CopperFox Metals Inc.

Schaft Creek Project

British Columbia, Canada

Schaft Creek Project
Soils Baseline Report

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Soils Baseline Report

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1. INTRODUCTION

1. Introduction

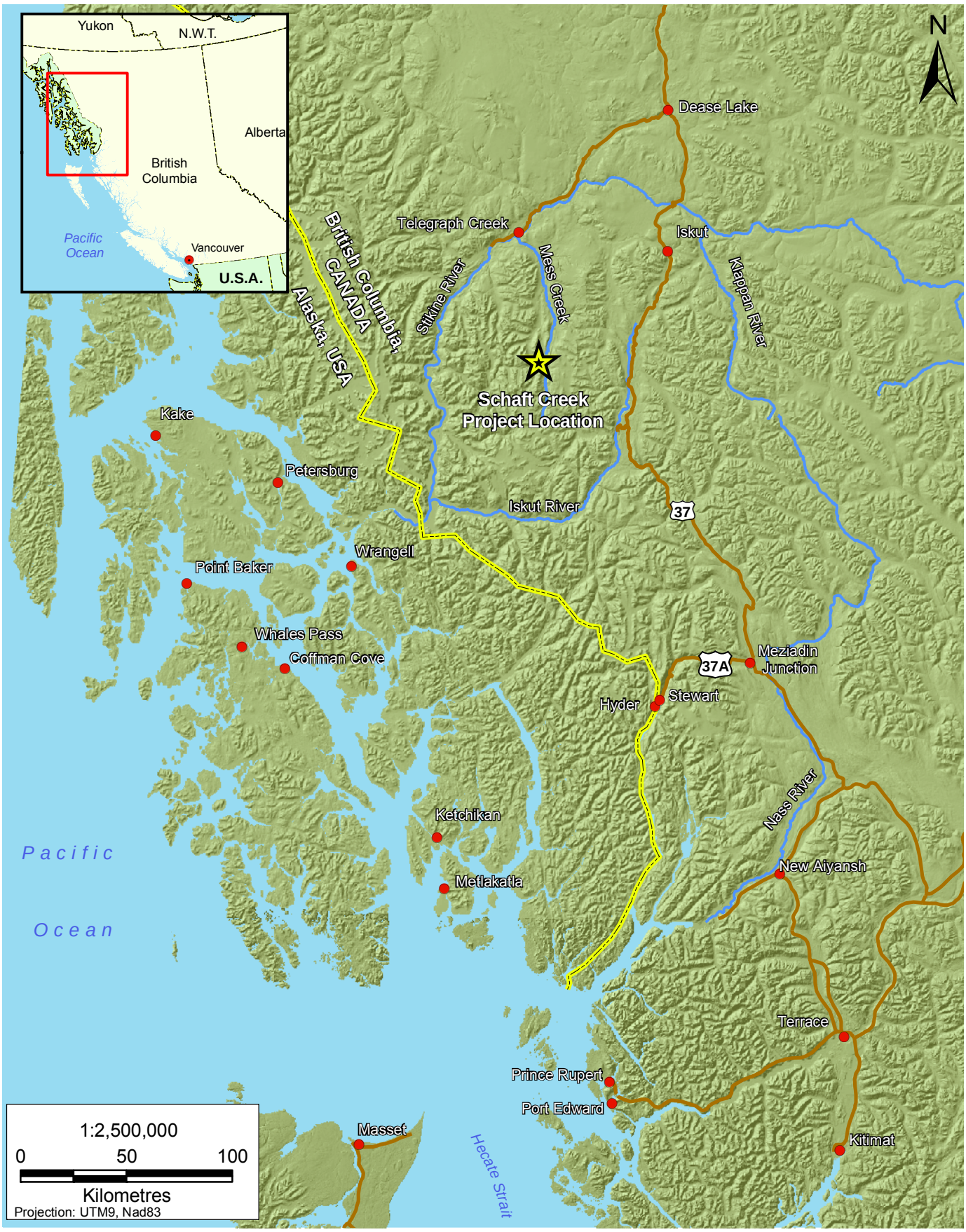
1.1 Schaft Creek Project Summary

Copper Fox Metals Inc. (Copper Fox) is a Canadian mineral exploration and development company focused on developing the Schaft Creek deposit which is a polymetallic (copper-gold-silver-molybdenum) deposit. The deposit is located in the Liard District (latitude 57^{o} 22' 4.2''; longitude 130^{o}, 58' 48.9"), in northwestern British Columbia, approximately 60 km south of the village of Telegraph Creek Creek (Figure 1.1-1). The property is comprised of 40 mineral claims covering an area totalling approximately 20,932 ha within the Cassiar Iskut-Stikine Land and Resource Management Plan Area (Figure 1.1-2). The Schaft Creek Project, here in called the Project, occurs within the Tahltan Nation traditional territory. Copper Fox has been in discussions with the Tahltan Central Council (TCC) and the Tahltan Heritage Resources Environmental Assessment Team (THREAT) since initiating exploration activities in 2005. Copper Fox has engaged in numerous agreements with the TCC including a Communications Agreement, Traditional Knowledge Agreement, Letter of Understanding with the Tahltan Nation Development Corporation (TNDC), and a THREAT Agreement. Copper Fox will continue to work together with the Tahltan Nation as efforts on the Schaft Creek Project continue.

The deposit was discovered in 1957 and has since been investigated by prospecting, geological mapping, and geophysical surveys, as well as, diamond and percussion drilling. Over 65,000 meters of drilling has been completed on the property as of end 2007. Additional drilling is planned for 2008 to support future economic assessments of the property and an environmental assessment application.

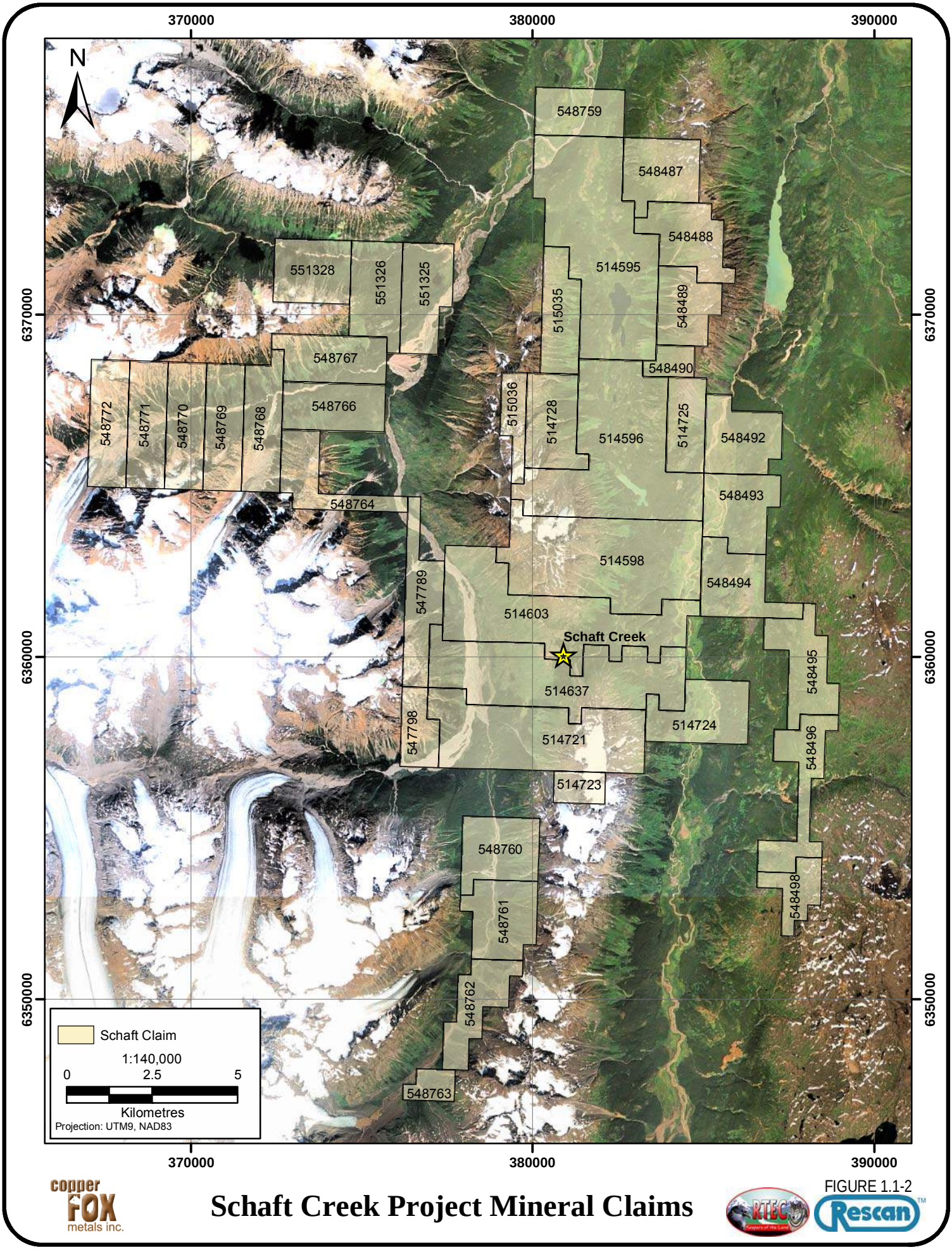
The Project entered the British Columbia environmental assessment process in August 2006. Although a formal federal decision has not yet been made, the Project will likely require federal approval as per the Canadian Environmental Assessment Act. Copper Fox has targeted the end of 2008 for submission of the Environmental Assessment Application and the full Feasibility Report.

Copper Fox has recently released a scoping level engineering and economic report for Schaft Creek. The mine and associated infrastructure are presented in Figure 1.1-3. The current mine plan has ore milled from an open pit at a rate of 65,000 tonnes/day. The deposit will be mined as a large truck/shovel operation and use typical drill and blast techniques. An explosives manufacturing facility will be constructed on-site. The mine plan includes 719 million tonnes of minable ore extracted over a 31 year mine life. The Project is estimated to generate up to 1,200 jobs during the construction phase and approximately 500 permanent jobs during the life of the mine.



Location Map for Schaft Creek Project

FIGURE 1.1-1



copper FOX metals inc.

Schaft Creek Project Mineral Claims

FIGURE 1.1-2

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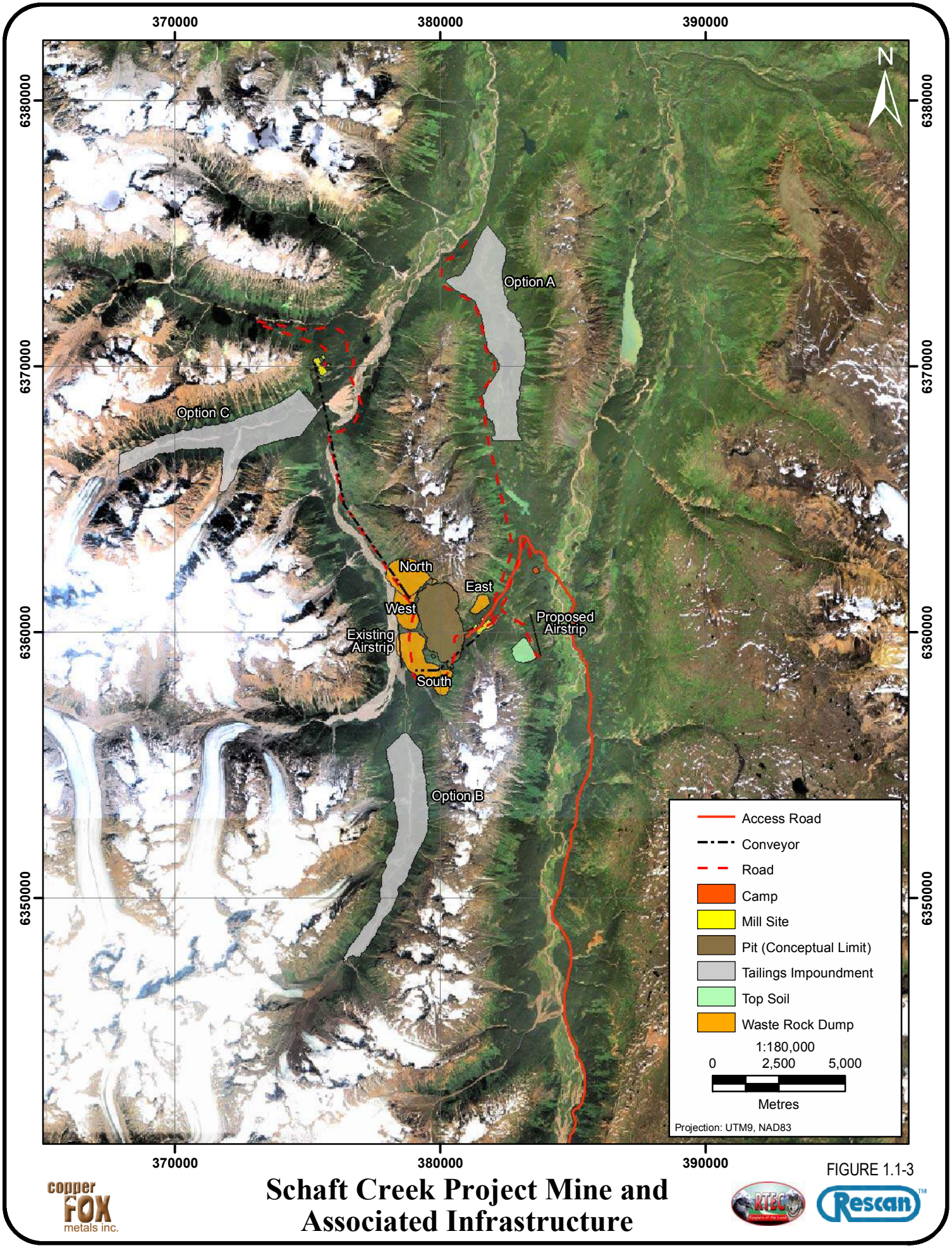


FIGURE 1.1-3

Schaft Creek Project Mine and Associated Infrastructure

Ore will be crushed, milled, and filtered on-site to produce copper and molybdenum concentrates. The mill will include a typical comminution circuit (Semi-Autogenous Mill, Ball Mill, and Pebble Crusher), followed by a flotation and a copper circuit with thickener, filtration and concentrate load out, and shipping. The mill includes a designated molybdenum circuit with thickener, filtration circuit, drying, and bagging. The filter plant will be located at the plant site. A tailings thickener and water reclaim system will be used to recycle process water. The circuit will have a design capacity of 70,652 tonnes per day and a nominal capacity of 65,000 tonnes per day (23,400,000 tonnes per year). The copper and molybdenum concentrates will be shipped via truck from the mill to the port of Stewart, BC.

Copper Fox will construct an access road from Highway 37 to the Schaft Creek property. Access to the property from Highway 37 will require approximately 105 km of new road. The first 65 km corresponds to the Galore Creek access road. NovaGold and Teck Cominco have currently put a hold on future construction efforts along their access road and the overall Galore Creek Project. Copper Fox will seek approval from the provincial government and NovaGold/Teck Cominco to construct the first 65 km of the Galore Creek access road, should the status of the Galore Creek project not change.

The route of the final 40 km of access road has not been finalized. Copper Fox has completed initial investigations of a route along Mess Creek. An alternative route is also being considered that utilizes the plateau to the east of Mess Creek. Copper Fox is currently investigating the feasibility, as it relates to geohazards, of the two alignments. Both alignments include a 30 m bridge on Mess Creek. Mess Creek is considered navigable as per Transportation Canada criteria. Figure 1.1-4 presents the access road alignment that follows the Galore Creek road (65 km from Highway 37) and the Mess Creek alignment (40 km) to the Schaft Creek property.

Over the life of the mine, the Schaft Creek Project will generate over 700 million tonnes of tailings. Three tailings facilities are being considered (Figure 1.1-3). The three options will undergo an alternatives assessment that will include engineering, construction and operating costs, geotechnical, geohazards, environmental, and social considerations.

The Project will generate over a billion tonnes of waste rock. Waste rock dumps are proposed around the perimeter of the pit (Figure 1.1-3). This includes the flat area between the proposed pit and Schaft Creek.

A detailed water management plan has yet to be developed for the Project. A water management plan will be included in the next level of economic assessment (pre-feasibility) and project description update. A waste water discharge is expected from the tailings facility, waste rock dumps, and domestic waste water treatment plant. The management plan will detail the plans to minimize natural drainage into the tailings facility, the pit, and waste rock dumps. Pit water will be pumped to the tailings facility.

A new airfield will be constructed east of the pit (Figure 1.1-3). The Project will be a fly-in, fly-out operation. The new landing strip will be capable of handling a Boeing 737. Other facilities include a terminal building, fuelling, maintenance, and control facilities.

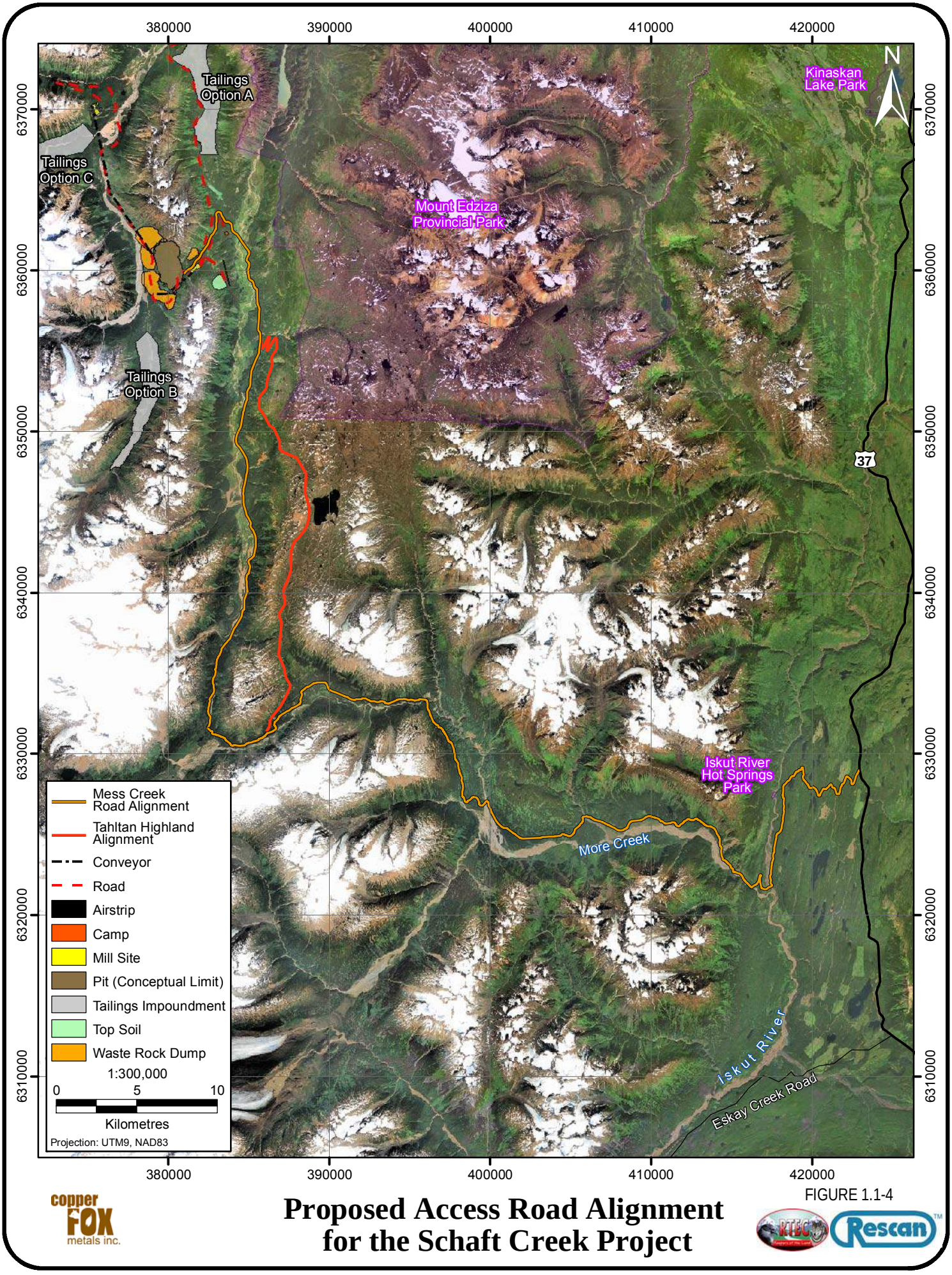


FIGURE 1.1-4

Proposed Access Road Alignment for the Schaft Creek Project

A permanent camp will be constructed to support a staff of approximately 500 employees. Other facilities include a truck shop, warehouse, administration building, maintenance laboratory, explosives storage, water treatment facilities, and potable water storage.

With Copper Fox targeting the end of 2008 for submission of their Environmental Assessment Application and full Feasibility Report, screening of the EA application plus the 180 day review period will result in project approval as early as July 2009. Copper Fox will likely seek concurrent permitting for strategic permits to facility the timely construction of key project components. Construction is estimated to take two and half years. Thus, production could begin by early 2012.

1.2 Study Objectives

The soil assessment was initiated in 2007 and will be completed in 2008. The assessment was conducted to obtain an understanding of soil baseline conditions for the proposed mine site, road routes, and tailings options. Field information is used as part of Terrestrial Ecosystem Mapping (TEM) and Predicted Ecosystem Mapping (PEM). This information will also be relevant when assessing the project's effects and developing soil handling plans for reclamation and closure planning.

The main objectives of the study are as follows:

1. Characterize the soils at the proposed mine site, road routes, and tailings options.
2. Identify soil baseline metal concentrations and compare them with British Columbia and Canadian guidelines for potential contaminants.

The information collected during the field program of 2007, and the planned program of 2008, will be used to asses the soil material suitability for use in reclamation and closure planning.

2. METHODS

2. Methods

2.1 Field Survey

Two field surveys were carried out during the summer months of 2007. The first survey was conducted between July 23rd and August 3rd and the second between August 27th and August 31st.

Field crews consisted of a soil scientist, vegetation ecologist, wildlife biologist, and Tahltan assistant. A total of 88 soil inspection sites were completed during the first survey and 16 during the second survey. Sites were located at the proposed mine pit, tailings option A, tailings option B, tailings option C, a study area east of Yehiniko Lake, a study area at the north end of Schaft Creek and the proposed road route from Arctic Lake to Mess Creek. Sites that were inspected during the first field survey were labelled numbers 1-86 and distributed throughout the study area. Sites investigated during the second survey were labelled P (taken from proposed mine pit), TA (tailings option A), or TB (tailings option B). A vegetation and wildlife habitat survey were carried out at each soil inspection site and are reported elsewhere.

