



To:	Mr. Myles Hargrove Summit Earthworks Inc.	Date:	July 19, 2016
c:		Memo No.:	001
From:	Lucas Hennecker, Environmental Specialist Lora Paul, Senior Project Manager	File:	ENG.VGEO03082-01

Subject: Environmental Soil Sampling in Conjunction with Geotechnical Investigation

1.0 INTRODUCTION

Summit Earthworks Inc. (Summit) retained Tetra Tech EBA Inc. (Tetra Tech EBA) to conduct environmental soil sampling in conjunction with a geotechnical investigation at a proposed contaminated soils transfer facility located on Derwent Way (herein referred to as “the Site”) in New Westminster, BC. Tetra Tech EBA understands that the environmental soil sampling was conducted to provide baseline soil concentrations at the Site prior to development of the Site as a contaminated soils transfer facility.

2.0 SCOPE OF WORK

Tetra Tech EBA completed the following scope of work:

- Completed soil sampling at five geotechnical testhole locations (TH16-01 to TH16-05) from surface to just above the water table;
- Submitted one to two select soil samples per testhole to AGAT Laboratories for analysis. Analysis included light extractable hydrocarbons (LEPH), heavy extractable hydrocarbons (HEPH), polycyclic aromatic hydrocarbons (PAH), extractable petroleum hydrocarbons (EPH), volatile organic compounds (VOCs) [including benzene, toluene, ethylbenzene, and xylenes (BTEX)], volatile petroleum hydrocarbons (VPH), sodium & chloride, and metals; and
- Prepared this technical memo summarizing the investigations analytical results and field findings.

3.0 METHODOLOGIES

On May 25, 2016, soil samples were collected during the completion of a geotechnical investigation. Five testholes were completed at the Site using solid stem drilling method. Samples were collected from each testhole at regular intervals of depth or when there was a change in material type or color. Nitrile gloves were worn when handling soil and were changed regularly to reduce the potential for cross-contamination between soil samples.

Soil samples were field screened for hydrocarbon vapours using an RKI Eagle gas monitor with methane elimination. Soil samples were collected in plastic bags and warmed for approximately 20 to 30 minutes, after which vapour concentrations were measured in parts per million (ppm) or lower explosive limit (LEL%) and recorded on the soil description logs. Hydrocarbon vapour measurements were used to help select samples for laboratory analysis. Measured field vapour concentrations were zero for all samples collected.

Samples selected for possible laboratory analyses were placed in sterile 120 mL glass jars with Teflon™-lined lids while samples for BTEX/VPH testing in 40 mL vials (containing 10 mL of methanol for preservation). All samples were then stored on ice in coolers and transported to AGAT Laboratories for analysis.

Environmental testhole logs showing description of soils, sample locations, and field vapour concentrations are attached as Appendix B. A site plan showing the testhole locations is attached as Figure 1.

4.0 SOIL ASSESSMENT STANDARDS

For most land in British Columbia, soil is assessed based on standards outlined in the *Environmental Management Act* (EMA) under the jurisdiction of the British Columbia Ministry of Environment (MoE). The regulation under the EMA that is directly applicable to the laboratory results is the Contaminated Sites Regulation (CSR).

The provincial standards considered applicable to the Property are stipulated in the following document:

- *Environmental Management Act* (EMA), Contaminated Sites Regulation (CSR), BC Reg. 375/96, deposited 1996/12/16, O.C. 1480/96, effective 1997/04/01 (including amendments up to BC Reg. 4/2014, effective January 31, 2014).

Generic standards for the assessment and remediation of soils are detailed in CSR Schedules 4 and 10. Generic standards depend solely on land use. The current land usage of the Site is “vacant”. Zoning of the Site is M-2, which is defined as Heavy Industrial Districts. Based on current zoning, CSR Schedules 4 and 10 generic numerical soil standards for Industrial Land (IL) use was used for comparison of laboratory soil results.

Matrix standards for the assessment and remediation of soils are detailed in Schedule 5 of the CSR. Matrix standards are risk-based standards that depend on land use and a number of site-specific factors. For pH-dependent matrix standards, the most stringent soil pH was used to select the appropriate standard based on the laboratory data.

Two site-specific factors from CSR Schedule 5 apply to all sites in British Columbia, irrespective of land uses. They include the intake of contaminated soil and toxicity to soil invertebrates and plants. In addition, the soil matrix numerical standards listed in CSR Schedule 5 are also dependent on water use on a site and/or within surrounding lands. Without an assessment of groundwater use for the Site, the CSR mandates that the most stringent standards from Schedule 5, including protection of drinking water (DW) be applied to all sites in British Columbia. The Fraser River at the Site is considered to be a mix of both marine and freshwater, therefore, both were also applied and the most stringent used.

