	0.06	5.1	0.87	<0.1	0.06
REP 2317773	QC																				
2317776	Soil	13.5	33.3	0.63	195.5	0.006	<20	1.63	<0.001	0.07	<0.1	1.6	0.22	<0.02	35	0.8	0.04	4.9	0.70	<0.1	0.06
REP 2317776	QC	13.6	32.7	0.64	191.9	0.006	<20	1.65	<0.001	0.07	<0.1	1.6	0.21	<0.02	36	0.9	<0.02	4.7	0.60	<0.1	0.08
2317789	Soil	19.0	29.5	0.37	171.8	0.003	<20	0.83	0.002	0.09	<0.1	1.5	0.58	0.05	73	5.1	0.13	2.4	0.55	<0.1	0.02
REP 2317789	QC	20.8	31.1	0.39	186.3	0.003	<20	0.86	0.002	0.09	<0.1	1.6	0.61	0.05	78	5.6	0.11	2.5	0.54	<0.1	0.02
2317812	Soil	4.7	13.5	0.41	221.2	0.002	<20	0.82	<0.001	0.04	<0.1	1.2	0.47	0.10	87	0.8	<0.02	1.8	0.77	<0.1	0.02
REP 2317812	QC																				
2317825	Soil	4.7	7.1	0.04	328.9	0.001	<20	0.35	0.002	0.06	<0.1	0.8	0.13	0.04	98	0.4	0.02	1.4	1.29	<0.1	<0.02
REP 2317825	QC	4.9	7.5	0.04	357.3	0.001	<20	0.38	0.002	0.06	<0.1	0.9	0.13	0.04	106	0.6	0.02	1.5	1.33	<0.1	<0.02
2317850	Soil	13.7	23.9	0.25	388.6	0.002	<20	0.76	<0.001	0.13	<0.1	0.8	0.27	<0.02	40	4.0	0.05	2.5	0.69	<0.1	<0.02
REP 2317850	QC																				
2317861	Soil	5.5	10.7	0.05	511.4	0.006	<20	0.46	0.002	0.06	<0.1	0.8	0.07	0.06	135	0.8	<0.02	1.7	0.19	<0.1	<0.02
REP 2317861	QC	5.4	11.5	0.05	516.0	0.005	<20	0.46	0.002	0.06	<0.1	0.9	0.08	0.06	127	0.9	<0.02	1.7	0.18	<0.1	<0.02
2317888	Soil	14.9	14.7	0.08	199.0	0.002	<20	0.70	<0.001	0.10	<0.1	1.1	0.45	0.03	38	2.8	0.09	2.9	0.55	<0.1	<0.02
REP 2317888	QC																				
2317897	Soil	2.7	8.1	0.17	234.9	0.002	<20	0.48	0.002	0.05	<0.1	1.0	0.22	0.09	141	0.8	<0.02	1.1	0.41	<0.1	0.06
REP 2317897	QC	2.7	7.8	0.17	216.1	0.002	<20	0.45	0.002	0.05	<0.1	0.9	0.21	0.10	123	0.9	<0.02	1.1	0.37	<0.1	0.06
2317926	Soil	4.2	10.5	0.05	613.4	0.002	<20	0.32	0.003	0.08	<0.1	0.9	0.12	0.07	147	1.7	<0.02	1.1	0.77	<0.1	<0.02
REP 2317926	QC																				
2317933	Soil	1.8	5.0	0.06	317.1	0.002	<20	0.17	0.002	0.13	<0.1	0.8	0.09	0.10	317	0.5	<0.02	0.4	0.20	<0.1	0.03
REP 2317933	QC	1.9	5.1	0.06	317.9	0.002	<20	0.17	0.002	0.13	<0.1	0.9	0.08	0.09	320	0.5	<0.02	0.4	0.20	<0.1	0.02
2317964	Soil	2.2	3.9	0.16	924.8	0.002	<20	0.28	0.005	0.04	<0.1	0.8	0.09	0.17	112	6.9	0.04	0.5	0.20	<0.1	0.09
REP 2317964	QC																				
2317993	Soil	13.6	14.9	0.24	526.9	0.002	<20	0.68	<0.001	0.07	0.1	2.8	1.13	0.11	438	10.2	0.03	1.6	0.60	<0.1	0.16
REP 2317993	QC	12.9	14.3	0.24	519.7	0.002	<20	0.66	<0.001	0.07	0.1	2.5	1.10	0.11	440	9.6	0.02	1.6	0.57	<0.1	0.15
2317999	Soil	11.0	12.1	0.33	456.5	0.004	<20	1.13	<0.001	0.04	<0.1	2.6	0.19	0.09	208	1.4	<0.02	4.2	0.69	<0.1	0.07
REP 2317999	QC																				