All data were collected following the guidelines established in the Field Manual for Describing Terrestrial Ecosystems (B.C. MELP and B.C. MoF, 1998). The Ground Inspection Form (GIF) was used during field data collection as part of the TEM mapping. More detailed information on soils was also recorded. Soil inspection sites required the excavation of a soil pit to the depth of common rooting or parent material. The following information was collected:

- location (UTM coordinates);
- slope (gradient, aspect, and elevation);
- soil drainage;
- soil texture;
- coarse fragment content;
- root zone; and
- BC terrain system classification (terrain texture, surficial material, surface expression, and geomorphic process) (Howes and Kenk, 1997).

Further notes were recorded that included soil horizon designation and depth, colour (Munsell colour chart), depth to bedrock, and water table location. All site and morphological data have been summarized (Appendix 1).

2.2 Sampling and Laboratory Analysis

2.2.1 Sampling

Soils were sampled at representative locations and included the common soil types within potentially impacted areas and adjacent non-impacted areas. Fifty-three soil samples were collected from 27 sites at surface (0-10-cm) and subsurface (10-20-cm) depths, for fertility and

metal analysis. Samples were placed in clean, plastic, labelled bags and sent to ALS Environmental (ALS), Vancouver, BC for laboratory analysis.

2.2.2 Fertility Analysis

All samples collected were analysed for the following tests:

- available phosphate (P)
- cation exchange capacity (CEC)
- organic parameters including CaCO3 equivalent, total organic carbon, total carbon by combustion, and inorganic carbon
- pH
- total sulphur

Details of the analytical procedures used to measure fertility parameters by ALS are included (Appendix 2).

2.2.3 Metals Analysis

Soil samples were tested for a suite of 28 metals (Table 2.2-1) using procedures adapted from the United States Environmental Protection Agency (EPA). Samples were digested at 90°C for two hours using a 1:1 ratio of concentrated nitric and hydrochloric acids. This method is intended to dissolve metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Table 2.2-1
Metal Analysis (ALS lab)

Metals	Abbreviation	Detection Limit (mg/kg)	Metals	Abbreviation	Detection Limit (mg/kg)
Aluminum	Al	50	Magnesium	Mg	50
Antimony	Sb	10	Manganese	Mn	1
Arsenic	As	5	Mercury	Hg	0.05
Barium	Ba	1	Molybdenum	Mo	2
Beryllium	Be	0.5	Nickel	Ni	5
Bismuth	Bi	20	Phosphorus	Pb	50
Cadmium	Cd	0.5	Potassium	K	200
Calcium	Ca	50	Selenium	Se	0.1
Chromium	Cr	2	Silver	Ag	2
Cobalt	Co	2	Sodium	Na	200
Copper	Cu	1	Tin	Sn	5
Iron	Fe	50	Titanium	Ti	1
Lead	Pb	50	Vanadium	V	2
Lithium	Li	2	Zinc	Zn	1

Metal interpretation included comparing analytical results from samples collected from the study area with the Canadian Council of Ministers of the Environment (CCME) and BC Contaminated Site Regulations (CSR) guidelines for soils in park/residential and industrial land use areas. The detailed analytical methodologies are included (Appendix 2).

3. RESULTS AND DISCUSSION

3. Results and Discussion

3.1 Climate

The Schaft Creek Project is located on the eastern edge of the Boundary Ranges, a high, rugged mountain range in northwestern British Columbia with the Coast Mountains to the west and sub-boreal interior plateau to the east. Elevations on the property range from 500 to over 2,000 m above sea level and the climate of the project area is characterized by this coast/interior transition. The Coast Mountains with peaks over 3,000 m in elevation lead to lifting of moist air masses moving inland from the Pacific Ocean.

Annual precipitation at the Schaft Creek Property averages between 700-1100 mm however approximately 60% of this annual precipitation occurs as snow (Samuel Engineering, 2007). Mean monthly temperatures have been recorded typically below zero from November through to March and remain above freezing from April to October. Mean temperatures fluctuate from +30°C to - 30°C with an annual average temperature of 0°C. The dominant wind direction is south - southeast (Samuel Engineering, 2007).

3.2 Geology

The Schaft Creek Project area is located near the border of the Tahltan Highlands in the Boundary Ranges. These Ranges comprise of steep granite mountains and the highlands form transitional belts between these granite mountains and the 1,524 m (5,000 ft) Yukon and Stikine Plateaus (Holland, 1976). The Coast Mountains constitute a large anticline of sedimentary and volcanic rocks with a central composite base of batholithic intrusions. Volcanic, sedimentary, and metamorphosed sedimentary rocks including shales, siltstones, sandstones, greywacke, conglomerates and limestone, along with plutonic rocks, occur in the region surrounding the Schaft Creek Project site.

The Schaft Creek deposit borders the Hickman Batholith to the west and the volcanic rocks of the Mess Lake facies to the east with the valley floor exposing the Stuhini group volcanics (Samuel Engineering, 2007). The deposit is hosted by north striking, steep, easterly dipping volcanic rocks, mafic flows, subvolcanic intrusions, and epiclastics of the Stuhini Group, with only 10% of the mineralisation in felsic dikes and quartz feldspar porphyry.

3.3 Surficial Geology

The complexity of the surficial geology in the region is indicated by the range of surficial materials. These include colluvium, glacial till (morainal), glaciofuvial, fluvial, and volcanic deposits. They occur in varying thickness, depending on the topography in which they were deposited and the process by which they developed. Bedrock outcrops are commonly found on upper crest meso slope positions within the high altitude areas.

The lowlands and valleys within the project area consist of subdued relief, with forested, glacially rounded, and elongate outcrops, and thick intervening Pleistocene and recent glacial, glaciofluvial, and fluvial deposits. The region has been the site of more than one glaciation and

this process has influenced the present topography. Since the last glacial period, the land surface has continued to be modified by the action of gravity, wind, water, and ice resulting in large areas of colluvial and fluvial deposits along the creeks. Wetlands and soils with organic caps have developed in depressional and seepage areas.

3.4 Topography and Slopes

The Schaft Creek Property comprises an area totalling approximately 20,932 ha within the Cassiar Iskut-Stikine Land and Resource Management Plan (LRMP) area, located in northwestern British Columbia. The property is positioned within the upper source regions of Schaft Creek, which drains northerly into Mess Creek and onwards into the Stikine River. The elevation of the valley at the Schaft Creek campsite is 866 m, with nearby mountains exceeding 2,000 m (Samuel Engineering, 2007).

The Coast Mountains are characterised by steep, rugged topography, high relief and extensive alpine glaciers, and snowfields (Brown *et al.*, 1996). The steep, rugged mountains to the south and west of the Schaft property reflect this. To the north of the deposit is the west-facing slope of Mount La Casse, however, to the east, the elevation drops into the valley of Mess Creek. Topography within the valley floor is very subdued and largely covered by glaciofluvial gravels with very scarce bedrock exposures in the lower elevations of the valley floor (Samuel Engineering, 2007).

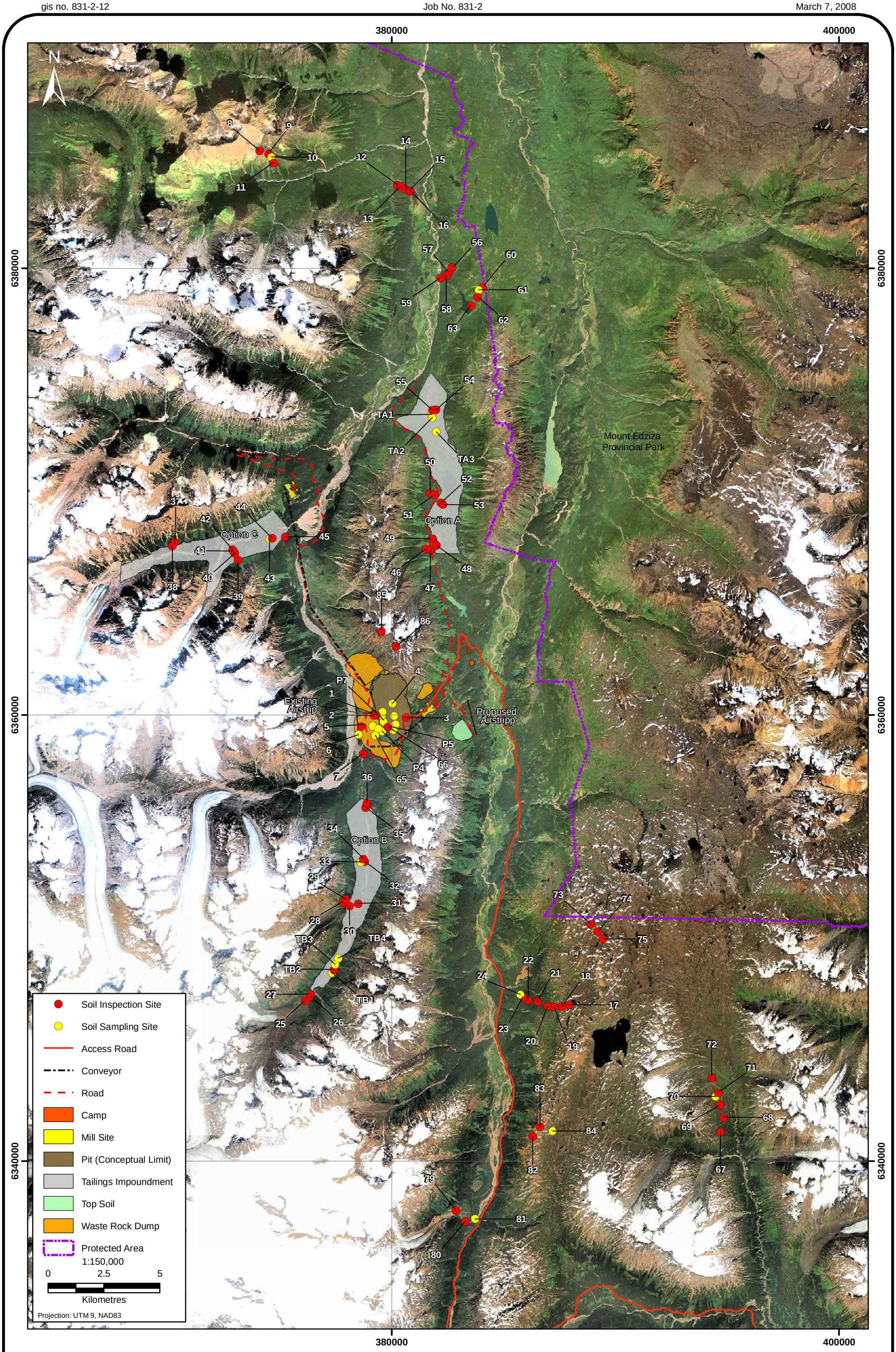
3.5 Terrain and Soils

During the 2007 field program, the soils were investigated at 104 sites throughout the study area (Figure 3.5-1) (Plate 3.5-1).

Podzolization is the dominant soil forming process throughout the study area due to the region's geology and cold moist climate in the lower to mid elevation range. These soils are found in the following biogeoclimatic zones: Interior Ceder- Hemlock (ICH), Engelmann Spruce (ESSF), Spruce-Willow-Birch (SBS), and the Boreal White and Black Spruce Zone (BWBS).

Podzolization involves the downward translocation of iron, aluminium, and organic matter. Orthic Humo-Ferric Podzols dominate and Orthic Dystric Brunisols, Eluviated Dystric Brunisols, and Orthic Sombric Brunisols also occur indicating less developed, less weathered soils with the latter having higher organic matter in the surface layer. Orthic Melanic Brunisols occur on basic parent materials and younger fluvial soils. Soils classified as Orthic Gleysols have developed in wetter areas and many of these have a thick organic capping. A permanent water table occurs within a metre of the surface of these soils.

In the high elevation biogeoclimatic zones, such as the Alpine Tundra (AT) and the ESSF, the high precipitation results in high rates of leaching and acidic soils. Cold temperatures near subalpine and alpine areas, slows the rate of plant decomposition, and therefore, the rate of nutrient cycling is slow. The surface (A) horizon of the soils in this area has a high proportion of undecomposed plant material causing them to have a dark colour and spongy texture.



copper FOX metals inc.

FIGURE 3.5-1

Schaft Creek Soil Sample and Inspection Locations

RTEC Rescan™

Alpine soils are shallow and are, thus, fragile to disturbances. Organic soils occur in depressional areas, generally in valley bottoms and they are associated with wetlands (bogs, swamps and fens). Organic matter of these soils is moderately to well-decomposed (Mesisols to Humisols). These soils which have developed in wetter areas also generally have poor structural stability.

Plate 3.5-1. Schaft Creek Study Area. Steep Glacial Incised Mountainous Terrain.

3.5.1 Colluvial

Colluvial materials (Plates 3.5-2 & 3.5-3) are generally found on mid to upper, moderate to steep, slopes between 600 and 1,800 masl. This terrain occurs over the entire study area as steep mountainous terrain is prevalent. Colluvium is found in all biogeoclimatic zones but is predominate in the ESSF. Soils are generally shallow with sand being the most common soil particle size (<2 mm). Soils have a high coarse fragment content dominated generally by angular shaped gravels. Drainage on these materials is well to rapid. Dominant soil types are Eluviated Dystric Brunisols, Orthic Dystric Brunisols, and Orthic and Humo-Ferric Podzols. Orthic Sombric Brunisols occur at higher elevation with Melanic Brunisols occurring on the basic parent materials.

3.5.2 Morainal

Morainal materials (glacial tills) (Plates 3.5-4 & 3.5-5) are generally found on lower to upper, gentle to moderate slopes, between 600 and 1,300 masl. The depth of the deposited glacial till alternates between veneers (10 to 100 cm) and blankets (>100 cm) throughout the study area and surface expression conforms to the underlying bedrock topography. Soils are generally medium textured (sandy loam, silt loam, and loam) but coarse textured loamy sands also occur frequently. Coarse fragment content in these deposits usually ranges from 20% to 50% of soil volume. Drainage on morainal veneers is rapid to well and drainage on blanket material is well to poor depending on meso slope position. Dominant soil types are Eluviated Dystric Brunisols, Orthic Dystric Brunisols, and Orthic Humo-Ferric Podzols.

On higher elevation sites, Orthic Sombric Brunisols and Sombric Humo-Ferric Podzols occur with Melanic Brunisols occurring on basic parent materials.

Plate 3.5-2. Colluvium materials (Orthic Sombric Brunisol [Site 10]).

Plate 3.5-3. Colluvium materials (Orthic Melanic Brunisol [Site 39]).

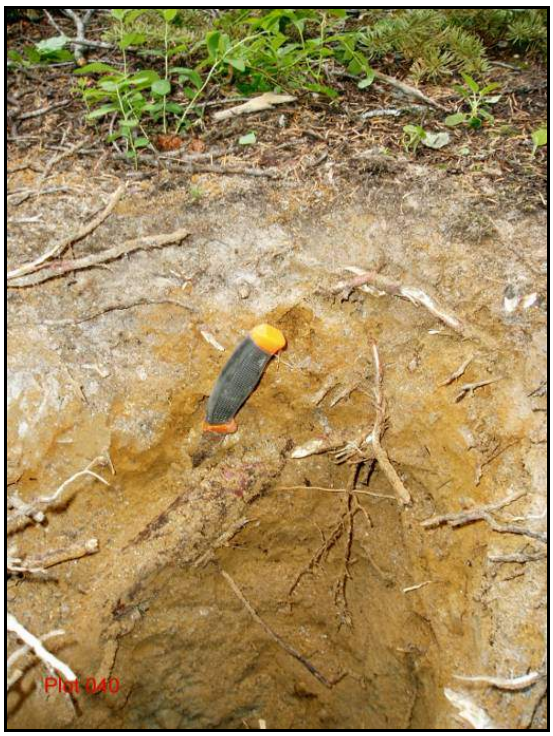


Plate 3.5-4. Morainal materials (Orthic Humo-Ferric Podzol [Site 40]).

Plate 3.5-5. Morainal materials (Orthic Dystric Brunisol [Site 33]).

3.5.3 Glaciofluvial

Glaciofluvial (glacial outwash) parent materials are dominant in valley bottoms (Plates 3.5-6 & 3.5-7) between 600 and 1,000 masl. This material occurs in the ESSF, BWBS, and ICH biogeoclimatic zones. These deposits are deep, generally coarse textured (sand to loamy sand), and well sorted. The subsurface (Bm) material, is generally sandy loam. Coarse fragment content generally ranges from 30% to 60% of soil volume. Deposits with higher coarse fragment content are associated with higher velocity meltwaters and a closer proximity to the glacial terminus. Therefore, they are more heterogeneous. Perviousness is high on this material and drainage is generally well to rapidly drained, dependent on slope position. Dominant soil types are Eluviated Dystric Brunisols, Orthic Dystric Brunisols, and Orthic Humo-Ferric Podzols on well drained sites with predominantly Gleysols occurring on the more poorly drained sites.

3.5.4 Fluvial

Fluvial parent materials (Plates 3.5-8 & 3.5-9) are deposited by streams and rivers and occur in mid to lower slope positions, between 600 and 1,000 masl. This material can occur in all areas but is prevalent in the BWBS, ESSF, and ICH biogeoclimatic zones. These deposits are generally greater than 1m in depth, are commonly moderately to well sorted, and display stratification. Soil textures are variable, ranging from coarse textured (sand, loamy sand) to medium textured (loam, silt loam). Coarse fragments are rounded and range from 10% to 80%. Fluvial soils are generally found in lower slope positions where soil moisture is recharged from upslope and stream seepage. Soil drainage ranges from rapid to poor. Dominant soil types are Orthic Regosols on recent active depositions, Orthic Dystric Brunisols and Orthic Melanic Brunisols on well drained sites, and Orthic Gleysols on poorly drained sites.

3.5.5 Organic

Organic materials (Plates 3.5-10 & 3.5-11) are associated with depressional areas that are poorly to very poorly drained in which organic matter accumulates due to slow decomposition. They are found in valley bottoms in the ESSF, BWBS , SBS, and ICH biogeoclimatic zones. These materials have poor structural stability and generally a watertable at or near the surface. In soils classified as Mesisols, the organic matter is moderately decomposed. Soils classified as Humisols have highly decomposed organic matter. Organic deposits can be shallow (Terric subgroups) to deep (Typic or Cumulic subgroups). A volcanic ash layer ±5cm thick is observed on many wetland areas varying from 30 cm to 60 cm in depth from the surface, indicating historic volcanic activity in the region.

3.5.6 Bedrock

Exposed bedrock (Plate 3.5-13) is commonly found on upper crest meso slope positions and is common in high elevation biogeoclimatic zones (AT, ESSF, SWB). A capping of soil material commonly consists of aeolian, morainal, colluvium, and saprolite materials, and is generally less than 10 cm (Plate 3.5-12). Sites are rapidly drained with low or stunted vegetation cover.

Plate 3.5-6. Glaciofluvial materials (Orthic Humo-Ferric Podzol [Site 13]).

Plate 3.5-7. Glaciofluvial materials (Orthic Dystric Brunisol [Site 81]).

Plate 3.5-8. Gravelly fluvial materials (Orthic Dystric Brunisol [Site 34]).

Plate 3.5-9. Fluvial materials (Orthic Dystric Brunisol [Site 6]).

Plate 3.5-10. Organic materials (Cumulo Mesisol [Site 50]).

Plate 3.5-11. Organic materials (Typic Humisol [Site TA1]).

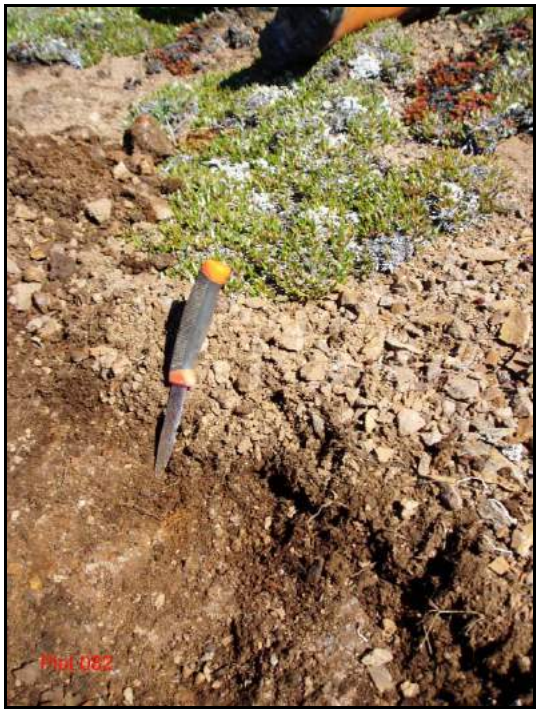


Plate 3.5-12. Saprolite materials, weathered rock, very shallow (Orthic Dystric Brunisol [Site 82]).

Plate 3.5-13. Shallow soils with significant bedrock exposure (Site 85).

3.5.7 Volcanic

This material has been transported and deposited by wind. It consists of sand, fine sand, and silt pyroclastic sediments. These soils are found within high elevation biogeoclimatic zones (AT, ESSF, SWB) and in organic deposits as a thin buried layer. Volcanic deposits are common near Mount Edziza which became a dormant volcano 10,000 years ago (Plates 3.5-14 & 3.5-15). Numerous eruptions have taken place around Mount Edziza creating more than 30 cinder cones (*e.g.*, Eve Cone, Coffee and Cocoa Craters). It is estimated that these cones were formed no more than 1,300 years ago (http://en.wikipedia.org/wiki/Mount_Edziza).

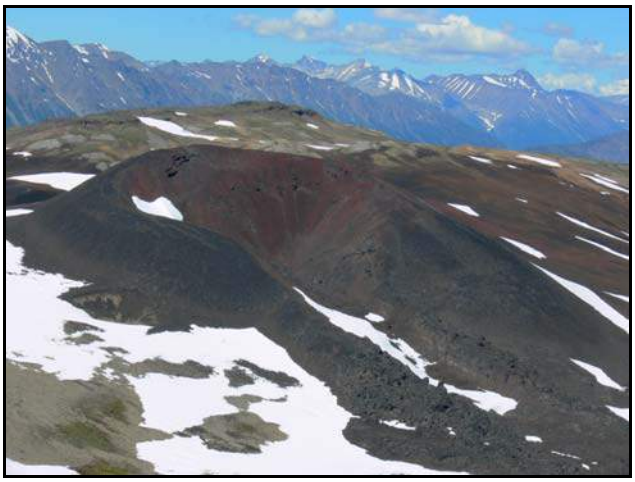


Plate 3.5-14. Volcanic soils (Site 76).

Plate 3.5-15. Volcanic landscape (Site 77).

