



Report on the 2013 Soil Geochemistry Program
for the
Fluke Property

Claims

238024-238028, 238030-238034, 337621

Omineca Mining Division
Northeastern British Columbia

NTS Map Sheet
094F07

385000 E, 6364500 N
(NAD83, Zone 10)

Owner
Cirque Operating Corp.

Operator
Teck Resources Limited
Suite 3300, 550 Burrard Street
Vancouver, BC, V6C 0B3

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November 6, 2013

SUMMARY

The Fluke property is located in the Muskwa Ranges at the northern end of the Rocky Mountains, northeastern BC, approximately 260 km north of the town of Mackenzie. The Fluke property comprises 11 contiguous claims covering an area of 1,525 hectares. The property is owned 100% by Cirque Operating Corp., a joint venture partnership between Teck Resources Ltd. (50%) and Korea Zinc Company Ltd. (50%).

The Fluke 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 Fluke 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 Fluke 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 Fluke property.

The Fluke showing consists of laminar-banded pyrite with galena–sphalerite-rich horizons overlying a well-bedded black chert, and the Pook showing consists of gossanous, baritic, Pb–Zn-rich black shales. Both showings are hosted in the Gunsteel ‘formation’ of the Earn Group. Unmineralized, but possibly laterally equivalent, distal black baritic shale (overlying a well-bedded black chert horizon) is exposed elsewhere on the Fluke property. Historic drilling, however, failed to intersect any significant intervals of high-grade mineralization at depth. A geochemical soil sampling program was conducted during the 2013 field season over the area of the known showings, as well as the down-strike continuation of the prospective lithologies for the purpose of continuing property-scale exploration of untested areas in the future.

Results of the 2013 soil sampling program indicate that targeting using the B horizon is more advantageous than the A horizon on the Fluke property, primarily due to the more common occurrence of a developed B horizon, and ease of sample collection when compared to the A horizon. Due to the promising results, future programs are recommended to perform B horizon soil sampling for detection of massive sulfide bodies through cover.

TABLE OF CONTENTS

SUMMARY	2
TABLE OF CONTENTS	3
LIST OF FIGURES	4
LIST OF TABLES	4
1. INTRODUCTION	5
1.1 LOCATION, ACCESS, AND PHYSIOGRAPHY	5
1.2 TENURE	5
1.3 HISTORY AND PREVIOUS WORK.....	9
1.4 2013 WORK SUMMARY	10
2. GEOLOGY	11
2.1 REGIONAL GEOLOGY.....	11
2.2 PROPERTY GEOLOGY	14
2.2.1 Structural Geology	16
2.2.2 Alteration and Mineralization.....	18
3.1 SOIL GEOCHEMISTRY	19
3.1.1 Surficial Environment.....	19
3.1.2 Sample Methodology and Analytical Techniques	20
3.1.3 Quality Control	20
3.2 SOIL GEOCHEMISTRY RESULTS.....	20
3.2.1 A Horizon	20
3.2.2 B Horizon	21
4. CONCLUSIONS AND RECOMMENDATIONS	34
REFERENCES.....	35
APPENDIX I – STATEMENT OF QUALIFICATIONS.....	37
APPENDIX II – STATEMENT OF EXPENSES.....	39
APPENDIX III – SOIL SAMPLE DESCRIPTIONS	40
APPENDIX IV – SOIL GEOCHEMICAL ANALYTICAL CERTIFICATES	43

LIST OF FIGURES

Figure 1. Location of the Fluke Property.....	6
Figure 2. Local access to the Fluke property.....	7
Figure 3. Fluke tenure map.....	8
Figure 4. Devonian-Mississippian mineralization relative to terranes of the northern Cordillera (modified from Nelson and Colpron, 2007). Abbreviation are CT: Cassiar Terrane and MP: Macdonald Platform..	13
Figure 5. Schematic tectono-metallogenic model for the Devonian–Mississippian western margin of North America (modified from Nelson and Colpron, 2007).....	14
Figure 6. Schematic stratigraphic column for the Lower to Middle Paleozoic units deposited near the Fluke property in the Kechika Trough. Fluke mineralization occurs within the Gunsteel ‘formation’ (modified from MacIntyre, 1998).	15
Figure 7. Historic structural data for the Fluke property including a) poles to bedding planes, axial plane is represented by the great circle, b) second set of poles to bedding planes with the axial plane represented by the great circle, c) poles to cleavage planes with the average measured cleavage represented by the great circle, and d) fold hinge lines and intersection lineations.....	18
Figure 8. Sample pit locations for A-horizon soils.....	22
Figure 9. A-horizon lead data in ppm.....	23
Figure 10. A-horizon zinc data in ppm.....	24
Figure 11. A-horizon silver data in ppm.....	25
Figure 12. A-horizon thallium data in ppm.....	26
Figure 13. A-horizon barium data in ppm.....	27
Figure 14. Sample pit locations for B-horizon soils.....	28
Figure 15. B-horizon lead data in ppm.....	29
Figure 16. B-horizon zinc data in ppm.....	30
Figure 17. B-horizon silver data in ppm.....	31
Figure 18. B-horizon thallium data in ppm.....	32
Figure 19. B-horizon barium data in ppm.....	33

LIST OF TABLES

Table 1. Mineral tenure summary for the Fluke property.....	9
Table 2. Summary of the ownership history of the Fluke property.....	10
Table 3. Summary of diamond drilling completed on the Fluke property.....	10
Table 4. Detailed lithological break-down of units on the Fluke property.....	16

1. INTRODUCTION

1.1 LOCATION, ACCESS, AND PHYSIOGRAPHY

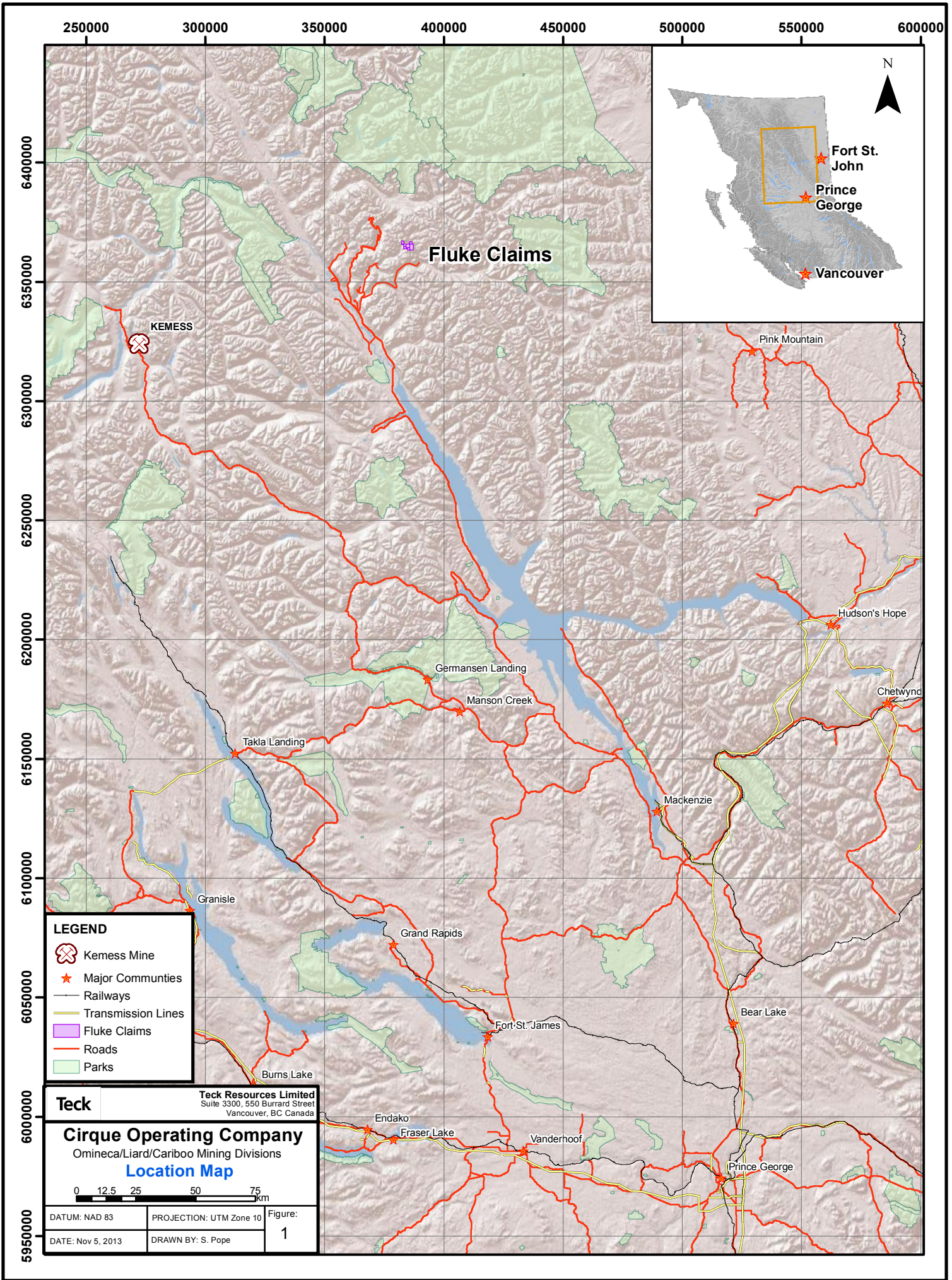
The Fluke Project is located in the Muskwa Ranges at the northern end of the Rocky Mountains, northeastern British Columbia, within the traditional territories of the Kwadacha First Nation. The property is roughly centered at 385000 E, and 6364500 N (NAD83, Zone 10). The main supply centres include the town of Mackenzie and the city of Prince George, located approximately 260 km and 410 km to the south-southeast, respectively (Fig. 1). The two closest communities are Kwadacha (also known as Fort Ware ~45 km to the west) and Tsay Keh Dene (~55 km to the south).

The area of the Fluke property is accessible by logging roads north of Mackenzie along an ~43 km long, forestry-permitted road, locally called the ‘mine road’ and maintained by the Cirque Operating Corp., which branches eastward off the Del Main Line north of Tsay Keh Dene (Figs. 1 and 2). Direct access to the property however, is only by helicopter staged from the Cirque property camp operated by Teck Resources on behalf of Cirque Operating Corp. Nearby airstrips include the Finbow and Tsay Keh Dene airstrips (Fig. 2), and scheduled air service consists of 3 weekly charters out of Prince George booked by the local First Nations.

Physiographic regions of the Fluke property consist of forested to sub-alpine slopes and wetland ranging from as low as 1040 metres up to ~1700 metres, as well as alpine tundra, ridges, and peaks between 1700–2080 metres (Fig. 3). Relief in this area varies from gentle to steep, and outcrops are generally well-exposed along ridge-tops in the tree-less alpine and in creek bottoms, but exposure varies from good to poor along the sub-alpine ridges where subcrop and/or felsenmeer dominate and moss, grass, and wildflower cover is abundant. Extensive fir, with lesser aspen and pine, and local concentrations of spruce at lower elevations, severely limits exposures below the tree line. 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. At least one iron oxide spring was noted at the Pook showing on the Fluke property, in proximity to baritic black shales of Devonian-Mississippian age. The property is located within the Finlay River drainage basin and the showings drain to the east into the Akie River via the Fluke and Pook creeks; the western portion of the property drains to the west into Del Creek.

1.2 TENURE

The Fluke property comprises 11 contiguous claims covering an area of 1,525 hectares (Fig. 3). It is owned 100% by Cirque Operating Corp., a joint venture partnership between Teck Resources Ltd. (50%) and Korea Zinc Company Ltd. (50%). The tenure number, claim name, issue date, size, dollar amount of work claimed for 2013, and the due date for the next assessment are shown in Table 1.



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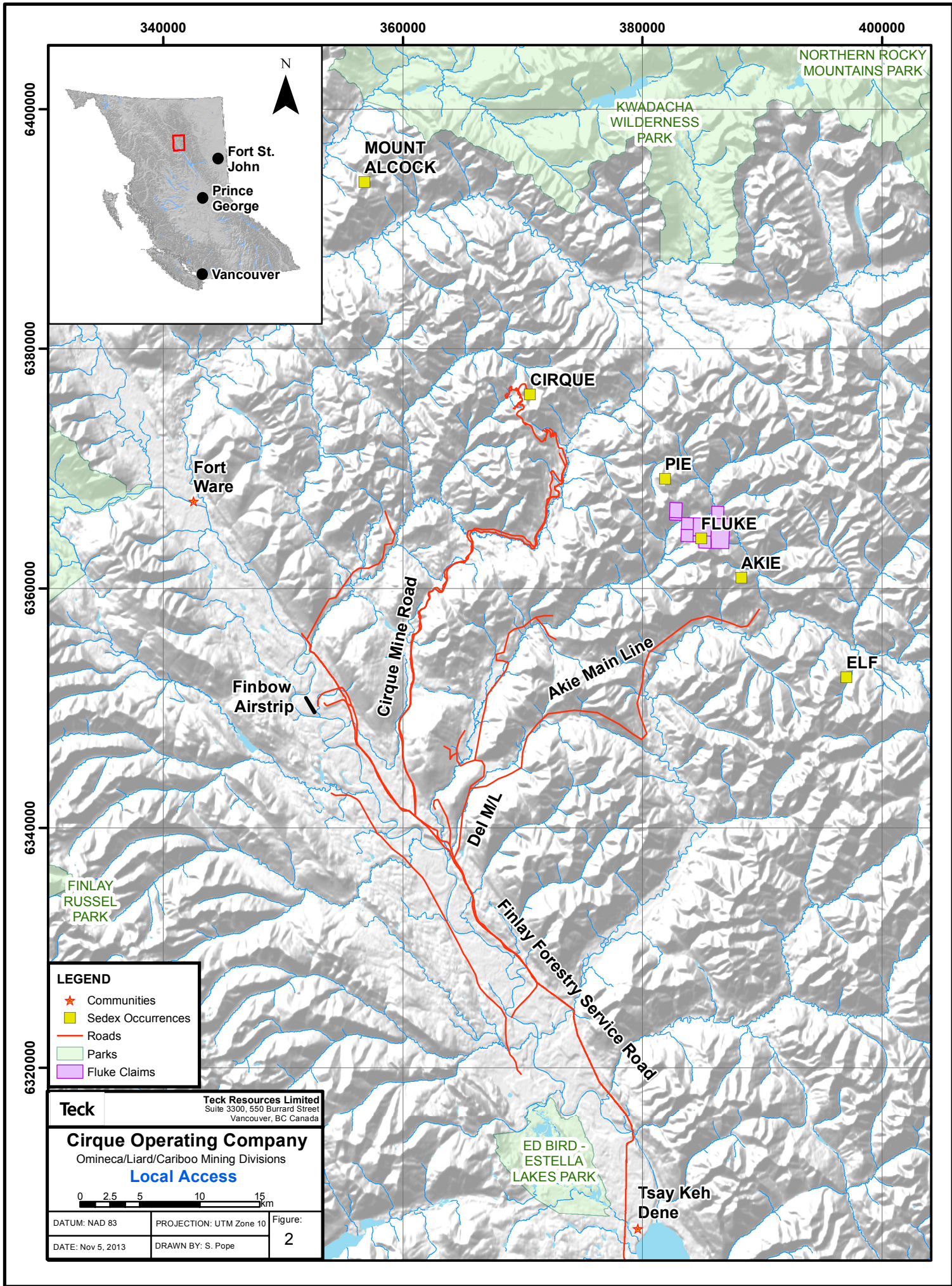
- Keness Mine
- Major Communities
- Railways
- Transmission Lines
- Fluke Claims
- Roads
- Parks

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

Cirque Operating Company
 Omineca/Liard/Cariboo Mining Divisions
Location Map



DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: Nov 5, 2013	DRAWN BY: S. Pope	1



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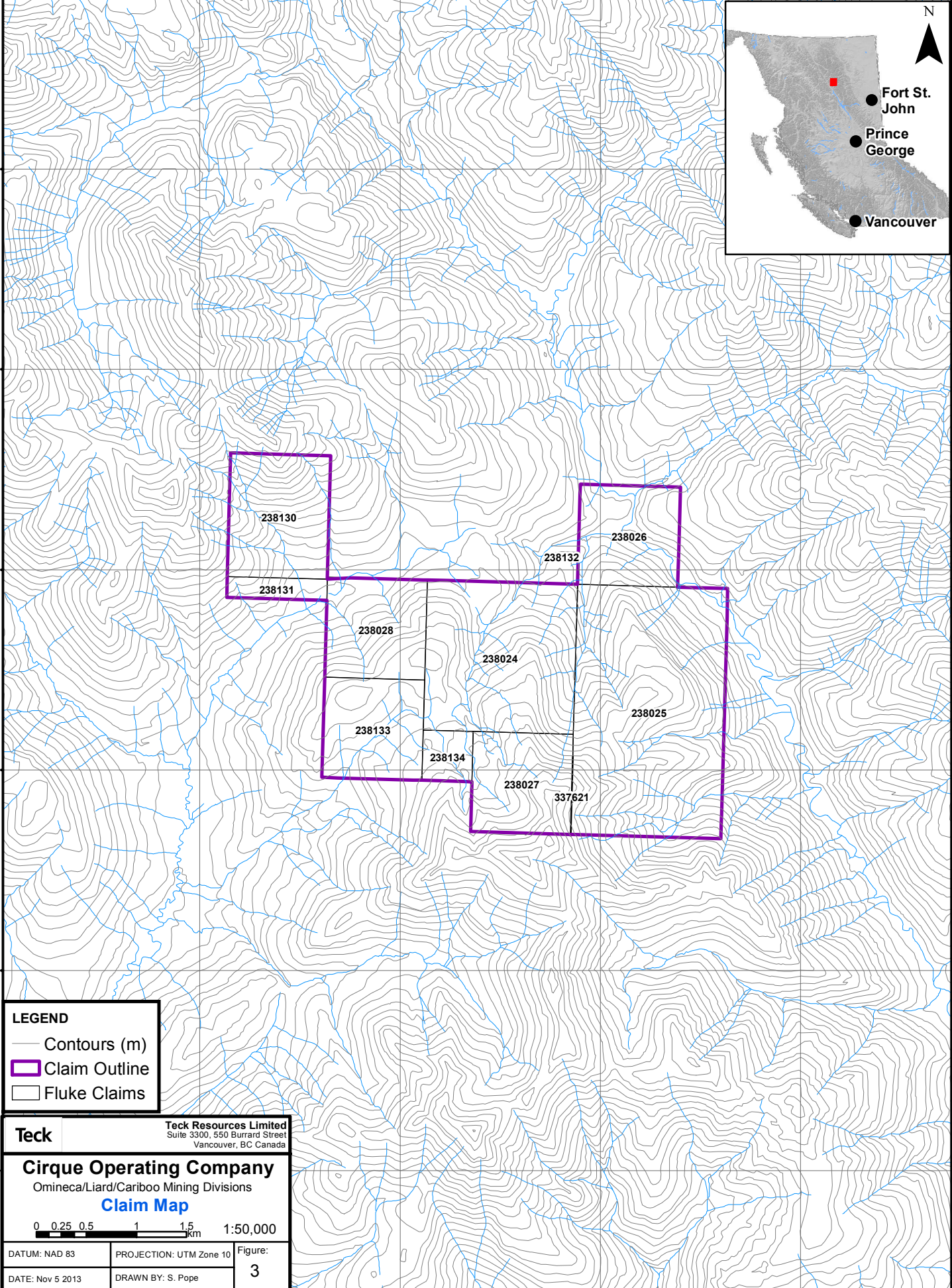
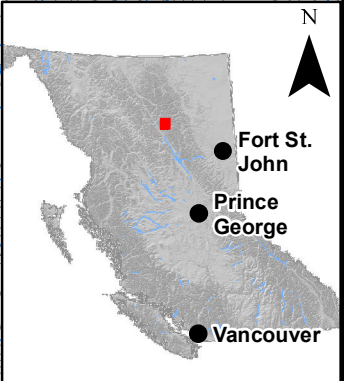
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LEGEND

-  Contours (m)
-  Claim Outline
-  Fluke Claims

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

Cirque Operating Company
 Omineca/Liard/Cariboo Mining Divisions

Claim Map

0 0.25 0.5 1 1.5 km 1:50,000

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

Table 1. Mineral tenure summary for the Fluke property.

Tenure No.	Claim	Owner	Issue Date	Area (ha)	2013 Claimed	Good to Date
238024	FLUKE #1	134801	8/01/1978	225	\$3,368.85	3/15/2016
238025	FLUKE #3	134801	8/01/1978	375	\$5,614.75	3/15/2016
238026	FLUKE #4	134801	8/01/1978	100	\$1,497.27	3/15/2016
238027	FLUKE #5	134801	8/01/1978	100	\$1,497.27	3/15/2016
238028	FLUKE #6	134801	8/01/1978	100	\$1,497.27	3/15/2016
238030	FLUKE #7	134801	7/16/1979	200	\$2,994.54	3/15/2016
238031	FLUKE #8	134801	7/16/1979	175	\$2,620.22	3/15/2016
238032	FLUKE #9	134801	7/16/1979	100	\$1,497.27	3/15/2016
238033	FLUKE #10	134801	7/16/1979	100	\$1,497.27	3/15/2016
238034	FLUKE #11	134801	7/16/1979	25	\$374.32	3/15/2016
337621	FLUKE NO.12FR	134801	7/08/1995	25	\$374.32	3/15/2016
Total				1525	\$19,502.46	

1.3 HISTORY AND PREVIOUS WORK

Exploration for SEDEX style mineralization was initiated in the Kechika Trough in 1970, but it wasn't until 1978 that the Fluke Showing was found by Cyprus Anvil Mining Corp. in joint venture with Hudson's Bay Oil and Gas Ltd. (Table 2). During the 1978 and 1979 field seasons, Cyprus Anvil Mining Corp. conducted geological mapping, soil sampling, prospecting and linecutting which generated multiple follow-up targets. One of these targets (the Fluke showing) was drill tested by four diamond drill holes in 1980 (Table 3) and was unsuccessful at intersecting mineralization at depth. In 1981 two more diamond drill holes tested stratigraphy beneath soil geochemical anomalies to the east and northwest of the Fluke showing. These holes only intersected short horizons of disseminated barite within black shales of the Gunsteel 'formation'. In September of 1982 Cyprus Anvil Mining Corp. drilled their last diamond drill hole testing down-dip stratigraphy of the Pook showing which intersected 20 m of laminated pyrite with minor sphalerite and galena. None of the drilled core on the Fluke property was sampled or assayed at the time due to the presumed sub-economic intersections. To date, no further drilling has occurred on the Fluke property.