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 Vancouver BC V6C 0B3 CANADA

Project: 204700  
 Report Date: August 06, 2013

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# QUALITY CONTROL REPORT

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Method	Analyte	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	LOI	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	LOI
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	%
MDL		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.1
Pulp Duplicates															
2317773	Soil	1.48	11.6	0.6	<0.05	4.2	3.35	22.7	0.03	<1	1.0	18.2	<10	<2	9.7
REP 2317773	QC														9.0
2317776	Soil	0.98	11.3	0.5	<0.05	3.1	2.78	26.5	0.03	<1	0.5	26.2	<10	<2	8.2
REP 2317776	QC	1.07	10.6	0.5	<0.05	3.2	2.76	26.5	0.03	<1	0.5	25.1	<10	<2	
2317789	Soil	0.67	5.5	0.1	<0.05	1.1	6.15	35.5	<0.02	3	0.4	8.5	<10	<2	10.6
REP 2317789	QC	0.68	6.0	0.1	<0.05	1.2	6.49	37.5	<0.02	3	0.5	9.0	<10	<2	
2317812	Soil	0.15	5.2	0.1	<0.05	1.3	7.20	9.0	<0.02	<1	0.4	7.1	<10	<2	55.2
REP 2317812	QC														55.4
2317825	Soil	0.05	4.1	0.2	<0.05	0.5	0.98	9.0	<0.02	<1	0.1	1.0	<10	<2	53.5
REP 2317825	QC	0.06	4.1	0.2	<0.05	0.4	1.04	9.4	<0.02	<1	0.1	1.2	<10	<2	
2317850	Soil	0.11	12.9	0.2	<0.05	0.3	4.70	29.6	0.03	<1	0.4	7.7	<10	<2	10.2
REP 2317850	QC														10.0
2317861	Soil	0.15	2.4	0.3	<0.05	0.3	1.78	10.2	<0.02	<1	0.3	0.7	<10	<2	77.2
REP 2317861	QC	0.17	2.5	0.3	<0.05	0.3	1.87	10.2	<0.02	1	0.3	0.7	<10	<2	
2317888	Soil	0.45	8.3	0.2	<0.05	0.5	2.68	25.8	<0.02	<1	0.4	5.5	<10	<2	14.1
REP 2317888	QC														14.0
2317897	Soil	0.14	2.8	0.1	<0.05	2.4	4.94	5.6	<0.02	1	0.3	2.4	<10	<2	69.7
REP 2317897	QC	0.12	2.6	<0.1	<0.05	2.2	4.69	5.2	<0.02	<1	0.3	2.4	<10	<2	
2317926	Soil	0.09	3.7	0.2	<0.05	0.5	0.94	7.8	<0.02	<1	0.2	0.9	<10	<2	69.0
REP 2317926	QC														69.3
2317933	Soil	0.06	2.9	0.1	<0.05	0.8	0.84	3.4	<0.02	<1	0.2	0.6	<10	<2	83.8
REP 2317933	QC	0.05	3.1	<0.1	<0.05	0.8	0.77	3.4	<0.02	<1	<0.1	0.9	<10	<2	
2317964	Soil	0.09	1.6	<0.1	<0.05	3.8	5.41	4.0	<0.02	12	0.2	1.7	<10	<2	83.5
REP 2317964	QC														83.8
2317993	Soil	0.68	7.3	0.4	<0.05	4.9	21.09	19.3	0.02	4	0.4	5.3	15	3	36.5
REP 2317993	QC	0.63	6.7	0.3	<0.05	4.9	20.81	18.5	0.03	3	0.4	4.8	<10	3	
2317999	Soil	0.34	4.4	0.3	<0.05	1.9	15.22	19.9	<0.02	1	0.5	5.5	<10	<2	43.8
REP 2317999	QC														43.3



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 Vancouver BC V6C 0B3 CANADA