3.6 Soil Analytical Results

3.6.1 Fertility

Soil reaction (pH) was found to be generally neutral to slightly acidic which is near optimal for nutrient availability. The more acidic soils were coarser textured (sandy loam to loamy sand) and weathered as represented by Dystric Brunisols and Podzols. Soil pH affects nutrient availability and ecosystem floristic composition. The soils in the study area are non-calcareous and non-saline.

The surface soil samples (0-10-cm) were found to have higher organic carbon content then the subsurface samples (10-20-cm) and organic matter content was greater in soil samples taken from higher elevations. Coarser textured soils were also found to have lower organic matter content. cation exchange capacity (CEC) has a direct relationship with soil organic matter content; therefore CEC is also lower with coarser textured soils. A higher CEC indicates improved plant macronutrient availability. Total sulphur is also directly proportionate to organic matter content - soils with higher organic matter content have higher sulphur content. Well-drained upland (lower-to-mid elevation) soils generally have low sulphur content. Data are presented in Tables 3.6-1 and 3.6-2.

Table 3.6-1
Fertility Results: Surface Soil Samples (0-10cm)

Sample ID	PIT1A	PIT2A	PIT3A	PIT4A	PIT5A	PIT6A	PIT7A	PIT8A	PIT9A	TAILA1A	TAILA2A	TAILA3A	TAILB 1A	TAILB 3A
Physical Tests														
pH	6.73	6.70	6.43	5.76	5.48	6.95	5.44	6.95	5.10	6.46	4.73	6.45	6.90	6.84
Anions and Nutrients														
Phosphate-P														
Organic Parameters														
CaCO3 Equivalent	0.9	0.7	<0.7	1.1	0.8	1.4	0.8	2.0	1.0	3.5	0.9	1.0	1.2	0.8
Total Organic Carbon	13.4	3.1	2.2	1.4	1.7	26.6	3.1	27	1.7	42.5	4.1	6.7	10.4	2.2
Total Carbon by Combustion	13.4	3.1	2.2	1.4	1.7	26.6	3.1	27.2	1.7	42.6	4.1	6.7	10.4	2.2
Inorganic Carbon	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1
XNo class														
Cation Exchange Capacity	78.3	21.4	12.7	13.3	9.0	124	24.5	115	15.1	132	24.7	42.3	68.4	26.4
Sulfur (S)-Total	900	200	700	<100	<100	1200	100	2500	100	3100	200	600	900	200

Sample ID	TAILB 4A	084	081	033	010	043	004	024	070	065	061	064	006
Physical Tests													
pH	8.38	5.07	7.45	6.50	5.82	4.94	5.73	5.15	4.97	4.42	6.25	5.50	6.75
Anions and Nutrients													
Phosphate-P		<1	<1	1	20	8	21	4	1	7	1	1	1
Organic Parameters													
CaCO3 Equivalent	5.3	1.7	9.7	<0.7	<0.7	0.8	0.7	<0.7	<0.7	<0.7	0.8	<0.7	0.7
Total Organic Carbon	0.1	5.2	1.3	2.6	4.1	5.2	4.3	3.4	7.5	4.3	4.5	1.9	0.4
Total Carbon by Combustion	0.7	5.3	2.5	2.6	4.1	5.2	4.3	3.4	7.5	4.3	4.5	1.9	0.4
Inorganic Carbon	0.6	0.2	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
XNo class													
Cation Exchange Capacity	8.3	35.1	5.1	15.7	19.1	25.7	23.1	24.2	31.2	22.5	25.5	14.0	5.0
Sulfur (S)-Total	400	0.44	0.06	0.11	0.30	0.22	0.22	0.19	0.51	0.16	0.28	0.13	0.04

Table 3.6-2
Fertility Results: Subsurface Soil Samples (10-20cm)

Sample ID	PIT1B	PIT2B	PIT3B	PIT4B	PIT5B	PIT6B	PIT7B	PIT8B	PIT9B	TAILA1B	TAILA2B	TAILA3B	TAILB 1B
Physical Tests													
pH	7.06	6.67	6.37	6.12	6.00	6.99	5.63	6.94	5.47	6.05	5.07	6.79	7.07
Anions and Nutrients													
Phosphate-P													
Organic Parameters													
CaCO3 Equivalent	1.0	0.8	1.1	<0.7	<0.7	1.2	0.8	1.9	<0.7	2.3	0.9	0.9	0.7
Total Organic Carbon	11.5	2.6	11.7	0.8	0.9	9.2	0.9	13.7	1.2	43.9	2.8	2	4.4
Total Carbon by Combustion	11.5	2.6	11.7	0.8	0.9	9.2	0.9	13.9	1.2	44.0	2.8	2.0	4.4
Inorganic Carbon	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1
XNo class													
Cation Exchange Capacity	69.9	20.3	59.2	8.9	9.9	66.4	8.0	99.4	9.4	122	17.6	10.5	23.8
Sulfur (S)-Total	700	200	600	<100	<100	500	300	1900	<100	4900	100	200	300

Sample ID	TAILB 3B	084	081	033	010	043	004	024	070	065	061	064	006
Physical Tests													
pH	6.89	5.49	7.98	6.54	5.89	5.08	5.79	5.49	5.04	4.92	6.31	6.46	7.22
Anions and Nutrients													
Phosphate-P		<1	<1	2	11	1	4	6	3	2	<1	1	1
Organic Parameters													
CaCO3 Equivalent	0.9	<0.7	16.5	<0.7	0.9	<0.7	<0.7	<0.7	<0.7	<0.7	1.0	<0.7	1.0
Total Organic Carbon	2.9	5.9	0.9	1.7	2.5	1.4	2.4	2.1	3.5	1.6	7	1	0.9
Total Carbon by Combustion	2.9	5.9	2.8	1.7	2.5	1.4	2.4	2.1	3.5	1.6	7.0	1.0	0.9
Inorganic Carbon	<0.1	<0.1	1.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
XNo class													
Cation Exchange Capacity	29.2	38.5	2.0	12.0	16.3	9.4	18.9	19.9	21.2	11.6	41.1	10.1	6.2
Sulfur (S)-Total	300	0.51	0.03	0.09	0.18	0.06	0.17	0.16	0.25	0.07	0.39	0.06	0.05

3.6.2 Metals

All metal analytical results are presented in Appendix 3 and will be utilized as baseline environmental data and the basis for information for reclamation. The results indicate that there were more samples in exceedance of CCME guidelines than CSR guidelines. Chromium, copper, molybdenum, nickel, and vanadium levels were frequently found to be in exceedance of CCME guidelines (Table 3.6-3). Antimony, arsenic, selenium and zinc were infrequently found to be in exceedance and barium, beryllium, cadmium, cobalt, lead, mercury, silver, thallium, and tin levels did not exceed any guidelines criteria.

Samples from within the proposed pit area sites contained metal concentrations which were frequently in exceedence of guidelines. Sites with heavy metal exceedences occurred on all the major parent materials (morainal, colluvial, glaciofluvial, fluvial, and organic) and occurred on all major soil subgroups (Brunisols, Podzols, and Organics). Heavy metals also exceeded one or more guidelines in all soil drainage classes. In both the surface (0-10-cm) and subsurface (10-20-cm) samples, the metal analyses indicated similar results with regard to exceedence. However the subsurface sample generally indicated higher concentration levels of metals. Site 81 is a glaciofluvial site located by the access road. The analysis shows elevated levels of arsenic and copper at this site. Site 84 is an alpine site, east of the access road. Elevated levels of arsenic, antimony, zinc, chromium, copper, nickel and selenium occurred in that sample.

Antimony

Antimony exceeded CSR and CCME park guidelines (20 mg/kg) and CSR and CCME industrial guidelines (40 mg/kg) at one site located along the access road (Site 84) (Table 3.6-4a & 3.6-4b). The surface sample exceeded all guidelines (54 mg/kg) and the subsurface sample (21 mg/kg) exceeded CSR and CCME park guidelines.

Arsenic

Three surface and four subsurface samples exceeded CCME park/residence and industrial guidelines (12 mg/kg) and two surface and two subsurface samples also exceeded CSR park (50 mg/kg) and industrial guidelines (100 mg/kg) for arsenic (Figure 3.6-1). The highest levels of arsenic were found in samples taken along the access road (Site 81 & 84), with samples showing exceedences also sampled from the proposed mine pit site, and tailings options, sites.

Chromium

Of a sample size of twenty-seven sites, fourteen samples from the 0-cm to 10-cm depth, and fifteen from the 10-cm to 20-cm depth exceeded CCME park/residence guidelines for chromium (64 mg/kg) (Figure 3.6-2). Twelve surface and fourteen subsurface samples exceeded CCME industrial chromium guidelines (87 mg/kg). The CSR park criterion (300 mg/kg) was exceeded at two sites: T4B surface (468 mg/kg) and Site 33 (surface (312 mg/kg) and subsurface (296 mg/kg).

Copper

Fourteen samples from surface samples and eighteen from subsurface samples exceeded CCME park/residence guidelines for copper (63 mg/kg) (Figure 3.6-3). Ten surface and sixteen

subsurface samples exceeded CCME industrial copper guidelines (91 mg/kg). The CSR park criterion (150 mg/kg) was exceeded by six surface and ten subsurface samples, and the CSR industrial criterion (250 mg/kg) was exceeded by four surface and seven subsurface samples. Concentrations of copper exceeding guidelines were found in both surface and subsurface samples with the highest exceedences occurring in the proposed pit area.

Molybdenum

Five surface and five subsurface samples exceeded the CCME park/residence and CSR park criterion for molybdenum (10 mg/kg) (Figure 3.6-4). Two surface and two subsurface samples exceeded CCME industrial and CSR industrial Molybdenum guidelines (40 mg/kg) (Sites P1 & P6). Molybdenum concentrations that exceeded guidelines were seen exclusively in the proposed pit area.

Nickel

The CCME park/residence and industrial guideline for nickel is 50 mg/kg (Figure 3.6-5). This criterion was exceeded by eleven surface and fourteen subsurface samples. The CSR park criterion (100 mg/kg) was exceeded by five surface and eight subsurface samples, from various locations, throughout the study area.

Vanadium

The CCME park/residence and industrial guideline is 130 mg/kg (Figure 3.6-6). This criterion was exceeded by six surface and eight subsurface samples.

Zinc

One inspection site (Site 84) was found to have zinc levels in exceedence of CCME park/residence guidelines (200mg/kg) in both surface (251 mg/kg) and subsurface (205 mg/kg) samples (Figure 3.6-7). Other soil samples analysed within the Schaft Creek study area showed concentrations of zinc under all guideline levels.

Table 3.6-3
Metal Analysis Against Criteria

	# of Samples in Exceedance							
	CCME Park/Residence		CCME Industrial		CSR Park		CSR Industrial	
Metal	Soil Sample 0-10 cm (n=53)	Soil Sample 10-20 cm (n=53)	Soil Sample 0-10 cm (n=53)	Soil Sample 10-20 cm (n=53)	Soil Sample 0-10 cm (n=53)	Soil Sample 10-20 cm (n=53)	Soil Sample 0-10 cm (n=53)	Soil Sample 10-20 cm (n=53)
Antimony	**1**	**1**	**1**	0	**1**	**1**	**1**	0
Arsenic	**3**	**4**	**3**	**4**	**2**	**2**	**2**	**2**
Barium	0	0	0	0	0	0	0	0
Beryllium	0	0	0	0	0	0	0	0
Cadmium	0	0	0	0	0	0	0	0
Chromium	**14**	**15**	**12**	**14**	**1**	0	0	0
Cobalt	0	0	0	0	0	0	0	0
Copper	**14**	**18**	**10**	**16**	**6**	**10**	**4**	**7**
Lead	0	0	0	0	0	0	0	0
Mercury	0	0	0	0	0	0	0	0
Molybdenum	**5**	**5**	**2**	**2**	**5**	**5**	**2**	**2**
Nickel	**11**	**14**	**11**	**14**	**5**	**8**	0	0
Selenium								
Silver	0	0	0	0	0	0	0	0
Thallium	0	0	0	0	0	0	0	0
Tin	0	0	0	0	0	0	0	0
Vanadium	**6**	**8**	**6**	**8**	0	0	0	0
Zinc	**1**	**1**	0	0	0	0	0	0

Note: shaded cells indicate the number of samples in exceedence

Table 3.6-4a
Exceedences of Metals in Surface Samples (0-10-cm)

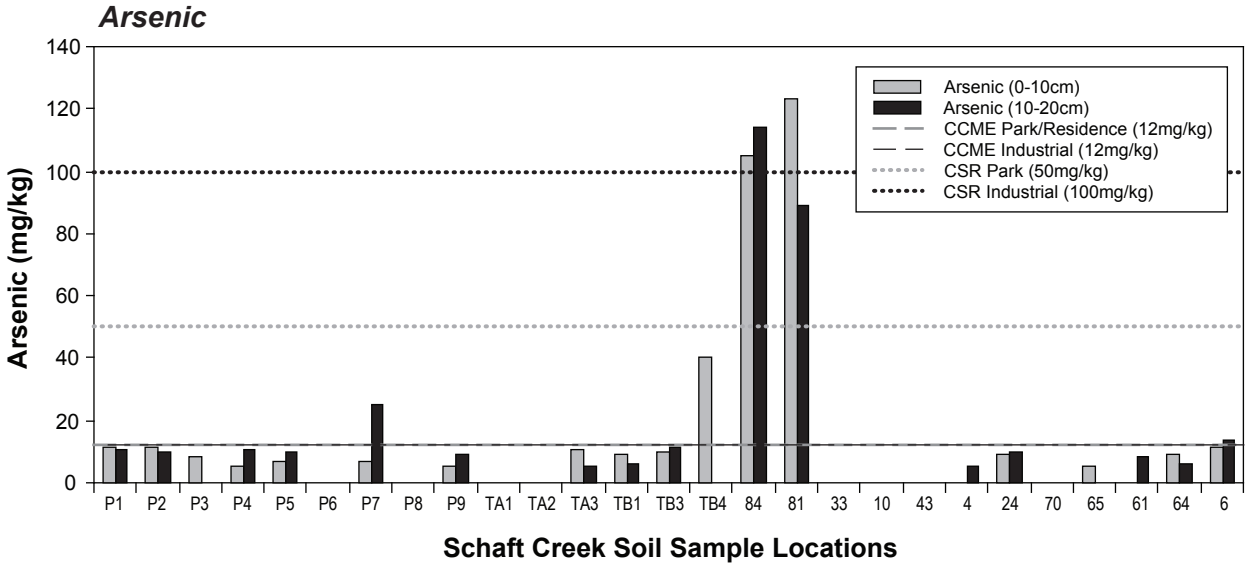
Sample Description	Sb mg/kg	As mg/kg	Cr mg/kg	Cu mg/kg	Mo mg/kg	Ni mg/kg	V mg/kg	Zn mg/kg
P1A	<10	11.5	45.3	**16300**	**66.3**	29.5	70.1	25.3
P2A	<10	11.3	**157**	**402**	**37.2**	48.7	**132**	57.7
P3A	<10	8.4	**123**	**725**	**32.2**	36.0	129	57.2
P4A	<10	5.2	**158**	**98.6**	6.9	**67.6**	123	62.0
P5A	<10	6.6	**230**	40.4	7.2	**65.0**	**154**	117
P6A	<10	<5.0	48.6	**1740**	**43.1**	**58.1**	42.1	43.6
P7A	<10	7.1	**84.0**	**65.3**	**18.7**	20.1	112	111
P9A	<10	5.2	**109**	**119**	<4.0	29.7	114	57.7
TA3A	<10	10.4	**139**	54.6	<4.0	**125**	77.7	56.9
TB1A	<10	9.5	**128**	**79.3**	<4.0	**61.9**	**132**	93.8
TB3A	<10	10.1	**137**	**160**	<4.0	**111**	**181**	90.4
TB4A	<10	**40.5**	**468**	**88.7**	<4.0	**260**	122	70.7
84	**54.0**	**105**	**85.2**	**158**	4.8	**177**	90.5	**251**
81	<10	**123**	34.9	**101**	<4.0	**62.4**	67.4	77.9
33	<10	<5.0	312	**91.1**	6.7	**198**	118	39.0
65	<10	5.1	**155**	38.6	4.8	48.2	**131**	46.1
64	<10	8.9	**116**	**78.6**	<4.0	49.3	127	42.3
6	<10	11.4	**264**	51.0	<4.0	**94.5**	**162**	53.7

Sb: antimony; As: arsenic; Cr: chromium; Cu: copper; Mo: molybdenum; Ni: nickel; V: vanadium; Zn: zinc.

Table 3.6-4b
Exceedences of Metals in Subsurface Samples (10-20-cm)

Sample Description	Sb mg/kg	As mg/kg	Cr mg/kg	Cu mg/kg	Mo mg/kg	Ni mg/kg	V mg/kg	Zn mg/kg
P1B	<10	10.6	35.0	**9850**	**70.7**	21.6	64.8	24.5
P2B	<10	10	**149**	**399**	**34.7**	45.6	129	46.4
P3B	<10	<5.0	37.7	**281**	**18.7**	17.3	59.8	53.3
P4B	<10	10.5	**201**	**199**	5.6	**84.9**	**132**	46.2
P5B	<10	10.2	**284**	**102**	<4.0	**109**	**146**	69.2
P6B	<10	<5.0	17.6	**1200**	**41.2**	23.9	25.8	38.4
P7B	<10	**25.4**	**165**	**283**	**11.5**	**64.3**	**134**	97.9
P8B	<10	<5.0	18.3	**161**	7.3	30.8	22.6	78.5
P9B	<10	9.1	**139**	**328**	<4.0	**58.7**	**132**	65.1
TA2B	<10	<5.0	**136**	30.2	<4.0	**203**	84.9	51.5
TA3B	<10	5.4	**136**	33.0	<4.0	**132**	72.1	52.4
TB1B	<10	6.2	**123**	58.6	<4.0	**64.9**	125	69.9
TB3B	<10	11.1	**140**	**183**	<4.0	**120**	**177**	90.7
84	**21.0**	**114**	**102**	**116**	5.7	**171**	118	**205**
81	<10	**89.0**	38.6	**101**	<4.0	**60.0**	61.6	69.2
33	<10	<5.0	**296**	**105**	6.0	**191**	123	34.8
4	<10	5.1	**79.3**	**125**	4.7	29.7	131	133
70	<10	<5.0	45.5	56.5	<4.0	33.9	**132**	85.1
65	<10	<5.0	**252**	**124**	4.6	**106**	**140**	60.9
61	<10	8.5	51.3	**290**	5.5	**104**	94.8	79.2
64	<10	6.2	**90.6**	**78.8**	<4.0	42.5	123	46.6
6	<10	**13.6**	**260**	**63.6**	<4.0	**93.6**	**164**	53.2

Sb: antimony; As: arsenic; Cr: chromium; Cu: copper; Mo: molybdenum; Ni: nickel; V: vanadium; Zn: zinc.



Note: Detection Limit for Arsenic = <5mg/kg therefore all sample concentrations <5mg/kg have been recorded as 0.

Arsenic Concentrations in Soil Samples

FIGURE 3.6-1

copper FOX metals inc.

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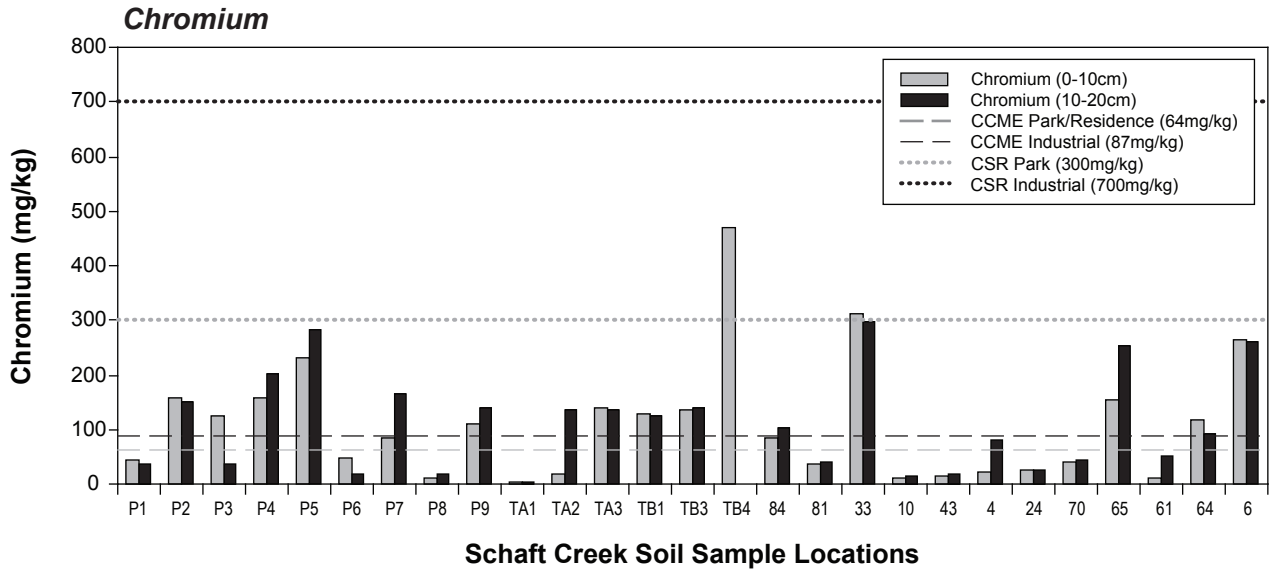
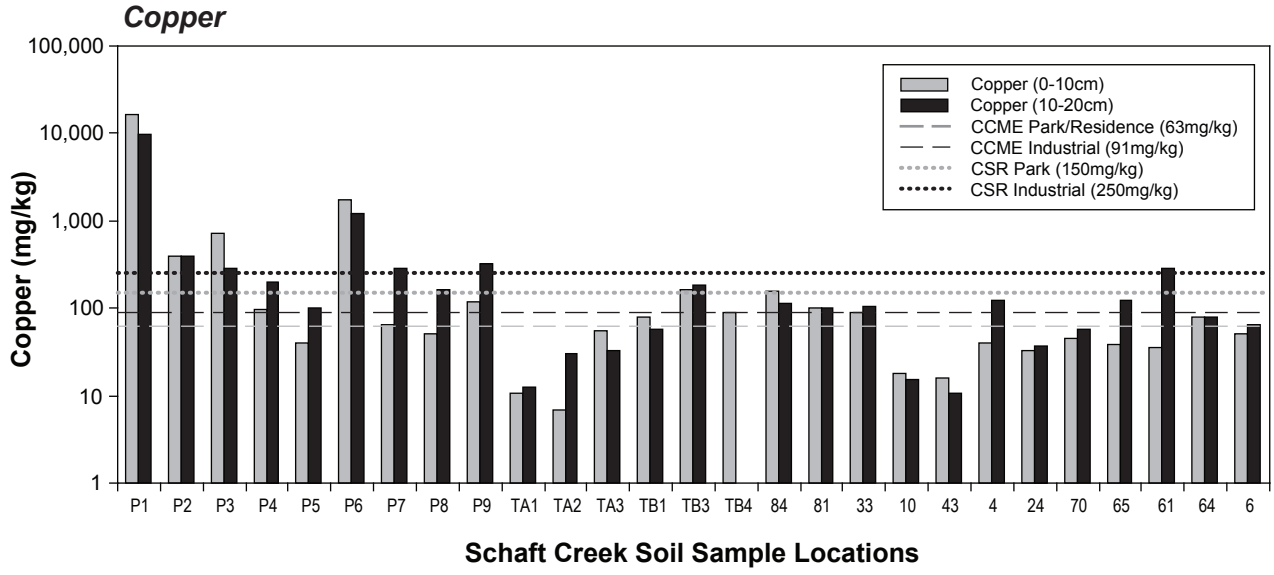


Chromium Concentrations in Soil Samples

FIGURE 3.6-2



Copper Concentrations in Soil Samples

FIGURE 3.6-3

copper FOX metals inc.