The property was acquired by Curragh Resources in 1985, along with the non-contiguous Cirque and Elf properties; however, Curragh Resources went into receivership in 1994. At this time, the Fluke property was acquired by Cirque Operating Corporation (25% Teck Corp., 25% Cominco Ltd., and 50% Korea Zinc Company Ltd.).

In 2001, when Teck Corp. and Cominco Ltd. merged, a 50% share in the property was obtained on behalf of Teck Cominco Ltd. (later Teck Resources Ltd.). 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. In 2013, Teck Resources and Korea Zinc Company undertook an exploration program on several of their joint venture properties in the Gataga District, including the Fluke property. This report outlines work required for assessment purposes that was completed in 2013 on the Fluke property by Teck Resources Ltd. on behalf of Cirque Operating Corp.

Table 2. Summary of the ownership history of the Fluke 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 Fluke 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	Curragh Resources Inc. purchases rights to the claims with other assets.
1989–1991	Austuriani de Zinc	Austuriani de Zinc earns a 30% interest in the property by participating in exploration work.
1992	Curragh Resources	Curragh Resources re-acquires 100% ownership of the Fluke property.
1994	Curragh Resources	Curragh Resources goes into receivership.
1994	Cirque Operating Corp.	Teck Corp. (25%), Cominco Ltd. (25%), Korea Zinc Company Ltd. (50%) buy Curragh Resources and together form Cirque Operating Corp.
2001	Cirque Operating Corp.	Teck and Cominco merge to form Teck Cominco Ltd., acquiring a 50% interest in the Fluke property.

Table 3. Summary of diamond drilling completed on the Fluke property.

Year	Target	Diamond Drilling	
		No. Holes	Meters
1980	Fluke showing	4	1,787
1981	Geochemical anomalies	2	915
1982	Pook showing	1	593
	Total	7	3,295

1.4 2013 WORK SUMMARY

During the 2013 field season from August 22nd to 27th 96 soil samples were collected on the Fluke claims Fluke 1, Fluke 3, Fluke 5 and Fluke 11. Samples comprised 64 B horizon, 24 A horizon, 4 field duplicates and 4 standards.

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 Fluke property is located within the Gataga–Akie District of the Kechika Trough in northeastern British Columbia (Figs. 1 and 4). The Kechika Trough is a narrow, north-northwest trending, autochthonous tectonostratigraphic extension of the Selwyn Basin (Fig. 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 (Fig. 4). Even after dextral displacement on major faults in northeastern British Columbia is restored, the Cassiar Platform would still 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. 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).

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 (Figs. 4 and 5; Gordey and Anderson, 1993). The extensive off-shelf Cassiar Platform marks the western limit to the Kechika Trough (Fig. 4 and “Cassiar Terrane” in Fig. 5), 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).

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 (Fig. 5; Nelson and Colpron, 2007). This back-arc rifting led to the separation of several pericratonic terranes separated from the western margin of Laurentian by the opening of the Slide Mountain ocean basin west of the Cassiar Platform (or the “Cassiar Terrane” in Fig. 5; 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 (Fig. 5; Nelson and Colpron, 2007).

Periodic extensional tectonism and restricted sedimentation within 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 are the most economically significant, and 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 (Fig. 4; Ferri et al., 1999). Despite the influx of clastic sediments in the Devonian–Mississippian, SEDEX mineralization occurred in 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).

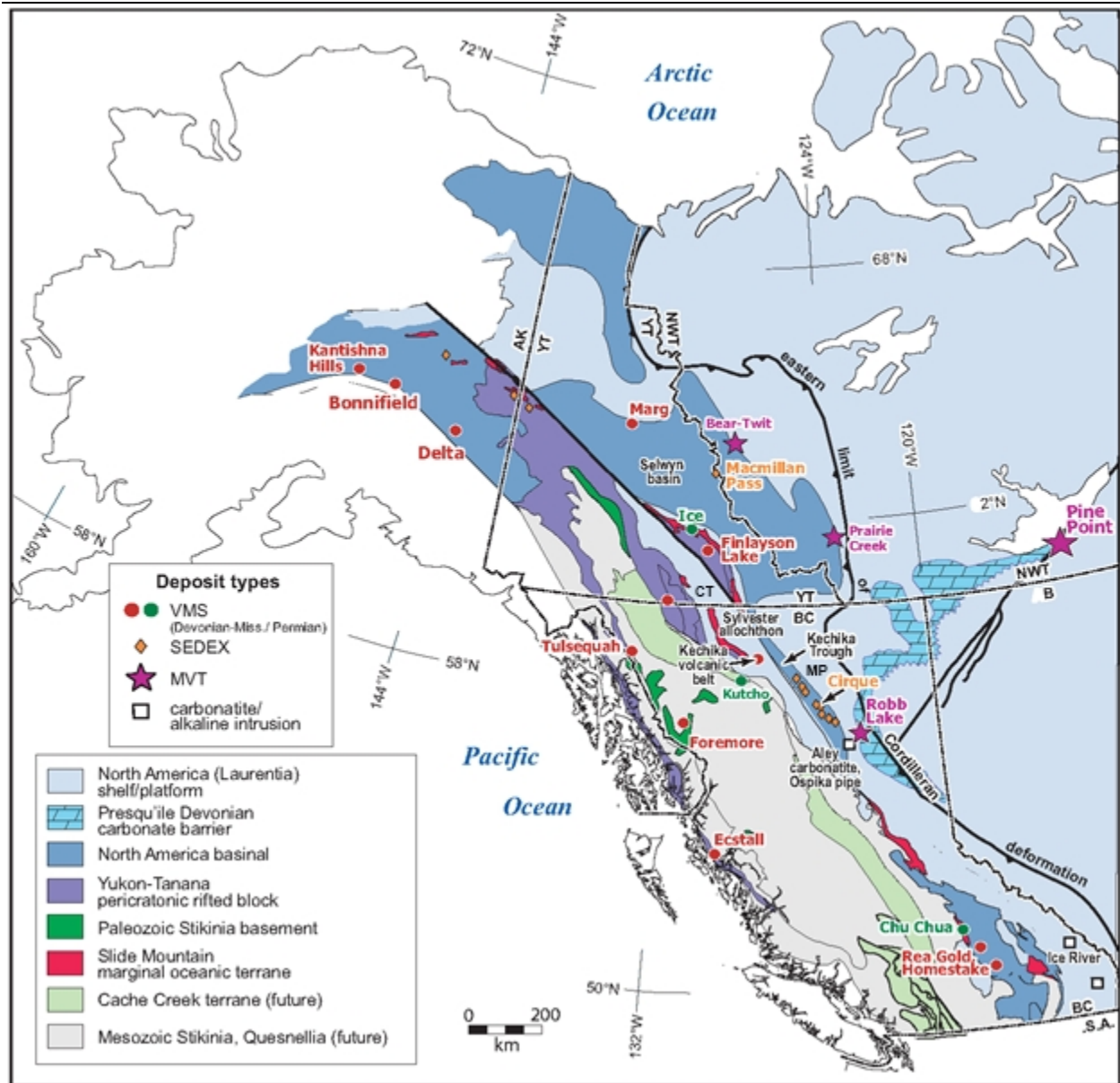


Figure 4. Devonian-Mississippian mineralization relative to terranes of the northern Cordillera (modified from Nelson and Colpron, 2007). Abbreviation are CT: Cassiar Terrane and MP: Macdonald Platform.

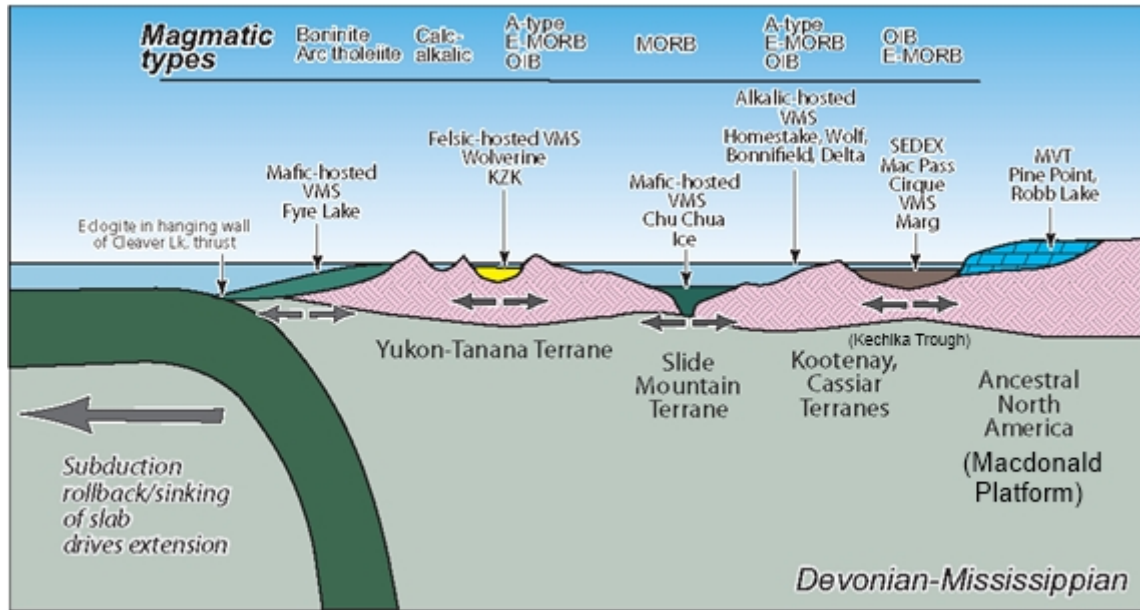


Figure 5. Schematic tectono-metallogenic model for the Devonian–Mississippian western margin of North America (modified from Nelson and Colpron, 2007).

2.2 PROPERTY GEOLOGY

The Fluke 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 central panel in the vicinity of the Fluke claims: the Ordovician to Devonian Road River Group; and, the Devonian–Mississippian Earn Group (Fig. 6).

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 to Early Silurian units (OR-; Fig. 6) and Silurian to Devonian units (SRL, SRM, SRU; Fig. 6), 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 are also included in the Road River Group within the Kechika Trough (the Kwadacha Reef, or DK-, and the Paul River Formation, or DP-; Fig. 6).

The Earn Group 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. This 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 was 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' (Fig. 6). These three 'formations' are stratigraphically and/or structurally interfingering, making differentiation of these units difficult at any scale of mapping (e.g., Ferri et al., 1999). Siliceous or cherty shales of the Earn Group are the primary host to syn-sedimentary mineralization on the Fluke property, and variably contain baritic ± pyritic ± galena ± sphalerite mineralized horizons.

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

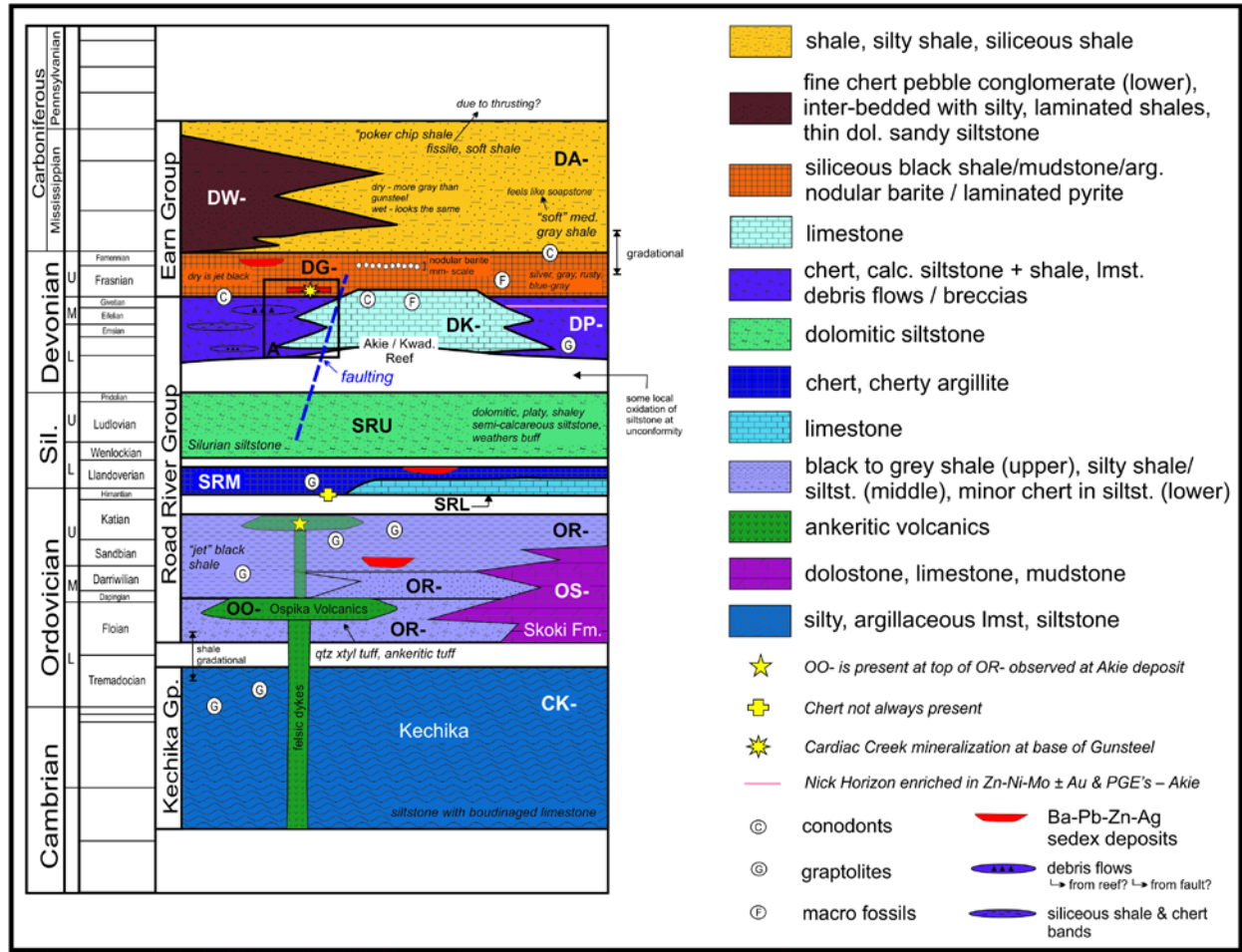


Figure 6. Schematic stratigraphic column for the Lower to Middle Paleozoic units deposited near the Fluke property in the Kechika Trough. Fluke mineralization occurs within the Gunsteel 'formation' (modified from MacIntyre, 1998).

Table 4. Detailed lithological break-down of units on the Fluke property.

	EARN GROUP	ROCK TYPES
Devonian	Warneford Formation (DW-)	Silty shale, Siltstone, sandstone, chert pebble conglomerate
	Akie Formation (DA-)	Soft black shale
	DAC	DA- with <10% pyrite and <5 % barite
	Gunsteel Formation (DG-)	Black siliceous shale to porcellanite
	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
	DGS - pyritic ore facies	DG- with 50-100% laminated pyrite with variable sphalerite and galena
		ROAD RIVER GROUP
Silurian	Paul River Formation (DP-)	Bryozoan to crinoid floatstone with a lime mudstone matrix
	Kwadacha Reef (DK-)	
	Upper Road River Group (SRU)	Medium to dark grey mottle-bedded siltstone with abundant feeding burrows
	Middle Road River Group (SRM)	Black chert to porcellanite with interbedded silty shale
	Lower Road River Group (SRL)	Medium grey lime mudstone
Ordovician	Road River Group Shale facies (OR-)	Black variably calcareous shale
	Road River Group Siltstone facies (OR-)	

2.2.1 Structural Geology

Regional structural and lithostratigraphic correlations for the Gataga-Akie district are well-described by Pigage (1986), McClay and Insley, (1986), McClay et al. (1987), Insley (1990), McClay (1991), MacIntyre (1992) and Paradis et al. (1998). During the Cambrian to Mississippian, basin subsidence and extension, and related normal faulting (D_1), produced parallel asymmetric graben systems with steeply dipping bounding faults and containing 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 (metre-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 Fluke 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. Thrust-bounded packages contain chevron to tight folds and well-cleaved strata. Pigage (1986) has identified two separate compressional coaxial phases of deformation that exhibit similar trending and verging folds (D_3 and D_4) at Cirque which have also been observed on the Fluke property (Insley, 1990). Folds associated with D_3 at Fluke 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 (i.e., siltstone, limestone, and chert) resulted in a tightly spaced fracture cleavage. Where rheologically differing lithologies are interbedded (chert and siltstone), 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 and current 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.

Historical structural data from Cyprus Anvil Mining and Teck Resources for the Fluke property has been reviewed and compared with the literature and technical reports aided by stereonet software from Allmendinger et al. (in press). No overturned bedding measurements are reported in the Fluke historic datasets however, bedding data show folds have a gentle to moderately steep southwest dipping limb and a moderate to steeply dipping northeast limb (Fig. 7a). Because no overturned bedding is mentioned in the historic reports, no overturned forelimb is inherent from the bedding data. It is possible that the northeastern forelimbs have been locally sheared and attenuated and thus not reported however, it is also likely that overturned bedding is present but not observed and thus not recorded. A second set of bedding foliation data (Fig. 7b) shows northwest trending tight upright folds possibly analogous to those described by Pigage, (1986) as D_2 and herein as D_4/F_4 . Cleavage measurements however (Fig. 7c), most closely fit with the D_3 folding style. This would be consistent with the established literature as the larger scale asymmetric D_3/F_3 folds are much more prevalent than the smaller scale locally developed F_4 . Because crenulation cleavages were not reportedly measured it remains unclear if they are related to the F_4 folds at Fluke as are described by Insley (1990). Lineation measurements (Fig. 7d) are comparable with the trend of the regional D_3 fold structures. Lineation measurements are not historically differentiated into bedding-cleavage intersections or hinge lines.

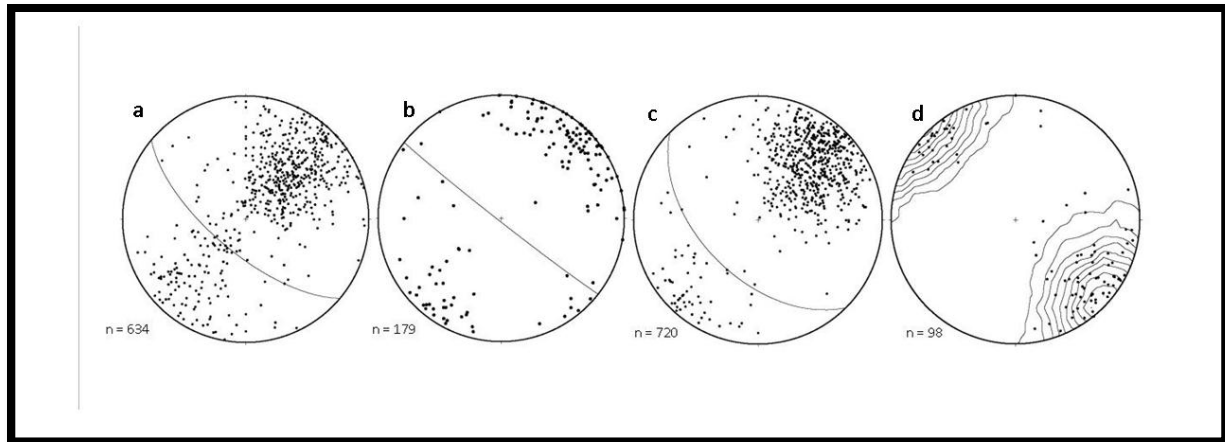


Figure 7. Historic structural data for the Fluke property including a) poles to bedding planes, axial plane is represented by the great circle, b) second set of poles to bedding planes with the axial plane represented by the great circle, c) poles to cleavage planes with the average measured cleavage represented by the great circle, and d) fold hinge lines and intersection lineations.

2.2.2 Alteration and Mineralization

SEDEX-style mineralization on the Fluke property was first identified in 1978 as a small outcrop of sub-cm, massive to laminar-banded pyrite with sphalerite- ± galena-rich horizons (a chip sample over 1m graded 2.81% Pb+Zn and 9 g/t Ag) interbedded with non-baritic siliceous black shale in Fluke Creek (“Fluke” showing; Farmer, 1995). One diamond drill hole testing the down-dip extension of the Fluke showing intersected 6.9% Pb+Zn and 32.5 g/t Ag over 2.5m. A second showing of massive to laminated barite with disseminated to finely laminar galena (a chip sample over 1.55m graded 5.2% Pb+Zn and 37.8 g/t Ag) interbedded with baritic ± pyritic silty black shale is located near the base of a high cliff at the head of Pook Creek (“Pook” showing; Farmer, 1995). One diamond drill hole testing the down-dip extension of the Pook showing intersected 10.3% Pb+Zn and 33 g/t Ag over 0.6m, and 7.7% Pb+Zn and 29 g/t Ag over 0.7m.