Project: 204700  
 Report Date: August 06, 2013

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# QUALITY CONTROL REPORT

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		1F Mo ppm 0.01	1F Cu ppm 0.01	1F Pb ppm 0.01	1F Zn ppm 0.1	1F Ag ppb 2	1F Ni ppm 0.1	1F Co ppm 0.1	1F Mn ppm 1	1F Fe % 0.01	1F As ppm 0.1	1F U ppm 0.1	1F Au ppb 0.2	1F Th ppm 0.1	1F Sr ppm 0.5	1F Cd ppm 0.01	1F Sb ppm 0.02	1F Bi ppm 0.02	1F V ppm 2	1F Ca % 0.01	1F P % 0.001	
Reference Materials																						
STD DOLOMITE-2	Standard																					
STD DOLOMITE-2	Standard																					
STD DOLOMITE-2	Standard																					
STD DOLOMITE-2	Standard																					
STD DOLOMITE-2	Standard																					
STD DOLOMITE-2	Standard																					
STD DOLOMITE-2	Standard																					
STD DS9	Standard	13.17	94.34	126.5	308.9	1681	42.4	7.9	603	2.36	29.2	2.3	103.3	5.5	61.3	2.53	4.59	5.66	38	0.70	0.082	
STD DS9	Standard	13.19	103.0	107.9	313.7	1888	37.9	7.4	573	2.32	24.7	2.2	119.8	5.0	60.1	2.47	4.13	5.50	39	0.68	0.078	
STD DS9	Standard	13.92	104.8	109.9	324.2	1921	41.7	7.8	597	2.41	26.6	2.2	125.8	5.4	64.8	2.58	4.66	5.91	39	0.73	0.080	
STD DS9	Standard	12.89	108.3	123.7	315.4	2018	39.0	7.4	588	2.39	26.3	2.0	135.1	5.0	58.8	2.44	4.57	5.35	40	0.73	0.077	
STD DS9	Standard	14.10	112.0	107.6	333.4	1842	41.7	8.0	607	2.42	27.8	2.6	127.6	5.4	62.7	2.55	4.33	5.61	41	0.75	0.082	
STD DS9	Standard	12.36	107.2	119.0	307.0	1738	40.7	7.4	572	2.38	25.2	2.1	109.8	5.3	60.9	2.39	4.07	5.47	40	0.72	0.077	
STD DS9	Standard	13.29	110.6	120.4	293.0	1698	40.2	7.5	544	2.41	24.3	2.5	101.8	5.9	67.8	2.30	5.02	6.09	39	0.71	0.081	
STD OREAS45EA	Standard	1.53	667.8	11.51	29.4	271	370.0	49.9	393	24.14	10.3	1.4	57.8	8.3	3.1	0.01	0.23	0.19	295	0.03	0.028	
STD OREAS45EA	Standard	1.35	695.5	9.96	26.0	256	376.7	45.4	371	23.57	9.3	1.2	50.3	7.1	2.8	0.02	0.16	0.17	290	0.03	0.026	
STD OREAS45EA	Standard	1.51	708.3	10.04	28.4	241	393.2	46.8	382	24.44	10.2	1.3	46.7	7.0	2.8	0.01	0.22	0.17	305	0.04	0.026	
STD OREAS45EA	Standard	1.52	719.1	9.96	30.1	240	399.9	50.5	378	25.60	10.0	1.2	47.5	7.3	2.8	0.01	0.19	0.17	311	0.03	0.026	
STD OREAS45EA	Standard	1.43	719.1	9.85	28.3	240	399.3	47.3	387	24.36	10.0	1.2	54.2	7.0	2.8	0.01	0.18	0.17	304	0.03	0.026	
STD OREAS45EA	Standard	1.25	675.2	10.41	25.0	215	366.4	44.7	349	22.28	8.7	1.1	55.2	7.4	2.5	0.03	0.17	0.16	283	0.03	0.024	
STD OREAS45EA	Standard	1.52	687.5	14.43	29.6	273	388.4	51.6	402	24.48	9.6	1.8	58.5	10.0	3.9	0.05	0.25	0.25	304	0.03	0.025	
STD DS9 Expected		12.84	108	126	317	1830	40.3	7.6	575	2.33	25.5	2.69	118	6.38	69.6	2.4	4.94	6.32	40	0.7201	0.0819	
STD OREAS45EA Expected		1.78	709	14.3	30.6	311	357	52	400	22.65	11.4	1.73	53	10.7	4.05	0.03	0.64	0.26	295	0.032	0.029	
STD DOLOMITE-2 Expected																						
BLK	Blank	<0.01	0.02	<0.01	<0.1	3	<0.1	<0.1	<1	<0.01	0.3	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001	
BLK	Blank	<0.01	0.02	0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001	
BLK	Blank	<0.01	0.17	0.01	<0.1	2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001	
BLK	Blank	<0.01	0.15	<0.01	<0.1	5	0.2	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001	