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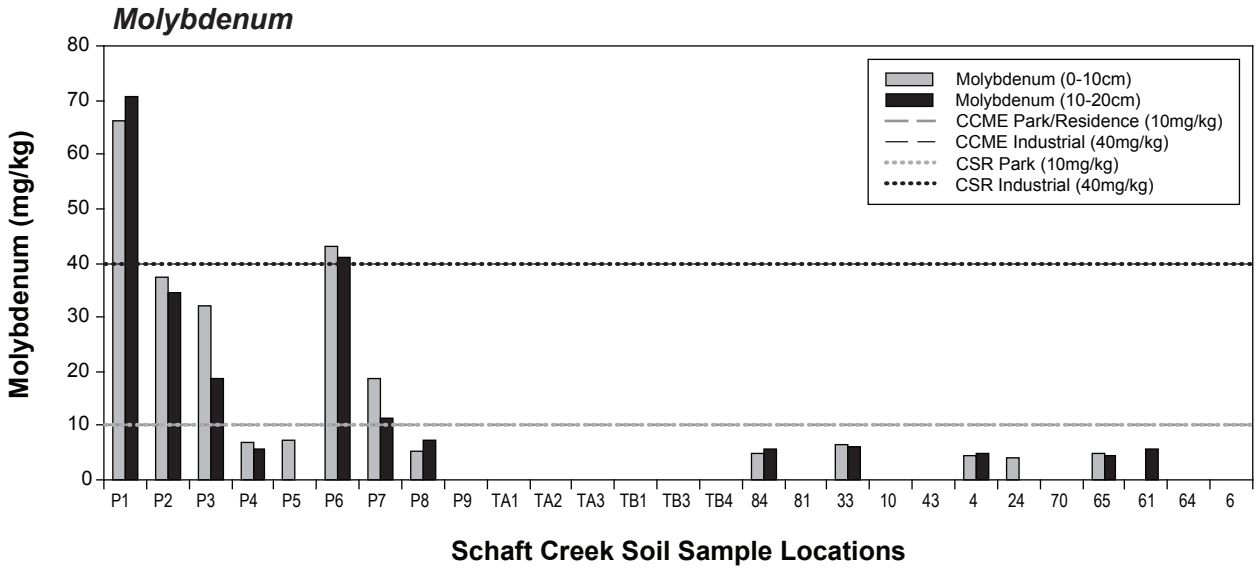
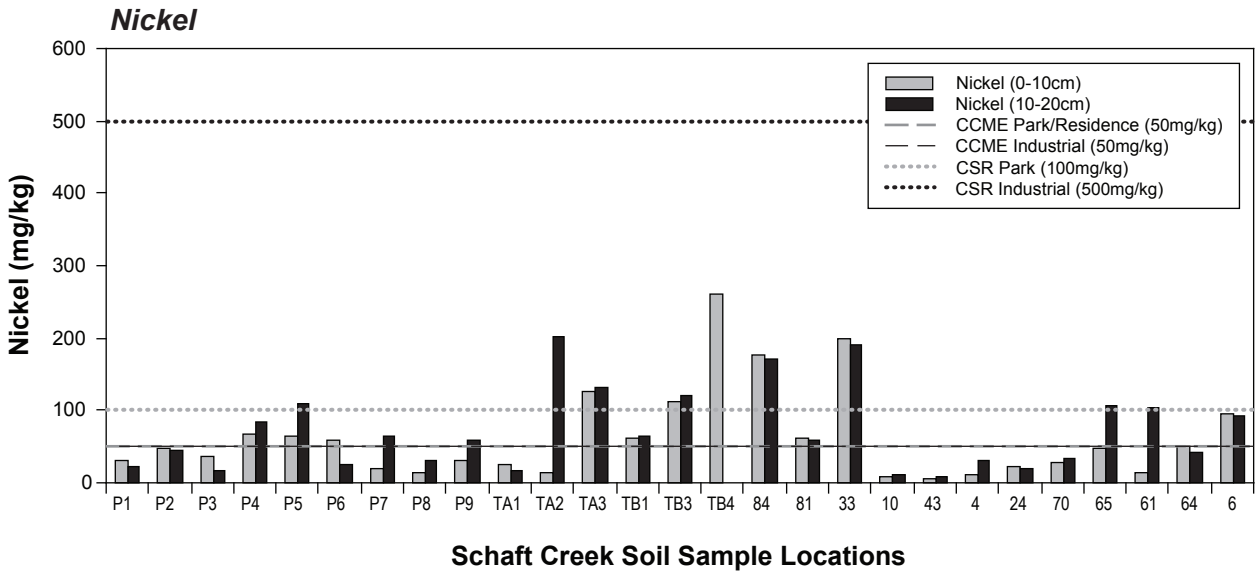


Note: Detection Limit for Molybdenum =<4mg/kg therefore all sample concentrations <4mg/kg have been recorded as 0.

Molybdenum Concentrations in Soil Samples

FIGURE 3.6-4



Nickel Concentrations in Soil Samples

FIGURE 3.6-5

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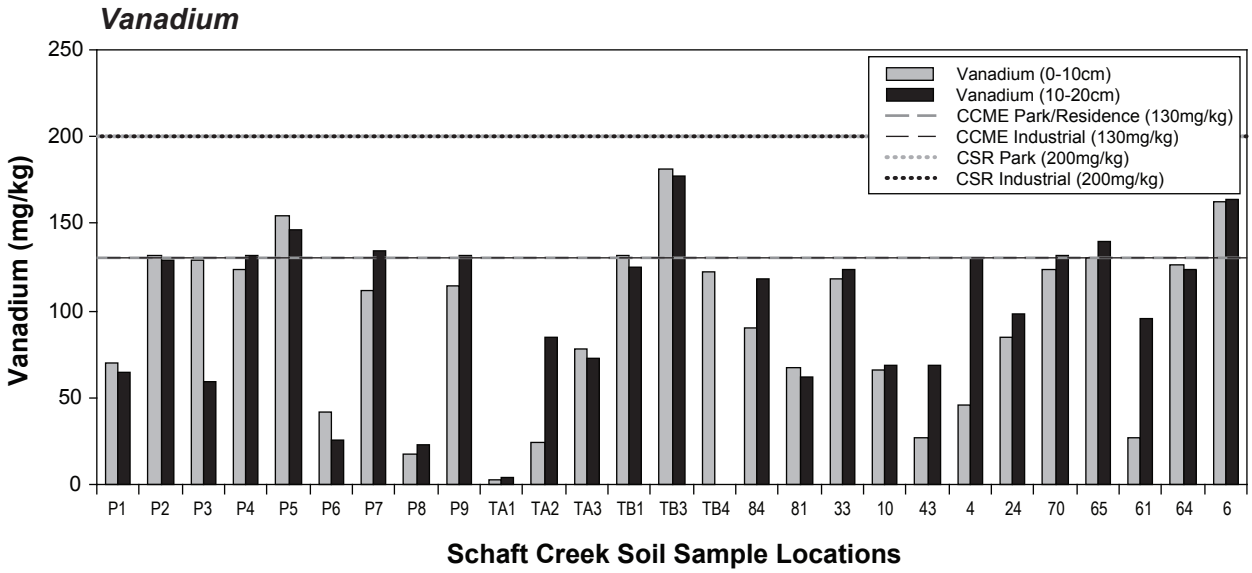
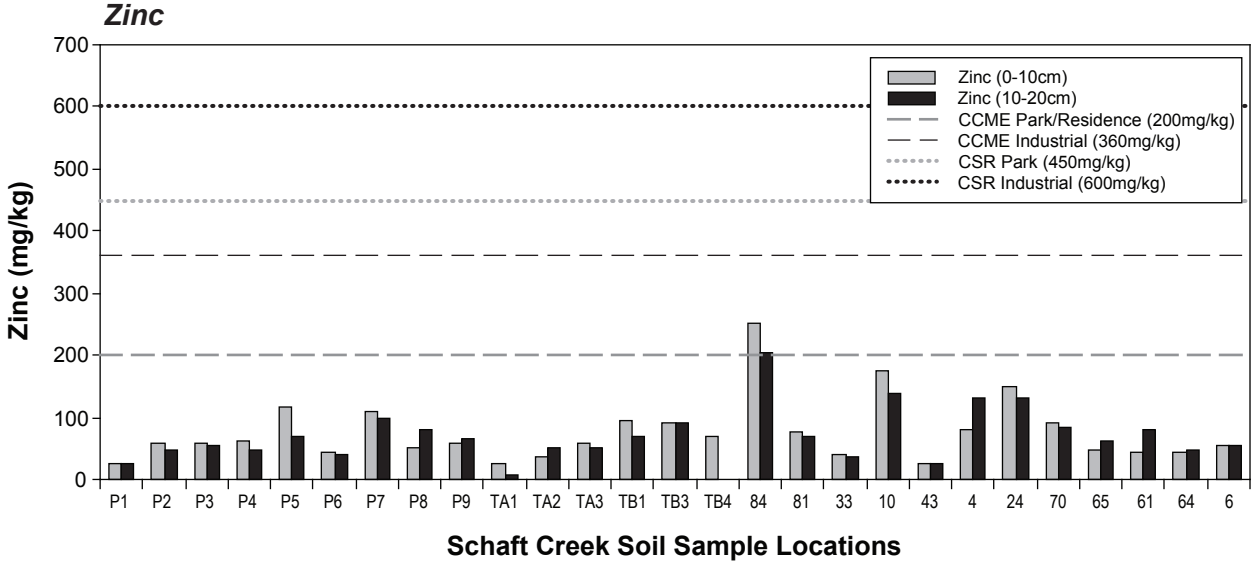


Vanadium Concentrations in Soil Samples

FIGURE 3.6-6



Zinc Concentrations in Soil Samples

FIGURE 3.6-7

copper FOX metals inc.

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APPENDIX 1
SOIL INVESTIGATION SITE FIELD INFORMATION

Appendix 1
Soil Investigation Site Field Information

Date		**7/25/2007**	**7/25/2007**	**7/25/2007**	**7/25/2007**	**7/25/2007**	**7/25/2007**	**7/25/2007**	**7/26/2007**	**7/26/2007**	**7/26/2007**	**7/26/2007**	**7/26/2007**
Plot Number		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
UTM Zone		**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
UTM northing		**6359994**	**6359974**	**6359883**	**6360514**								
UTM easting		**379310**	**379213**	**380652**	**380031**								
Plot photo #'s			**18**	**21**	**22+2511**		**26**	**27**	**28-30**	**31 + 32**	**34**	**35**	
Landuse	Forest		x	x	x	x	x	x					x
	Wetland	x											
	Agriculture												
	Grazing												
	Urban												
	Other								x	x	x	x	
Surficial (genetic) material	Morainal		x	x				x					
(1: top material,	Bedrock												
2: submaterial,	Weathered bedrock												
3: parent material)	Colluvium				x					x	x	x	
	Fluvial					x	x						
	Glaciofluvial	x											
	Lacustrine												
	Glaciolacustrine												
	Marine												
	Glaciomarine												x
	Organic	x											x
	Undifferentiated												
	Ice												
	Eolian												
	Anthropogenic												
Surface expression	Sloping (%)	1-3%	15%	20%	70%	1%	2%	15%	16%	70%	62%	50%	0%
	Aspect	160	N	V	260	20	80	330	190	150	200	130	
	Ground Cover (%)	100%	70%	70%	70%	5%	70%	90%	80%	90%	95%	100%	100%
	Erosion												
	Depression(s)												
	Hummock(s)		x										
	Rolling												
	Undulating	x											
	Blanket			x	x								
	Fan(s)												
	Level (L), Plain (P), Ridge(s) (R)												
	Terrace(s)												
	Veneer							x	x	x		x	x
	Mantle variable thickness												
	Cone(s)												
Microtopography	Level												
	Slightly mounded				x	x	x			x	x		x
	Moderatley mounded	x	x					x	x				
	Strongly mounded			x								x	
	Severely mounded												
	Extremely mounded												
	Ultra mounded												
Humus orders	Mor	x	x	x	x		x	x	x				
	Moder												
	Mull									x	x	x	
	None					x							
Drainage classes	Very rapidly												
	Rapidly				x	x			x	x			
	Well drained		x				x	x			x	x	
	Moderately			x									
	Imperfectly												
	Poorly	x											
	Very poorly												x
COMMENTS				gsMb		flood plain			alpine wildlands	alpine wilderness	wildland	wild	

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/27/2007	7/27/2007	7/27/2007	7/27/2007	7/27/2007	7/27/2007	7/27/2007	7/27/2007
Plot Number		**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
UTM Zone		**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
UTM northing													
UTM easting													
Plot photo #'s		**36+37**	**38**	**39**		**43-45**	**46**	**47**		**49**	**50**	**51**	**52, 53**
Landuse	Forest	x	x	x						x	x	x	x
	Wetland				x								
	Agriculture												
	Grazing												
	Urban												
	Other					x	x	x	x				
Surficial (genetic) material	Morainal					x	x		x	x		x	x
(1: top material,	Bedrock												
2: submaterial,	Weathered bedrock												
3: parent material)	Colluvium		x	x							x		
	Fluvial												
	Glaciofluvial	x						x					
	Lacustrine				x								
	Glaciolacustrine												
	Marine												
	Glaciomarine												
	Organic												
	Undifferentiated												
	Ice												
	Eolian												
	Anthropogenic												
Surface expression	Sloping (%)	12%	50%	70%	2%	12%	15%	20%	30%	18%	50%	20%	32%
	Aspect	300	130	80	110	310	V	230	240	V	240	270	280
	Ground Cover (%)	90%	85%	95%	100%	80%	98%	90%	70%	90%		90%	100%
	Erosion				nill	slight	slight	slight	mod	slight	high	mod	mod
	Depression(s)												
	Hummock(s)	x	x	x									
	Rolling												
	Undulating												
	Blanket											x	
	Fan(s)												
	Level (L), Plain (P), Ridge(s) (R)												
	Terrace(s)												
	Veneer					x	x		x	x			
	Mantle variable thickness												
	Cone(s)												
Microtopography	Level				x								
	Slightly mounded	x		x			x		x	x	x		x
	Moderatley mounded		x			x						x	
	Strongly mounded							x					
	Severely mounded												
	Extremely mounded												
	Ultra mounded												
Humus orders	Mor	x	x	x	x	x	x		x	x	x	x	x
	Moder												
	Mull							x					
	None												
Drainage classes	Very rapidly												
	Rapidly		x	x		x	x			x	x		
	Well drained	x							x			x	
	Moderately							x					x
	Imperfectly												
	Poorly				x								
	Very poorly												
COMMENTS		3B		3B									

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/28/2007	7/28/2007	7/28/2007	7/28/2007	7/28/2007	7/28/2007	7/28/2007	7/28/2007	7/28/2007	7/28/2007	7/28/2007	7/28/2007
Plot Number		**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**
UTM Zone		**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
UTM northing													
UTM easting													
Plot photo #'s		**56, 57**	**58**	**59**	**61, 62**	**63**	**64**	**65**	**66**	**67, 68**	**69**	**70, 71**	**72**
Landuse	Forest		x	x		x	x	x	x	x	x	x	x
	Wetland												
	Agriculture												
	Grazing												
	Urban												
	Other	x			x								
Surficial (genetic) material (1: top material, 2: submaterial, 3: parent material)	Morainal									x		x	
	Bedrock												
	Weathered bedrock												
	Colluvium				x	x							x
	Fluvial	x					x				x		
	Glaciofluvial							x	x				
	Lacustrine												
	Glaciolacustrine												
	Marine												
	Glaciomarine												
	Organic												
	Undifferentiated												
	Ice												
	Eolian												
	Anthropogenic												
Surface expression	Sloping (%)	8%	15%	3%	20%	50%	20%	4%	2%	24%	12%	12%	32%
	Aspect	250	230	350	110	140	130	120	80	50	70	250	260
	Ground Cover (%)	90%	100%	90%	96%	95%		80%	95%	100%	50%	98%	95%
	Erosion	slight	slight	nill	mod	high		slight	nill	mod	slight	slight	mod
	Depression(s)												
	Hummock(s)												
	Rolling		x										
	Undulating												
	Blanket									x		x	x
	Fan(s)						x				x		
	Level (L), Plain (P), Ridge(s) (R)	P		P					P				
	Terrace(s)												
	Veneer				x	x							
	Mantle variable thickness												
	Cone(s)												
Microtopography	Level												
	Slightly mounded				x			x	x				
	Moderatley mounded	x	x			x	x			x		x	x
	Strongly mounded			x							x		
	Severely mounded												
	Extremely mounded												
	Ultra mounded												
Humus orders	Mor	x	x	x	x	x	x	x	x	x	x	x	x
	Moder												
	Mull												
	None												
Drainage classes	Very rapidly												
	Rapidly		x	x							x		
	Well drained	x				x	x	x	x	x			x
	Moderately												
	Imperfectly											x	
	Poorly				x								
	Very poorly												
COMMENTS													

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		**7/29/2007**	**7/29/2007**	**7/29/2007**	**7/29/2007**	**7/29/2007**	**7/29/2007**	**7/29/2007**	**7/29/2007**	**7/29/2007**	**7/30/2007**	**7/30/2007**	**7/30/2007**
Plot Number		**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**
UTM Zone		**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
UTM northing													
UTM easting													
Plot photo #'s		**76**	**78**	**80, 81**	**82**	**83**		**84, 85**	**86, 87**	**88**	**89, 90**	**x---x**	**91, 92**
Landuse	Forest		x		x	x		x	x	x	x	x	x
	Wetland						x						
	Agriculture												
	Grazing												
	Urban												
	Other	x		x									
Surficial (genetic) material	Morainal				x			x	x	x	x	x	x
(1: top material,	Bedrock												
2: submaterial,	Weathered bedrock												
3: parent material)	Colluvium			x									
	Fluvial	x				x							
	Glaciofluvial												
	Lacustrine												
	Glaciolacustrine												
	Marine												
	Glaciomarine												
	Organic						x						
	Undifferentiated												
	Ice												
	Eolian												
	Anthropogenic												
Surface expression	Sloping (%)	30%	30%	45%	10-40%	15%	2%	20%	10%	20%	10%	10%	20%
	Aspect	210	130	320	V	340	35	40	90	N	150	160	V
	Ground Cover (%)	<1	90%	90%	90%	99%	90%	95%	80%	90%	90%	96%	
	Erosion	v. high	mod	high	mod	mod	nil	slight		slight	slight	slight	
	Depression(s)						x						
	Hummock(s)												
	Rolling												
	Undulating												
	Blanket	x			x			x		x		x	
	Fan(s)												
	Level (L), Plain (P), Ridge(s) (R)												
	Terrace(s)												
	Veneer			x		x			x		x		x
	Mantle variable thickness												
	Cone(s)												
Microtopography	Level												
	Slightly mounded				x		x				x	x	
	Moderatley mounded			x				x		x			x
	Strongly mounded	x	x			x							
	Severely mounded												
	Extremely mounded												
	Ultra mounded												
Humus orders	Mor		x	x	x	x	x	x	x	x	x	x	x
	Moder												
	Mull												
	None	x											
Drainage classes	Very rapidly								x				x
	Rapidly	x	x	x						x			
	Well drained				x			x			x	x	
	Moderately					x							
	Imperfectly												
	Poorly						x						
	Very poorly												
COMMENTS													

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		**7/30/2007**	**7/30/2007**	**7/30/2007**	**7/30/2007**	**7/30/2007**	**7/30/2007**	**7/30/2007**	**7/31/2007**	**7/31/2007**	**7/31/2007**	**7/31/2007**	**7/31/2007**
Plot Number		**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
UTM Zone		**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
UTM northing													
UTM easting													
Plot photo #'s		**93, 94**	**95, 96**	**97, 98**	**99**	**100**	**101, 102**	**103**	**106**	**107**	**108**	**109, 110**	**111**
Landuse	Forest	x		x	x		x	x	x	x	x	x	
	Wetland		x										x
	Agriculture												
	Grazing												
	Urban												
	Other												
Surficial (genetic) material	Morainal				x		x	x	x				
(1: top material,	Bedrock												
2: submaterial,	Weathered bedrock												
3: parent material)	Colluvium			x						x	x	x	
	Fluvial	x											
	Glaciofluvial					x							
	Lacustrine												
	Glaciolacustrine												
	Marine												
	Glaciomarine												
	Organic		x										x
	Undifferentiated												
	Ice												
	Eolian												
	Anthropogenic												
Surface expression	Sloping (%)	10%	2%	55%	15%	3%	12%	15%	10%	40%	45%	30%	1-2%
	Aspect	70	230	110	140	210	30	210	210	290	270	270	260
	Ground Cover (%)	90%	95%		80%		96%	90%	50%	95%	96%	99%	100%
	Erosion	slight	nil		mod		slight	slight	slight	mod	high	mod	nil
	Depression(s)		x			x							x
	Hummock(s)												
	Rolling												
	Undulating												
	Blanket	x		x	x		x	x				x	
	Fan(s)												
	Level (L), Plain (P), Ridge(s) (R)												
	Terrace(s)												
	Veneer								x	x	x		
	Mantle variable thickness												
	Cone(s)												
Microtopography	Level		x										
	Slightly mounded			x	x		x	x	x	x			x
	Moderatley mounded	x				x					x	x	
	Strongly mounded												
	Severely mounded												
	Extremely mounded												
	Ultra mounded												
Humus orders	Mor	x	x	x	x	x	x	x	x	x	x	x	x
	Moder												
	Mull												
	None												
Drainage classes	Very rapidly								x				
	Rapidly									x	x		
	Well drained			x	x		x	x				x	
	Moderately												
	Imperfectly	x											
	Poorly		x			x							x
	Very poorly												
COMMENTS													