Both showings are less than 2 metres in stratigraphic thickness (possibly much less due to isoclinal folding), and dip ~60° to the southwest (Farmer, 1995). The host rocks to this mineralization were identified as black, non-calcareous shale of the Gunsteel ‘formation’, which is underlain by a “ribbon-banded” (Roberts, 1979) to “poorly bedded” (Farmer, 1995) black chert horizon at the Fluke showing, and overlain by a “ribbon-bedded” (Farmer, 1995) chert horizon at the Pook showing. The surface continuation of mineralization was not observed, and drilling targeting the down-strike continuation at depth failed to intersect significant Pb–Zn–Ag mineralization. However, black shales of the Gunsteel ‘formation’ that contain disseminated to mm-scale nodular to lamellar barite and that are apparently *overlain* by a well-bedded black chert horizon were identified and mapped in 1995 (this implies that the rocks at the Fluke showing are overturned). Due to the lack of pyrite in the baritic shales, these rocks are thought to represent a down-strike, although laterally distal, continuation of the ore horizon at the Pook and Fluke showings. Down-strike, baritic black shale was also observed as far as the southeast corner of the property (Farmer, 1995).

3. 2013 FIELD PROGRAM

Geological work conducted during the 2013 field season consisted of a geochemical soil sampling program. Between August 22–27th 2013, 96 soil samples were collected on the Fluke property to assess known mineral occurrences and develop new targets. Two soil traverses were set up to cross occurrences of surface mineralization and prospective lithologies in order to look for similar anomalies in untested areas of prospective Earn Group stratigraphy on the property.

3.1 SOIL GEOCHEMISTRY

3.1.1 Surficial Environment

The Fluke property is dominated by boreal forest to sub-alpine slopes and wetland at elevations of 1040 metres to ~1700 metres and alpine tundra and peaks between 1700–2080 metres. Extensive fir, with lesser aspen, pine and local concentrations of spruce at lower elevations constitute the dominant tree populations. At and above the tree-line, mosses, grasses, and wildflowers cover all but the steepest slopes. Below the tree-line, areas of deadfall and avalanche slide paths are dominated by willows, alder and stunted fir. Mountain ridges typically trend to the northwest and northeast with corresponding steep drainages orthogonal to the ridges. Mountain runoffs typically drain into regional drainages that trend northeast and consist of meandering rivers and streams in wide flat valley bottoms. Glacial and glacial-fluvial deposits are minor in the mountainous terrain, but become more prevalent in the low, wide valleys. Relief in the area is typically low angled to steep, with many slopes less than 30° where most soil sampling took place. As such, soil development was variable and soil profiles changed markedly from site to site in any aspect. Most mineral soils on the Fluke property likely developed on colluvial (rather than glacial) deposits.

Soil profiles were very heterogeneous between aspect, elevation, terrain angle, drainage, and even between sites on the same line. Herein, soils are named based on their classification in the Canadian System of Soil Classification (Canada Soil Survey Committee, Subcommittee on Soil Classification, 1978). Organic LFH horizons were always present, varying from 1–2 cm thick in the alpine to ~50 cm thick in low-lying moist drainages, and consisted of partially decomposed needles, twigs and mosses. The Ah horizon of fully decomposed material occurred in thin mm- to cm-thick veneers below the LFH horizon. 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 or just the LFH horizon, 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 just the C horizon (typically composed of colluvium). BC horizons of dark brown to tan-coloured soil with abundant sand and gravel fragments were the most common. Less abundant 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.

3.1.2 Sample Methodology and Analytical Techniques

Two sample lines were undertaken on the Fluke property with sample sites located every 50 metres along the line. 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 were entered digitally into a hand-held device. Soils for geochemical sampling were collected from the Ah and B horizons at each sample site, where present. When sample material was sparse, multiple pits were dug within a 5 metre radius for sufficient sample collection. Samples from the Ah horizon 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 2 mm sieve, depending on dryness, before being deposited into Kraft paper bags. 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. Samples were then shipped to the Acme Analytical Laboratory in Vancouver for sample preparation by the method SS80 which involves drying up to ½ 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.

3.1.3 Quality Control

To reduce contamination between sample sites shovels, sieves and trowels were cleaned 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. 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).

3.2 SOIL GEOCHEMISTRY RESULTS

The 2013 soil sampling program was successful in determining the most effective soil horizon to sample, as well as the most useful elemental signatures for detecting buried sulfides. Figures 8–17 illustrate sample sites and the results of selected trace elements for the A and B horizon soils.

3.2.1 A Horizon

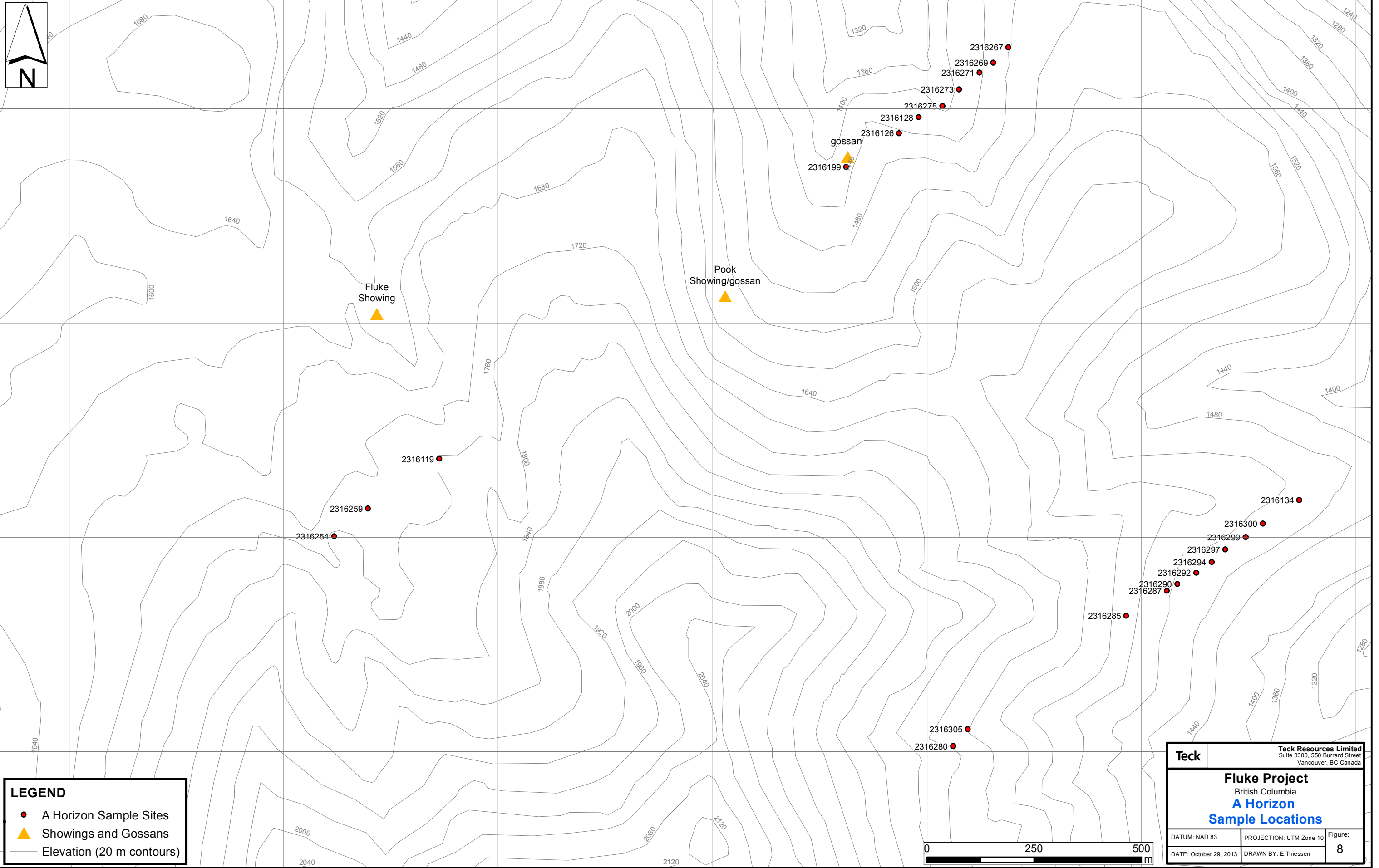
The A horizon is poorly developed on the Fluke property due to the predominance of steep terrain above the tree-line, where minimal organic soils developed. Figure 8 demonstrates the paucity of Ah horizon sample sites and the subsequent poor distribution of data for this soil horizon. Because both soil traverse lines lack significant data coverage, a proper geochemical assessment of various selected elements is not possible. However, for completion, selected elements lead, zinc, silver, thallium and barium are presented in Figures 9-13. Complete soil geochemical analyses are presented in Appendix IV.

3.2.2 B Horizon

The B horizon in the sample area typically developed as a transitional BC soil. Often in steep terrain above the tree-line only the C horizon or talus fines were available. Rarely Bm and Bf horizons were present and collected. Collectively the B or C horizon soils were very prevalent and provided very good sample coverage throughout the Fluke property (Fig. 14). Figure 15 shows lead data highlighting two 400-10000 ppm anomalies along strike with the Fluke and Pook showings. A lesser anomaly of ~139 ppm lead also occurred on the southeast sample line. The majority of non-anomalous soil samples within this area are sub 50 ppm lead. Zinc data (Fig. 16) are poor as most samples have similar values of less than 600 ppm. One anomalous zinc sample produced a value of 865 ppm proximal to a gossan northeast of the Pook showing. Silver data (Fig. 17) does not clearly show any anomalies associated with the Fluke or Pook showings. North of the Pook showing is a broad zone of semi-anomalous silver (> 4 ppm) however, no clear target exists. Thallium data (Fig. 18) show a relative anomaly in the vicinity of the Pook showing with values of 4-10 ppm. Most other thallium data are sub 4 ppm. Barium data (Fig. 19) in soils is mostly sub 2000 ppm however, two minor anomalies of ~4000 ppm occur northeast of the Pook showing. One occurs adjacent to a gossan and one at the northeast end of the traverse line. These anomalies are small in width and do not correlate with the known Fluke and Pook occurrences. Overall, lead data appeared to be the most consistent with highlighting anomalies above and along strike of known mineral occurrences. A complete list of soil geochemical data is available in Appendix IV.

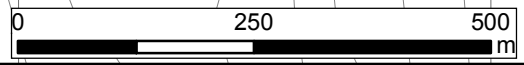
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LEGEND

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

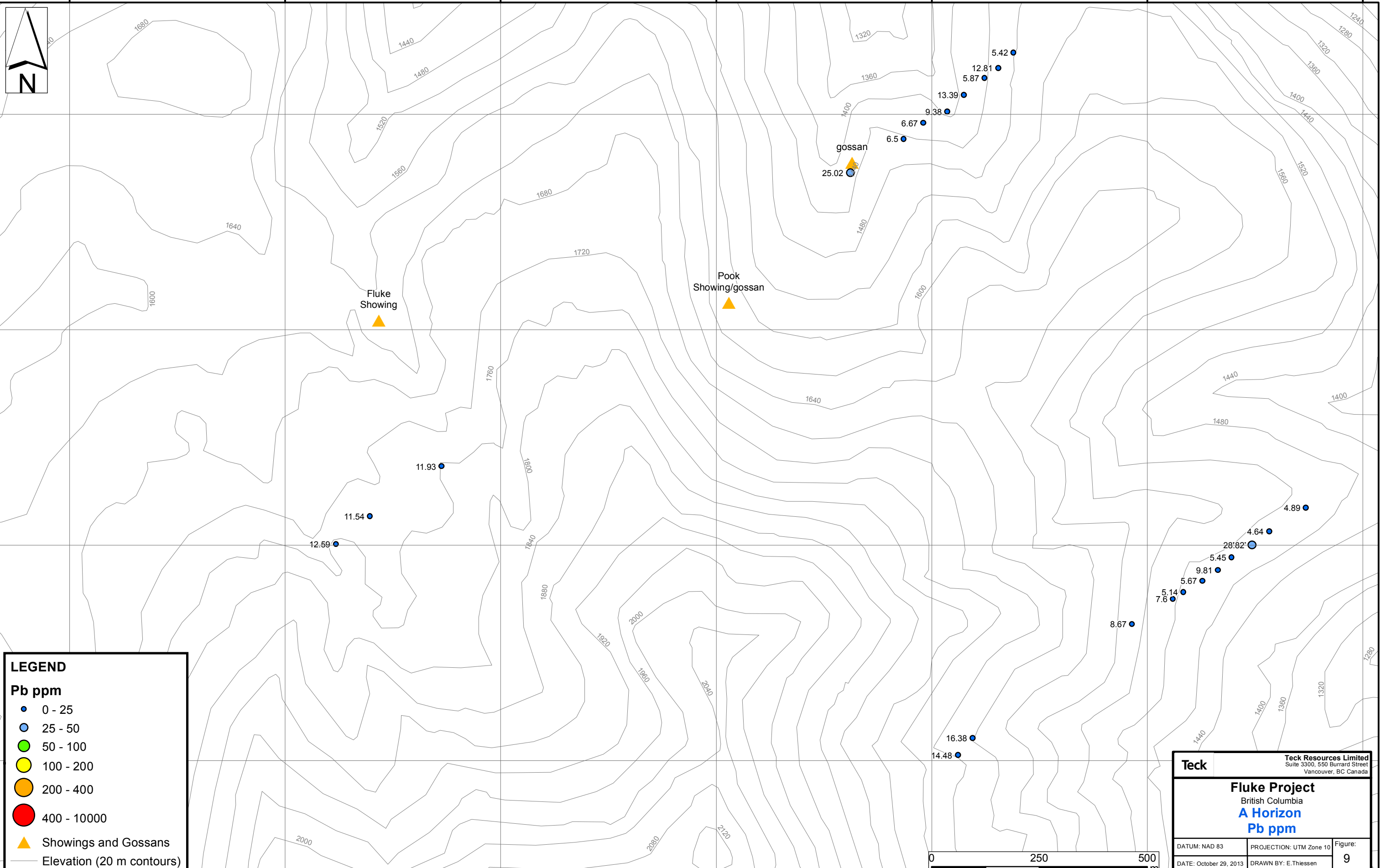


Teck		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada	
Fluke Project British Columbia A Horizon Sample Locations			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: October 29, 2013	DRAWN BY: E.Thiessen	8	

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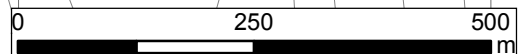
LEGEND

Pb ppm

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 400
- 400 - 10000

▲ Showings and Gossans

— Elevation (20 m contours)

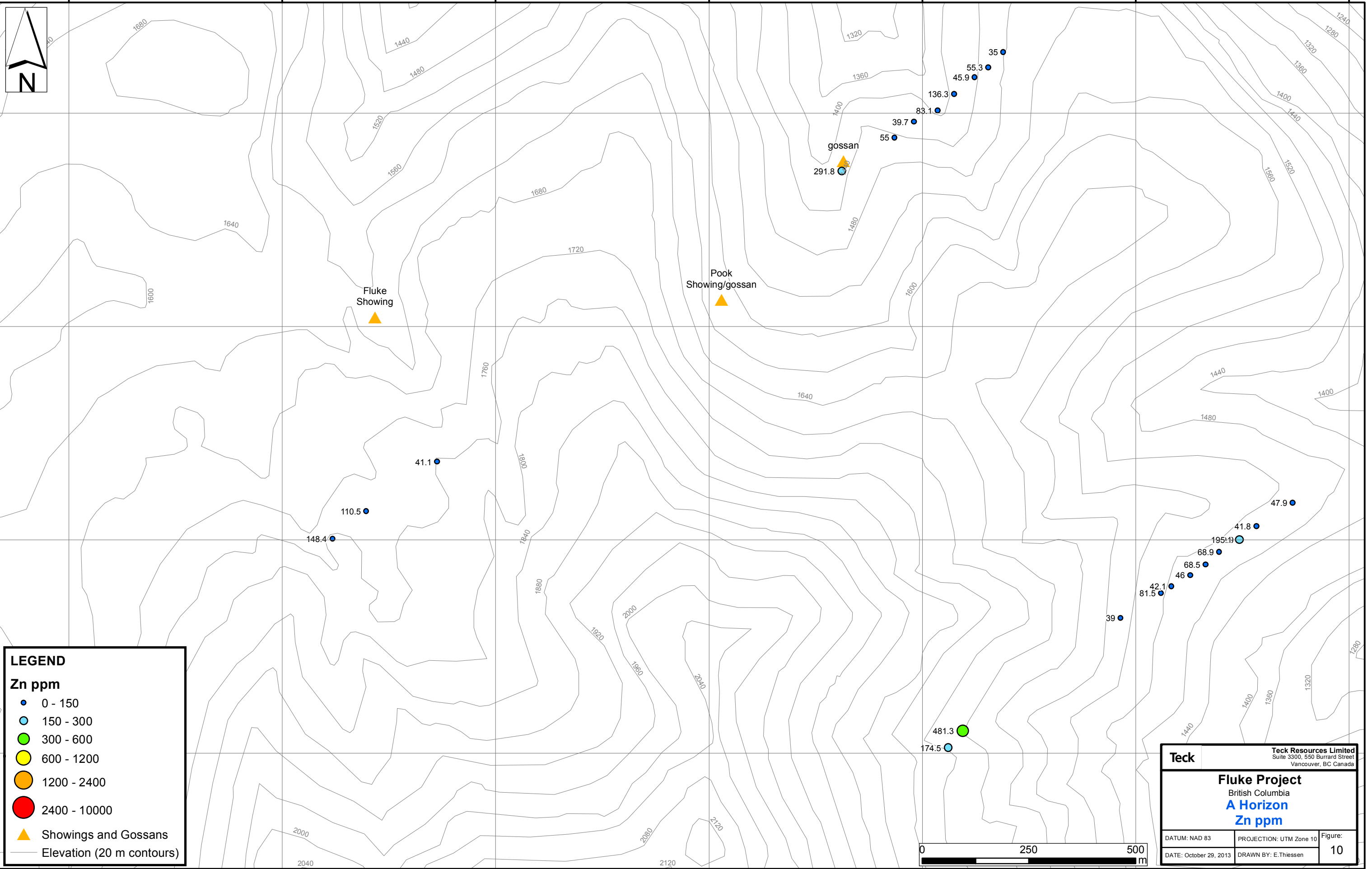


Teck		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada	
Fluke Project			
British Columbia			
A Horizon			
Pb ppm			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: October 29, 2013	DRAWN BY: E.Thiessen	9	

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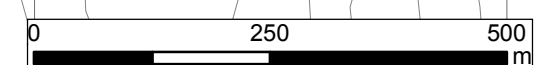
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LEGEND

Zn ppm

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

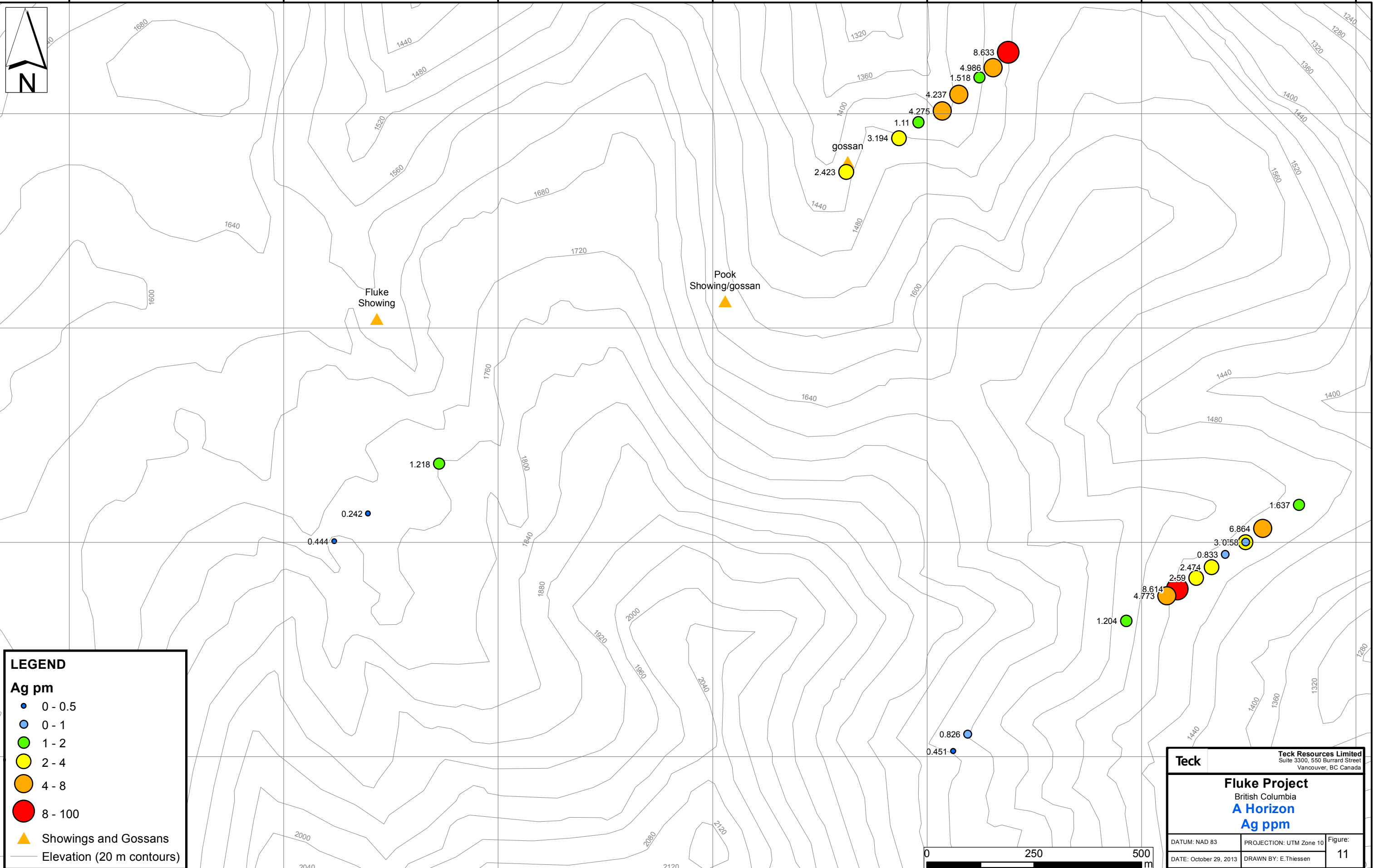


Teck		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada	
Fluke Project British Columbia A Horizon Zn ppm			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: October 29, 2013	DRAWN BY: E.Thiessen	10	