In conclusion, the following site-specific factors from Schedule 5 were applied to the Property:

- Intake of contaminated soil;
- Toxicity to soil invertebrates and plants;
- Groundwater used for drinking water; and
- Groundwater flow to surface water used by freshwater and marine aquatic life.

5.0 RESULTS

A copy of the laboratory report, which contains the analytical data obtained during this baseline assessment, is included in Appendix C. A summary of the soil analytical results are presented in Table 1.

5.1 Soil Stratigraphy

General observations at testholes TH16-01, TH16-02, and TH16-03 were that the soil was characterized as being a sand and gravel fill material down to approximately 30 cm switching to a sand fill material down to a depth of approximately 4 to 5 m. Trace organics were observed sporadically within testholes TH16-01 and TH16-02 and black organic matter (possibly tree bark) was observed at approximately 4 m depth within TH16-03. For testhole TH16-04, the soil stratigraphy alternated between a sand and gravel fill (0 – 30 cm), to a sand fill (30 cm – 2.1 m), to a silt and sand possibly fill (2.1 – 2.4 m) and back to a sand possibly fill down to approximately 3.0 m. Trace organics were observed sporadically within the top 3.0 m of TH16-04. For testhole TH16-05 the soil stratigraphy alternated between a sand and gravel fill (0 – 30 cm), to a sand fill (30 cm – 2.7 m) and then to a silt with sand possibly fill down to approximately 3.0 m. Trace organics were observed sporadically within the top 3.0 m of testhole TH16-05 and black organic matter (possibly tree bark) was observed at approximately 2.3 m depth. At approximately 3.0 to 4.3 m depth, an organic layer (possibly fill) was observed which contained suspect wood waste with creosote odours. Throughout all testholes, the water table was generally observed to be at depth of approximately 6.0 to 6.5 m.

5.2 Testhole Analytical Summary

Samples were selected for laboratory analysis based on field observations, field vapour concentrations and future development of the Site as a contaminated soils transfer facility. Since future development will be at grade and minimal soils will be removed during development, the samples collected within the top 1.0 m from each testhole was selected for analysis. Additional samples collected at depth were selected for analysis based on observed potential contamination at 3.5 m below grade at TH16-05 and every metre to 5 m in the other testholes for baseline purposes.

Table A identifies in red which parameters exceeded at which testholes and at which sample depth.

Table A: Parameter Exceedances

Sample Description	Hydrocarbons	Salts	Metals	VOCs
TH16-05 (depth 3.5 m): organics with gravel, sand, silt and clay (possible fill) with creosote odour	<CSR IL Standard	<CSR IL Standard	<CSR IL Standard	>CSR IL Standards for Benzene

In summary, based on all the analytical testing completed, the soil at testhole TH16-05 at a depth of 3.5 m was found to contain concentrations of benzene exceeding the applicable CSR IL standards. The remaining parameters tested for at other depths within this testhole and within other testholes, including, LEPH/HEPH/PAHs, EPH, BTEX, VOCs, VPH, sodium & chloride, and metals had concentrations less than the CSR IL standards.

6.0 QUALITY ASSURANCE/QUALITY CONTROL PROTOCOLS

Tetra Tech EBA's Quality Assurance/Quality Control (QA/QC) protocols for this investigation included:

- Adhering to standard Tetra Tech EBA quality management system field and record keeping procedures;
- Using new disposable gloves when collecting each sample;
- Placing samples in appropriate new and labelled laboratory-supplied containers;
- Properly preserving samples and transporting the samples to the analytical laboratory in an ice-filled cooler;
- Keeping detailed field notes and accurately recording sample locations;
- Completing chain-of-custody forms for all samples submitted for laboratory analyses;
- Analyzing the samples within the recommended holding time following their collection, at a laboratory accredited by Canadian Association for Laboratory Accreditation (CALA);
- Confirming and verifying database integrity by requiring that one person who did not compile the tables appearing in this report review the tables and compare the tabulated analytical results with the original information appearing on the laboratory certificates and information on the chain-of-custody forms to verify the accuracy of the information in the tables; and
- Requiring that a senior Tetra Tech EBA professional review this report to verify that it meets Tetra Tech EBA investigation and reporting standards.

7.0 CLOSURE

We trust this memo meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech EBA Inc.