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		**7/31/2007**	**7/31/2007**	**7/31/2007**	**7/31/2007**	**7/31/2007**	**7/31/2007**	**8/1/2007**	**8/1/2007**	**8/1/2007**	**8/1/2007**	**8/1/2007**	**8/1/2007**
Plot Number		**61**	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**	**71**	**72**
UTM Zone		**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
UTM northing													
UTM easting													
Plot photo #'s		**112, 113**	**114**	**115**	**116**	**117**	**118**	**119**	**120, 121**	**122**	**123**	**124, 125**	**126**
Landuse	Forest	x		x	x	x	x						
	Wetland		x										
	Agriculture												
	Grazing												
	Urban												
	Other							x	x	x	x	x	x
Surficial (genetic) material	Morainal	x		x		x	x	x	x	x	x		x
(1: top material,	Bedrock											x	
2: submaterial,	Weathered bedrock												
3: parent material)	Colluvium												
	Fluvial				x								
	Glaciofluvial												
	Lacustrine												
	Glaciolacustrine												
	Marine												
	Glaciomarine												
	Organic		x										
	Undifferentiated												
	Ice												
	Eolian												
	Anthropogenic												
Surface expression	Sloping (%)	22%	2%	12%	10%	22%	15%	15%	20%	25%	24%	5%	20%
	Aspect	100	100	230	280	310	250	60	70	70	50	70	100
	Ground Cover (%)		99%	98%	99%	99%		80%	95%	80%	92%	98%	99%
	Erosion		nil		light	mod		slight	mod	mod	mod		mod
	Depression(s)		x										
	Hummock(s)												
	Rolling												
	Undulating												
	Blanket	x		x	x	x	x		x		x	x	x
	Fan(s)												
	Level (L), Plain (P), Ridge(s) (R)		L										
	Terrace(s)												
	Veneer									x			
	Mantle variable thickness												
	Cone(s)												
Microtopography	Level												
	Slightly mounded	x						x	x			x	
	Moderatley mounded		x	x	x	x	x						
	Strongly mounded									x	x		x
	Severely mounded												
	Extremely mounded												
	Ultra mounded												
Humus orders	Mor		x	x	x	x	x			x			x
	Moder	x											
	Mull							x	x		x	x	
	None												
Drainage classes	Very rapidly												
	Rapidly												
	Well drained	x		x		x	x			x	x		x
	Moderately								x				
	Imperfectly				x			x				x	
	Poorly		x										
	Very poorly												
COMMENTS													

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		**8/1/2007**	**8/1/2007**	**8/1/2007**	**no data**	**no data**	**no data**	**8/2/2007**	**8/2/2007**	**8/2/2007**	**8/2/2007**	**8/2/2007**	**8/2/2007**
Plot Number		**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**
UTM Zone		**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
UTM northing													
UTM easting													
Plot photo #'s		**129**	**130, 131**	**136**				**138**	**139**	**140**	**159**	**160**	**161, 162**
Landuse	Forest								x	x			
	Wetland												
	Agriculture												
	Grazing												
	Urban												
	Other	x	x	x				x			x	x	x
Surficial (genetic) material	Morainal	x	x					x	x			x	x
(1: top material,	Bedrock												
2: submaterial,	Weathered bedrock										x		
3: parent material)	Colluvium			x									
	Fluvial												
	Glaciofluvial									x			
	Lacustrine												
	Glaciolacustrine												
	Marine												
	Glaciomarine												
	Organic												
	Undifferentiated												
	Ice												
	Eolian												
	Anthropogenic												
Surface expression	Sloping (%)	25%	20%	20%				10%	25%	5%	25%	30%	15%
	Aspect	V	130	270				150	360	320	220	110	95
	Ground Cover (%)	60%	85%	2%				50%	99%	99%	60%	95%	96%
	Erosion	high	mod					slight	mod	nil	mod	mod	
	Depression(s)												
	Hummock(s)												
	Rolling												
	Undulating												
	Blanket			x				x	x			x	x
	Fan(s)												
	Level (L), Plain (P), Ridge(s) (R)									L			
	Terrace(s)												
	Veneer	x	x								x		
	Mantle variable thickness												
	Cone(s)												
Microtopography	Level												
	Slightly mounded									x	x		
	Moderatley mounded	x		x					x			x	
	Strongly mounded		x					x					x
	Severely mounded												
	Extremely mounded												
	Ultra mounded												
Humus orders	Mor							x	x	x			x
	Moder												
	Mull	x	x									x	
	None			x							x		
Drainage classes	Very rapidly										x		
	Rapidly	x						x		x			
	Well drained								x			x	
	Moderately												x
	Imperfectly		x	x									
	Poorly												
	Very poorly												
COMMENTS										on creek edge, creek erosion possible			

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		**8/2/2007**	**8/2/2007**
Plot Number		**85**	**86**
UTM Zone		**9**	**9**
UTM northing			
UTM easting			
Plot photo #'s		**171**	**172**
Landuse	Forest		
	Wetland		
	Agriculture		
	Grazing		
	Urban		
	Other	x	x
Surficial (genetic) material	Morainal		
(1: top material,	Bedrock		
2: submaterial,	Weathered bedrock		
3: parent material)	Colluvium	x	x
	Fluvial		
	Glaciofluvial		
	Lacustrine		
	Glaciolacustrine		
	Marine		
	Glaciomarine		
	Organic		
	Undifferentiated		
	Ice		
	Eolian		
	Anthropogenic		
Surface expression	Sloping (%)	12%	30%
	Aspect	120	180
	Ground Cover (%)	40%	
	Erosion	mod	
	Depression(s)		
	Hummock(s)		
	Rolling		
	Undulating		
	Blanket		
	Fan(s)		
	Level (L), Plain (P), Ridge(s) (R)		
	Terrace(s)		
	Veneer	x	x
	Mantle variable thickness		
	Cone(s)		
Microtopography	Level		
	Slightly mounded		
	Moderatley mounded	x	x
	Strongly mounded		
	Severely mounded		
	Extremely mounded		
	Ultra mounded		
Humus orders	Mor		
	Moder		
	Mull	x	
	None		x
Drainage classes	Very rapidly		
	Rapidly	x	x
	Well drained		
	Moderately		
	Imperfectly		
	Poorly		
	Very poorly		
COMMENTS			

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		8/28/2007	8/28/2007	8/28/2007	8/29/2007	8/29/2007	8/29/2007	8/29/2007	8/29/2007	8/29/2007	8/30/2007	8/30/2007	8/30/2007
Plot Number		**Pit 1**	**Pit 2**	**Pit 3**	**Pit 4**	**Pit 5**	**Pit 6**	**Pit 7**	**Pit 8**	**Pit 9**	**Tail A1**	**Tail A2**	**Tail A3**
UTM Zone		**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
UTM northing		**6359959**	**6359578**	**6359316**	**6359259**	**6359489**	**6359692**	**6359965**	**6360138**	**6359502**	**6373451**	**6373315**	**6372666**
UTM easting		**380113**	**380173**	**380069**	**379584**	**379893**	**379641**	**379553**	**379595**	**379152**	**381787**	**381809**	**381988**
elevation		**1036**	**1008**	**972**	**904**	**940**	**900**	**901**	**911**	**890**	**820**	**819**	**824**
Plot photo #'s		**1053-1056**	**1057-1062**	**1063-1066**	**167-171**	**72-75**		**182-186**	**1091-1094**	**99-102**	**105-107**	**109-113**	**117-121**
Landuse	Forest	x			x			x		x		x	x
	Wetland						x		x		x		
	Agriculture												
	Grazing												
	Urban												
	Other		x	x		x							
Surficial (genetic) material	Morainal		2		x	x		x		1			
(1: top material,	Bedrock									2			
2: submaterial,	Weathered bedrock												
3: parent material)	Colluvium	x	1										
	Fluvial												
	Glaciofluvial											x	x
	Lacustrine												
	Glaciolacustrine												
	Marine												
	Glaciomarine												
	Organic						x		x		x		
	Undifferentiated												
	Ice												
	Eolian												
	Anthropogenic												
Surface expression	Sloping (%)	35%	20%		5%	10%	3%	22%	6%	0% crest	0%	0%	7%
	Aspect	218	237		200	220	234	238	214	999	999	999	315
	Ground Cover (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Erosion												
	Depression(s)												
	Hummock(s)												
	Rolling												
	Undulating												
	Blanket	x	x										
	Fan(s)												
	Level (L), Plain (P), Ridge(s) (R)												
	Terrace(s)												
	Veneer									x			
	Mantle variable thickness												
	Cone(s)												
Microtopography	Level										x		
	Slightly mounded	x	x	x	x	x		x		x			
	Moderatley mounded						x		x				
	Strongly mounded											x	x
	Severely mounded												
	Extremely mounded												
	Ultra mounded												
Humus orders	Mor						x					x	
	Moder	x	x	x	x	x				x			x
	Mull							x					
	None								x		x		
Drainage classes	Very rapidly												
	Rapidly												
	Well drained		x	x	x	x		x		x			
	Moderately	x										x	x
	Imperfectly						x						
	Poorly								x		x		
	Very poorly												
COMMENTS													

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		**8/30/2007**	**8/30/2007**	**8/30/2007**	**8/30/2007**
Plot Number		**Tail B1**	**Tail B2**	**Tail B3**	**Tail B4**
UTM Zone		**9**	**9**	**9**	**9**
UTM northing		**6348446**	**6348593**	**6348813**	**6349101**
UTM easting		**377326**	**377425**	**377467**	**377613**
elevation		**1099**	**1097**	**1088**	**1088**
Plot photo #'s		**130-136**		**152-156**	
Landuse	Forest	x			
	Wetland				
	Agriculture				
	Grazing				
	Urban				
	Other		x	x	x
Surficial (genetic) material	Morainal	2	2		
(1: top material,	Bedrock				
2: submaterial,	Weathered bedrock				
3: parent material)	Colluvium	1	1		
	Fluvial			x	x
	Glaciofluvial				
	Lacustrine				
	Glaciolacustrine				
	Marine				
	Glaciomarine				
	Organic				
	Undifferentiated				
	Ice				
	Eolian				
	Anthropogenic				
Surface expression	Sloping (%)	17%	11%	5% toe	0%
	Aspect	290	256	256	999
	Ground Cover (%)	100%	100%	10%	5%
	Erosion				
	Depression(s)				
	Hummock(s)				
	Rolling				
	Undulating				
	Blanket				
	Fan(s)				
	Level (L), Plain (P), Ridge(s) (R)				
	Terrace(s)				
	Veneer				
	Mantle variable thickness				
	Cone(s)				
Microtopography	Level				x
	Slightly mounded		x	x	
	Moderatley mounded	x			
	Strongly mounded				
	Severely mounded				
	Extremely mounded				
	Ultra mounded				
Humus orders	Mor	x	x		
	Moder				
	Mull				
	None			x	x
Drainage classes	Very rapidly				
	Rapidly			x	x
	Well drained				
	Moderately	x	x		
	Imperfectly				
	Poorly				
	Very poorly				
COMMENTS					

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/25/2007			7/25/2007					7/25/2007				7/25/2007					7/25/2007		
Site numbers		**1**			**2**					**3**				**4**					**5**		
HORIZON [1]		**LFH**	**Om**	**Cg**	**LFH**	**Ae**	**Bm**	**Bc1**	**Bc2**	**LFH**	**Bm**	**Bc1**	**Bc2**	**LFH**	**Aej**	**Bm1**	**Bm2**	**Bc**	**IC**	**IIC**	**IIIC**
DEPTH (cm)		**0-5**	**5-70**	**70-90+**	**2-0**	**0-7**	**7-28**	**28-60**	**60-70+**	**15-0**	**0-20**	**20-50**	**50-60+**	**5-0**	**0-2**	**2-32**	**32-60**	**60-90+**	**0-30**	**30-45**	**45-70+**
GRADE	weak					x	x	x			x	x	x		x	x	x	x		x	
	moderate																				
	strong																				
	none			x					x										x		x
CLASS SIZE	very fine														x			x			
	fine					x	x	x				x	x			x	x				
	medium																			x	
	coarse																				
	very coarse																				
KIND	subangular blocky						x	x				x	x				x	x		x	
	angular blocky																				
	granular														x	x					
	massive																				
	single grained			x					x										x		x
	columnar																				
	prismatic																				
	platy					x					x										
CONSISTENCE	dry (loose/soft/hard)			/																	
	moderate (loose/friable/firm)			/		x	x	x	x		x	x	x		x	x	x	x	x	x	x
	wet (nonsticky/sticky)			ns																	
COLOUR (Munsell chart)				5/5g		10yr5/1	10yr3/6	10yr4/4	2.5y3/3		10yr3/6	10yr3/2	10yr3/3		10yr4/1	10yr2/2	10yr3/3	10yr3/4	2.5y3/1	5y3/2	5y3/2
COARSE FRAGMENT	pebble (< 3 cm)			15		5	5	5	5		5	10	10		10	10	10	10	10	5	10
(% volume)	gravel (3-7.5 cm)			20			15	20	25		15	20	25		15	20	20	25	30	25	40
	cobble (7.5-25 cm)			10			10	10	15		10	20	25		10	20	20	25	5	5	10
	boulder (> 25 cm)								5												
	Total			45%		5%	30%	35%	50%		30%	50%	60%		35%	50%	50%	60%	45%	35%	60%
SHAPE	round					x	x	x	x		x	x	x						x	x	x
	angular			x											x	x	x	x			
MOTTLES	few (< 2)																				
	common (2-20)																				
	many (> 20)																				
	fine (< 5 mm)																				
	medium (5-15 mm)																				
	coarse (> 15 mm)																				
ROOTS	few (< 4)		x	x									x					x			x
	common (4-14)	x				x						x					x			x	
	many (> 14)										x			x	x	x					
	fine (< 2 mm)	x	x									x	x	x	x	x	x	x		x	x
	medium (2-5 mm)					x					x										
	coarse (> 5 mm)																				
	Restriciting (cm)		10																		
TEXTURE [2]			O6	SL		fSL	fSL	fSL	LS		SL	SL			fSL	fSL	fSL	fSL	LS	SL	S
Canadain System of Soil Classification: Subgroup																					
Comments			7w 70cm				climate class				7P>40cm, bedrock controll				Bm1=>Ahpossible					o regesol	

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic**

(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/25/2007					7/25/2007					7/26/2007				7/26/2007			
Site numbers		6					7					8				9			
HORIZON [1]		LFH	Bm1	Bm2	Bc1	Bc2	LFH	Ae	Bm	Bc	R	LF	Ah	Bm	R	LFH	Ah	Bm	R
DEPTH (cm)		7-0	0-15	15-35	35-80	80-90+	7-0	0-3	3-26	26-40	40+	2-0	0-19	19-55	55+	5-0	0-17	17-60	60+
GRADE	weak		x	x	x			x						x			x	x	
	moderate								x	x			x						
	strong																		
	none					x													
CLASS SIZE	very fine																	x	
	fine		x	x	x			x					x	x			x		
	medium								x	x									
	coarse																		
	very coarse																		
KIND	subangular blocky			x	x				x	x				x				x	
	angular blocky																		
	granular		x					x					x				x		
	massive																		
	single grained					x													
	columnar																		
	prismatic																		
	platy																		
CONSISTENCE	dry (loose/soft/hard)																		
	moderate (loose/friable/firm)		x	x	x	x		x	x	x			x	x			x	x	
	wet (nonsticky/sticky)																		
COLOUR (Munsell chart)			10yr3/3	10yr3/2	5y2.5/2	5y2.5/2		10yr6/1	7.5yr3/4	10yr3/3			10yr2/2	10yr3/6			2.5yr2.5/2	7.5yr3/4	
COARSE FRAGMENT	pebble (< 3 cm)		5	5	10	10		5	5	5			10	10			10	10	
(% volume)	gravel (3-7.5 cm)		5	10	10	15		5	10	5			20	30			30	20	
	cobble (7.5-25 cm)				5	10			10	40			20	30			20	40	
	boulder (> 25 cm)																	10	
	Total		10%	15%	25%	35%		10%	25%	50%			50%	70%			60%	80%	
SHAPE	round		x	x	x	x		x	x										
	angular									x			x	x			x	x	
MOTTLES	few (< 2)																		
	common (2-20)																		
	many (> 20)																		
	fine (< 5 mm)																		
	medium (5-15 mm)																		
	coarse (> 15 mm)																		
ROOTS	few (< 4)				x	x								x				x	
	common (4-14)	x	x	x				x	x	x			x				x		
	many (> 14)																		
	fine (< 2 mm)	x	x			x							x	x			x	x	
	medium (2-5 mm)			x	x			x	x	x									
	coarse (> 5 mm)																		
	Restriciting (cm)										lithic				lithic 55				Lithic 60
TEXTURE [2]			LS	fSL	fSL	LS		SL	L	L			SL	SL			SiL	SL	
Canadain System of Soil Classification: Subgroup																			
Comments			sand lense through sut					EDyB, gsmMV					srMv variable				s Brum, srCv		

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic**

(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/26/2007					7/26/2007				7/26/2007				7/26/2007			
Site numbers		10					11				12				13			
HORIZON [1]		LFH	Ah	Bm	Bc	R	LFH	Ahu	Bmu	R	LF	Of	Om	Cg	LF	Bf	Bc1	Bc2
DEPTH (cm)		5-0	0-20	20-45	45-70	70+	7-0	0-12	12-40	40+	0-5	5-15	15-40	40+	4-0	0-25	25-40	40-70+
GRADE	weak		x	x				x	x							x	x	x
	moderate																	
	strong																	
	none				x									x				
CLASS SIZE	very fine			x					x									
	fine		x					x										
	medium															x	x	x
	coarse																	
	very coarse																	
KIND	subangular blocky			x					x							x	x	x
	angular blocky																	
	granular		x					x										
	massive													x				
	single grained				x													
	columnar																	
	prismatic																	
	platy																	
CONSISTENCE	dry (loose/soft/hard)																	
	moderate (loose/friable/firm)		x	x	x			x	x							x	x	x
	wet (nonsticky/sticky)													x				
COLOUR (Munsell chart)			10yr2/2	10yr3/3	7.5yr2.5/3			10yr4/4	10yr2/2					4/5g		5yr4/5	10yr4/5	2.5y4/2
COARSE FRAGMENT	pebble (< 3 cm)		5	5	10			5	10							5	5	5
(% volume)	gravel (3-7.5 cm)		25	30	40			20	30							10	15	15
	cobble (7.5-25 cm)		15	20	30			20	30							5	10	15
	boulder (> 25 cm)							5	10									
	Total		45%	55%	80%			50%	80%		0%	0%	0%	0%		20%	30%	35%
SHAPE	round															x	x	x
	angular		x	x	x			x	x									
MOTTLES	few (< 2)																	
	common (2-20)																	
	many (> 20)																	
	fine (< 5 mm)																	
	medium (5-15 mm)																	
	coarse (> 15 mm)																	
ROOTS	few (< 4)								x			x						
	common (4-14)			x													x	
	many (> 14)		x				x	x			x							
	fine (< 2 mm)		x	x				x	x		x	x					x	
	medium (2-5 mm)						x											
	coarse (> 5 mm)																	
	Restriciting (cm)					lithic 70				lithic 40				w-10				
TEXTURE[2]			SiL	SL	LS			L	SL					SiL		fSL	SL	SL
Canadain System of Soil Classification: Subgroup																		
Comments				sample, srCv				pockets of mix and non mixed material, 5D,				Terric Meisol				OHFP, gsGFh		

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic**

(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/26/2007						7/26/2007				7/26/2007			7/27/2007			
Site numbers		14						15				16			17			
HORIZON [1]		LF	Aej	Bm1	Bm2	Bc1	Bc2	LFH	Bm	Bc1	Bc2	LF	Bg	Cg	LF	Bm	Bc	R
DEPTH (cm)		3-0	0-2	2-20	20-35	35-60	60-80+	14-0	0-24	24-45	45-60+	4-0	0-20	20-40+	2-0	0-25	25-40	40+
GRADE	weak		x	x	x	x			x	x						x		
	moderate																	
	strong																	
	none						x				x		x	x			x	
CLASS SIZE	very fine																	
	fine		x	x	x	x				x						x		
	medium								x									
	coarse																	
	very coarse																	
KIND	subangular blocky		x	x	x	x			x	x						x		
	angular blocky																	
	granular																	
	massive												x	x				
	single grained						x				x						x	
	columnar																	
	prismatic																	
	platy																	
CONSISTENCE	dry (loose/soft/hard)																	
	moderate (loose/friable/firm)		x	x	x	x	x		x	x	x					x	x	
	wet (nonsticky/sticky)												x	x				
COLOUR (Munsell chart)			10yr5/1	10yr3/6	10yr4/6	10yr3/3	2,5y3/3		10yr4/6	10yr3/3	2.5y3/3		4/sgy	4/10y		10yr3/3	10yr3/4	
COARSE FRAGMENT	pebble (< 3 cm)		5	5	10	10	10		10	10	10					10	10	
(% volume)	gravel (3-7.5 cm)		10	20	20	20	20		20	25	25					10	20	
	cobble (7.5-25 cm)		10	15	20	20	20		20	30	30					10	20	
	boulder (> 25 cm)																	
	Total		25%	40%	50%	50%	50%		50%	65%	65%	0%	0%	0%		30%	60%	
SHAPE	round		x	x	x	x	x		x	x	x					x		
	angular																x	
MOTTLES	few (< 2)																	
	common (2-20)																	
	many (> 20)																	
	fine (< 5 mm)																	
	medium (5-15 mm)																	
	coarse (> 15 mm)																	
ROOTS	few (< 4)					x					x	x	x				x	
	common (4-14)				x					x						x		
	many (> 14)		x	x				x	x									
	fine (< 2 mm)		x	x		x					x	x	x			x	x	
	medium (2-5 mm)				x			x	x	x								
	coarse (> 5 mm)																	
	Restriciting (cm)													w-5				40-L
TEXTURE [2]			fSL	fSL	SL	LS	LS		fSL	LS	LS		Si	Si		SL	LS	
Canadain System of Soil Classification: Subgroup																		
Comments				2B, ODyBr, gsCb					ODyB, srCv									