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LEGEND

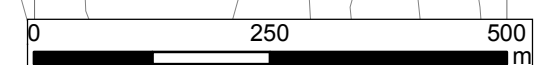
Ag ppm

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

▲ Showings and Gossans

— Elevation (20 m contours)

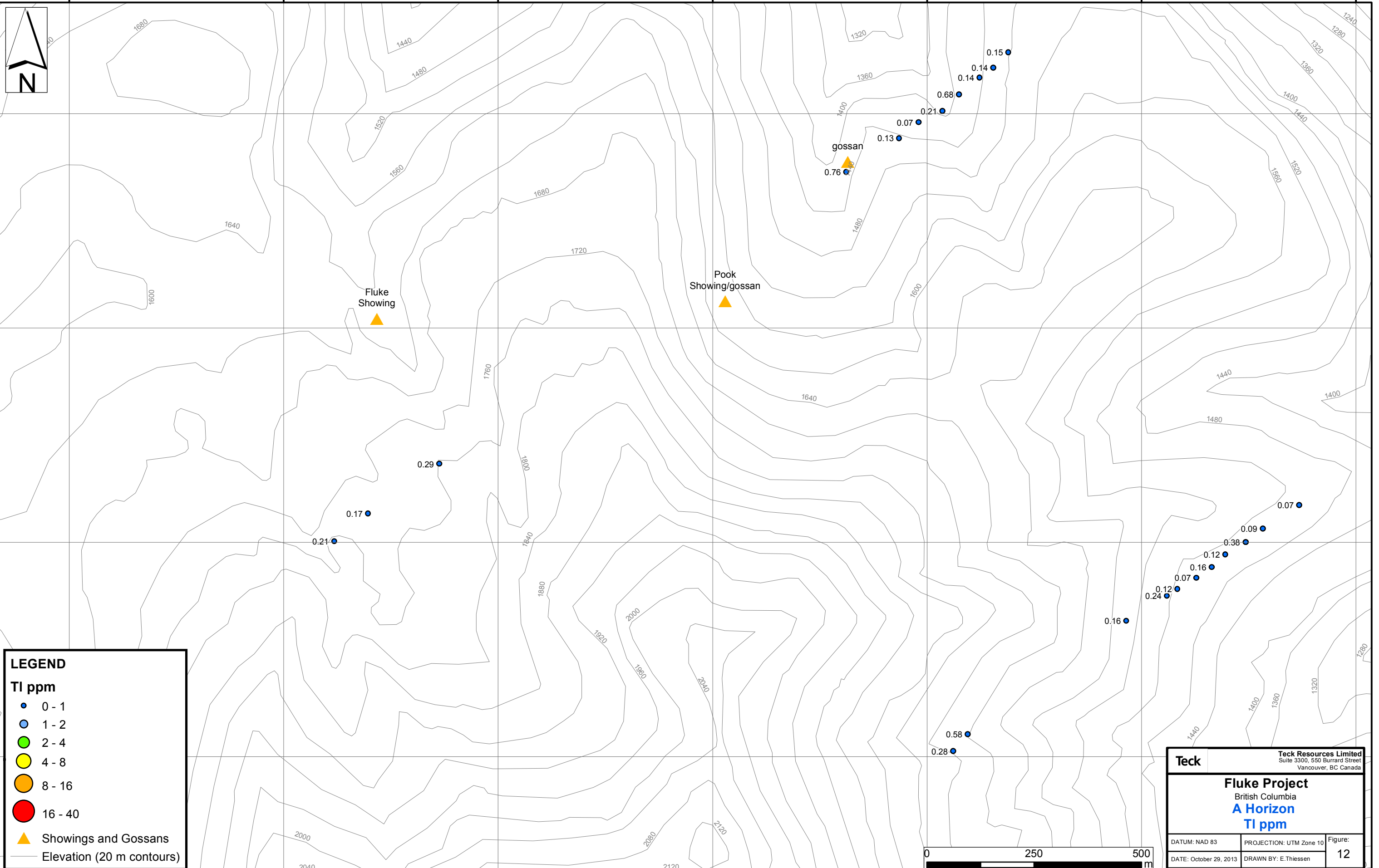
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Fluke Project British Columbia A Horizon Ag ppm			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
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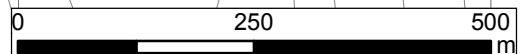
LEGEND

TI ppm

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

▲ Showings and Gossans

— Elevation (20 m contours)

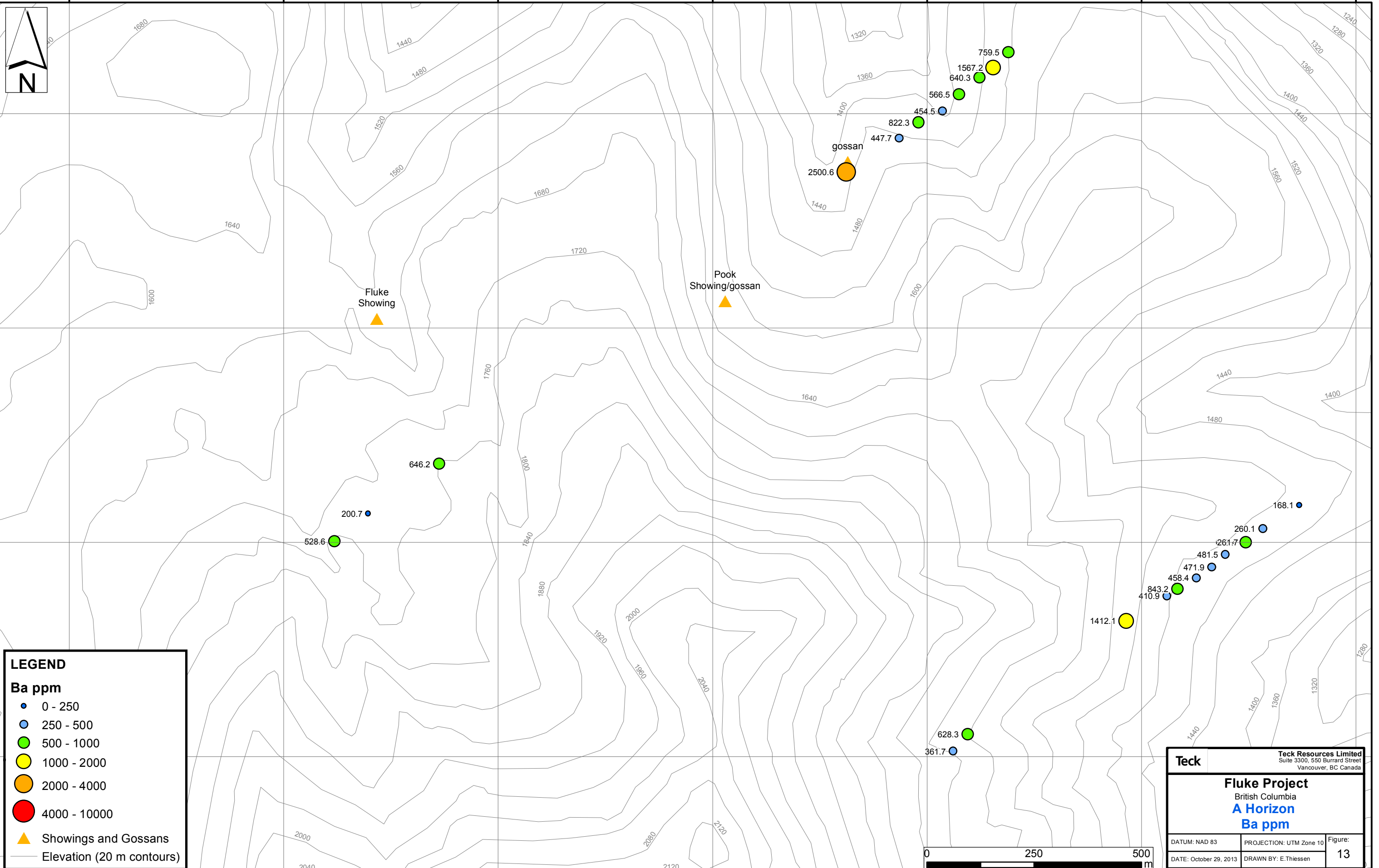


Teck		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada	
Fluke Project			
British Columbia			
A Horizon			
TI ppm			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: October 29, 2013	DRAWN BY: E.Thiessen	12	

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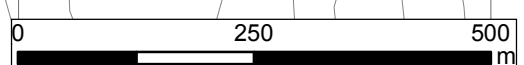
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Ba ppm

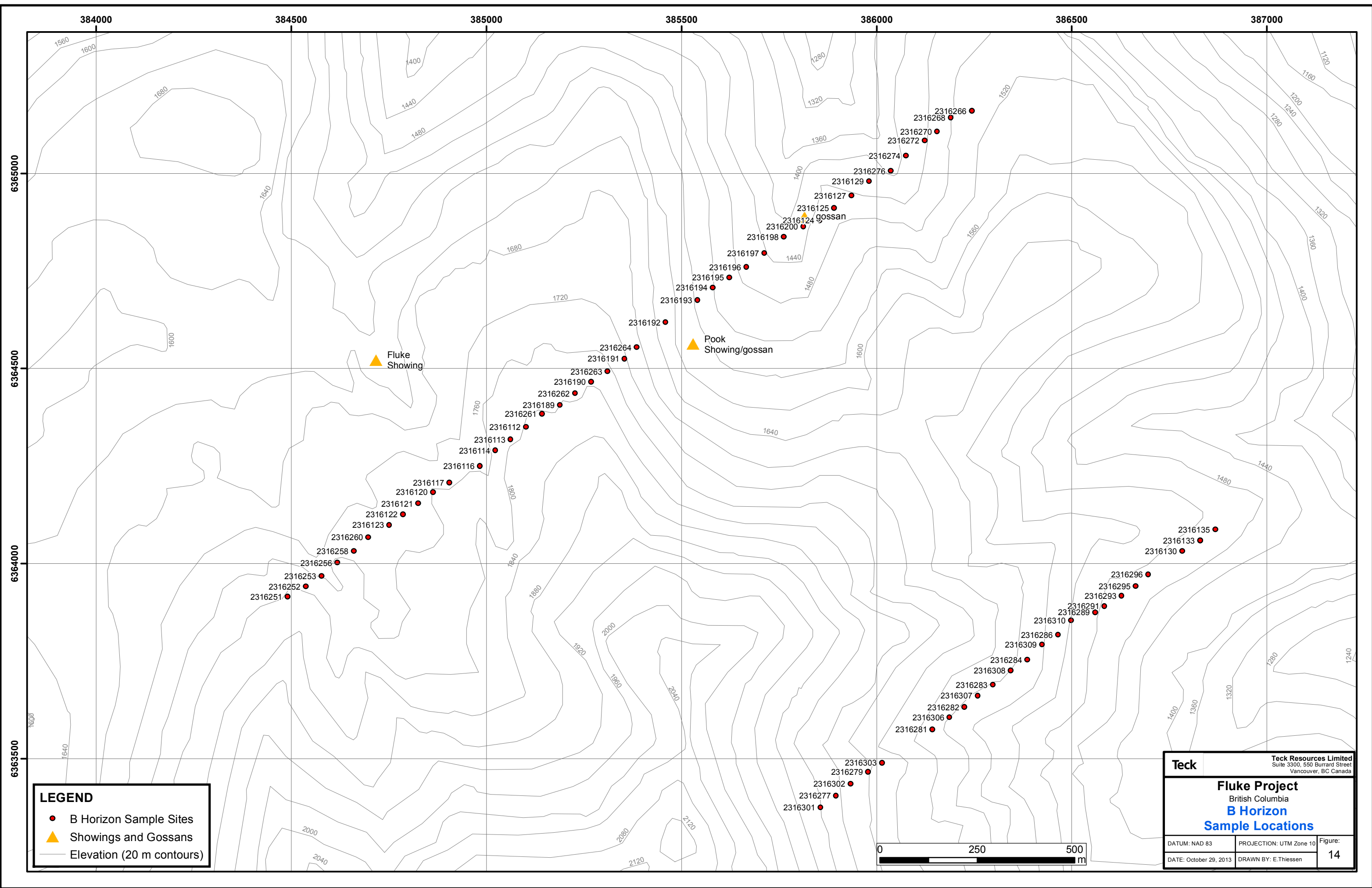
- 0 - 250
- 250 - 500
- 500 - 1000
- 1000 - 2000
- 2000 - 4000
- 4000 - 10000

▲ Showings and Gossans

— Elevation (20 m contours)

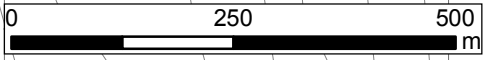


Teck		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada	
Fluke Project British Columbia A Horizon Ba ppm			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: October 29, 2013	DRAWN BY: E.Thiessen	13	



LEGEND

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

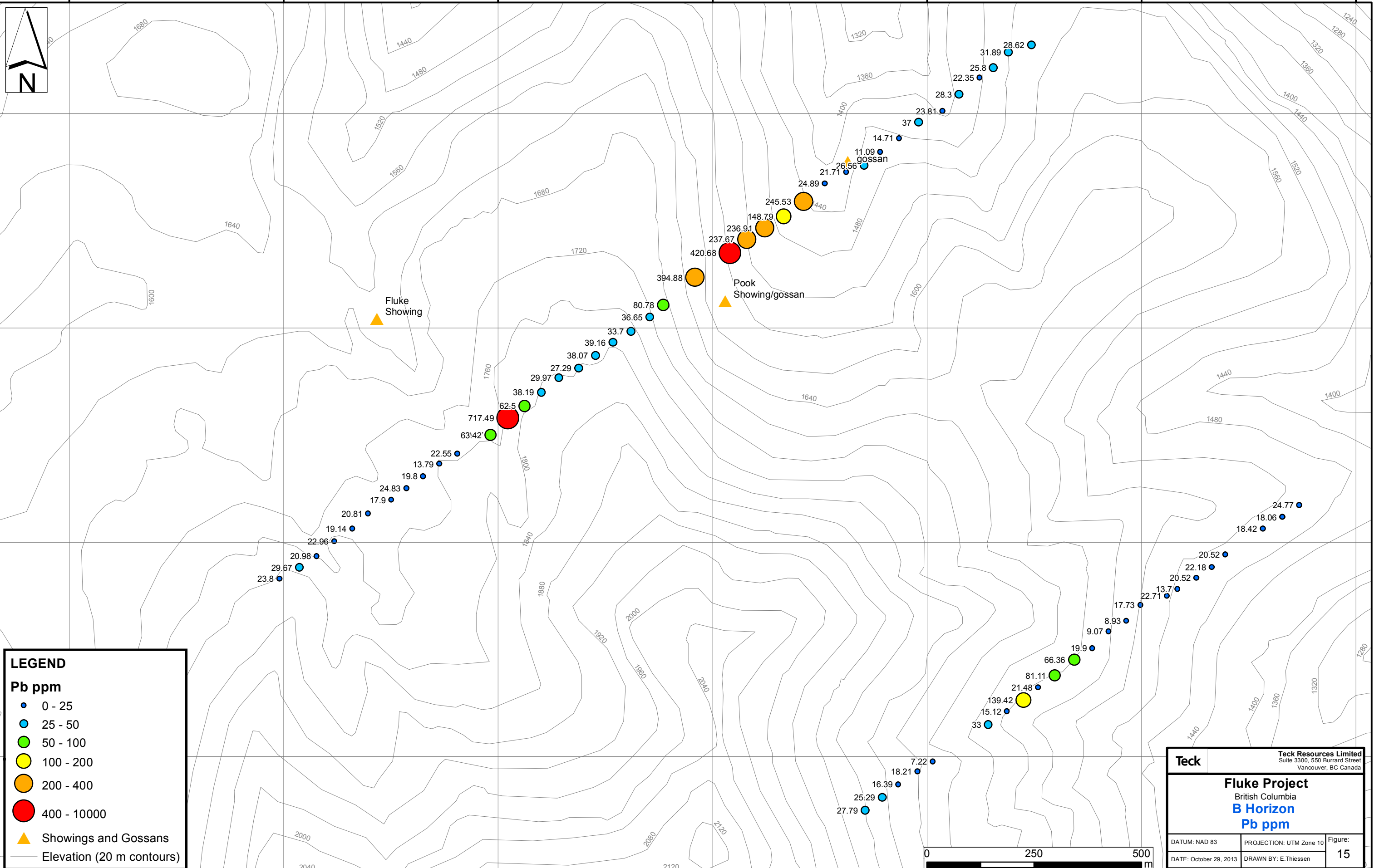


Teck		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada
Fluke Project British Columbia B Horizon Sample Locations		
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:
DATE: October 29, 2013	DRAWN BY: E.Thiessen	14

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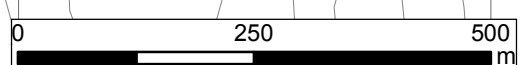
636500
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LEGEND

Pb ppm

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

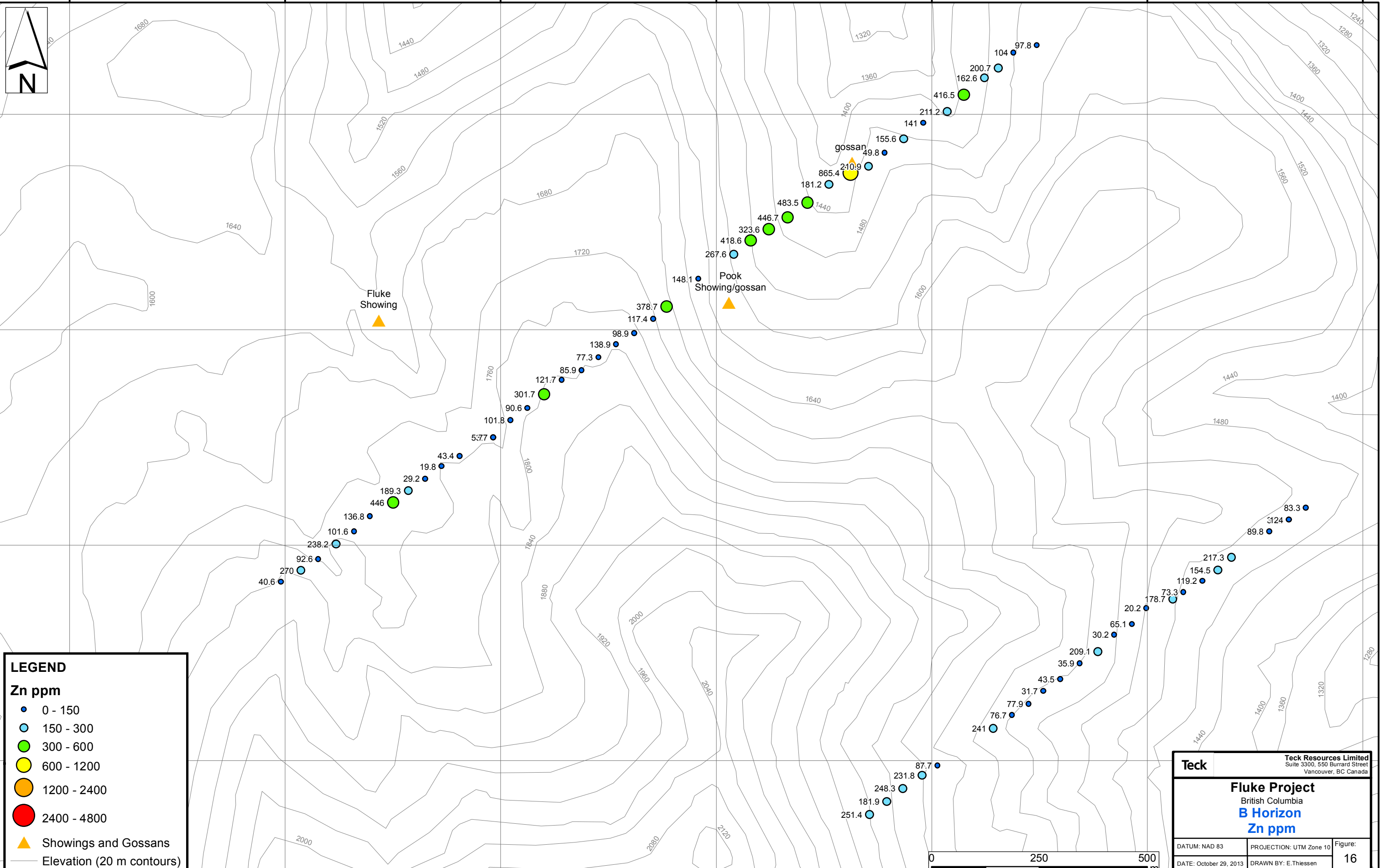


Teck		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada	
Fluke Project			
British Columbia			
B Horizon			
Pb ppm			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: October 29, 2013	DRAWN BY: E.Thiessen	15	

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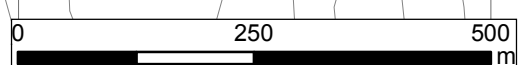
LEGEND

Zn ppm

- 0 - 150
- 150 - 300
- 300 - 600
- 600 - 1200
- 1200 - 2400
- 2400 - 4800

▲ Showings and Gossans

— Elevation (20 m contours)