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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Project: 204700  
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# QUALITY CONTROL REPORT

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		1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
Reference Materials																					
STD DOLOMITE-2	Standard																				
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STD DOLOMITE-2	Standard																				
STD DS9	Standard	10.7	116.0	0.61	333.1	0.100	<20	0.92	0.082	0.40	2.7	2.4	5.47	0.17	213	5.6	5.06	4.6	2.46	<0.1	0.06
STD DS9	Standard	10.7	113.3	0.60	336.2	0.090	<20	0.93	0.089	0.40	3.6	2.5	5.70	0.17	219	5.6	5.27	4.5	2.52	<0.1	0.06
STD DS9	Standard	12.5	117.5	0.64	361.4	0.100	<20	1.00	0.094	0.41	3.2	2.5	5.91	0.17	218	5.8	5.45	4.5	2.65	<0.1	0.06
STD DS9	Standard	10.9	118.4	0.63	321.9	0.098	<20	0.99	0.096	0.42	2.9	2.4	5.58	0.17	241	5.5	5.52	4.5	2.52	<0.1	0.08
STD DS9	Standard	11.9	121.9	0.63	338.6	0.101	<20	1.00	0.094	0.42	3.0	2.5	5.69	0.17	223	5.7	5.27	4.9	2.56	<0.1	0.07
STD DS9	Standard	11.2	115.5	0.62	329.5	0.094	<20	0.98	0.093	0.41	2.7	2.6	5.52	0.17	195	5.4	5.23	4.7	2.41	<0.1	0.06
STD DS9	Standard	11.1	111.5	0.63	298.3	0.108	<20	0.95	0.089	0.41	2.5	2.2	4.80	0.18	189	5.1	4.65	4.3	2.18	<0.1	0.06
STD OREAS45EA	Standard	5.7	934.7	0.09	142.2	0.079	<20	3.06	0.018	0.06	<0.1	74.2	0.06	0.04	10	0.7	0.08	12.0	0.65	0.2	0.39
STD OREAS45EA	Standard	5.0	885.9	0.08	122.3	0.071	<20	3.12	0.020	0.06	<0.1	72.1	0.05	0.04	9	0.6	0.06	10.8	0.58	0.2	0.37
STD OREAS45EA	Standard	5.1	880.9	0.09	126.4	0.074	<20	3.25	0.019	0.06	<0.1	73.6	0.05	0.04	15	0.9	0.09	11.4	0.64	0.2	0.43
STD OREAS45EA	Standard	5.0	924.0	0.09	124.5	0.078	<20	3.35	0.020	0.06	<0.1	73.4	0.05	0.04	6	1.1	0.09	11.6	0.61	0.3	0.37
STD OREAS45EA	Standard	5.0	909.6	0.09	127.0	0.075	<20	3.34	0.020	0.06	<0.1	72.0	0.05	0.04	13	1.4	0.07	11.3	0.63	0.2	0.43
STD OREAS45EA	Standard	5.1	823.4	0.08	132.9	0.077	<20	3.00	0.019	0.05	<0.1	70.0	0.05	0.04	12	0.7	0.10	10.1	0.54	0.2	0.43
STD OREAS45EA	Standard	6.8	815.3	0.09	143.5	0.090	<20	3.22	0.017	0.06	<0.1	72.7	<0.02	0.04	11	0.9	0.11	11.6	0.62	0.3	0.49
STD DS9 Expected		13.3	121	0.6165	330	0.1108		0.9577	0.0853	0.395	2.89	2.5	5.3	0.1615	200	5.2	5.02	4.59	2.37	0.1	0.08
STD OREAS45EA Expected		8.19	849	0.095	148	0.106		3.32	0.027	0.053		78	0.072	0.044	340	2.09	0.11	11.7	0.77	0.26	0.82
STD DOLOMITE-2 Expected																					
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