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic**

(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/27/2007				7/27/2007				7/27/2007						7/27/2007				
Site numbers		18				19				20						21				
HORIZON [1]		LF	Bm	Bc	R	LFH	Ah	Bm	Bc	LFH	Ae	Bm1	Bm2	Bc	R	LFH	Ae	Bm1	Bm2	Bc
DEPTH (cm)		2-0	0-26	26-45	45+	5-0	0-5	5-30	30-50+	4-0	0-4	4-15	15-30	30-50	50+	2-0	0-2	2-17	17-30	30+
GRADE	weak		x	x				x			x	x	x				x	x	x	
	moderate						x													
	strong																			
	none								x					x						x
CLASS SIZE	very fine																		x	
	fine			x			x	x			x	x	x				x	x		
	medium		x																	
	coarse																			
	very coarse																			
KIND	subangular blocky		x	x				x				x	x					x	x	
	angular blocky																			
	granular						x										x			
	massive										x									
	single grained								x					x						x
	columnar																			
	prismatic																			
	platy																			
CONSISTENCE	dry (loose/soft/hard)																			
	moderate (loose/friable/firm)		x	x			x	x	x		x	x	x	x			x	x	x	x
	wet (nonsticky/sticky)																			
COLOUR (Munsell chart)			7.5yr3/3	7.5yr2.5/3			10yr2/2	10yr3/3	2.5y3/3		10yr5/1	7.5yr2.5/2	7.5yr2.5/3	7.5yr3/4			10yr5/1	10yr4/6	7.5yr4/6	7.5yr4/4
COARSE FRAGMENT	pebble (< 3 cm)		5	10			5	10	15		5	5	5	10			5	5	5	10
(% volume)	gravel (3-7.5 cm)		15	20			10	15	15		10	20	20	40			10	15	15	20
	cobble (7.5-25 cm)		15	30			5	10	15			10	20	40			10	15	15	20
	boulder (> 25 cm)																			10
	Total		35%	60%			20%	35%	45%		15%	35%	45%	90%			25%	35%	35%	60%
SHAPE	round		x				x	x	x				x				x	x	x	
	angular			x										x						x
MOTTLES	few (< 2)																			
	common (2-20)																			
	many (> 20)																			
	fine (< 5 mm)																			
	medium (5-15 mm)																			
	coarse (> 15 mm)																			
ROOTS	few (< 4)			x										x						x
	common (4-14)							x					x						x	
	many (> 14)		x			x	x			x	x	x					x	x		
	fine (< 2 mm)		x	x		x	x	x			x		x	x					x	x
	medium (2-5 mm)									x		x					x	x		
	coarse (> 5 mm)																			
	Restriciting (cm)				L-40										L-50					
TEXTURE[2]			SiL	SL			SiL	SL	LS		SL	L	L	LS			fSL	SL	SL	LS
Canadain System of Soil Classification: Subgroup																				
Comments																				

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic**

(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/27/2007						7/27/2007				7/27/2007				7/28/2007				
Site numbers		22						23				24				25				
HORIZON [1]		LFH	Aej	Bm1	Bm2	Bc	R	LFH	Ae	Bf	Bc	LFH	Bf	Bm	Bc	LFH	Bm	Bc1	Bc2	C
DEPTH (cm)		5-0	0-7	7-20	20-40	40-60	60+	7-0	0-4	4-35	35-70+	10-0	0-20	20-35	35-60+	2-0	0-15	15-40	40-50	50-60+
GRADE	weak		x	x	x				x	x			x	x			x	x	x	
	moderate																			
	strong																			
	none					x					x				x					x
CLASS SIZE	very fine																x			
	fine		x	x	x				x	x			x	x				x	x	
	medium																			
	coarse																			
	very coarse																			
KIND	subangular blocky			x	x					x				x				x	x	
	angular blocky																			
	granular		x						x				x				x			
	massive																			
	single grained					x					x				x					x
	columnar																			
	prismatic																			
	platy																			
CONSISTENCE	dry (loose/soft/hard)																			
	moderate (loose/friable/firm)		x	x	x	x			x	x	x		x	x	x		x	x	x	x
	wet (nonsticky/sticky)																			
COLOUR (Munsell chart)			10yr4/2	5yr3/4	10yr3/4	10yr3/6			10yr5/1	5yr3/4	10yr3/4		7.5yr2.5/2	7.5yr3/3	10yr3/3		7.5yr3/3	7.5yr3/2	7.5yr3/2	7.5yr3/1
COARSE FRAGMENT	pebble (< 3 cm)		5	5	10	10			5	5	10						15			10
(% volume)	gravel (3-7.5 cm)		10	15	20	20			10	10	10		15	20	30		15			40
	cobble (7.5-25 cm)		5	5	10	30			5	5	5		15	20	20		10			40
	boulder (> 25 cm)																			
	Total		20%	25%	40%	60%			20%	20%	25%		30%	40%	50%		40%			90%
SHAPE	round		x	x	x	x				x	x		x	x	x		x			x
	angular																			
MOTTLES	few (< 2)																			
	common (2-20)																			
	many (> 20)																			
	fine (< 5 mm)																			
	medium (5-15 mm)																			
	coarse (> 15 mm)																			
ROOTS	few (< 4)					x					x				x			x	x	
	common (4-14)				x									x			x			
	many (> 14)	x	x	x				x	x	x		x	x							
	fine (< 2 mm)			x	x	x					x		x	x	x		x	x	x	
	medium (2-5 mm)	x	x					x	x	x										
	coarse (> 5 mm)											x								
	Restriciting (cm)						L-60													
TEXTURE[2]			fSL	SiL	SL	LS			SL	L	SL		fSL	SL	LS		SL	LS	fSL	LS
Canadain System of Soil Classification: Subgroup																				
Comments																				

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic**

(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/28/2007					7/28/2007				7/28/2007			7/28/2007				7/28/2007			
Site numbers		**26**					**27**				**28**			**29**				**30**			
HORIZON [1]		**LFH**	**Ae**	**Bf1**	**Bf2**	**Bc**	**LFH**	**Bm1**	**Bm2**	**Bc**	**LFH**	**Bg**	**Cg**	**LFH**	**Bm**	**Bc1**	**Bc2**	**LFH**	**Bm**	**Bc1**	**Bc2**
DEPTH (cm)		**7-0**	**0-5**	**5-20**	**20-36**	**36+**	**8-0**	**0-4**	**4-30**	**30-60+**	**7-0**	**0-20**	**20-30+**	**12-0**	**0-17**	**17-40**	**40+**				
GRADE	weak		x	x	x				x			x			x	x	x			x	
	moderate																				
	strong																				
	none					x		x		x			x						x		x
CLASS SIZE	very fine																				
	fine		x	x	x				x			x			x	x	x			x	
	medium																				
	coarse																				
	very coarse																				
KIND	subangular blocky			x	x				x						x	x	x			x	
	angular blocky																				
	granular		x									x									
	massive																				
	single grained					x		x		x			x						x		x
	columnar																				
	prismatic																				
	platy																				
CONSISTENCE	dry (loose/soft/hard)																				
	moderate (loose/friable/firm)		x	x	x	x		x	x	x					x	x	x		x	x	x
	wet (nonsticky/sticky)											x	x								
COLOUR (Munsell chart)			10yr7/1	5yr3/3	5yr3/4	7.5yr3/4		10yr4/2	10yr4/6	10yr3/2		3/10gy	3/5g		10yr3/2	2.5y3/2	5y3/2		2.5y3/2	5y3/2	5y3/1
COARSE FRAGMENT	pebble (< 3 cm)		5	10	20	20		10	10	10		10	10		5	5	5		10	5	10
(% volume)	gravel (3-7.5 cm)		10	20	20	20		10	15	20		10	20		15	15	15		10	15	20
	cobble (7.5-25 cm)		10	20	20	30			20	30		15	20		5	5	10		5	15	20
	boulder (> 25 cm)			5	5	10			10	20		20	30		5	5	10			10	10
	Total		25%	55%	65%	80%		20%	55%	80%		55%	80%		30%	30%	40%		25%	45%	60%
SHAPE	round		x					x	x	x					x					x	x
	angular			x								x	x			x	x				
MOTTLES	few (< 2)																				x
	common (2-20)																			x	
	many (> 20)																	x	x		
	fine (< 5 mm)																			x	x
	medium (5-15 mm)																	x	x		
	coarse (> 15 mm)																				
ROOTS	few (< 4)				x					x			x				x				x
	common (4-14)			x																x	
	many (> 14)	x	x				x	x	x		x	x		x	x	x		x	x		
	fine (< 2 mm)				x					x	x	x	x				x			x	x
	medium (2-5 mm)			x			x		x						x			x	x		
	coarse (> 5 mm)	x	x					x						x		x					
	Restriciting (cm)																				
TEXTURE[2]			SL	L	SL	LS		LS	fSL	LS		L	LS		SL	SL	LS		LS	SL	LS
Canadain System of Soil Classification: Subgroup																					
Comments																					

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic**

(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/28/2007				7/28/2007				7/28/2007				7/28/2007			7/28/2007				
Site numbers		31				32				33				34			35				
HORIZON [1]		**LFH**	**C**	**Bm**	**Bcgj**	**LFH**	**Bm**	**Bc1**	**Bc2**	**LFH**	**Bm**	**Bc1**	**Bc2**	**LF**	**Bm**	**Bc**	**LFH**	**Ah**	**Bm**	**Ahb**	**Bmb**
DEPTH (cm)		**5-0**	**0-20**	**20-40**	**40-60+**	**4-0**	**0-20**	**20-45**	**45-60+**	**10-0**	**0-20**	**20-50**	**50-70+**	**1-0**	**0-30**	**30-50+**	**20-0**	**0-15**	**15-29**	**29-33**	**33-40+**
GRADE	weak		x	x			x	x			x	x	x		x						x
	moderate																	x	x	x	
	strong																				
	none				x				x							x					
CLASS SIZE	very fine														x						
	fine		x	x			x				x	x	x					x	x	x	x
	medium							x													
	coarse																				
	very coarse																				
KIND	subangular blocky			x			x	x			x	x	x		x				x	x	x
	angular blocky																				
	granular		x															x			
	massive																				
	single grained				x				x							x					
	columnar																				
	prismatic																				
	platy																				
CONSISTENCE	dry (loose/soft/hard)																				
	moderate (loose/friable/firm)		x	x	x		x	x	x		x	x	x		x	x		x	x	x	x
	wet (nonsticky/sticky)																				
COLOUR (Munsell chart)			3/5g	10yr3/4	3/10y		10yr3/3	2.5y3/2	5y3/2		10yr3/4	10yr3/3	2.5y3/3		2.5y4/3	2.5y3/2		10yr2/1	10yr3/3	10yr2/1	10yr3/4
COARSE FRAGMENT	pebble (< 3 cm)		5	10	10		5	5	10		10	10	5		5	10			10	5	10
(% volume)	gravel (3-7.5 cm)		10	20	15			5	20		10	10	10		25	20			10	5	10
	cobble (7.5-25 cm)		10	10	10						10	20	5		10	10					5
	boulder (> 25 cm)			5	5						5	5			5	10					
	Total		30%	45%	40%		5%	10%	30%		35%	45%	20%		45%	50%		0%	20%	10%	25%
SHAPE	round		x		x		x	x	x		x	x	x		x	x			x	x	x
	angular			x																	
MOTTLES	few (< 2)																				
	common (2-20)				x																
	many (> 20)																				
	fine (< 5 mm)																				
	medium (5-15 mm)				x																
	coarse (> 15 mm)																				
ROOTS	few (< 4)				x				x				x			x					x
	common (4-14)	x				x		x				x							x	x	
	many (> 14)		x	x			x			x	x				x			x			
	fine (< 2 mm)	x	x	x	x	x			x		x	x	x		x	x			x	x	x
	medium (2-5 mm)						x	x		x								x			
	coarse (> 5 mm)																				
	Restriciting (cm)																				
TEXTURE[2]			fSL	SL	SL		SL	SL	LS		SL	SL	SL		LS	LS		SiL	L	SiL	SL
Canadain System of Soil Classification: Subgroup																					
Comments																					

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic**

(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/28/2007				7/29/2007		7/29/2007				7/29/2007					7/29/2007				
Site numbers		36				37		38				39					40				
HORIZON [1]		LFH	Aej	Bmf	Bc	C1	C2	LFH	Ae	Bm	Bc	LFH	C	Ahb	Bmb	Bcb	LF	Ae	Bf	Bc1	Bc2
DEPTH (cm)		19-0	0-5	5-25	25-50+	0-25	25+	5-0	0-5	5-35	35-60+	2-0	0-5	5-25	25-50	50+	2-0	0-8	8-28	28-52	52-70+
GRADE	weak		x	x									x	x				x	x	x	x
	moderate																				
	strong																				
	none				x	x	x			x	x				x	x					
CLASS SIZE	very fine												x								
	fine		x	x										x				x	x	x	x
	medium																				
	coarse																				
	very coarse																				
KIND	subangular blocky			x									x						x	x	x
	angular blocky																				
	granular		x											x							
	massive																				
	single grained				x	x	x			x	x				x	x					
	columnar																				
	prismatic																				
	platy																	x			
CONSISTENCE	dry (loose/soft/hard)																				
	moderate (loose/friable/firm)		x	x	x	x	x			x	x		x	x	x	x		x	x	x	x
	wet (nonsticky/sticky)																				
COLOUR (Munsell chart)			10yr5/2	5yr3/2	7.5yr2.5/1	10yr4/4	10yr4/16		10yr5/2	10yr4/5	10yr4/6		10yr4/2	10yr3/2	10yr4/3	10yr3/4		10yr6/1	7.5yr4/5	10yr4/4	2.5y3/3
COARSE FRAGMENT	pebble (< 3 cm)		5	10	10	10	10		10	10	10		10	10	10	10					
(% volume)	gravel (3-7.5 cm)		10	20	20	35	30		10	20	20		25	20	30	30		5	10	15	15
	cobble (7.5-25 cm)		5	10	15	20	30		10	20	20		15	10	20	20		5	10	10	10
	boulder (> 25 cm)					5	10			10	10		15	5	10	20			5	10	10
	Total		20%	40%	45%	70%	80%		30%	60%	60%		55%	45%	70%	80%		10%	25%	35%	35%
SHAPE	round		x	x														x	x	x	x
	angular				x	x	x		x	x	x		x	x	x	x					
MOTTLES	few (< 2)																				
	common (2-20)																				
	many (> 20)																				
	fine (< 5 mm)																				
	medium (5-15 mm)																				
	coarse (> 15 mm)																				
ROOTS	few (< 4)				x						x					x					x
	common (4-14)									x										x	
	many (> 14)	x	x	x				x	x					x	x		x	x	x		
	fine (< 2 mm)				x					x	x			x	x	x				x	x
	medium (2-5 mm)		x	x				x	x										x		
	coarse (> 5 mm)	x															x	x			
	Restriciting (cm)																				
TEXTURE[2]			LS	SL	SL	LS	LS		SL	LS	LS		LS	SL	LS	LS		L	L	L	SL
Canadain System of Soil Classification: Subgroup																					
Comments																					

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic**

(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/29/2007					7/29/2007		7/29/2007				7/29/2007				7/29/2007			
Site numbers		41					42		43				44				45			
HORIZON [1]		**LFH**	**Bm**	**Ahb**	**Bm2**	**Bc**	**Of**	**Om**	**LFH**	**Ae**	**Bm**	**Bc**	**LFH**	**Ae**	**Bf**	**R**	**LF**	**Ae**	**Bm**	**Bc**
DEPTH (cm)		**11-0**	**0-7**	**7-12**	**12-36**	**36-50+**	**0-60**	**60-100**	**7-0**	**0-7**	**7-35**	**35-60+**	**3-0**	**0-5**	**5-20**	**20+**	**3-0**	**0-5**	**5-30**	**30-50+**
GRADE	weak		x	x		x				x	x			x	x			x	x	x
	moderate				x															
	strong																			
	none											x								
CLASS SIZE	very fine													x				x		
	fine		x	x	x	x				x	x				x				x	x
	medium																			
	coarse																			
	very coarse																			
KIND	subangular blocky		x		x	x				x	x			x	x			x	x	x
	angular blocky																			
	granular			x																
	massive																			
	single grained											x								
	columnar																			
	prismatic																			
	platy																			
CONSISTENCE	dry (loose/soft/hard)																			
	moderate (loose/friable/firm)		x	x	x	x				x	x	x		x	x			x	x	x
	wet (nonsticky/sticky)																			
COLOUR (Munsell chart)			10yr4/3	10yr2/1	10yr3/4	10yr3/3				10yr5/1	7.5yr3/4	7.5yr3/3		10yr5/1	7.5yr4/5			7.5yr6/1	7.5yr4/6	10yr5/5
COARSE FRAGMENT	pebble (< 3 cm)					5					5	5		5	10					
(% volume)	gravel (3-7.5 cm)					10				20	15	15		15	10			10	15	20
	cobble (7.5-25 cm)				5	10				20	20	20		40	30			10	10	15
	boulder (> 25 cm)					25				10	10	10		20	30				5	5
	Total		0%	0%	5%	50%				50%	50%	50%		80%	80%			20%	30%	40%
SHAPE	round				x	x				x	x	x		x	x			x	x	x
	angular																			
MOTTLES	few (< 2)																			
	common (2-20)																			
	many (> 20)																			
	fine (< 5 mm)																			
	medium (5-15 mm)																			
	coarse (> 15 mm)																			
ROOTS	few (< 4)											x								x
	common (4-14)			x	x						x				x					
	many (> 14)	x	x			x	x		x	x				x			x	x	x	
	fine (< 2 mm)				x	x	x					x		x	x				x	x
	medium (2-5 mm)			x					x		x									
	coarse (> 5 mm)	x	x							x							x	x		
	Restriciting (cm)															20+				
TEXTURE[2]			L	SiL	L	L	3	5		LS	LS	LS		LS	fSL			SL	SL	fSL
Canadain System of Soil Classification: Subgroup																				
Comments																				

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(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/30/2007					7/30/2007					7/30/2007					7/30/2007			
Site numbers		46					47					48					49			
HORIZON [1]		LFH	Aej	Bf	Bc	R	LF	Aej	Bf	Bc1	Bc2	LF	Aej	Bm	Bc	R	LFH	Bm	Bg1	Cg
DEPTH (cm)		7-0	0-6	6-20	20-45	45+	4-0	0-5	5-20	20-40	40-60+	2-0	0-2	3-30	30-40	40+	10-0	0-15	15-50	50-60+
GRADE	weak		x						x					x				x		
	moderate			x	x										x					
	strong																			
	none							x		x	x		x						x	x
CLASS SIZE	very fine																			
	fine		x						x					x	x			x		
	medium			x	x															
	coarse																			
	very coarse																			
KIND	subangular blocky		x	x	x				x					x	x			x		
	angular blocky																			
	granular																			
	massive																			
	single grained							x		x	x		x						x	x
	columnar																			
	prismatic																			
	platy																			
CONSISTENCE	dry (loose/soft/hard)																			
	moderate (loose/friable/firm)		x	x	x			x	x	x	x		x	x	x					
	wet (nonsticky/sticky)																	x	x	x
COLOUR (Munsell chart)			10yr4/2	7.5yr3/4	7.5yr2.5/3			10yr4/2	5yr3/4	10yr3/4	2.5y3/3		10yr5/1	10yr4/6	10yr5/4			10yr4/4	2.5y4/4	2.5y4/3
COARSE FRAGMENT	pebble (< 3 cm)																			
(% volume)	gravel (3-7.5 cm)			10	15				15	25	25			15	15				50	60
	cobble (7.5-25 cm)								10	15	15			5	5					
	boulder (> 25 cm)																			
	Total			10%	15%			0%	25%	40%	40%		0%	20%	20%				50%	60%
SHAPE	round			x	x				x	x	x								x	x
	angular													x	x					
MOTTLES	few (< 2)																			
	common (2-20)																			
	many (> 20)																			
	fine (< 5 mm)																			
	medium (5-15 mm)																			
	coarse (> 15 mm)																			
ROOTS	few (< 4)										x								x	x
	common (4-14)				x					x					x		x	x		
	many (> 14)	x	x	x			x	x	x				x	x						
	fine (< 2 mm)	x			x					x	x				x			x	x	x
	medium (2-5 mm)		x	x			x	x	x				x	x			x			
	coarse (> 5 mm)																			
	Restriciting (cm)					L 45										L40				50W
TEXTURE[2]			Ls	L	SL			LS	SL	LS	LS		LS	SiL	SiL			SiL	SL	SL
Canadain System of Soil Classification: Subgroup																				
Comments																				

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(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/30/2007			7/30/2007			
Site numbers		50			51			
HORIZON [1]		Of1	C	Om	LF	Bf	Bc1	Bc2
DEPTH (cm)		0-50	50-55	55-120	9-0	0-25	25-50	50-70
GRADE	weak					x	x	x
	moderate							
	strong							
	none		x					
CLASS SIZE	very fine							
	fine					x	x	x
	medium							
	coarse							
	very coarse							
KIND	subangular blocky					x	x	x
	angular blocky							
	granular							
	massive							
	single grained		x					
	columnar							
	prismatic							
	platy							
CONSISTENCE	dry (loose/soft/hard)							
	moderate (loose/friable/firm)					x	x	x
	wet (nonsticky/sticky)		x					
COLOUR (Munsell chart)			2.5y4/3			7.5yr3/4	2.5y3/3	2.5y4/4
COARSE FRAGMENT	pebble (< 3 cm)							
(% volume)	gravel (3-7.5 cm)					20	30	30
	cobble (7.5-25 cm)						5	5
	boulder (> 25 cm)							
	Total	0%	0%	0%		25%	35%	35%
SHAPE	round					x	x	x
	angular							
MOTTLES	few (< 2)							
	common (2-20)							
	many (> 20)							
	fine (< 5 mm)							
	medium (5-15 mm)							
	coarse (> 15 mm)							
ROOTS	few (< 4)				x			x
	common (4-14)						x	
	many (> 14)	x				x		
	fine (< 2 mm)	x			x			x
	medium (2-5 mm)					x	x	
	coarse (> 5 mm)							
	Restriciting (cm)							
TEXTURE[2]		O2	LS	O5		SL	SL	SL
Canadain System of Soil Classification: Subgroup								
Comments								