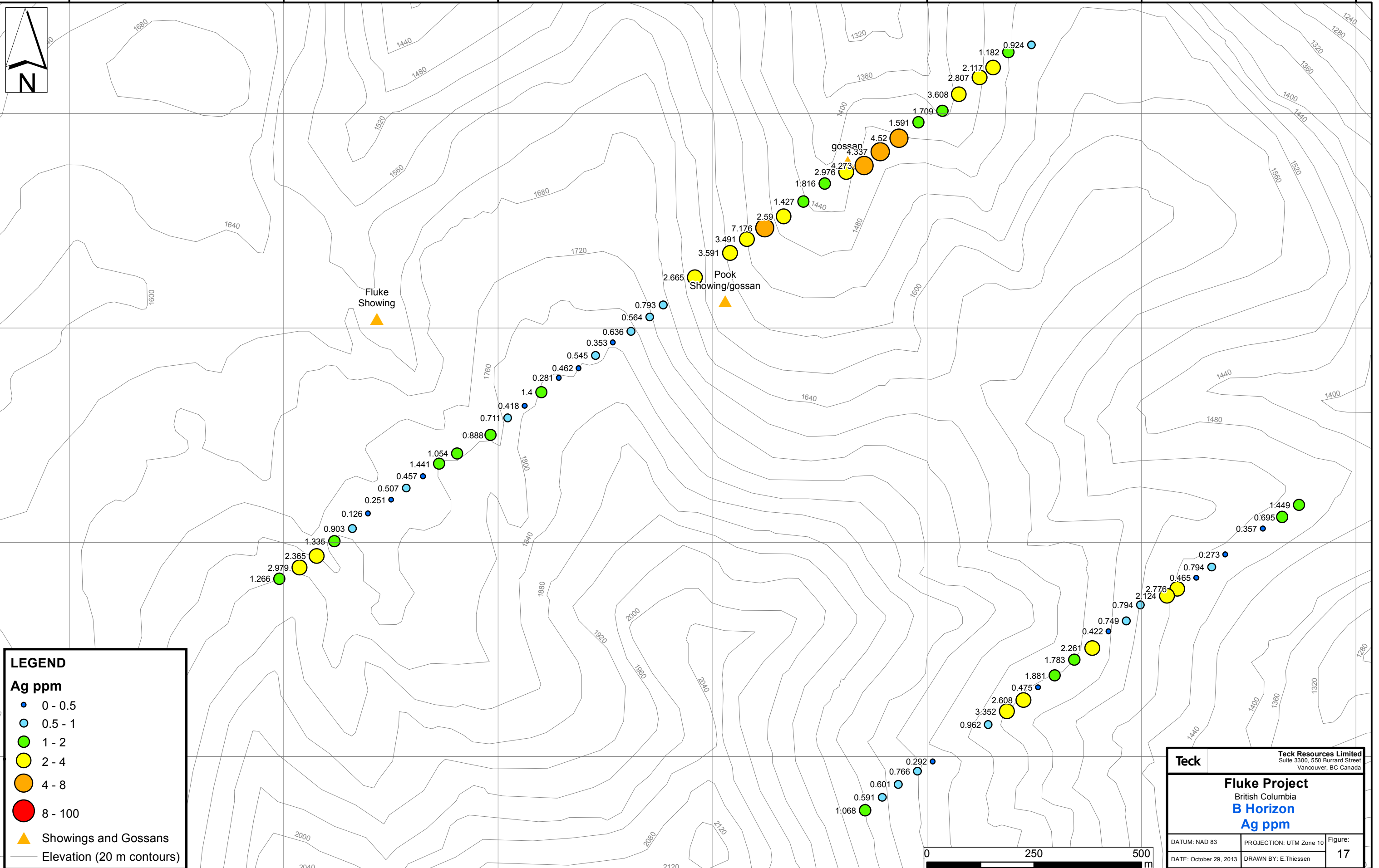


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British Columbia			
B Horizon			
Zn ppm			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: October 29, 2013	DRAWN BY: E.Thiessen	16	

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LEGEND

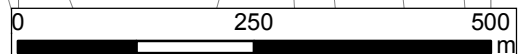
Ag ppm

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

▲ Showings and Gossans

— Elevation (20 m contours)

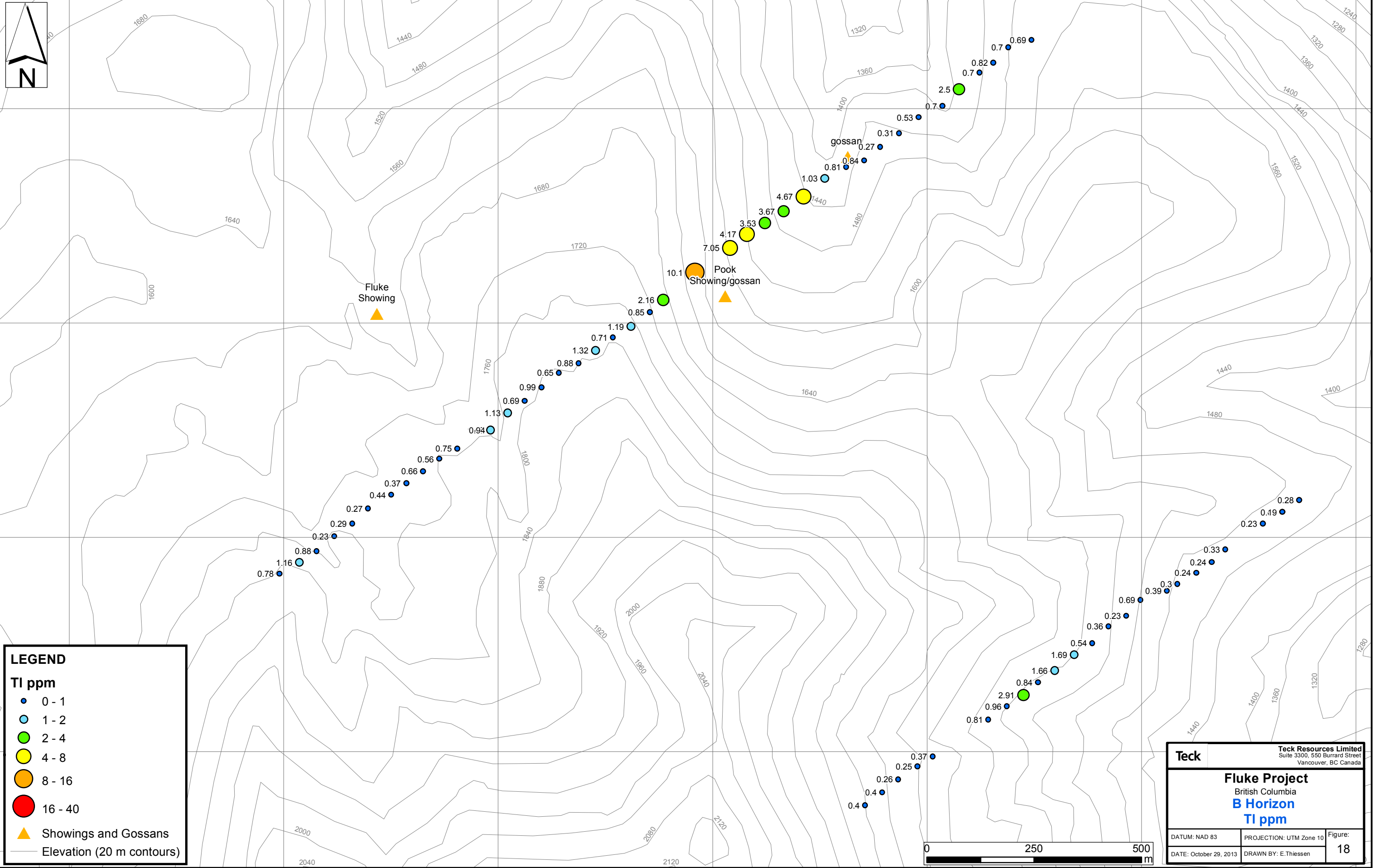
Teck		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada	
Fluke Project			
British Columbia			
B Horizon			
Ag ppm			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: October 29, 2013	DRAWN BY: E.Thiessen	17	



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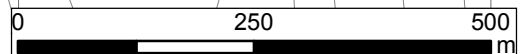
LEGEND

TI ppm

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

▲ Showings and Gossans

— Elevation (20 m contours)

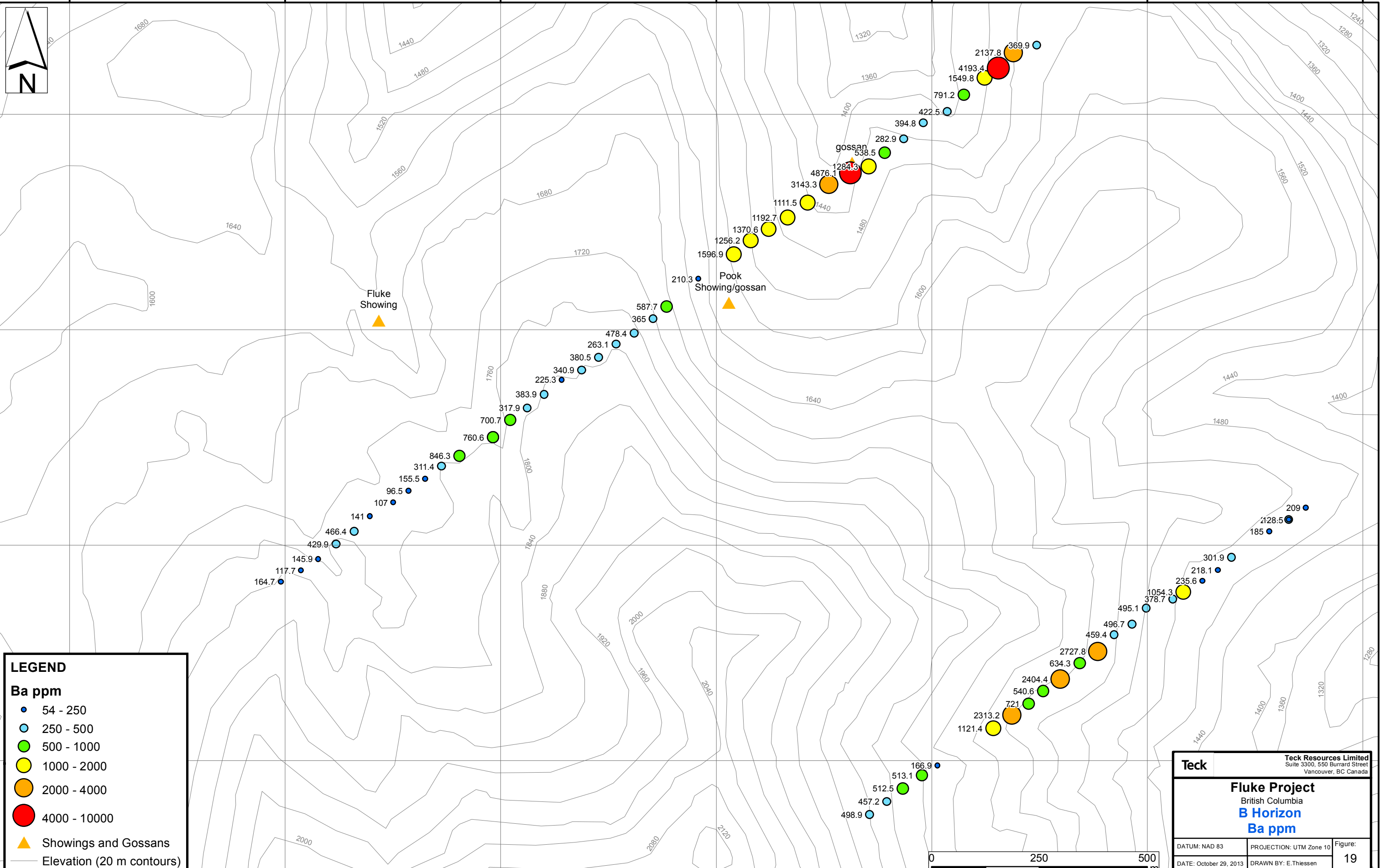


Teck		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada	
Fluke Project			
British Columbia			
B Horizon			
Ti ppm			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: October 29, 2013	DRAWN BY: E.Thiessen	18	

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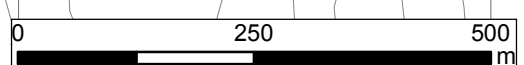
LEGEND

Ba ppm

- 54 - 250
- 250 - 500
- 500 - 1000
- 1000 - 2000
- 2000 - 4000
- 4000 - 10000

▲ Showings and Gossans

— Elevation (20 m contours)



Teck		Teck Resources Limited Suite 3300, 550 Burrard Street Vancouver, BC Canada	
Fluke Project			
British Columbia			
B Horizon			
Ba ppm			
DATUM: NAD 83	PROJECTION: UTM Zone 10	Figure:	
DATE: October 29, 2013	DRAWN BY: E.Thiessen	19	

4. CONCLUSIONS AND RECOMMENDATIONS

Collecting samples from both the A and B horizons has demonstrated that B horizon sampling is more efficient, and is a better sample medium than the A horizon for target generation on the Fluke property. This is primarily due to the more extensive development of the B (or BC) horizon allowing for complete coverage of the desired sample area. Additionally, lead anomalies in the B horizon were effective at delineating both the Fluke and Pook mineralized horizons along strike and at surface. Lead does not appear to produce false negative anomalies away from mineralization. Although it is unclear how well similar anomalies will present themselves in areas of thicker soil development or lower elevation glacial sediment cover, future soil geochemistry programs on the Fluke property are encouraged to collect material from the B horizon. The quality of B horizon data obtained here also suggests that future programs be equally diligent with QAQC protocol (e.g., clean shovels between sites, place samples in individual plastic bags, perform field sieving, and completely dry samples before shipping).

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APPENDIX I – STATEMENT OF QUALIFICATIONS

Kirsten Louise Rasmussen, Ph.D, B.Sc

I, Kirsten Rasmussen, Ph.D., B.Sc., do hereby certify that:

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

I graduated from the University of British Columbia, Canada, in May 2013 with a research-based Doctorate of Philosophy in Geology.

I graduated from the University of Calgary, Canada, in May 2004 with a Bachelor of Science in Geology.

I have been practicing my profession since graduation in 2004 as a geological scientist in Canada.

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



Kirsten Louise Rasmussen, Ph.D, B.Sc

Signed at Kitimat, British Columbia, Canada this 25th day of October, 2013.

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 Fluke 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 6th day of November, 2013.

APPENDIX II – STATEMENT OF EXPENSES

Exploration Work type	Comment	Days			Totals
Personnel/ Position	Field Days (list actual days)	Days	Rate	Subtotal*	
Geologist 1	Aug 27,	1	\$450.00	\$450.00	
Geologist 2	Aug 27,	1	\$450.00	\$450.00	
Field Assistant 1	Aug 22, 23, 26, 27	4	\$350.00	\$1,400.00	
Field Assistant 2	Aug 22, 24, 27	3	\$350.00	\$1,050.00	
Field Assistant 3	Aug 22, 24, 26	3	\$350.00	\$1,050.00	
Field Assistant 4	Aug 22, 23, 27	3	\$350.00	\$1,050.00	
				\$5,450.00	\$5,450.00
Office Studies	List Personnel (note - Office only, do not include field days)				
Literature search			\$0.00	\$0.00	
Database compilation			\$0.00	\$0.00	
Other (specify)			\$0.00	\$0.00	
				\$0.00	\$0.00
Remote Sensing	Area in Hectares / Enter total invoiced amount or list personnel				
Aerial photography			\$0.00	\$0.00	
LANDSAT	1170.27Ha		\$0.00	\$858.13	
DEM	1170.27Ha		\$0.00	\$54.32	
Other (specify)			\$0.00	\$0.00	
				\$912.46	\$912.46
Ground Exploration Surveys	Area in Hectares/List Personnel				
Geological mapping				\$0.00	
Regional				\$0.00	
Reconnaissance				\$0.00	
Prospect				\$0.00	
				\$0.00	\$0.00
Geochemical Surveying	Number of Samples	No.	Rate	Subtotal	
Stream sediment			\$0.00	\$0.00	
Soil		96	\$35.00	\$3,360.00	
Rock			\$0.00	\$0.00	
Other (specify)			\$0.00	\$0.00	
				\$3,360.00	\$3,360.00
Transportation		No.	Rate	Subtotal	
Helicopter (hours)	4 total hours (10 flights at 0.4 hrs)		\$0.00	\$5,980.00	
Fuel (litres/hour)	(200L/hr)*4hr	800.00	\$1.50	\$1,200.00	
Fixed Wing			\$0.00	\$0.00	
Other			\$0.00	\$0.00	
				\$7,180.00	\$7,180.00
Accommodation & Food	Rates per day	No.	Rate	Subtotal	
Hotel			\$0.00	\$0.00	
Camp		15	\$150.00	\$2,250.00	
Meals	included in camp rate		\$0.00	\$0.00	
				\$2,250.00	\$2,250.00
Miscellaneous					
Telephone			\$0.00	\$0.00	
Other (specify)			\$0.00	\$0.00	
				\$0.00	\$0.00
Equipment Rentals					
Field Gear			\$0.00	\$250.00	
Other (specify)			\$0.00	\$0.00	
				\$250.00	\$250.00
Freight					
Soil samples			\$0.00	\$100.00	
Other (specify)			\$0.00	\$0.00	
				\$100.00	\$100.00
TOTAL Expenditures (no tax)					\$19,502.46