# QUALITY CONTROL REPORT

VAN13002779.1

		1F Nb ppm 0.02	1F Rb ppm 0.1	1F Sn ppm 0.1	1F Ta ppm 0.05	1F Zr ppm 0.1	1F Y ppm 0.01	1F Ce ppm 0.1	1F In ppm 0.02	1F Re ppb 1	1F Be ppm 0.1	1F Li ppm 0.1	1F Pd ppb 10	1F Pt ppb 2	LOI LOI %
Reference Materials															
STD DOLOMITE-2	Standard														46.0
STD DOLOMITE-2	Standard														45.9
STD DOLOMITE-2	Standard														46.1
STD DOLOMITE-2	Standard														45.5
STD DOLOMITE-2	Standard														46.0
STD DOLOMITE-2	Standard														45.8
STD DOLOMITE-2	Standard														45.5
STD DS9	Standard	1.13	35.3	5.6	<0.05	1.6	5.40	20.0	1.99	64	6.1	26.1	125	370	
STD DS9	Standard	1.01	34.3	5.6	<0.05	1.6	5.45	20.7	1.95	63	5.8	26.1	133	389	
STD DS9	Standard	1.11	37.3	5.9	<0.05	1.8	6.04	23.4	2.07	78	5.7	26.2	122	394	
STD DS9	Standard	1.13	34.1	5.4	<0.05	1.8	5.71	21.8	1.80	59	5.5	25.1	121	376	
STD DS9	Standard	1.17	36.9	5.8	<0.05	1.9	5.97	22.9	1.97	58	5.8	26.9	132	383	
STD DS9	Standard	1.15	34.1	5.5	<0.05	1.7	5.46	21.1	2.08	56	6.3	25.5	128	365	
STD DS9	Standard	0.88	30.4	6.4	<0.05	1.8	4.96	20.8	1.99	51	5.7	26.6	111	324	
STD OREAS45EA	Standard	0.05	6.9	0.8	<0.05	15.6	4.88	14.3	0.06	<1	0.4	2.2	66	102	
STD OREAS45EA	Standard	0.05	6.5	0.7	<0.05	15.0	4.62	13.3	0.07	<1	0.4	2.3	50	95	
STD OREAS45EA	Standard	0.04	6.6	0.7	<0.05	15.8	4.70	13.5	0.06	<1	0.3	2.2	58	104	
STD OREAS45EA	Standard	0.05	7.0	0.7	<0.05	16.0	4.59	13.8	0.07	<1	0.4	2.3	56	102	
STD OREAS45EA	Standard	0.05	6.9	0.6	<0.05	16.4	4.60	13.1	0.06	<1	0.4	2.4	60	96	
STD OREAS45EA	Standard	0.05	6.1	0.6	<0.05	16.0	4.01	12.1	0.07	<1	0.4	2.0	52	80	
STD OREAS45EA	Standard	0.07	6.7	0.8	<0.05	18.3	5.26	17.0	0.07	<1	0.4	2.0	86	110	
STD DS9 Expected		0.96	33.8	6.4	0.004	2	5.97	25.4	2.2	61	5.4	25.2	120	350	
STD OREAS45EA Expected		0.43	7.93	0.97		26.6	5.74	17.7	0.1		0.47	7.63	66	108	
STD DOLOMITE-2 Expected															45.9
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	



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 Vancouver BC V6C 0B3 CANADA

Project: 204700  
 Report Date: August 06, 2013

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## QUALITY CONTROL REPORT

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		1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
BLK	Blank	<0.01	0.14	<0.01	<0.1	5	<0.1	<0.1	<1	<0.01	0.2	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	0.13	0.01	<0.1	3	<0.1	<0.1	<1	<0.01	0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	0.22	0.04	<0.1	<2	<0.1	<0.1	<1	<0.01	0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001



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## QUALITY CONTROL REPORT

VAN13002779.1

		1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	1F	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02



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		1F Nb ppm 0.02	1F Rb ppm 0.1	1F Sn ppm 0.1	1F Ta ppm 0.05	1F Zr ppm 0.1	1F Y ppm 0.01	1F Ce ppm 0.1	1F In ppm 0.02	1F Re ppb 1	1F Be ppm 0.1	1F Li ppm 0.1	1F Pd ppb 10	1F Pt ppb 2	LOI %
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2	