[1] Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic

[2] Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/30/2007					7/30/2007				7/30/2007					7/30/2007				
Site numbers		52					53				54					55				
HORIZON [1]		LF	Bf	Bm	Bc1	Bc2	LFH	Ah	Bg	Cg	LFH	Ae	Bf	Bm	Bc	LF	Ae	Bf	Bm	Bc
DEPTH (cm)		2-0	0-15	15-36	36-70	70-80+	15-0	0-15	15-40	40-80+	8-0	0-2	2-18	18-35	35-60+	4-0	0-2	2-26	20-32	32+
GRADE	weak		x	x								x	x	x				x	x	
	moderate				x	x		x												
	strong																			
	none								x	x					x		x			x
CLASS SIZE	very fine											x								
	fine		x	x	x	x							x	x				x	x	
	medium							x												
	coarse																			
	very coarse																			
KIND	subangular blocky		x	x	x	x							x	x				x	x	
	angular blocky																			
	granular							x				x								
	massive								x	x										
	single grained														x		x			x
	columnar																			
	prismatic																			
	platy																			
CONSISTENCE	dry (loose/soft/hard)																			
	moderate (loose/friable/firm)		x	x	x	x		x	x	x		x	x	x	x		x	x	x	x
	wet (nonsticky/sticky)																			
COLOUR (Munsell chart)			7.5yr3/4	10yr3/5	2.5y3/2	5y3/2		5y3/1	2.5y/10y	2.5y/5gy		10yr6/1	5yr3/4	10yr3/4	2.5yr3/2		10yr6/1	5yr4/6	10yr4/6	10yr5/4
COARSE FRAGMENT	pebble (< 3 cm)																			
(% volume)	gravel (3-7.5 cm)		15	20	25	25						10	15	20	25		5	10	20	25
	cobble (7.5-25 cm)		5	5	10	10						5	15	15	20			5	20	20
	boulder (> 25 cm)			5	5	10							5	5	5			5	5	10
	Total		20%	30%	40%	45%	0%	0%	0%	0%		15%	35%	40%	50%		5%	20%	45%	55%
SHAPE	round		x	x	x							x	x	x	x		x	x	x	x
	angular																			
MOTTLES	few (< 2)																			
	common (2-20)																			
	many (> 20)																			
	fine (< 5 mm)																			
	medium (5-15 mm)																			
	coarse (> 15 mm)																			
ROOTS	few (< 4)					x		x							x	x				x
	common (4-14)		x	x	x		x						x	x					x	
	many (> 14)										x	x					x	x		
	fine (< 2 mm)				x	x	x	x					x	x	x	x			x	x
	medium (2-5 mm)		x	x							x	x						x		
	coarse (> 5 mm)																x			
	Restriciting (cm)								20W											
TEXTURE[2]			SL	SL	SL	SL		SiL	SiL	SiL		LS	SL	LS	LS		LS	L	SL	SL
Canadain System of Soil Classification: Subgroup																				
Comments																				

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: orga**

(continued)

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/31/2007				7/31/2007					7/31/2007				7/31/2007			
Site numbers		56				57					58				59			
HORIZON [1]		LF	Bm	Bc	R	LFH	Ae	Bf	Bc	R	LFH	Bf	Bc	R	LFH	Bf	Bm	Bc
DEPTH (cm)		2-0	0-20	20-32	32+	7-0	0-3	3-30	30-60	60+	11-0	0-45	45-70	70+	7-0	0-14	14-35	35-60+
GRADE	weak		x					x				x				x	x	
	moderate																	
	strong																	
	none			x			x		x				x					x
CLASS SIZE	very fine																	
	fine		x					x				x				x	x	
	medium																	
	coarse																	
	very coarse																	
KIND	subangular blocky							x				x				x	x	
	angular blocky																	
	granular		x															
	massive																	
	single grained			x			x		x				x					x
	columnar																	
	prismatic																	
	platy																	
CONSISTENCE	dry (loose/soft/hard)																	
	moderate (loose/friable/firm)		x	x			x	x	x			x	x			x	x	x
	wet (nonsticky/sticky)																	
COLOUR (Munsell chart)			7.5yr4/5	2.5y4/2			10yr5/1	5yr3/4	10yr3/6			5yr3/3	10yr3/5			5yr3/3	10yr3/6	10yr3/4
COARSE FRAGMENT	pebble (< 3 cm)																	
(% volume)	gravel (3-7.5 cm)		25	30			10	20	25			35	40			25	30	35
	cobble (7.5-25 cm)		20	25			10	20	20			15	20			15	20	25
	boulder (> 25 cm)		10	20				10	20			5	5			5	5	5
	Total		45%	75%			20%	50%	65%			55%	65%			45%	55%	65%
SHAPE	round		x	x			x											
	angular							x	x			x	x			x	x	x
MOTTLES	few (< 2)																	
	common (2-20)																	
	many (> 20)																	
	fine (< 5 mm)																	
	medium (5-15 mm)																	
	coarse (> 15 mm)																	
ROOTS	few (< 4)					x							x					x
	common (4-14)			x					x						x			
	many (> 14)		x				x	x				x				x	x	
	fine (< 2 mm)			x		x			x				x				x	x
	medium (2-5 mm)		x				x	x				x			x			
	coarse (> 5 mm)															x		
	Restriciting (cm)				L-32					L 60				70L				
TEXTURE[2]			fSL	LS			LS	SL	LS			SL	LS			SL	SL	LS
Canadain System of Soil Classification: Subgroup																		
Comments																		

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: orga** **(continued)**

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/31/2007				7/31/2007				7/31/2007			7/31/2007					
Site numbers		60				61				62			63					
HORIZON [1]		Of1	Cg	Of2	Om	LFH	Ahe	Bf	Bc	Of1	Cg	Om	LFH	Ae	Bf	Bm	Bc1	Bc2
DEPTH (cm)		0-30	30-35	35-60	60-120+	28-0	0-9	9-35	35-60+	0-45	45-50	50-120	5-0	0-2	2-13	13-30	30-60	60+
GRADE	weak						x	x						x	x	x		
	moderate																	
	strong																	
	none		x						x		x						x	x
CLASS SIZE	very fine																	
	fine						x							x	x	x		
	medium							x										
	coarse																	
	very coarse																	
KIND	subangular blocky							x						x	x	x		
	angular blocky																	
	granular						x											
	massive																	
	single grained		x						x		x						x	x
	columnar																	
	prismatic																	
	platy																	
CONSISTENCE	dry (loose/soft/hard)																	
	moderate (loose/friable/firm)						x	x	x					x	x	x	x	x
	wet (nonsticky/sticky)		x								x							
COLOUR (Munsell chart)			2.5y3/3				7.5yr2.5/2	5yr3/4	10yr3/3		10yr3/3			5yr7/1	5yr3/4	10yr4/5	2.5y4/4	2.5y4/2
COARSE FRAGMENT	pebble (< 3 cm)																	
(% volume)	gravel (3-7.5 cm)						10	40						20	20	25	30	30
	cobble (7.5-25 cm)						10	10										5
	boulder (> 25 cm)						10	10										
	Total		0%				30%	60%			0%			20%	20%	25%	30%	35%
SHAPE	round						x	x						x	x	x	x	x
	angular																	
MOTTLES	few (< 2)																	
	common (2-20)																	
	many (> 20)																	
	fine (< 5 mm)																	
	medium (5-15 mm)																	
	coarse (> 15 mm)																	
ROOTS	few (< 4)								x								x	
	common (4-14)															x		
	many (> 14)	x				x	x	x			x				x			
	fine (< 2 mm)	x							x		x							
	medium (2-5 mm)							x								x	x	
	coarse (> 5 mm)					x	x								x			
	Restriciting (cm)		W - 30							W-10								
TEXTURE[2]		O2	LS	O3	O5		L	SiL	LS		LS			SL	SL	SL	LS	LS
Canadain System of Soil Classification: Subgroup																		
Comments																		

[1] Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: orga

[2] Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		7/31/2007				7/31/2007					7/31/2007							8/1/2007			
Site numbers		**64**				**65**					**66**							**67**			
HORIZON [1]		**LFH**	**Bm**	**Bg**	**Cg**	**LFH**	**Ae**	**Bf**	**Bm**	**Bc**	**LFH**	**Bm1**	**Bm2**	**Bc**	**Bmh**	**Ahb**	**Bc**	**LF**	**Ah**	**Bc**	**R**
DEPTH (cm)		**24-0**	**0-6**	**6-24**	**24-40+**	**10-0**	**0-3**	**3-25**	**25-40**	**40-60+**	**3-0**	**0-15**	**15-40**	**40-45**	**45-65**	**65-70**	**70+**	**1-0**	**0-14**	**14-40**	**40+**
GRADE	weak							x	x	x						x	x			x	
	moderate		x	x								x	x		x						
	strong																				
	none				x		x							x							x
CLASS SIZE	very fine								x	x											
	fine		x					x								x	x			x	
	medium			x								x	x		x						
	coarse																				
	very coarse																				
KIND	subangular blocky		x	x				x	x	x		x	x		x	x	x				
	angular blocky																				
	granular																			x	
	massive																				
	single grained				x		x							x							x
	columnar																				
	prismatic																				
	platy																				
CONSISTENCE	dry (loose/soft/hard)																				
	moderate (loose/friable/firm)		x	x	x		x	x	x	x		x	x	x	x	x	x			x	
	wet (nonsticky/sticky)																				x
COLOUR (Munsell chart)			10yr3/3	5y4/2	3/10y		10yr5/2	5yr3/3	10yr4/6	10yr3/4		7.5yr3/4	7.5yr3/3	2.5y3/3	7.5yr3/2	10yr3/2	10yr3/4		10yr2/2	2.5y4/4	
COARSE FRAGMENT	pebble (< 3 cm)																				
(% volume)	gravel (3-7.5 cm)		10	10	50		10	20	25	25		10	10	25	5	10	35		15	40	
	cobble (7.5-25 cm)							10	10	10						5	10		10	15	
	boulder (> 25 cm)								5	5							5		5	5	
	Total		10%	10%	50%		10%	30%	40%	40%		10%	10%	25%	5%	15%	50%		30%	60%	
SHAPE	round		x	x	x		x	x	x	x		x	x	x	x	x	x		x	x	
	angular																				
MOTTLES	few (< 2)																				
	common (2-20)														x						
	many (> 20)			x																	
	fine (< 5 mm)																				
	medium (5-15 mm)														x						
	coarse (> 15 mm)			x																	
ROOTS	few (< 4)			x						x				x	x	x				x	
	common (4-14)		x						x				x								
	many (> 14)	x				x	x	x				x							x		
	fine (< 2 mm)		x	x						x				x	x	x			x	x	
	medium (2-5 mm)								x			x	x								
	coarse (> 5 mm)	x				x	x	x													
	Restriciting (cm)				W25																L40
TEXTURE[2]			SiL	SiL	LS		LS	fSL	fSL	fSL		L	L	LS	L	SL	SL		SiL	LS	
Canadain System of Soil Classification: Subgroup																					
Comments																					

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: orga**

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		**8/1/2007**					**8/1/2007**						**8/1/2007**			
Site numbers		**68**					**69**						**70**			
HORIZON [1]		**LFH**	**Ah**	**Bf**	**Bc1**	**Bc2**	**LF**	**Ah**	**Bm**	**Ahb**	**Bfb**	**R**	**LF**	**Ah**	**Bm**	**Bc1**	**Bc2**
DEPTH (cm)		**2-0**	**0-11**	**11-25**	**25-50**	**50-60+**	**2-0**	**0-2**	**Feb-18**	**18-36**	**36-50**	**50+**	**1-0**	**0-7**	**7-22**	**22-42**	**42-60**
GRADE	weak			x				x	x					x	x		
	moderate		x		x	x				x	x					x	x
	strong																
	none																
CLASS SIZE	very fine																
	fine		x	x	x			x	x	x				x	x	x	x
	medium					x					x						
	coarse																
	very coarse																
KIND	subangular blocky			x	x	x			x	x	x				x	x	x
	angular blocky																
	granular		x					x						x			
	massive																
	single grained																
	columnar																
	prismatic																
	platy																
CONSISTENCE	dry (loose/soft/hard)																
	moderate (loose/friable/firm)		x	x	x	x		x	x	x	x			x	x	x	x
	wet (nonsticky/sticky)																
COLOUR (Munsell chart)			7.5yr2.5/2	5yr3/3	2.5y4/4	2.5y5/4		7.5yr3/2	7.5yr3/4	7.5yr2.5/2	7.5yr2.5/3			10yr2/2	10yr3/3	10yr3/5	2.5y3/3
COARSE FRAGMENT	pebble (< 3 cm)																
(% volume)	gravel (3-7.5 cm)			20	10	15		10	25	30	10			10	10	10	10
	cobble (7.5-25 cm)			5	10	20			5	10						5	5
	boulder (> 25 cm)																
	Total		0%	25%	20%	35%		10%	30%	40%	10%			10%	10%	15%	15%
SHAPE	round			x	x	x		x	x	x	x			x	x	x	x
	angular																
MOTTLES	few (< 2)					x											
	common (2-20)																
	many (> 20)																
	fine (< 5 mm)																
	medium (5-15 mm)					x											
	coarse (> 15 mm)																
ROOTS	few (< 4)				x											x	x
	common (4-14)			x						x							
	many (> 14)		x					x	x					x	x		
	fine (< 2 mm)		x		x			x	x	x					x	x	x
	medium (2-5 mm)			x										x			
	coarse (> 5 mm)																
	Restriciting (cm)											L-50					
TEXTURE[2]			L	L	SiL	SiL		SiL	L	L	L			L	L	L	L
Canadain System of Soil Classification: Subgroup																	
Comments																	

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: orga** **(continued)**

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date		8/1/2007					8/1/2007					8/1/2007					8/1/2007				
Site numbers		71					72					73					74				
HORIZON [1]		LF	Ah	Bm	Bgj	Cgi	LFH	Bm	Bc1	Bc2	LF	Ah	Bm	Cgj	R	LF	Ah	Ahy	Bcy	Bc
DEPTH (cm)		1-0	0-5	5-15	15-50	50+	3-0	0-15	15-40	40+	2-0	0-14	14-20	20-40	40+	2-0	0-2	2-30	30-60	60+
GRADE	weak		x	x	x							x	x				x			
	moderate							x	x	x								x	x	
	strong																			
	none					x								x						x
CLASS SIZE	very fine							x												
	fine		x	x					x	x		x	x				x	x	x	
	medium				x															
	coarse																			
	very coarse																			
KIND	subangular blocky			x	x			x	x	x			x							
	angular blocky																			
	granular		x									x					x	x	x	
	massive					x														x
	single grained													x						
	columnar																			
	prismatic																			
	platy																			
CONSISTENCE	dry (loose/soft/hard)																			
	moderate (loose/friable/firm)		x					x	x	x		x	x	x			x	x	x	
	wet (nonsticky/sticky)			x	x	x														x
COLOUR (Munsell chart)			10yr3/2	10yr3/6	10yr3/5	10yr3/4		10yr3/4	2.5y3/3	2.5y3/2		10yr2/2	10yr3/4	2.5y3/3			10yr2/1	10yr2/2	10yr3/2	2.5y3/2
COARSE FRAGMENT	pebble (< 3 cm)																			
(% volume)	gravel (3-7.5 cm)		5	15	20	20		10	15	20			30	50			10	20	20	35
	cobble (7.5-25 cm)			5	10	10		10	15	15			5	10			5	20	30	15
	boulder (> 25 cm)					5			10	10										
	Total		5%	20%	30%	35%		20%	40%	45%		0%	35%	60%			15%	40%	50%	50%
SHAPE	round		x	x	x	x		x	x	x							x	x	x	
	angular												x	x						x
MOTTLES	few (< 2)																			
	common (2-20)				x															
	many (> 20)					x								x						
	fine (< 5 mm)																			
	medium (5-15 mm)				x	x														
	coarse (> 15 mm)													x						
ROOTS	few (< 4)				x		x			x						x				
	common (4-14)			x					x				x	x						
	many (> 14)		x					x				x					x	x	x	
	fine (< 2 mm)		x	x	x		x	x	x	x		x	x	x		x	x	x	x	
	medium (2-5 mm)																			
	coarse (> 5 mm)																			
	Restriciting (cm)														L-40					W 60
TEXTURE[2]			SL	SL	SL	SL		L	L	L		fSL	SL	LS			fSL	SL	SL	SL
Canadain System of Soil Classification: Subgroup																				
Comments																				

[1] Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: orga

[2] Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		8/1/2007		no data	no data	no data	8/2/2007				8/2/2007		
Site numbers		75		76	77	78	79				80		
HORIZON [1]		C1	C2				LF	Bm	Bc	C	LFH	Bm	Bc
DEPTH (cm)		0-40	40+				1-0	0-10	10-30	30+	12-0	0-16	16+
GRADE	weak							x	x				x
	moderate											x	
	strong												
	none	x	x							x			
CLASS SIZE	very fine												
	fine							x	x			x	x
	medium												
	coarse												
	very coarse												
KIND	subangular blocky							x	x			x	x
	angular blocky												
	granular												
	massive	x	x							x			
	single grained												
	columnar												
	prismatic												
	platy												
CONSISTENCE	dry (loose/soft/hard)												
	moderate (loose/friable/firm)							x	x	x		x	x
	wet (nonsticky/sticky)	x	x										
COLOUR (Munsell chart)		2.5y3/3	5y4/3					10yr4/4	10yr4/3	2.5y4/4		10yr4/5	2.5y4/4
COARSE FRAGMENT	pebble (< 3 cm)												
(% volume)	gravel (3-7.5 cm)	30	30					25	25	30		20	30
	cobble (7.5-25 cm)	20	30					20	20	25		20	25
	boulder (> 25 cm)							10	10	15		10	15
	Total	50%	60%					55%	55%	70%		50%	70%
SHAPE	round											x	x
	angular	x	x					x	x	x			
MOTTLES	few (< 2)												
	common (2-20)												
	many (> 20)												
	fine (< 5 mm)												
	medium (5-15 mm)												
	coarse (> 15 mm)												
ROOTS	few (< 4)								x				x
	common (4-14)							x					
	many (> 14)										x	x	
	fine (< 2 mm)							x	x				x
	medium (2-5 mm)										x	x	
	coarse (> 5 mm)												
	Restriciting (cm)												
TEXTURE[2]		SL	SiL					SL	SL	L		L	SL
Canadain System of Soil Classification: Subgroup													
Comments													

[1] Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: orga

(continued)

[2] Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine

Appendix 1
Soil Investigation Site Field Information (continued)

Date		8/2/2007						8/2/2007		8/2/2007						
Site numbers		81						82		83						
HORIZON [1]		LFH	Bm	Bc	Bmb	Bc	C	Bm	R	LFH	Ah	Bm	Ahb	Bm2	Bc1	Bc2
DEPTH (cm)		6-0	0-8	8-35	35-40	40-75	75+	0-12	12+	2-0	0-6	6-10	10-16	16-32	32-50	50+
GRADE	weak		x					x								x
	moderate										x	x	x	x	x	
	strong															
	none			x	x	x	x									
CLASS SIZE	very fine															
	fine		x					x			x	x	x	x	x	x
	medium															
	coarse															
	very coarse															
KIND	subangular blocky		x					x				x		x	x	x
	angular blocky															
	granular										x		x			
	massive															
	single grained			x	x	x	x									
	columnar															
	prismatic															
	platy															
CONSISTENCE	dry (loose/soft/hard)															
	moderate (loose/friable/firm)		x	x	x	x	x	x			x	x	x	x	x	x
	wet (nonsticky/sticky)															
COLOUR (Munsell chart)			10yr3/6	2.5 y4/3	10yr3/4	2.5y3/3	2.5y3/2	10yr3/3			10yr2/2	7.5yr3/4	10yr2/1	5yr3/4	2.5y3/3	5yr4/6
COARSE FRAGMENT	pebble (< 3 cm)															
(% volume)	gravel (3-7.5 cm)		50	50	40	40	45	45				10		10	10	20
	cobble (7.5-25 cm)		10	10		10	5	5							5	5
	boulder (> 25 cm)															
	Total		60%	60%	40%	50%	50%	50%			0%	10%	0%	10%	15%	25%
SHAPE	round		x	x	x	x	x					x		x	x	
	angular							x								x
MOTTLES	few (< 2)															
	common (2-20)															
	many (> 20)															
	fine (< 5 mm)															
	medium (5-15 mm)															
	coarse (> 15 mm)															
ROOTS	few (< 4)					x	x			x					x	
	common (4-14)	x		x	x			x						x		
	many (> 14)		x								x	x	x			
	fine (< 2 mm)	x	x	x	x	x	x	x		x	x	x	x	x	x	
	medium (2-5 mm)															
	coarse (> 5 mm)															
	Restriciting (cm)								L - 12							
TEXTURE [2]			SL	LS	LS	LS	LS	SL			SiL	SiL	SiL	L	L	SiL
Canadain System of Soil Classification: Subgroup																
Comments																

[1] Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: orga

(continued)

[2] Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine

Appendix 1
Soil Investigation Site Field Information (continued)

Date		8/2/2007					8/2/2007				8/2/2007		
Site numbers		84					85				86		
HORIZON [1]		LFH	Bm	Bc1	Bc2	R	LF	Ah	Bm	R	Bm	Bc	R
DEPTH (cm)		2-0	0-30	30-60	60-70	70+	1-0	0-20	20-40	40+	0-25	25-50	50+
GRADE	weak		x	x	x				x				
	moderate							x					
	strong												
	none										x	x	
CLASS SIZE	very fine												
	fine		x	x	x			x	x				
	medium												
	coarse												
	very coarse												
KIND	subangular blocky		x	x	x			x			x	x	
	angular blocky												
	granular								x				
	massive												
	single grained												
	columnar												
	prismatic												
	platy												
CONSISTENCE	dry (loose/soft/hard)												
	moderate (loose/friable/firm)		x	x	x			x	x		x	x	
	wet (nonsticky/sticky)												
COLOUR (Munsell chart)			7.5yr2.5/	7.5yr3/4	7.5yr3/3			10yr3/2	10yr3/1		10yr3/4	2.5y3/3	
COARSE FRAGMENT	pebble (< 3 cm)												
(% volume)	gravel (3-7.5 cm)		5	5	10			35	50		50	60	
	cobble (7.5-25 cm)				5			5	10		10	10	
	boulder (> 25 cm)												
	Total		5%	5%	15%			40%	60%		60%	70%	
SHAPE	round		x	x	x								
	angular							x	x		x	x	
MOTTLES	few (< 2)												
	common (2-20)												
	many (> 20)												
	fine (< 5 mm)												
	medium (5-15 mm)												
	coarse (> 15 mm)												
ROOTS	few (< 4)								x				
	common (4-14)	x			x						x		
	many (> 14)		x	x				x					
	fine (< 2 mm)	x	x	x	x			x	x		x		
	medium (2-5 mm)												
	coarse (> 5 mm)												
	Restriciting (cm)					L - 70							L - 50
TEXTURE [2]			L	L	L			fSL	LS		LS	LS	
Canadain System of Soil Classification: Subgroup													
Comments													