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 %
2316112	BC	385101	6364350	15-25	Moist	Other	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	5	20	75	0
2316113	BC	385062	6364318	15-25	Moist	Other	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	0	25	75	0
2316114	BC	385023	6364290	15-25	Moist	Other	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	0	0	0	0
2316115	BC	384983	6364250	25-35	Moist	Other	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	0	20	80	0
2316116	BC	384983	6364250	15-25	Moist	Other	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	5	20	75	0
2316117	BC	384905	6364207	15-25	Moist	Other	None	0.2	0.3	6mm	Moist	Brown	Till	0	0	25	75	0
2316119	Ah	384863	6364183	15-25	Moist	Other	None	0.02	0.08	2mm	Moist	Black	Organic	0	20	0	20	60
2316120	BC	384863	6364183	15-25	Moist	Other	None	0.08	0.2	6mm	Moist	Brown	Colluvium	0	5	20	75	0
2316121	BC	384825	6364154	(5-15)	Moist	Fir	None	0.2	0.3	6mm	Moist	Grey-Blue	Colluvium	0	20	20	60	0
2316122	BC	384786	6364126	(5-15)	Moist	Fir	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	0	0	0	0
2316123	BC	384751	6364099	15-25	Moist	None	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	20	30	50	0
2316124	BC	385854	6364879	>35	Dry	Fir	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	10	30	60	0
2316125	BC	385891	6364911	25-35	Moist	Fir	None	0.2	0.3	6mm	Moist	Grey-Blue	Colluvium	20	0	20	60	0
2316126	Ah	385935	6364943	25-35	Moist	Fir	None	0.05	0.12	2mm	Moist	Black	Organic	0	10	0	0	90
2316127	BC	385935	6364943	25-35	Moist	Fir	None	0.12	0.3	6mm	Moist	Brown	Colluvium	10	10	60	20	0
2316128	Ah	385981	6364980	25-35	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	20	0	0	80
2316129	Bm	385981	6364980	25-35	Moist	Fir	None	0.1	0.3	6mm	Moist	Brown	Colluvium	5	20	50	25	0
2316130	BC	386783	6364032	15-25	Moist	Fir	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	20	20	60	0
2316132	Bf	386829	6364059	15-25	Moist	Fir	None	0.2	0.3	6mm	Moist	Orange	Colluvium	0	20	60	20	0
2316133	Bf	386829	6364059	15-25	Moist	Fir	None	0.2	0.3	6mm	Moist	Orange	Colluvium	0	20	60	20	0
2316134	Ah	386868	6364087	15-25	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	5	0	0	95
2316135	BC	386868	6364087	15-25	Moist	Fir	None	0.1	0.3	6mm	Moist	Brown	Colluvium	0	25	25	50	0
2316189	BC	385188	6364406	15-25	Moist	Other	None	0.1	0.2	6mm	Moist	Brown	Colluvium	0	20	20	60	0
2316190	BC	385268	6364466	15-25	Moist	Fir	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	25	25	50	0
2316191	C	385354	6364525	>35	Moist	Fir	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	0	25	75	0
2316192	C	385459	6364618	>35	Moist	Fir	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	5	20	75	0
2316193	C	385541	6364675	25-35	Moist	None	None	0.2	0.3	6mm	Moist	Grey-Blue	Colluvium	0	25	25	50	0
2316194	C	385580	6364707	25-35	Moist	None	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	0	25	75	0
2316195	C	385622	6364733	25-35	Moist	None	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	10	40	50	0
2316196	BC	385666	6364760	15-25	Dry	None	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	10	25	50	15
2316197	C	385712	6364795	(5-15)	Moist	None	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	5	20	75	0
2316198	BC	385762	6364837	(5-15)	Moist	Other	None	0.2	0.3	6mm	Moist	Brown	Colluvium	0	10	30	60	0
2316199	Ah	385812	6364864	25-35	Moist	Fir	None	0.05	0.08	2mm	Moist	Black	Organic	0	20	0	0	80
2316200	BC	385812	6364864	25-35	Moist	Fir	None	0.08	0.3	6mm	Moist	Brown	Colluvium	0	25	25	50	0
2316251	BC	384490	6363915	25-35	Moist	Other	None	0.1	0.15	6mm	Moist	Grey-Blue	Colluvium	0	20	65	15	0
2316252	C	384537	6363941	>35	Moist	None	None	0.1	0.15	6mm	Moist	Brown	Colluvium	0	5	10	85	0
2316253	C	384577	6363968	15-25	Moist	Other	None	0.1	0.2	6mm	Moist	Brown	Colluvium	0	10	20	65	5
2316254	Ah	384618	6364002	15-25	Moist	Other	None	0.03	0.06	2mm	Moist	Black	Organic	0	0	0	0	100
2316256	BC	384618	6364002	15-25	Moist	Other	None	0.06	0.15	6mm	Moist	Brown	Colluvium	0	35	50	15	10
2316258	BC	384660	6364032	(5-15)	Moist	Fir	None	0.15	0.2	6mm	Moist	Brown	Colluvium	0	30	60	10	0
2316259	Ah	384697	6364067	(5-15)	Moist	Fir	None	0.02	0.04	2mm	Moist	Black	Organic	0	0	0	0	100
2316260	BC	384697	6364067	(5-15)	Moist	Fir	None	0.05	0.15	6mm	Moist	Brown	Colluvium	0	20	50	30	0
2316261	BC	385142	6364384	15-25	Moist	Other	None	0.15	0.25	6mm	Moist	Brown	Colluvium	0	20	60	20	0
2316262	BC	385227	6364436	15-25	Moist	Other	None	0.1	0.15	6mm	Moist	Brown	Colluvium	0	20	30	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 %
2316263	BC	385310	6364492	>35	Moist	None	None	0.1	0.15	6mm	Moist	Brown	Colluvium	0	20	30	50	0
2316264	BC	385385	6364554	>35	Moist	None	None	0.1	0.15	6mm	Moist	Brown	Colluvium	0	5	15	80	0
2316266	BC	386244	6365160	15-25	Moist	Fir	None	0.15	0.25	6mm	Moist	Brown	Colluvium	0	20	30	50	0
2316267	Ah	386190	6365143	25-35	Moist	Fir	None	0.04	0.08	2mm	Moist	Black	Organic	0	1	1	0	98
2316268	BC	386190	6365143	25-35	Moist	Fir	None	0.1	0.2	6mm	Moist	Brown	Colluvium	0	20	40	40	0
2316269	Ah	386155	6365107	25-35	Moist	Fir	None	0.08	0.1	2mm	Moist	Black	Organic	0	2	2	0	96
2316270	Bm	386155	6365107	25-35	Moist	Fir	None	0.1	0.2	6mm	Moist	Brown	Colluvium	0	20	40	40	0
2316271	Ah	386123	6365084	25-35	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	2	2	0	96
2316272	BC	386123	6365084	25-35	Moist	Fir	None	0.1	0.2	6mm	Moist	Brown	Colluvium	0	20	45	35	0
2316273	Ah	386075	6365045	25-35	Moist	Fir	None	0.01	0.02	2mm	Saturated	Black	Organic	0	2	2	0	96
2316274	BC	386075	6365045	25-35	Moist	Fir	None	0.02	0.15	6mm	Moist	Brown	Colluvium	0	15	35	50	0
2316275	Ah	386036	6365006	25-35	Moist	Fir	None	0.06	0.1	2mm	Moist	Black	Organic	0	2	2	0	96
2316276	BC	386036	6365006	25-35	Moist	Fir	None	0.1	0.2	6mm	Moist	Brown	Colluvium	0	10	30	60	0
2316277	Bm	385896	6363405	25-35	Moist	Other	None	0.05	0.15	6mm	Moist	Brown	Colluvium	0	30	50	10	10
2316279	C	385978	6363466	15-25	Dry	None	None	0.1	0.2	2mm	Dry	Brown	Colluvium	0	5	40	55	0
2316280	Ah	386061	6363513	15-25	Moist	Other	None	0.05	0.15	2mm	Moist	Brown	Organic	0	2	3	0	95
2316281	BC	386143	6363575	15-25	Moist	Other	None	0.05	0.15	6mm	Moist	Brown	Colluvium	0	40	40	10	10
2316282	C	386225	6363632	25-35	Moist	Other	None	0.1	0.2	6mm	Wet	Grey-Blue	Colluvium	0	10	40	50	0
2316283	C	386298	6363689	25-35	Moist	None	None	0.2	0.3	6mm	Wet	Grey-Blue	Colluvium	0	10	40	50	0
2316284	Bm	386386	6363753	25-35	Dry	Fir	None	0.05	0.1	6mm	Moist	Brown	Colluvium	0	40	40	10	10
2316285	Ah	386465	6363817	25-35	Dry	Fir	None	0.01	0.05	6mm	Moist	Black	Organic	0	2	1	0	97
2316286	BC	386465	6363817	25-35	Dry	Fir	None	0.05	0.15	6mm	Moist	Brown	Colluvium	0	50	5	45	0
2316287	Ah	386560	6363875	25-35	Moist	Fir	None	0.05	0.08	2mm	Moist	Brown	Organic	0	5	0	0	95
2316289	BC	386560	6363875	25-35	Moist	Fir	None	0.08	0.3	6mm	Moist	Brown	Colluvium	20	0	20	60	0
2316290	Ah	386584	6363891	15-25	Moist	Fir	None	0.1	0.2	2mm	Moist	Black	Organic	0	5	0	0	95
2316291	BC	386584	6363891	15-25	Moist	Fir	None	0.2	0.3	6mm	Moist	Brown	Colluvium	25	25	0	50	0
2316292	Ah	386628	6363917	15-25	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	15	0	0	85
2316293	BC	386628	6363917	15-25	Moist	Fir	None	0.1	0.3	6mm	Moist	Brown	Colluvium	20	20	20	40	0
2316294	Ah	386664	6363942	25-35	Moist	Fir	None	0.03	0.07	2mm	Moist	Black	Organic	0	5	0	0	95
2316295	BC	386664	6363942	25-35	Moist	Fir	None	0.1	0.3	6mm	Moist	Brown	Colluvium	20	5	25	50	0
2316296	BC	386696	6363972	15-25	Moist	Fir	None	0.02	0.3	6mm	Moist	Brown	Colluvium	0	30	30	40	0
2316297	Ah	386696	6363972	15-25	Moist	Fir	None	0.3	0.4	2mm	Moist	Black	Organic	0	5	0	0	95
2316298	Ah	386743	6364000	15-25	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	0	5	0	0	95
2316299	Ah	386743	6364000	15-25	Moist	Fir	None	0.3	0.4	6mm	Moist	Tan	Organic	0	5	0	0	95
2316300	Ah	386783	6364032	15-25	Moist	Fir	None	0.05	0.1	2mm	Moist	Black	Organic	5	20	0	0	75
2316301	BC	385856	6363375	25-35	Dry	None	None	0.02	0.1	6mm	Dry	Grey-Blue	Colluvium	0	10	60	30	0
2316302	BC	385933	6363435	25-35	Dry	None	None	0.02	0.15	6mm	Dry	Brown	Colluvium	0	15	65	20	0
2316303	BC	386013	6363489	25-35	Dry	Fir	None	0.03	0.2	6mm	Dry	Brown	Colluvium	0	15	55	30	0
2316305	Ah	386095	6363552	25-35	Moist	None	None	0.02	0.06	6mm	Dry	Black	Organic	0	10	20	10	60
2316306	BC	386187	6363606	25-35	Dry	None	None	0.05	0.15	6mm	Dry	Brown	Colluvium	0	5	50	45	0
2316307	BC	386259	6363661	25-35	Dry	None	None	0.02	0.1	6mm	Dry	Grey-Blue	Colluvium	0	15	50	35	0
2316308	C	386344	6363726	25-35	Dry	Fir	None	0.02	0.1	6mm	Dry	Brown	Colluvium	0	15	45	40	0
2316309	BC	386424	6363792	25-35	Dry	Fir	None	0.02	0.15	6mm	Dry	Grey-Blue	Colluvium	0	15	65	20	0
2316310	Bm	386498	6363854	25-35	Dry	Fir	None	0.06	0.2	6mm	Dry	Brown	Colluvium	0	15	60	25	0

APPENDIX IV – SOIL GEOCHEMICAL ANALYTICAL CERTIFICATES

Acme Analytical Laboratories (Vancouver) Ltd.
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: September 03, 2013
Report Date: September 17, 2013
Page: 1 of 6

CERTIFICATE OF ANALYSIS

VAN13003475.1

CLIENT JOB INFORMATION

Project: 204700
Shipment ID: CRQ_2013_006
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.

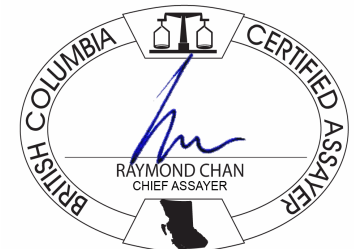
Invoice To: Teck Resources Limited
Suite 3300, 550 Burrard St.
Vancouver BC V6C 0B3
CANADA

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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Acme Analytical Laboratories (Vancouver) Ltd.
 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

Project: 204700
 Report Date: September 17, 2013

Page: 3 of 6

Part: 2 of 3

CERTIFICATE OF ANALYSIS

VAN13003475.1

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	
2316189	Soil	14.9	9.7	0.07	340.9	0.003	<20	0.58	<0.001	0.08	0.2	0.7	0.88	0.17	91	2.1	0.04	2.4	1.20	<0.1	<0.02
2316190	Soil	19.4	12.8	0.03	263.1	0.004	<20	0.50	<0.001	0.08	0.2	0.7	0.71	0.13	59	2.1	0.21	3.2	1.46	<0.1	<0.02
2316191	Soil	14.3	9.4	0.04	365.0	0.002	<20	0.40	<0.001	0.10	0.2	0.6	0.85	0.12	85	2.5	0.15	1.6	1.25	<0.1	<0.02
2316192	Soil	15.1	18.3	0.02	210.3	0.005	<20	0.64	<0.001	0.25	0.1	1.9	10.10	0.57	339	29.2	0.32	3.1	1.21	0.2	<0.02
2316193	Soil	24.2	11.7	0.03	1597	0.004	<20	0.53	<0.001	0.20	0.2	2.4	7.05	0.42	347	55.2	0.33	2.1	2.79	<0.1	0.02
2316194	Soil	11.6	15.1	0.04	1256	0.004	<20	0.91	<0.001	0.17	<0.1	4.5	4.17	0.39	251	26.0	0.24	2.1	3.80	0.3	0.08
2316195	Soil	11.0	10.8	0.03	1371	0.004	<20	0.73	<0.001	0.15	0.1	2.4	3.53	0.37	406	26.8	0.10	1.9	3.64	0.2	0.05
2316196	Soil	13.1	11.6	0.05	1193	0.004	<20	0.54	0.001	0.19	<0.1	2.3	3.67	0.40	184	18.6	0.21	1.4	2.82	0.2	<0.02
2316197	Soil	21.2	9.5	0.06	1112	0.004	<20	0.42	0.002	0.13	0.2	2.1	4.67	0.23	168	13.1	0.19	1.1	1.83	0.2	<0.02
2316198	Soil	11.5	11.3	1.21	3143	0.003	<20	0.73	0.006	0.06	0.2	1.2	1.03	0.11	148	3.5	0.13	1.9	1.49	<0.1	0.05
2316199	Soil	6.0	47.4	0.05	2501	0.005	<20	1.50	<0.001	0.07	0.2	1.1	0.76	0.27	418	40.4	0.37	1.4	0.56	0.2	<0.02
2316200	Soil	7.1	61.2	0.06	4876	0.006	<20	2.26	<0.001	0.07	0.2	1.7	0.81	0.19	492	40.7	0.52	2.0	0.59	<0.1	<0.02
2316251	Soil	17.2	11.8	0.14	164.7	0.004	<20	0.48	<0.001	0.17	<0.1	2.3	0.78	0.03	113	2.4	0.05	1.3	1.01	<0.1	0.02
2316252	Soil	11.8	14.0	0.21	117.7	0.004	<20	0.37	<0.001	0.18	<0.1	3.5	1.16	0.17	213	3.0	0.07	1.0	1.63	0.1	0.04
2316253	Soil	11.9	14.7	0.25	145.9	0.004	<20	0.47	<0.001	0.14	<0.1	1.5	0.88	0.07	164	2.1	0.09	1.4	1.51	<0.1	0.04
2316254	Soil	7.9	10.1	0.21	528.6	0.004	<20	0.32	0.001	0.12	<0.1	1.5	0.21	0.13	145	0.8	0.05	1.2	0.54	<0.1	0.06
2316255	Soil	8.5	11.9	0.22	520.2	0.004	<20	0.33	<0.001	0.14	<0.1	1.8	0.19	0.13	184	0.8	0.09	1.3	0.63	<0.1	0.06
2316256	Soil	23.3	18.1	0.46	429.9	0.004	<20	0.83	<0.001	0.16	<0.1	4.1	0.23	0.04	123	1.1	0.05	2.5	1.04	<0.1	0.04
2316257	Soil	22.2	18.6	0.53	419.4	0.004	<20	0.78	<0.001	0.16	<0.1	4.2	0.22	0.04	104	1.3	0.05	2.4	1.08	<0.1	0.04
2316258	Soil	14.1	15.3	0.12	466.4	0.002	<20	0.71	<0.001	0.15	<0.1	0.6	0.29	0.05	46	1.2	0.03	3.4	1.14	<0.1	<0.02
2316259	Soil	7.7	10.6	0.17	200.7	0.004	<20	0.30	0.001	0.12	<0.1	1.1	0.17	0.12	141	0.6	<0.02	1.3	0.45	0.1	<0.02
2316260	Soil	19.5	13.6	0.18	141.0	0.006	<20	0.74	<0.001	0.12	<0.1	1.3	0.27	<0.02	35	0.6	<0.02	3.2	1.01	<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.



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Project: 204700

Report Date: September 17, 2013

Page: 4 of 6

Part: 1 of 3

CERTIFICATE OF ANALYSIS

VAN13003475.1

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
2316261	Soil	20.82	28.48	29.97	121.7	281	26.2	3.7	63	2.31	17.8	1.8	<0.2	<0.1	26.1	0.25	2.12	0.25	67	0.02	0.102
2316262	Soil	44.99	27.43	38.07	77.3	545	19.2	2.1	25	2.13	25.1	5.0	<0.2	0.3	56.3	0.20	2.16	0.32	58	0.02	0.135
2316263	Soil	48.65	31.66	33.70	98.9	636	28.1	5.4	488	2.91	27.8	2.6	2.9	1.6	71.1	0.17	3.97	0.40	67	0.05	0.062
2316264	Soil	54.92	34.81	80.78	378.7	793	177.2	83.0	3133	5.90	34.7	6.3	<0.2	1.3	37.0	2.93	4.29	0.28	106	0.03	0.113
2316265 BAL-1	Rock Pulp	1.30	18.53	25.72	85.4	158	35.7	7.3	252	1.88	4.2	1.6	<0.2	1.5	32.6	1.94	0.30	0.12	47	0.71	0.060
2316266	Soil	46.81	16.48	28.62	97.8	924	13.0	1.6	15	1.35	18.3	0.8	<0.2	0.1	33.9	0.26	3.08	0.32	111	0.02	0.053
2316267	Soil	3.30	4.80	5.42	35.0	8633	6.9	0.7	25	0.23	0.7	0.2	3.5	0.3	30.6	0.70	0.51	0.34	11	0.31	0.061
2316268	Soil	32.77	23.15	31.89	104.0	1182	23.2	3.5	48	3.58	25.2	1.5	1.8	0.8	66.1	0.53	4.43	0.31	113	0.04	0.187
2316269	Soil	6.29	22.22	12.81	55.3	4986	14.7	1.5	14	0.61	2.6	0.8	<0.2	<0.1	21.2	3.08	1.28	0.10	46	0.10	0.073
2316270	Soil	34.67	28.05	25.80	200.7	2117	29.2	2.8	36	3.94	36.1	2.4	<0.2	2.6	82.1	0.91	7.84	0.25	296	0.02	0.252
2316271	Soil	3.52	7.93	5.87	45.9	1518	11.8	0.9	21	0.24	0.9	0.2	1.9	0.3	52.3	1.48	0.73	0.13	12	0.55	0.107
2316272	Soil	24.45	37.71	22.35	162.6	2807	27.9	4.4	39	1.86	12.8	2.1	1.1	0.8	63.4	2.19	5.56	0.21	116	0.09	0.101
2316273	Soil	20.27	19.37	13.39	136.3	4237	24.9	1.3	217	0.82	10.8	1.4	6.1	0.7	58.7	2.49	6.49	0.66	49	0.44	0.199
2316274	Soil	72.26	67.34	28.30	416.5	3608	79.7	5.0	50	4.10	66.2	6.6	3.1	1.3	163.5	1.38	20.37	0.37	511	0.04	0.300
2316275	Soil	9.49	9.84	9.38	83.1	4275	15.2	1.4	37	0.45	4.7	0.4	3.4	0.5	26.1	1.58	2.18	0.37	32	0.19	0.092
2316276	Soil	26.59	27.85	23.81	211.2	1709	33.7	4.0	35	1.63	17.5	1.4	2.0	0.3	40.7	0.56	6.94	0.22	184	0.01	0.059
2316277	Soil	10.98	21.91	25.29	181.9	591	30.2	4.5	390	1.46	7.9	1.4	3.1	1.2	40.0	3.14	2.18	0.23	23	1.64	0.153
2316278	Soil	12.83	23.37	29.69	177.9	756	30.8	5.4	527	1.65	8.8	1.8	2.8	1.3	43.6	3.17	2.60	0.20	26	1.57	0.164
2316279	Soil	8.72	41.04	18.21	231.8	766	66.5	9.2	332	2.05	7.5	1.5	1.7	2.4	40.3	1.73	2.14	0.17	34	2.65	0.122
2316280	Soil	9.26	15.33	14.48	174.5	451	22.2	5.7	1499	1.16	4.3	1.0	1.5	1.0	23.6	2.82	1.40	0.12	20	1.37	0.202
2316281	Soil	24.98	31.36	33.00	241.0	962	53.1	14.3	452	4.66	31.0	5.1	2.1	1.4	38.9	1.87	4.62	0.17	62	0.59	0.135
2316282	Soil	38.06	12.61	139.4	77.9	2608	10.6	0.7	12	1.44	25.1	2.3	1.5	0.8	22.3	0.29	12.70	0.17	108	0.03	0.051
2316283	Soil	57.30	10.91	81.11	43.5	1881	9.5	0.6	9	1.23	24.8	2.5	1.2	0.2	24.7	0.15	8.53	0.14	119	0.01	0.073
2316284	Soil	22.20	47.26	19.90	209.1	2261	54.0	3.2	64	2.44	18.9	5.5	1.7	<0.1	50.3	0.98	4.07	0.15	225	0.03	0.184
2316285	Soil	6.44	8.87	8.67	39.0	1204	7.7	0.8	27	0.30	2.7	0.3	1.6	0.4	22.3	0.36	0.92	0.13	18	0.41	0.120
2316286	Soil	8.19	10.32	8.93	65.1	749	9.0	1.1	12	0.74	5.5	0.5	0.8	1.0	12.4	0.09	0.84	0.12	67	0.02	0.052
2316287	Soil	4.96	28.07	7.60	81.5	4773	9.4	1.2	67	0.45	3.2	0.2	4.3	0.6	14.5	0.62	0.81	0.14	14	0.24	0.117
2316288 BAL-1	Rock Pulp	1.27	17.28	23.02	80.0	162	33.2	6.8	296	1.91	4.5	1.4	0.6	1.3	30.7	1.91	0.36	0.10	48	0.71	0.057
2316289	Soil	8.10	35.88	22.71	178.7	2124	25.8	4.4	28	2.21	13.3	0.8	0.4	0.9	31.9	0.36	1.24	0.21	83	0.02	0.065
2316290	Soil	3.18	13.17	5.14	42.1	8614	10.3	0.9	26	0.25	1.4	0.1	2.9	0.3	30.7	0.32	0.50	0.09	6	0.26	0.097