[1] Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic

[2] Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date		**8/28/2007**				**8/28/2007**							**8/28/2007**					
Site numbers		**Pit 1**				**Pit 2**							**Pit 3**					
UTM Zone		**9**				**9**							**9**					
UTM northing		**6359959**				**6359578**							**6359316**					
UTM easting		**380113**				**380173**							**380069**					
HORIZON [1]		**LFH**	**Ah**	**Bm1**	**Bm2**	**LFH**	**Ah**	**Bh**	**Bm1**	**Bm2**	**Bm3**	**Bc**	**LFH**	**Ah**	**Bh**	**Ah**	**Bm2**	**Bc**
DEPTH (cm)		**13-0**	**0-20**	**20-33**	**33-50+**	**8-0**	**0-2**	**2-8**	**8-20**	**20-26**	**26-33**	**33+**	**10-0**	**0-1**	**1-9**	**9-20**	**20-27**	**27-50+**
GRADE	weak								x								x	
	moderate											x						x
	strong			x	x													
	none																	
CLASS SIZE	very fine																	
	fine								x								x	
	medium			x	x							x						x
	coarse																	
	very coarse																	
KIND	subangular blocky			x	x							x					x	x
	angular blocky																	
	granular			x					x								x	x
	massive																	
	single grained																	
	columnar																	
	prismatic																	
	platy																	
CONSISTENCE	dry (loose/soft/hard)								x								x	
	moderate (loose/friable/firm)			x	x							x						x
	wet (nonsticky/sticky)																	
COLOUR (Munsell chart)				7.5 3/1	7.5 2.5/1				10yr3/4						light gray	black	10yr3/1	10yr3/3
COARSE FRAGMENT	pebble (< 3 cm)											x				x		x
(% volume)	gravel (3-7.5 cm)								x			x			x			x
	cobble (7.5-25 cm)								x									
	boulder (> 25 cm)			x						x								
	Total	0%	0%	20%	0%				40%			55%			5%	5%	0%	35%
SHAPE	round								x			x						x
	angular								x			x						x
MOTTLES	few (< 2)																	
	common (2-20)																	
	many (> 20)																	
	fine (< 5 mm)																	
	medium (5-15 mm)																	
	coarse (> 15 mm)																	
ROOTS	few (< 4)										x	x			x	x	x	
	common (4-14)			x	x										x	x	x	
	many (> 14)								x									
	fine (< 2 mm)				x				x									
	medium (2-5 mm)			x							x	x			x	x	x	
	coarse (> 5 mm)																	
	Restriciting (cm)																	
TEXTURE [2]				SL	SiL				SL			SL			S		SL	LS
Canadain System of Soil Classification: Subgroup																		
Comments																		

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic**

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

(continued)

Appendix 1
Soil Investigation Site Field Information (continued)

Date					**8/29/2007**							**8/29/2007**					**8/29/2007**	
Site numbers					**Pit 4**							**Pit 5**					**Pit 6**	
UTM Zone					**9**							**9**					**9**	
UTM northing					**6359259**							**6359489**					**6359692**	
UTM easting					**379584**							**379893**					**379641**	
HORIZON [1]		**LFH**	**Ah**	**Ae**	**Bh**	**Bm1**	**Bc**	**LFH**	**Ah**	**Ae**	**Bhf**	**Bh**	**Bm**	**Bc**	**LFH**	**Ah**	**Bm**	**Oh**
DEPTH (cm)		**4-0**	**0-1**	**1-8**	**8-23**	**23-30**	**30-50+**	**5-0**	**0-1**	**1-3**	**3-8**	**8-20**	**20-45**	**45-55+**	**17-0**	**0-10**	**10-20**	**20-60+**
GRADE	weak				x	x	x					x		x			x	
	moderate												x					
	strong																	
	none																	
CLASS SIZE	very fine																	
	fine				x	x	x					x	x	x			x	
	medium												x					
	coarse																	
	very coarse																	
KIND	subangular blocky												x					
	angular blocky																	
	granular				x	x	x					x		x			x	
	massive																	x
	single grained				x	x	x					x	x	x			x	
	columnar																	
	prismatic																	
	platy																	
CONSISTENCE	dry (loose/soft/hard)											x		x			x	
	moderate (loose/friable/firm)				x	x	x											
	wet (nonsticky/sticky)																	
COLOUR (Munsell chart)					10yr4/3	10yr3/4	10yr3/3				7.5yr4/4	10yr4/3	10yr4/3	10yr3/3				black
COARSE FRAGMENT	pebble (< 3 cm)				x	x	x					x	x	x				
(% volume)	gravel (3-7.5 cm)				x	x	x					x		x				
	cobble (7.5-25 cm)					x	x					x		x				
	boulder (> 25 cm)											x		x				
	Total				40%	30%	40%					50%	10%	40%	0%	0%	0%	0%
SHAPE	round				x	x	x					x		x				
	angular				x	x	x					x		x				
MOTTLES	few (< 2)																	
	common (2-20)																	
	many (> 20)																	
	fine (< 5 mm)																	
	medium (5-15 mm)																	
	coarse (> 15 mm)																	
ROOTS	few (< 4)					x						x						
	common (4-14)																x	
	many (> 14)				x								x			x		
	fine (< 2 mm)				x	x						x	x			x	x	
	medium (2-5 mm)																x	
	coarse (> 5 mm)																	
	Restriciting (cm)																	
TEXTURE[2]					LS	SL	LS					LS	SL	LS			S	humic
Canadain System of Soil Classification: Subgroup																		
Comments																		

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic** **(continued)**

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (continued)

Date					**8/29/2007**					**8/29/2007**						**8/29/2007**			**8/29/2007**
Site numbers					**Pit 7**					**Pit 8**						**Pit 9**			**Tail A1**
UTM Zone					**9**					**9**						**9**			**9**
UTM northing					**6359965**					**6360138**						**6359502**			**6373451**
UTM easting					**379553**					**379595**						**379152**			**381787**
HORIZON [1]		**LFH**	**Ah**	**Ae**	**Bf**	**Bm1**	**Bc**	**Om**	**Of**	**Oh**	**Cg**	**LFH**	**Ah**	**Ae**	**Bfb**	**Bc1**	**C**	**R**	**Oh**
DEPTH (cm)		**3-0**	**0-1**	**1-3**	**3-12**	**12-34**	**34-50**	**0-10**	**10-30**	**30-40**	**40-55+**	**4-0**	**0-1**	**1-3**	**3-9**	**9-23**	**23-33**	**33+**	**0-50+**
GRADE	weak					x	x								x	x	x		
	moderate																		
	strong																		
	none																		
CLASS SIZE	very fine																		
	fine					x	x								x	x	x		
	medium																		
	coarse																		
	very coarse																		
KIND	subangular blocky																		
	angular blocky																		
	granular					x	x				x				x	x	x		
	massive							x	x	x									x
	single grained					x	x				x								
	columnar																		
	prismatic																		
	platy																		
CONSISTENCE	dry (loose/soft/hard)					x	x								x	x	x		
	moderate (loose/friable/firm)																		
	wet (nonsticky/sticky)							x	x	x	x								x
COLOUR (Munsell chart)					7.5y4/4	10yr4/3	10yr3/3		black	black	greyish				7.5yr5/4	10yr5/4	10yr5/7		
COARSE FRAGMENT	pebble (< 3 cm)					x	x				x					x	x		
(% volume)	gravel (3-7.5 cm)					x	x				x					x	x		
	cobble (7.5-25 cm)					x	x				x								
	boulder (> 25 cm)								x	x						x			
	Total					60%	45%		70%	70%	60%					50%	35%		0%
SHAPE	round					x	x		x	x	x					x	x		
	angular					x	x		x	x	x					x	x		
MOTTLES	few (< 2)																		
	common (2-20)																		
	many (> 20)																		
	fine (< 5 mm)																		
	medium (5-15 mm)																		
	coarse (> 15 mm)																		
ROOTS	few (< 4)								x						x				
	common (4-14)																		
	many (> 14)					x										x			
	fine (< 2 mm)					x			x							x			
	medium (2-5 mm)					x													
	coarse (> 5 mm)														x				
	Restriciting (cm)																	33	water 10cm
TEXTURE[2]						LS	LS	fibric	mesic	humic	LS				LS	LS			humic
Canadain System of Soil Classification: Subgroup																			
Comments																			

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic** **(continued)**

[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

Appendix 1
Soil Investigation Site Field Information (completed)

Date		**8/29/2007**				**8/29/2007**				**8/30/2007**					**8/30/2007**				**8/30/2007**	**8/30/2007**
Site numbers		**Tail A2**				**Tail A3**				**Tail B1**					**Tail B2**				**Tail B3**	**Tail B4**
UTM Zone		**9**				**9**				**9**					**9**				**9**	**9**
UTM northing		**6373315**				**6372666**				**6348446**					**6348593**				**6348813**	**6349101**
UTM easting		**381809**				**381988**				**377326**					**377425**				**377467**	**377613**
HORIZON [1]		**moss**	**LFH**	**Bm1**	**Bc**	**LFH**	**Ah**	**Bm1**	**Bc**	**LFH**	**Ah**	**Bm1**	**Bm2**	**Bc**	**LFH**	**Ah**	**Bh**	**Bm1**	**C**	**C**
DEPTH (cm)		**3-6**	**0-3**	**3-14**	**14-25**	**5-0**	**0-3**	**3-16**	**16-40+**	**8-0**	**0-2**	**2-13**	**13-32**	**32-52+**	**8-0**	**0-1**	**1-20**	**20-50+**		
GRADE	weak			x					x									x	x	
	moderate				x							x	x	x			x			x
	strong							x												
	none																			
CLASS SIZE	very fine								x											
	fine			x									x	x			x	x	x	x
	medium				x			x				x	x	x			x			x
	coarse							x												
	very coarse																			
KIND	subangular blocky			x	x			x				x	x	x			x	x		
	angular blocky																			
	granular				x								x	x			x	x		x
	massive																			
	single grained			x					x										x	x
	columnar																			
	prismatic																			
	platy																			
CONSISTENCE	dry (loose/soft/hard)								x											
	moderate (loose/friable/firm)			x	x			x				x	x	x			x	x		
	wet (nonsticky/sticky)																		x	x
COLOUR (Munsell chart)				10yr2/2	10yr3/3			10yr3/1				10yr3/2	10yr2/2	10yr3/2			10yr3/3	10yr3/4		
COARSE FRAGMENT	pebble (< 3 cm)			x	x				x				x	x			x	x	x	x
(% volume)	gravel (3-7.5 cm)			x	x				x				x	x			x	x	x	x
	cobble (7.5-25 cm)			x	x				x					x				x	x	x
	boulder (> 25 cm)			x					x								x	x	x	
	Total			70%	70%			0%	70%				20%	30%			10%	35%	100%	80%
SHAPE	round			x	x				x				x	x				x		x
	angular			x	x				x				x	x				x		
MOTTLES	few (< 2)				x															
	common (2-20)			x																
	many (> 20)																			
	fine (< 5 mm)				x															
	medium (5-15 mm)			x																
	coarse (> 15 mm)																			
ROOTS	few (< 4)							x										x		
	common (4-14)											x	x							
	many (> 14)																x			
	fine (< 2 mm)							x				x	x				x			
	medium (2-5 mm)																x	x		
	coarse (> 5 mm)																			
	Restriciting (cm)																			
TEXTURE [2]				S	LS			L	S			L	LS				SL	SL	S	S
Canadain System of Soil Classification: Subgroup																				
Comments																				

[1] **Definition of horizon codes: A: surface horizon, B: subsurface horizon, C: parent material, LFH: litter, Of: organic undecomposed, Om: organic medium, Oh: organic highly decomposed, j: early stage, e: depleted, m: little development, g: wet, h: organic**
[2] **Definition of texture codes: CL: clay, S: sand, Si: silt, L: loam, G: gravel, F: fine**

APPENDIX 2
ALS FERTILITY AND METAL ANALYSIS METHODS

File No. W4678

Appendix 1 - METHODOLOGY

Outlines of the methodologies utilized for the analysis of the samples submitted are as follows

Moisture in Sediment/Soil

This analysis is carried out gravimetrically by drying the sample at 103 C for a minimum of six hours.

Recommended Holding Time:
Sample: 14 days
Reference: Puget

Laboratory Location: ALS Environmental, Vancouver

pH in Soil

This analysis is carried out in accordance with procedures described in "Soil Sampling and Methods of Analysis" (CSSS). The procedure involves mixing the air-dried sample with deionized/distilled water. The pH of the solution is then measured using a standard pH probe. A one to two ratio of sediment to water is used for mineral soils and a one to ten ratio is used for highly organic soils.

Laboratory Location: ALS Environmental, Vancouver

Cyanide in Sediment/Soil

Method Revised and Replace: 1997 02 01 This analysis is carried out in accordance with U.S. EPA Method 9010 (Publ. # SW-846 3rd ed., Washington, DC 20460) Specifically, subsamples are distilled using an acid reflux distillation. Liberated hydrogen cyanide gas is trapped in a weak NaOH solution. The extracts are then analysed colorimetrically.

Laboratory Location: ALS Environmental, Vancouver

Metals in Sediment/Soil

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 Method 3050B or Method 3051, published by the United States Environmental Protection Agency (EPA). The sample is manually homogenized and a representative subsample of the wet material is weighed. The sample is then digested by either hotplate or microwave oven using a 1:1 ratio of nitric acid and hydrochloric acid. Instrumental analysis is by atomic absorption/emission/fluorescence spectrophotometry (EPA Method 7000 series), inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B), and/or inductively coupled plasma - mass spectrometry (EPA Method 6020).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may become "environmentally available." By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Appendix 1 - METHODOLOGY - Continued

Recommended Holding Time:
Sample/Extract: 6 months (Mercury = 28 days)
Reference: EPA

Laboratory Location: ALS Environmental, Vancouver

Results contained within this certificate relate only to the samples as submitted.

This Certificate Of Analysis shall only be reproduced in full, except with the written approval of ALS Environmental.

End of Report

APPENDIX 3
FERTILITY AND METAL ALS RESULTS

Appendix 3
Fertility and Metal ALS Results

Sample ID	084 0-10CM	084 10-20CM	081 0-10CM	081 10-20CM	033 0-10CM	033 10-20CM	010 0-10CM	010 10-20CM	043 0-10CM	043 10-20CM	004 0-10CM	004 10-20CM
Date Sampled	**02-AUG-07**	**02-AUG-07**	**02-AUG-07**	**02-AUG-07**	**28-JUL-07**	**28-JUL-07**	**26-JUL-07**	**26-JUL-07**	**29-JUL-07**	**29-JUL-07**	**25-JUL-07**	**25-JUL-07**
ALS Sample ID	**L541097-1**	**L541097-2**	**L541097-3**	**L541097-4**	**L541097-5**	**L541097-6**	**L541097-7**	**L541097-8**	**L541097-9**	**L541097-10**	**L541097-11**	**L541097-12**
Matrix	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
Physical Tests												
pH	5.07	5.49	7.45	7.98	6.50	6.54	5.82	5.89	4.94	5.08	5.73	5.79
Anions and Nutrients												
Available Phosphate-P	<1	<1	<1	<1	1	2	20	11	8	1	21	4
Metals												
Aluminum (Al)	21100	33000	11100	10900	22100	21400	13300	14300	9180	9390	14300	27600
Antimony (Sb)	54.0	21.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic (As)	105	114	123	89.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.1
Barium (Ba)	196	375	168	128	45.1	40.0	395	282	162	76.5	290	368
Beryllium (Be)	2.02	2.05	<0.50	<0.50	<0.50	<0.50	0.72	0.62	0.50	<0.50	1.65	0.69
Bismuth (Bi)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium (Cd)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium (Ca)	3070	3650	14800	28200	8770	7760	4960	4500	2100	1590	4400	6560
Chromium (Cr)	85.2	102	34.9	38.6	312	296	12.2	13.2	15.4	18.9	21.8	79.3
Cobalt (Co)	48.8	46.2	33.0	31.2	26.3	25.0	13.9	13.5	2.6	5.3	9.4	18.2
Copper (Cu)	158	116	101	101	91.1	105	17.8	15.1	15.9	10.8	40.7	125
Iron (Fe)	73500	74300	69000	62900	46900	46900	35700	35500	11600	25100	25700	49100
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium (Li)	10.3	16.0	10.8	11.3	11.5	11.0	6.8	7.2	5.3	6.2	9.0	12.0
Magnesium (Mg)	4730	5580	25500	31000	40200	38100	6110	7010	2440	4520	5030	14000
Manganese (Mn)	2840	4540	1600	1360	515	474	2310	1590	127	389	1270	1300
Mercury (Hg)	1.67	0.761	0.135	0.0917	0.0166	0.0165	0.0189	0.0118	0.0320	0.0140	0.0197	0.0145
Molybdenum (Mo)	4.8	5.7	<4.0	<4.0	6.7	6.0	<4.0	<4.0	<4.0	<4.0	4.5	4.7
Nickel (Ni)	177	171	62.4	60.0	198	191	9.3	9.9	6.6	7.7	10.4	29.7
Phosphorus (P)	1160	1840	870	832	642	639	1230	1090	281	271	771	763
Potassium (K)	930	960	720	670	440	360	1320	1210	790	440	1540	1610
Selenium (Se)	<3.0	<5.0	<4.0	<3.0	<2.0	<2.0	<3.0	<2.0	<2.0	<2.0	<2.0	<2.0
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium (Na)	<200	<200	<200	<200	420	260	210	<200	840	<200	1200	220
Strontium (Sr)	15.6	17.6	49.5	76.0	59.4	54.0	30.0	28.8	19.7	12.8	19.1	35.1
Thallium (Tl)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin (Sn)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium (Ti)	202	162	145	171	1230	1170	1270	1240	1290	742	803	1010
Vanadium (V)	90.5	118	67.4	61.6	118	123	65.9	68.4	26.6	68.0	45.6	131
Zinc (Zn)	251	205	77.9	69.2	39.0	34.8	174	137	25.3	24.1	79.2	133
Organic Parameters												
CaCO3 Equivalent	1.7	<0.7	9.7	16.5	<0.7	<0.7	<0.7	0.9	0.8	<0.7	0.7	<0.7
Total Organic Carbon	5.2	5.9	1.3	0.9	2.6	1.7	4.1	2.5	5.2	1.4	4.3	2.4
Total Carbon by Combustion	5.3	5.9	2.5	2.8	2.6	1.7	4.1	2.5	5.2	1.4	4.3	2.4
Inorganic Carbon	0.2	<0.1	1.1	1.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
XNo class												
Cation Exchange Capacity	35.1	38.5	5.1	2.0	15.7	12.0	19.1	16.3	25.7	9.4	23.1	18.9
Total Nitrogen by LECO	0.44	0.51	0.06	0.03	0.11	0.09	0.30	0.18	0.22	0.06	0.22	0.17

(continued)

Appendix 3
Fertility and Metal ALS Results (completed)

Sample ID	024 0-10CM	024 10-20CM	070 0-10CM	070 10-20CM	065 0-10CM	065 10-20CM	061 0-10CM	061 10-20CM	064 0-10CM	064 10-20CM	006 0-10CM	006 10-20CM
Date Sampled	27-JUL-07	27-JUL-07	01-AUG-07	01-AUG-07	31-JUL-07	31-JUL-07	31-JUL-07	31-JUL-07	31-JUL-07	31-JUL-07	25-JUL-07	25-JUL-07
ALS Sample ID	L541097-13	L541097-14	L541097-15	L541097-16	L541097-17	L541097-18	L541097-19	L541097-20	L541097-21	L541097-22	L541097-23	L541097-24
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Physical Tests												
pH	5.15	5.49	4.97	5.04	4.42	4.92	6.25	6.31	5.50	6.46	6.75	7.22
Anions and Nutrients												
Available Phosphate-P	4	6	1	3	7	2	1	<1	1	1	1	1
Metals												
Aluminum (Al)	17100	17700	28700	31300	14700	22000	12900	44800	17500	17400	14800	15300
Antimony (Sb)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic (As)	9.0	9.6	<5.0	<5.0	5.1	<5.0	<5.0	8.5	8.9	6.2	11.4	13.6
Barium (Ba)	137	110	71.0	88.1	45.0	39.8	60.6	79.0	69.3	54.5	35.5	41.8
Beryllium (Be)	1.27	1.16	<0.50	0.56	<0.50	0.58	1.51	3.25	<0.50	<0.50	<0.50	<0.50
Bismuth (Bi)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium (Cd)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium (Ca)	2860	2680	5960	6650	3260	4470	5330	10400	11500	10300	8860	10100
Chromium (Cr)	24.9	24.7	41.8	45.5	155	252	11.7	51.3	116	90.6	264	260
Cobalt (Co)	13.4	13.2	21.2	23.1	12.0	18.0	6.0	26.4	17.3	17.3	23.5	24.1
Copper (Cu)	32.8	37.3	45.4	56.5	38.6	124	35.6	290	78.6	78.8	51.0	63.6
Iron (Fe)	46400	50900	49000	52100	44900	52800	20700	52300	43200	42100	52600	53800
Lead (Pb)	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium (Li)	15.5	13.4	7.9	8.4	8.9	14.3	5.8	8.5	13.3	15.4	9.2	9.6
Magnesium (Mg)	4280	3980	12900	15500	13100	24900	3100	4530	16700	18100	24400	24500
Manganese (Mn)	1930	1650	931	904	399	465	732	2010	605	544	696	692
Mercury (Hg)	0.0296	0.0246	0.0260	0.0198	0.0227	0.0183	0.0211	0.0539	0.0106	<0.0050	0.0157	0.0162
Molybdenum (Mo)	4.1	<4.0	<4.0	<4.0	4.8	4.6	<4.0	5.5	<4.0	<4.0	<4.0	<4.0
Nickel (Ni)	23.7	20.6	26.8	33.9	48.2	106	14.3	104	49.3	42.5	94.5	93.6
Phosphorus (P)	874	950	1000	1020	666	575	349	829	734	606	829	822
Potassium (K)	870	990	970	910	620	470	1490	530	580	530	490	520
Selenium (Se)	<2.0	<3.0	<2.0	<2.0	<3.0	<2.0	<2.0	<3.0	<2.0	<2.0	<2.0	<2.0
Silver (Ag)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium (Na)	430	350	570	660	430	260	2430	550	220	<200	300	310
Strontium (Sr)	19.8	20.3	41.1	44.0	25.4	29.7	16.1	31.4	55.5	41.3	32.1	35.6
Thallium (Tl)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin (Sn)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium (Ti)	619	861	2160	2480	1380	1250	1410	2790	1390	1460	1160	1190
Vanadium (V)	84.6	98.2	123	132	131	140	26.3	94.8	127	123	162	164
Zinc (Zn)	150	131	90.4	85.1	46.1	60.9	44.6	79.2	42.3	46.6	53.7	53.2
Organic Parameters												
CaCO3 Equivalent	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.8	1.0	<0.7	<0.7	0.7	1.0
Total Organic Carbon	3.4	2.1	7.5	3.5	4.3	1.6	4.5	7	1.9	1	0.4	0.9
Total Carbon by Combustion	3.4	2.1	7.5	3.5	4.3	1.6	4.5	7.0	1.9	1.0	0.4	0.9
Inorganic Carbon	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
XNo class												
Cation Exchange Capacity	24.2	19.9	31.2	21.2	22.5	11.6	25.5	41.1	14.0	10.1	5.0	6.2
Total Nitrogen by LECO	0.19	0.16	0.51	0.25	0.16	0.07	0.28	0.39	0.13	0.06	0.04	0.05