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Page: 4 of 6

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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
2316261	Soil	20.9	12.1	0.06	225.3	0.004	<20	0.68	0.002	0.09	<0.1	0.6	0.65	0.11	26	2.0	0.07	3.7	1.74	<0.1	<0.02
2316262	Soil	28.8	12.7	0.12	380.5	0.005	<20	0.71	0.003	0.12	0.2	0.8	1.32	0.21	73	2.1	0.12	3.1	1.14	<0.1	<0.02
2316263	Soil	24.4	9.1	0.41	478.4	0.002	<20	0.68	0.002	0.13	<0.1	1.6	1.19	0.15	75	4.1	0.30	1.7	1.34	<0.1	<0.02
2316264	Soil	22.2	9.2	0.06	587.7	0.004	<20	0.62	<0.001	0.11	0.1	1.3	2.16	0.10	46	5.3	0.15	2.7	2.31	<0.1	<0.02
2316265 BAL-1	Rock Pulp	19.5	31.7	0.18	66.3	0.003	<20	1.39	0.007	0.08	<0.1	4.5	0.36	0.06	107	1.4	<0.02	3.8	0.73	<0.1	0.08
2316266	Soil	23.4	13.8	0.03	369.9	0.003	<20	0.53	0.004	0.08	0.2	0.6	0.69	0.10	17	3.6	0.19	4.2	0.59	<0.1	<0.02
2316267	Soil	2.5	4.9	0.03	759.5	0.003	<20	0.14	0.003	0.04	<0.1	0.7	0.15	0.10	160	0.7	0.07	0.6	0.43	<0.1	0.03
2316268	Soil	14.8	22.0	0.14	2138	0.006	<20	1.09	0.013	0.09	0.1	1.3	0.70	0.20	67	4.5	0.13	4.0	0.63	0.1	0.03
2316269	Soil	13.1	14.6	0.02	1567	0.003	<20	0.47	0.002	0.04	<0.1	0.5	0.14	0.06	89	1.9	<0.02	2.2	0.46	<0.1	<0.02
2316270	Soil	19.7	29.6	0.09	4193	0.013	<20	1.07	<0.001	0.07	0.2	2.0	0.82	0.17	150	7.1	0.19	4.7	0.74	<0.1	0.04
2316271	Soil	1.7	10.5	0.05	640.3	0.003	<20	0.15	0.001	0.07	<0.1	0.6	0.14	0.15	203	1.8	<0.02	0.6	0.49	<0.1	<0.02
2316272	Soil	11.9	20.9	0.05	1550	0.003	<20	0.85	0.005	0.07	<0.1	1.6	0.70	0.10	109	6.7	0.16	4.0	0.95	<0.1	0.02
2316273	Soil	4.5	17.4	0.05	566.5	0.002	<20	0.22	0.004	0.10	0.1	1.1	0.68	0.19	331	6.4	0.06	0.9	0.98	<0.1	<0.02
2316274	Soil	23.3	57.2	0.06	791.2	0.003	<20	0.98	0.008	0.11	0.3	2.4	2.50	0.22	260	18.6	0.36	5.3	0.96	0.1	<0.02
2316275	Soil	3.7	17.7	0.03	454.5	0.003	<20	0.21	0.003	0.06	<0.1	1.0	0.21	0.12	153	2.7	0.04	1.0	0.67	<0.1	<0.02
2316276	Soil	18.9	20.1	0.02	422.5	0.002	<20	0.45	0.002	0.06	<0.1	0.5	0.70	0.09	38	7.6	0.24	4.9	0.74	<0.1	<0.02
2316277	Soil	6.4	17.6	0.19	457.2	0.002	<20	0.29	0.007	0.13	<0.1	1.3	0.40	0.24	98	1.9	0.03	1.0	0.48	<0.1	0.12
2316278	Soil	7.1	11.2	0.21	476.4	0.002	<20	0.34	0.008	0.13	<0.1	1.4	0.51	0.25	103	2.4	0.04	1.1	0.54	<0.1	0.12
2316279	Soil	14.6	30.3	1.12	513.1	0.002	<20	0.43	0.003	0.14	<0.1	3.4	0.25	0.06	97	2.5	0.03	1.6	0.91	<0.1	0.03
2316280	Soil	7.5	9.2	0.27	361.7	0.002	<20	0.26	0.003	0.12	<0.1	1.3	0.28	0.21	88	1.4	0.03	0.8	0.49	<0.1	0.07
2316281	Soil	10.4	10.7	0.14	1121	0.001	<20	0.69	0.003	0.10	<0.1	1.9	0.81	0.18	131	4.1	0.06	1.3	0.90	<0.1	0.06
2316282	Soil	19.6	10.7	0.02	721.0	0.001	<20	0.35	<0.001	0.17	<0.1	0.7	2.91	0.33	25	11.4	0.15	2.2	1.28	<0.1	<0.02
2316283	Soil	20.7	12.0	0.03	2404	0.001	<20	0.48	<0.001	0.10	<0.1	0.4	1.66	0.12	45	7.6	0.10	2.5	1.92	<0.1	<0.02
2316284	Soil	10.9	20.5	0.05	2728	0.003	<20	2.21	<0.001	0.06	0.2	0.4	0.54	0.15	114	3.1	0.06	4.8	1.15	<0.1	<0.02
2316285	Soil	2.8	8.6	0.07	1412	0.002	<20	0.22	0.003	0.08	<0.1	0.4	0.16	0.19	165	0.6	<0.02	0.6	0.84	<0.1	<0.02
2316286	Soil	38.2	16.8	0.03	496.7	<0.001	<20	0.52	<0.001	0.07	<0.1	0.6	0.23	<0.02	11	0.5	0.12	3.7	1.57	<0.1	<0.02
2316287	Soil	3.5	7.8	0.05	410.9	0.001	<20	0.24	0.003	0.09	<0.1	0.6	0.24	0.11	263	0.7	<0.02	1.2	1.38	<0.1	0.03
2316288 BAL-1	Rock Pulp	18.7	32.2	0.18	66.9	0.002	<20	1.31	0.009	0.07	<0.1	4.1	0.31	0.06	93	1.2	<0.02	3.8	0.63	<0.1	0.06
2316289	Soil	17.9	14.3	0.03	378.7	0.001	<20	0.86	0.001	0.06	<0.1	1.0	0.39	0.05	32	1.1	0.04	5.0	1.55	<0.1	<0.02
2316290	Soil	1.5	8.1	0.05	843.2	0.002	<20	0.13	0.004	0.09	<0.1	0.5	0.12	0.15	363	0.5	<0.02	0.4	1.63	<0.1	0.03

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

VAN13003475.1

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
2316261	Soil	0.22	11.7	0.5	<0.05	0.1	3.94	38.0	0.03	<1	0.2	2.5	<10	<2	15.3
2316262	Soil	0.27	11.7	0.5	<0.05	0.2	9.56	51.8	0.03	7	0.2	3.3	<10	5	21.1
2316263	Soil	0.03	8.4	0.3	<0.05	0.4	8.71	45.7	0.03	<1	0.3	8.5	21	<2	8.1
2316264	Soil	0.18	12.6	0.4	<0.05	0.2	8.10	41.9	0.03	<1	0.3	2.3	<10	3	12.5
2316265 BAL-1	Rock Pulp	0.40	8.4	0.7	<0.05	2.3	20.52	36.1	0.03	5	0.7	10.5	<10	<2	13.0
2316266	Soil	0.05	6.5	0.9	<0.05	0.3	2.22	42.6	<0.02	2	0.1	1.1	<10	3	9.3
2316267	Soil	0.08	2.0	0.2	<0.05	0.7	0.48	4.4	<0.02	<1	<0.1	0.6	<10	<2	85.8
2316268	Soil	0.75	9.8	0.5	<0.05	0.5	3.07	27.2	0.03	2	0.2	6.3	<10	3	16.6
2316269	Soil	0.13	2.6	0.4	<0.05	<0.1	1.67	23.2	<0.02	<1	0.2	0.6	<10	4	51.3
2316270	Soil	1.27	10.4	0.7	<0.05	0.5	4.08	33.4	0.05	<1	0.2	4.2	<10	<2	11.1
2316271	Soil	0.05	3.1	0.1	<0.05	0.9	0.62	3.4	<0.02	5	<0.1	0.4	<10	<2	88.6
2316272	Soil	0.27	6.0	0.6	<0.05	0.8	4.22	20.9	0.02	<1	0.5	4.7	<10	6	23.9
2316273	Soil	0.21	7.4	0.6	<0.05	0.7	2.78	6.0	0.02	4	0.1	0.7	<10	<2	82.8
2316274	Soil	0.38	8.6	0.9	<0.05	1.1	8.51	30.5	0.06	6	0.4	2.7	<10	4	20.0
2316275	Soil	0.16	3.8	0.3	<0.05	1.0	0.96	6.2	<0.02	5	<0.1	0.5	<10	<2	78.8
2316276	Soil	0.10	5.6	0.9	<0.05	<0.1	3.60	29.8	0.02	1	0.2	1.1	<10	<2	11.0
2316277	Soil	0.13	6.7	0.2	<0.05	3.9	6.93	11.5	<0.02	<1	0.2	3.5	<10	3	48.8
2316278	Soil	0.17	7.8	0.3	<0.05	4.5	8.74	13.2	<0.02	<1	0.5	4.3	<10	<2	43.5
2316279	Soil	0.05	7.9	0.2	<0.05	1.2	16.38	27.3	0.03	2	0.6	10.1	<10	<2	12.8
2316280	Soil	0.07	5.5	0.2	<0.05	3.0	6.14	18.1	<0.02	2	0.2	3.1	<10	<2	46.8
2316281	Soil	0.13	8.7	0.2	<0.05	2.6	13.36	19.3	<0.02	6	0.3	4.2	11	3	22.9
2316282	Soil	<0.02	12.3	0.5	<0.05	<0.1	2.69	32.6	0.02	3	0.2	1.2	<10	<2	8.3
2316283	Soil	0.08	10.8	0.4	<0.05	<0.1	2.77	33.2	<0.02	2	0.1	2.0	<10	<2	8.3
2316284	Soil	0.63	8.6	0.5	<0.05	0.3	4.70	19.1	0.04	<1	0.8	3.3	<10	<2	36.8
2316285	Soil	0.11	5.7	0.2	<0.05	0.7	0.67	4.9	<0.02	<1	0.1	0.5	<10	3	83.4
2316286	Soil	0.03	7.2	0.8	<0.05	0.2	2.20	65.6	<0.02	<1	0.2	1.3	<10	<2	11.7
2316287	Soil	0.11	6.8	0.2	<0.05	0.7	0.97	6.5	<0.02	<1	<0.1	0.6	<10	3	75.9
2316288 BAL-1	Rock Pulp	0.25	7.3	0.6	<0.05	1.9	20.71	31.5	<0.02	2	0.8	10.4	<10	<2	12.3
2316289	Soil	0.26	7.3	0.7	<0.05	0.2	4.26	34.4	<0.02	<1	0.3	1.1	<10	<2	14.6
2316290	Soil	0.06	5.9	0.1	<0.05	1.0	0.56	2.8	<0.02	<1	<0.1	0.4	<10	4	89.2



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Project: 204700
 Report Date: September 17, 2013

Page: 1 of 2 Part: 1 of 3

QUALITY CONTROL REPORT

VAN13003475.1

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																					
2316171	Soil	7.67	15.64	13.96	202.7	63	39.4	6.5	167	2.39	7.2	0.7	0.3	0.4	13.0	1.44	1.24	0.14	74	0.30	0.054
REP 2316171	QC																				
2316182	Soil	6.69	14.25	9.84	84.2	233	15.2	4.2	1963	0.54	2.2	0.3	0.4	0.2	19.1	1.94	0.72	0.06	20	1.04	0.177
REP 2316182	QC	6.49	15.26	10.95	94.6	261	16.4	4.6	1985	0.55	2.2	0.3	0.3	0.2	19.5	2.07	0.73	0.07	20	1.05	0.176
2316257	Soil	4.54	39.68	20.35	225.6	1094	50.6	11.6	202	3.49	5.8	1.0	1.4	3.2	10.0	0.47	1.14	0.22	35	0.39	0.055
REP 2316257	QC																				
2316268	Soil	32.77	23.15	31.89	104.0	1182	23.2	3.5	48	3.58	25.2	1.5	1.8	0.8	66.1	0.53	4.43	0.31	113	0.04	0.187
REP 2316268	QC	31.87	23.29	31.74	103.8	1206	22.9	3.3	47	3.56	24.8	1.5	1.4	0.9	67.3	0.48	4.43	0.32	113	0.03	0.184
2316271	Soil	3.52	7.93	5.87	45.9	1518	11.8	0.9	21	0.24	0.9	0.2	1.9	0.3	52.3	1.48	0.73	0.13	12	0.55	0.107
REP 2316271	QC	3.76	7.45	5.93	48.9	1546	12.4	0.9	24	0.24	1.5	0.2	3.8	0.3	53.4	1.34	0.65	0.09	12	0.56	0.097
2316293	Soil	6.62	23.33	20.52	119.2	465	22.6	7.5	71	2.30	10.8	0.5	0.8	0.1	13.9	0.32	1.01	0.21	54	0.03	0.062
REP 2316293	QC																				
2317404	Soil	124.9	66.83	116.1	787.0	3437	97.7	3.1	116	2.48	35.6	8.0	3.0	3.2	133.0	11.07	32.95	0.15	363	0.32	0.101
REP 2317404	QC	123.6	63.90	116.7	740.5	3476	99.3	2.8	108	2.45	34.3	8.6	2.9	3.3	145.0	11.78	35.34	0.17	361	0.29	0.106
2317429	Soil	13.63	15.83	23.88	121.8	376	29.5	2.4	131	1.08	6.0	1.2	<0.2	<0.1	20.8	0.36	2.13	0.14	105	0.02	0.067
REP 2317429	QC																				
2317440	Soil	77.51	33.35	22.64	568.4	368	156.2	6.2	235	1.80	20.8	5.3	1.0	0.8	23.8	4.01	8.80	0.14	153	1.29	0.125
REP 2317440	QC	77.46	35.10	23.28	579.6	385	156.8	6.0	237	1.79	20.6	5.5	2.1	0.8	24.4	4.01	8.87	0.13	154	1.31	0.124
2317450	Soil	7.54	18.34	7.20	428.5	175	15.8	2.8	1633	0.30	1.5	0.3	0.8	0.3	66.6	5.27	0.66	0.17	9	2.38	0.186
REP 2317450	QC	7.51	17.42	7.52	407.7	178	14.8	2.8	1612	0.29	1.4	0.3	0.9	0.2	69.8	5.24	0.63	0.10	8	2.37	0.185
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	12.60	97.50	127.2	296.4	1829	41.5	7.7	588	2.34	24.3	2.6	101.8	5.7	63.7	2.58	4.52	5.57	40	0.70	0.080
STD DS9	Standard	13.73	101.2	130.5	301.3	1848	41.6	8.1	629	2.42	23.8	2.7	112.2	5.7	65.1	2.45	5.04	5.63	41	0.73	0.086

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QUALITY CONTROL REPORT

VAN13003475.1

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																					
2316171	Soil	15.6	19.8	0.21	286.3	0.004	<20	1.00	0.002	0.09	<0.1	1.2	0.29	0.03	14	0.7	<0.02	4.0	1.35	<0.1	<0.02
REP 2316171	QC																				
2316182	Soil	3.3	11.8	0.15	462.6	0.002	<20	0.29	0.003	0.17	<0.1	0.4	0.14	0.13	109	0.6	<0.02	0.9	0.70	<0.1	<0.02
REP 2316182	QC	3.4	11.6	0.14	494.2	0.002	<20	0.27	0.002	0.17	<0.1	0.3	0.16	0.13	127	0.6	<0.02	1.1	0.74	<0.1	<0.02
2316257	Soil	22.2	18.6	0.53	419.4	0.004	<20	0.78	<0.001	0.16	<0.1	4.2	0.22	0.04	104	1.3	0.05	2.4	1.08	<0.1	0.04
REP 2316257	QC																				
2316268	Soil	14.8	22.0	0.14	2138	0.006	<20	1.09	0.013	0.09	0.1	1.3	0.70	0.20	67	4.5	0.13	4.0	0.63	0.1	0.03
REP 2316268	QC	14.6	23.6	0.14	2026	0.007	<20	1.07	0.013	0.09	0.2	1.2	0.70	0.20	72	4.6	0.08	3.8	0.63	<0.1	<0.02
2316271	Soil	1.7	10.5	0.05	640.3	0.003	<20	0.15	0.001	0.07	<0.1	0.6	0.14	0.15	203	1.8	<0.02	0.6	0.49	<0.1	<0.02
REP 2316271	QC	1.8	12.3	0.05	651.1	0.003	<20	0.15	0.002	0.07	<0.1	0.8	0.16	0.15	242	1.0	0.14	0.5	0.45	<0.1	0.03
2316293	Soil	8.0	12.5	0.03	235.6	0.002	<20	0.78	0.002	0.05	<0.1	0.6	0.24	0.03	20	0.7	0.04	5.2	1.49	<0.1	<0.02
REP 2316293	QC																				
2317404	Soil	28.5	18.5	0.04	666.9	0.002	<20	0.32	0.001	0.17	0.7	3.4	2.90	0.44	622	17.2	0.35	2.6	0.66	<0.1	<0.02
REP 2317404	QC	28.1	17.6	0.04	664.2	0.002	<20	0.35	0.002	0.17	0.5	3.3	2.92	0.44	591	17.7	0.26	2.5	0.65	<0.1	<0.02
2317429	Soil	12.3	12.0	0.03	189.1	0.002	<20	0.26	<0.001	0.09	0.1	0.2	0.52	0.08	28	1.4	0.05	2.0	0.58	<0.1	<0.02
REP 2317429	QC																				
2317440	Soil	15.8	10.8	0.17	421.5	0.001	<20	0.33	0.001	0.07	0.2	1.7	0.79	0.13	83	4.9	0.10	1.1	0.35	<0.1	0.06
REP 2317440	QC	16.0	10.6	0.18	427.1	0.001	<20	0.34	0.002	0.07	0.2	1.6	0.75	0.13	111	4.8	0.10	1.1	0.36	<0.1	0.08
2317450	Soil	1.3	4.3	0.18	809.9	0.003	<20	0.14	0.003	0.11	<0.1	0.4	0.13	0.24	151	0.7	<0.02	0.4	0.22	<0.1	0.03
REP 2317450	QC	1.2	4.1	0.18	803.7	0.002	<20	0.13	0.002	0.10	<0.1	0.4	0.13	0.24	166	0.6	<0.02	0.3	0.22	<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	11.2	114.2	0.62	318.1	0.093	<20	0.92	0.081	0.39	2.7	2.4	5.21	0.17	185	5.4	4.85	4.6	2.45	0.1	0.05
STD DS9	Standard	12.8	123.5	0.64	356.9	0.103	<20	0.96	0.083	0.40	2.5	2.3	5.55	0.17	185	5.6	4.71	4.5	2.52	<0.1	0.06

QUALITY CONTROL REPORT

VAN13003475.1

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	0.1
Pulp Duplicates															
2316171	Soil	0.28	11.3	0.4	<0.05	0.1	4.99	33.0	0.02	1	0.5	13.2	<10	<2	10.7
REP 2316171	QC														10.8
2316182	Soil	0.12	8.0	<0.1	<0.05	0.4	1.28	6.0	<0.02	2	0.2	1.1	<10	<2	68.2
REP 2316182	QC	0.12	8.4	0.1	<0.05	0.3	1.27	6.4	<0.02	<1	0.3	1.2	<10	<2	
2316257	Soil	0.20	11.4	0.3	<0.05	0.9	12.93	45.5	0.05	1	0.4	12.1	<10	5	8.9
REP 2316257	QC														9.0
2316268	Soil	0.75	9.8	0.5	<0.05	0.5	3.07	27.2	0.03	2	0.2	6.3	<10	3	16.6
REP 2316268	QC	0.80	9.9	0.5	<0.05	0.6	3.31	27.4	<0.02	2	0.2	6.3	13	7	
2316271	Soil	0.05	3.1	0.1	<0.05	0.9	0.62	3.4	<0.02	5	<0.1	0.4	<10	<2	88.6
REP 2316271	QC	0.10	3.7	0.3	<0.05	0.7	0.60	3.1	<0.02	<1	<0.1	0.4	<10	<2	
2316293	Soil	0.26	8.3	0.7	<0.05	0.2	1.87	14.8	0.03	<1	0.2	0.9	<10	3	14.1
REP 2316293	QC														14.3
2317404	Soil	0.04	8.4	1.3	<0.05	0.9	23.12	38.3	0.04	8	0.4	5.0	<10	4	9.4
REP 2317404	QC	0.05	9.2	1.4	<0.05	0.8	25.87	37.6	0.05	12	0.4	5.0	<10	6	
2317429	Soil	<0.02	7.3	0.5	<0.05	<0.1	2.75	18.4	<0.02	<1	0.2	2.3	<10	<2	7.2
REP 2317429	QC														7.7
2317440	Soil	0.49	3.8	0.2	<0.05	3.3	24.33	20.5	0.03	1	0.7	2.9	<10	2	31.9
REP 2317440	QC	0.49	4.0	0.3	<0.05	3.5	24.84	20.3	0.02	9	0.8	3.0	<10	<2	
2317450	Soil	0.06	2.5	0.1	<0.05	0.8	0.85	2.6	<0.02	2	<0.1	0.6	<10	3	83.8
REP 2317450	QC	0.07	2.5	<0.1	<0.05	0.9	0.88	2.7	<0.02	1	<0.1	0.6	<10	<2	84.1
Reference Materials															
STD DOLOMITE-2	Standard														46.0
STD DOLOMITE-2	Standard														45.9
STD DOLOMITE-2	Standard														46.0
STD DOLOMITE-2	Standard														45.8
STD DOLOMITE-2	Standard														45.4
STD DS9	Standard	0.99	34.7	6.7	<0.05	1.3	5.39	20.5	2.25	57	6.0	27.8	113	359	
STD DS9	Standard	0.93	34.1	6.4	<0.05	1.3	5.59	23.7	1.94	59	5.4	27.1	114	358	

QUALITY CONTROL REPORT

VAN13003475.1

		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
STD DS9	Standard	14.13	105.7	115.9	314.5	1827	41.8	7.9	619	2.44	24.6	2.7	108.0	5.6	62.9	2.37	4.82	5.27	42	0.76	0.086
STD DS9	Standard	12.79	113.8	136.1	323.4	2126	42.3	7.5	600	2.48	24.4	2.6	111.5	6.8	70.0	2.56	4.51	6.74	40	0.74	0.088
STD DS9	Standard	12.33	109.4	126.7	322.5	1820	40.7	7.3	571	2.35	27.5	2.7	114.5	6.5	72.2	2.44	5.05	5.99	39	0.71	0.083
STD DS9	Standard	13.98	118.0	138.6	331.2	1958	43.6	8.2	612	2.40	26.4	3.0	118.6	7.0	77.5	2.60	5.61	6.27	41	0.75	0.090
STD OREAS45EA	Standard	1.45	705.6	13.97	27.5	261	392.6	51.4	395	23.79	9.2	1.6	54.4	10.1	3.3	0.02	0.16	0.21	305	0.03	0.029
STD OREAS45EA	Standard	1.18	705.3	12.84	28.6	261	405.4	53.7	399	23.65	10.7	1.7	51.2	9.8	3.2	0.02	0.16	0.20	306	0.04	0.027
STD OREAS45EA	Standard	1.47	720.1	14.81	28.9	300	414.2	50.0	396	23.23	10.1	1.7	58.2	10.4	3.6	0.02	0.15	0.21	337	0.03	0.028
STD OREAS45EA	Standard	1.52	727.1	15.70	27.6	261	424.5	52.0	351	23.90	9.3	2.1	54.0	11.9	3.6	0.02	0.12	0.25	347	0.05	0.029
STD OREAS45EA	Standard	1.46	689.2	14.49	30.4	294	383.7	44.8	396	23.93	9.8	1.8	61.9	11.1	3.8	0.02	0.23	0.41	304	0.04	0.026
STD OREAS45EA	Standard	1.46	722.3	13.90	25.6	282	409.8	54.1	389	24.57	10.3	1.7	56.3	10.2	3.7	0.04	0.27	0.39	315	0.04	0.028
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	0.24	<0.01	<0.1	2	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
BLK	Blank	<0.01	<0.01	<0.01	0.3	<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	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	<0.01	<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	<0.01	0.03	<0.1	10	<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	0.05	<0.1	<2	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



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 Vancouver BC V6C 0B3 CANADA

Project: 204700
 Report Date: September 17, 2013

Page: 2 of 2

Part: 2 of 3

QUALITY CONTROL REPORT

VAN13003475.1

		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	12.6	125.8	0.65	333.2	0.102	<20	1.01	0.091	0.41	2.7	2.5	4.98	0.17	202	5.3	4.87	4.7	2.46	0.1	0.08
STD DS9	Standard	12.7	115.8	0.65	341.6	0.109	<20	0.99	0.087	0.42	2.9	2.8	5.54	0.17	215	5.3	4.43	4.8	2.48	<0.1	0.07
STD DS9	Standard	12.3	115.5	0.61	330.9	0.109	<20	0.93	0.082	0.40	3.3	2.2	5.32	0.17	230	5.5	5.25	4.8	2.36	0.1	0.07
STD DS9	Standard	14.4	120.4	0.64	344.0	0.117	<20	1.01	0.089	0.42	2.9	2.3	5.70	0.17	188	4.8	5.41	4.0	2.55	0.5	0.05
STD OREAS45EA	Standard	6.3	914.0	0.10	148.2	0.079	<20	3.16	0.025	0.05	<0.1	83.8	0.05	0.04	12	0.6	0.05	11.8	0.64	0.2	0.50
STD OREAS45EA	Standard	6.4	918.7	0.09	148.0	0.083	<20	3.25	0.025	0.05	<0.1	84.2	0.05	0.04	14	1.0	0.07	12.2	0.66	0.2	0.45
STD OREAS45EA	Standard	6.2	917.8	0.10	146.3	0.078	<20	3.38	0.017	0.05	<0.1	77.9	0.06	0.04	10	1.0	0.09	12.2	0.68	0.2	0.43
STD OREAS45EA	Standard	7.5	861.7	0.09	145.0	0.091	<20	3.48	0.017	0.05	<0.1	77.6	0.07	0.03	<5	0.6	0.09	12.9	0.68	0.4	0.52
STD OREAS45EA	Standard	6.7	810.9	0.09	147.5	0.090	<20	3.12	0.016	0.05	<0.1	82.5	<0.02	0.04	17	0.8	0.06	13.5	0.65	0.3	0.57
STD OREAS45EA	Standard	6.7	856.2	0.10	144.5	0.088	<20	3.36	0.015	0.05	<0.1	83.1	<0.02	0.04	19	1.9	0.19	11.8	0.66	0.5	0.42
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	0.8	<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	11	<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	0.13	<0.1	<0.02	0.2	<0.02

QUALITY CONTROL REPORT

VAN13003475.1

		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 DS9	Standard	0.97	32.9	6.5	<0.05	1.3	5.46	23.1	1.98	58	5.4	26.8	110	348	
STD DS9	Standard	1.01	35.7	6.7	<0.05	1.7	5.82	25.6	2.27	60	5.8	26.1	152	392	
STD DS9	Standard	0.94	33.4	6.6	<0.05	1.8	5.77	24.7	2.23	62	5.3	25.2	120	359	
STD DS9	Standard	0.89	35.2	6.7	<0.05	1.7	6.11	27.1	2.09	46	4.9	26.2	139	409	
STD OREAS45EA	Standard	0.05	7.0	0.7	<0.05	18.2	5.03	15.9	0.08	<1	0.4	2.5	65	111	
STD OREAS45EA	Standard	0.03	6.8	0.7	<0.05	15.9	4.74	15.5	0.06	<1	0.5	2.5	73	114	
STD OREAS45EA	Standard	0.03	7.9	0.9	<0.05	17.9	5.36	15.4	0.08	<1	0.5	2.7	75	125	
STD OREAS45EA	Standard	0.05	8.0	1.0	<0.05	20.8	5.42	21.3	0.14	<1	0.4	2.6	<10	131	
STD OREAS45EA	Standard	0.05	7.5	0.8	<0.05	21.3	5.21	17.1	0.09	<1	0.5	2.2	52	122	
STD OREAS45EA	Standard	0.02	7.4	1.0	<0.05	18.2	5.17	16.9	0.09	<1	0.2	2.2	56	102	
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	0.1	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	0.2	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	0.1	<0.02	2	<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	<0.1	<0.01	0.2	<0.02	<1	<0.1	<0.1	<10	<2	
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	2	<0.1	<0.1	<10	<2	



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Submitted By: Michael Buchanan and Rupa Mukherjee
Receiving Lab: Canada-Vancouver
Received: September 11, 2013
Report Date: September 24, 2013
Page: 1 of 6

CERTIFICATE OF ANALYSIS

VAN13003656.1

CLIENT JOB INFORMATION

Project: 204700
Shipment ID: CRQ_2013_007
P.O. Number
Number of Samples: 122

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.

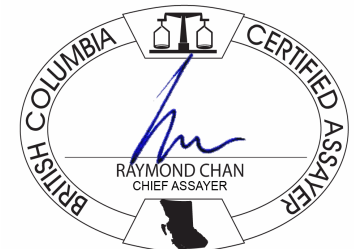
Invoice To: Teck Resources Limited
Suite 3300, 550 Burrard St.
Vancouver BC V6C 0B3
CANADA

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: September 24, 2013

Page: 2 of 6 Part: 1 of 3

CERTIFICATE OF ANALYSIS

VAN13003656.1

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
2316112	Soil	48.97	121.6	38.38	329.3	1538	61.9	8.2	166	4.97	36.5	9.7	1.6	0.5	52.6	2.24	6.63	0.23	79	0.04	0.202
2316113	Soil	20.60	24.32	62.95	90.7	431	20.7	2.9	45	1.97	18.9	2.6	0.9	0.1	32.4	0.34	1.58	0.21	62	0.02	0.086
2316114	Soil	30.54	36.94	782.5	105.4	752	12.0	1.0	16	2.33	34.8	5.9	1.5	0.9	180.7	0.26	3.95	0.25	75	0.02	0.100
2316115	Soil	22.77	16.32	38.94	50.3	1102	14.7	2.0	49	2.73	24.2	1.0	6.2	0.6	44.8	0.09	3.78	0.26	73	0.01	0.107
2316116	Soil	23.72	22.68	60.56	75.6	915	16.1	3.9	117	2.51	23.7	1.4	0.7	0.5	44.7	0.23	5.39	0.25	61	0.02	0.106
2316117	Soil	10.03	13.72	21.31	42.4	1063	7.3	1.0	57	1.32	11.7	1.0	2.0	0.4	41.3	0.09	3.04	0.21	42	<0.01	0.083
2316118	Soil	9.89	13.22	21.35	41.0	988	7.1	1.0	52	1.26	10.8	1.0	1.7	0.3	41.8	0.09	3.02	0.21	41	<0.01	0.075
2316119	Soil	4.89	11.50	10.46	38.2	1095	16.1	1.4	45	0.59	2.7	0.5	1.3	0.4	25.2	0.55	1.47	0.11	20	0.13	0.102
2316120	Soil	8.47	11.82	13.18	20.3	1483	6.6	0.9	12	1.01	7.2	0.9	1.1	0.2	22.5	0.08	1.24	0.17	60	<0.01	0.079
2316121	Soil	14.20	6.18	19.61	29.2	487	6.6	1.3	19	1.09	12.1	1.0	0.4	<0.1	15.6	0.07	1.14	0.19	60	0.02	0.045
2316122	Soil	16.37	27.35	24.04	187.9	514	48.1	11.3	487	3.65	18.0	2.6	1.3	1.0	6.5	0.52	3.21	0.19	54	0.06	0.106
2316123	Soil	12.29	17.61	17.98	431.2	256	73.8	8.4	417	1.92	8.3	2.1	0.6	1.6	12.9	2.06	0.74	0.11	15	1.06	0.091
2316124	Soil	34.34	32.11	25.76	207.8	4282	28.5	3.9	37	2.63	25.0	1.8	1.7	0.6	53.6	0.56	4.40	0.18	109	0.01	0.110
2316125	Soil	9.59	11.58	11.20	49.4	4422	8.2	1.6	16	0.60	5.2	1.0	0.6	<0.1	8.7	0.19	1.26	0.09	65	0.02	0.041
2316126	Soil	5.95	7.54	6.40	51.9	3046	9.2	1.3	22	0.44	3.4	0.3	3.4	0.3	19.2	0.45	1.08	0.08	17	0.32	0.085
2316127	Soil	11.34	20.44	15.44	148.4	4415	25.2	6.1	50	1.75	13.7	0.5	0.7	0.8	22.5	0.17	0.75	0.12	77	0.03	0.059
2316128	Soil	3.78	6.51	7.01	39.1	1250	9.6	1.3	41	0.39	3.2	0.2	5.0	0.2	53.1	0.33	0.71	0.07	12	0.41	0.109
2316129	Soil	11.92	39.22	39.06	146.5	1630	26.8	5.6	39	4.61	27.1	1.7	2.9	0.6	159.8	0.24	2.85	0.33	64	0.04	0.280
2316130	Soil	5.23	14.14	17.91	83.1	336	14.1	5.2	51	1.47	6.1	0.3	0.6	0.4	13.8	0.33	0.57	0.19	48	<0.01	0.037

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 24, 2013

Page: 1 of 2 Part: 1 of 3

QUALITY CONTROL REPORT

VAN13003656.1

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																					
2316106	Soil	72.21	35.62	36.12	140.9	842	26.4	3.1	53	3.90	37.9	3.9	2.1	0.8	60.3	0.40	3.43	0.26	103	0.02	0.110
REP 2316106	QC																				
2316130	Soil	5.23	14.14	17.91	83.1	336	14.1	5.2	51	1.47	6.1	0.3	0.6	0.4	13.8	0.33	0.57	0.19	48	<0.01	0.037
REP 2316130	QC	5.09	13.87	18.15	81.3	344	14.0	5.2	52	1.47	6.1	0.3	<0.2	0.4	13.4	0.36	0.62	0.20	49	<0.01	0.037
2316305	Soil	11.21	81.57	16.38	481.3	826	175.6	33.4	614	1.47	9.3	2.9	1.6	0.7	65.3	4.26	2.20	0.11	23	1.24	0.114
REP 2316305	QC																				
2316316	Soil	10.08	22.94	12.12	186.7	95	46.1	6.1	200	2.27	8.2	0.7	0.7	<0.1	5.9	0.56	1.50	0.20	59	0.03	0.045
REP 2316316	QC	10.11	23.54	12.03	190.7	86	46.8	6.0	191	2.31	7.9	0.7	0.7	0.1	5.7	0.53	1.46	0.16	61	0.03	0.047
2316341	Soil	21.35	28.54	15.12	1096	1388	166.5	37.1	3779	3.38	8.5	2.5	1.9	0.3	53.8	17.20	3.03	0.07	63	0.81	0.140
REP 2316341	QC																				
2316360	Soil	65.62	16.37	38.89	200.1	901	34.7	3.8	31	2.01	21.8	1.8	0.6	<0.1	22.4	0.43	3.55	0.29	242	0.04	0.065
REP 2316360	QC	66.01	16.75	38.81	200.9	854	34.6	3.8	30	1.96	22.2	1.7	0.9	<0.1	21.4	0.46	3.58	0.24	235	0.04	0.064
2316414	Soil	47.77	18.45	19.59	122.8	524	20.7	2.3	21	2.03	16.3	2.0	0.7	0.9	22.9	0.34	1.42	0.22	158	<0.01	0.061
REP 2316414	QC	48.63	19.46	19.85	128.7	523	20.5	2.4	20	2.10	16.8	2.0	1.7	0.9	23.7	0.33	1.44	0.22	162	<0.01	0.064
Reference Materials																					
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DS9	Standard	12.90	101.2	130.1	316.2	2070	39.7	7.5	609	2.33	26.5	2.8	111.5	5.9	63.4	2.60	5.32	5.99	39	0.72	0.089
STD DS9	Standard	13.77	103.2	137.9	323.7	2115	42.5	7.7	598	2.36	27.1	2.7	136.5	6.0	66.4	2.42	4.52	5.96	42	0.74	0.081
STD DS9	Standard	12.92	115.4	118.8	312.9	1948	43.4	7.6	575	2.39	24.6	2.5	115.1	5.9	62.0	2.33	5.21	5.78	40	0.73	0.083
STD DS9	Standard	13.42	116.2	119.4	307.3	1777	43.3	8.3	578	2.37	25.1	2.5	114.0	5.7	62.3	2.29	4.23	5.68	39	0.72	0.080
STD OREAS45EA	Standard	1.36	697.3	14.77	31.0	286	380.1	54.1	395	23.72	11.1	1.7	56.0	10.4	3.4	0.02	0.12	0.21	296	0.03	0.027
STD OREAS45EA	Standard	1.43	725.4	15.90	27.3	277	415.1	54.9	415	25.03	11.8	1.8	71.4	11.6	3.6	<0.01	0.11	0.23	311	0.03	0.029
STD OREAS45EA	Standard	1.54	702.1	13.11	27.8	268	394.8	52.0	401	25.26	10.3	1.6	54.1	9.3	3.3	0.02	0.22	0.21	301	0.03	0.027
STD OREAS45EA	Standard	1.37	700.0	13.38	28.0	250	387.8	51.3	399	24.08	8.8	1.6	49.2	9.7	3.3	0.02	0.12	0.22	304	0.03	0.026
STD DOLOMITE-2 Expected																					

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

VAN13003656.1

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																					
2316106	Soil	19.8	12.5	0.05	551.5	0.002	<20	0.77	0.017	0.18	<0.1	0.9	1.07	0.41	48	6.7	0.20	3.4	1.35	<0.1	0.05
REP 2316106	QC																				
2316130	Soil	7.5	6.9	0.03	198.8	0.004	<20	0.66	0.002	0.05	<0.1	1.1	0.22	0.03	28	0.6	0.04	5.0	1.08	<0.1	<0.02
REP 2316130	QC	7.9	7.3	0.03	197.6	0.004	<20	0.67	0.002	0.05	<0.1	1.1	0.23	0.03	23	0.6	0.05	4.6	1.24	<0.1	<0.02
2316305	Soil	6.6	15.0	0.20	628.3	0.001	<20	0.60	0.003	0.09	<0.1	1.1	0.58	0.22	128	2.3	0.05	0.7	0.51	<0.1	0.06
REP 2316305	QC																				
2316316	Soil	15.3	20.9	0.10	135.6	0.005	<20	0.67	<0.001	0.08	<0.1	0.7	0.26	0.02	19	1.2	0.06	3.5	1.44	<0.1	<0.02
REP 2316316	QC	15.5	21.2	0.10	134.2	0.005	<20	0.70	0.001	0.08	<0.1	0.6	0.29	0.02	26	1.2	0.05	3.5	1.45	<0.1	<0.02
2316341	Soil	4.2	7.6	0.08	1487	0.002	<20	0.36	0.004	0.11	<0.1	0.6	1.26	0.10	140	1.2	0.04	1.2	0.81	<0.1	<0.02
REP 2316341	QC																				
2316360	Soil	20.1	14.5	0.06	449.7	0.003	<20	0.73	0.003	0.16	0.1	0.4	1.26	0.15	27	3.5	0.13	4.2	1.88	<0.1	<0.02
REP 2316360	QC	19.8	14.2	0.06	431.3	0.003	<20	0.73	0.002	0.16	0.1	0.3	1.20	0.15	28	3.5	0.13	4.2	1.89	<0.1	<0.02
2316414	Soil	18.5	13.9	0.05	550.7	0.004	<20	0.84	0.004	0.12	0.2	1.0	1.54	0.26	30	2.0	0.16	4.3	0.95	<0.1	<0.02
REP 2316414	QC	19.1	13.3	0.05	548.6	0.004	<20	0.86	0.004	0.12	0.2	1.2	1.59	0.25	25	2.0	0.20	4.4	0.95	<0.1	<0.02
Reference Materials																					
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DOLOMITE-2	Standard																				
STD DS9	Standard	12.6	120.5	0.61	340.3	0.095	<20	0.95	0.084	0.40	3.1	2.3	5.80	0.17	203	5.9	5.84	4.6	2.76	<0.1	0.04
STD DS9	Standard	13.2	119.4	0.63	357.1	0.101	<20	0.96	0.082	0.40	2.6	2.5	5.69	0.17	202	5.5	5.49	4.8	2.58	<0.1	0.04
STD DS9	Standard	11.7	116.4	0.62	313.9	0.102	<20	0.95	0.083	0.41	3.4	2.4	5.39	0.17	214	5.2	4.92	4.6	2.47	<0.1	0.04
STD DS9	Standard	11.4	114.6	0.62	312.1	0.103	<20	0.94	0.081	0.40	2.5	2.4	5.49	0.16	187	5.4	5.04	4.6	2.39	<0.1	0.05
STD OREAS45EA	Standard	6.0	927.9	0.09	144.7	0.083	<20	3.22	0.019	0.05	<0.1	91.1	0.06	0.04	15	0.9	0.10	12.7	0.69	0.3	0.52
STD OREAS45EA	Standard	6.5	957.1	0.10	155.2	0.084	<20	3.41	0.024	0.06	<0.1	95.1	0.06	0.04	12	1.1	0.09	13.7	0.74	0.2	0.52
STD OREAS45EA	Standard	6.2	911.6	0.09	140.8	0.086	<20	3.24	0.024	0.05	<0.1	77.5	0.05	0.04	9	0.9	0.08	12.1	0.71	0.3	0.49
STD OREAS45EA	Standard	6.2	916.8	0.09	136.6	0.084	<20	3.24	0.019	0.05	<0.1	76.6	0.06	0.04	7	0.7	0.09	12.5	0.66	0.2	0.52
STD DOLOMITE-2 Expected																					



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Project: 204700
 Report Date: September 24, 2013

Page: 1 of 2

Part: 3 of 3

QUALITY CONTROL REPORT

VAN13003656.1

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															
2316106	Soil	0.09	15.5	0.4	<0.05	0.5	6.36	39.6	0.05	3	0.4	2.6	<10	<2	13.6
REP 2316106	QC														13.2
2316130	Soil	0.50	7.6	0.6	<0.05	0.1	1.65	14.2	<0.02	<1	0.2	1.0	<10	<2	8.3
REP 2316130	QC	0.53	8.0	0.7	<0.05	0.1	1.62	14.9	<0.02	<1	0.1	1.0	<10	<2	
2316305	Soil	0.08	6.4	0.2	<0.05	2.0	10.85	12.4	<0.02	<1	0.5	2.9	11	<2	49.6
REP 2316305	QC														50.2
2316316	Soil	0.19	9.7	0.5	<0.05	<0.1	4.18	29.8	<0.02	<1	0.5	4.5	<10	<2	9.8
REP 2316316	QC	0.17	10.3	0.4	<0.05	<0.1	4.18	30.0	<0.02	<1	0.4	4.8	<10	<2	
2316341	Soil	0.16	7.2	<0.1	<0.05	0.3	9.30	7.5	<0.02	<1	0.4	1.4	14	<2	64.8
REP 2316341	QC														65.2
2316360	Soil	0.09	11.2	0.6	<0.05	1.5	3.45	34.4	0.02	<1	0.5	1.8	<10	<2	11.6
REP 2316360	QC	0.30	10.8	0.6	<0.05	0.5	3.43	33.6	<0.02	<1	0.1	1.6	<10	<2	
2316414	Soil	0.32	8.5	0.9	<0.05	0.3	3.24	33.1	0.03	<1	0.3	1.7	<10	<2	11.4
REP 2316414	QC	0.31	8.8	0.8	<0.05	0.2	3.43	32.5	<0.02	4	0.3	1.9	<10	<2	11.9
Reference Materials															
STD DOLOMITE-2	Standard														44.5
STD DOLOMITE-2	Standard														45.8
STD DOLOMITE-2	Standard														44.9
STD DOLOMITE-2	Standard														43.8
STD DS9	Standard	0.99	35.0	7.2	<0.05	1.2	5.79	23.8	2.35	59	6.0	28.2	133	367	
STD DS9	Standard	0.99	34.9	6.5	<0.05	1.2	6.11	24.4	2.36	66	6.1	26.2	133	384	
STD DS9	Standard	1.08	35.3	6.1	<0.05	1.5	5.56	22.2	2.12	65	5.2	25.0	118	362	
STD DS9	Standard	0.94	35.4	5.9	<0.05	1.5	5.43	22.1	2.06	63	5.8	24.3	116	363	
STD OREAS45EA	Standard	0.04	7.8	0.8	<0.05	17.6	5.31	15.5	0.08	1	0.4	2.4	71	109	
STD OREAS45EA	Standard	0.03	8.1	0.9	<0.05	17.6	5.57	16.8	0.09	<1	0.5	2.9	71	116	
STD OREAS45EA	Standard	0.05	7.5	0.8	<0.05	16.8	5.08	16.2	0.07	<1	0.4	2.5	61	114	
STD OREAS45EA	Standard	0.05	7.1	0.7	<0.05	17.6	5.02	16.8	0.07	<1	0.5	2.5	67	109	
STD DOLOMITE-2 Expected															45.9



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Project: 204700
 Report Date: September 24, 2013

Page: 2 of 2

Part: 1 of 3

QUALITY CONTROL REPORT

VAN13003656.1

	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
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	0.02	<0.01	0.05	<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	0.03	<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	0.03	<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	0.05	<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
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Page: 2 of 2

Part: 2 of 3

QUALITY CONTROL REPORT

VAN13003656.1

	1F La ppm 0.5	1F Cr ppm 0.5	1F Mg % 0.01	1F Ba ppm 0.5	1F Ti % 0.001	1F B ppm 20	1F Al % 0.01	1F Na % 0.001	1F K % 0.01	1F W ppm 0.1	1F Sc ppm 0.1	1F Ti ppm 0.02	1F S % 0.02	1F Hg ppb 5	1F Se ppm 0.1	1F Te ppm 0.02	1F Ga ppm 0.1	1F Cs ppm 0.02	1F Ge ppm 0.1	1F Hf ppm 0.02
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	8	<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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Page: 2 of 2

Part: 3 of 3

QUALITY CONTROL REPORT

VAN13003656.1

	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 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	<0.1	<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	