Prepared by:
Lucas Hennecker, B.Sc., R.B.Tech.
Environmental Specialist
Environment Practice
Direct Line: 778.945.5892
Lucas.Hennecker@tetrattech.com

Reviewed by:
Lora J Paul, P.Eng.
Senior Project Manager
Environment Practice
Direct Line: 250.714.3043
Lora.Paul@tetrattech.com

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Attachments: Tables (1a to 1c)
Figure (1)
Appendix A: Tetra Tech EBA's General Conditions
Appendix B: Testhole Logs
Appendix C: Laboratory Analytical Results

TABLES

Table 1a	Soil Analytical Results – Hydrocarbons
Table 1b	Soil Analytical Results – Soluble Parameters and Metals
Table 1c	Soil Analytical Results – Volatile Organic Compounds

Table 1a: Soil Analytical Results - Hydrocarbons

Parameter	Unit	CSR - IL	TH16-01		TH16-02		TH16-03		TH16-04		TH16-05	
			1.0 m	4.75 m	0.5 m	2.0 m	0.4 m	3.8 m	0.5 m	2.0 m	0.25 m	3.5 m
			25-May-2016	25-May-2016	25-May-2016	25-May-2016	25-May-2016	25-May-2016	25-May-2016	25-May-2016	25-May-2016	25-May-2016
BTEXS & MTBE												
Benzene	µg/g	0.04 #1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	-	0.11
Toluene	µg/g	2.5 #1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05
Ethylbenzene	µg/g	7 #1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05
Xylene (m)	µg/g	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	0.06
Xylene (o)	µg/g	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05
Xylenes Total	µg/g	20 #1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	-	-	<0.2
Styrene	µg/g	50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05
MTBE	µg/g	700 #2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Hydrocarbons												
EPH ₁₀₋₁₉	µg/g	2000*	<20	<20	<20	<20	<20	<20	<20	<20	<20	38
EPH ₁₉₋₃₂	µg/g	5000*	<20	<20	<20	<20	<20	45	<20	<20	59	346
LEPH	µg/g	2000	<20	-	<20	-	<20	-	<20	<20	<20	37
HEPH	µg/g	5000	<20	-	<20	-	<20	-	<20	-	58	341
VH ₁₀₋₁₉	µg/g	-	<10	<10	<10	<10	<10	<10	<10	-	-	<10
VPH ₁₀₋₁₉	µg/g	200	<10	<10	<10	<10	<10	<10	<10	-	-	<10
Polycyclic Aromatic Hydrocarbons (PAHs)												
1-Methylnaphthalene	µg/g	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	0.10
2-methylnaphthalene	µg/g	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	0.14
Acenaphthene	µg/g	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	0.06
Acenaphthylene	µg/g	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	0.08
Anthracene	µg/g	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	0.24
Benz(a)anthracene	µg/g	10	<0.02	-	<0.02	-	0.03	-	<0.02	-	0.03	1.01
Benzo(a)pyrene	µg/g	10 #1	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	1.07
Benzo(b)fluoranthene	µg/g	10	<0.02	-	<0.02	-	0.02	-	<0.02	-	0.03	0.69
Benzo(b+j)fluoranthene	µg/g	-	<0.03	-	<0.03	-	<0.03	-	<0.03	-	0.05	1.15
Benzo(g,h,i)perylene	µg/g	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	0.71
Benzo(j)fluoranthene	µg/g	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	0.02	0.46
Benzo(k)fluoranthene	µg/g	10	<0.02	-	<0.02	-	<0.02	-	<0.02	-	0.02	0.55
Chrysene	µg/g	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	0.94
Dibenz(a,h)anthracene	µg/g	10	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	0.26
Fluoranthene	µg/g	-	<0.05	-	<0.05	-	0.07	-	<0.05	-	0.06	0.95
Fluorene	µg/g	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	0.08
Indeno(1,2,3-c,d)pyrene	µg/g	10	<0.02	-	<0.02	-	<0.02	-	<0.02	-	0.02	0.68
Naphthalene	µg/g	50	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	0.24
Phenanthrene	µg/g	50	<0.02	-	<0.02	-	0.03	-	<0.02	-	0.03	0.55
Pyrene	µg/g	100	<0.02	-	<0.02	-	0.05	-	<0.02	-	0.06	0.95
Laboratory Work Order Number			16V098953	16V098953	16V098953	16V098953	16V098953	16V098953	16V098953	16V098953	16V098953	16V098953
Laboratory Identification Number			7586225	7586230	7586231	7586257	7586261	7586273	7586275	7586301	7586319	7586326

NOTES:

- #1 CSR Schedule 5 Substance.
 - #2 CSR Schedule 10 Substance.
 - Not analyzed or no CSR standard exists.
 - < Concentration is less than the laboratory detection limit indicated.
 - * EPH C10-C19 concentrations compared to the LEPH standard and EPH C19-C32 concentrations compared to the HEPH standard.
 - EPHs Extractable Petroleum Hydrocarbons.
 - LEPHs/HEPHs Light and Heavy EPHs.
 - MTBE Methyl Tert Butyl Ether
 - VH Volatile Hydrocarbons
 - VPH Volatile Petroleum Hydrocarbons
 - CSR BC Contaminated Sites Regulation (BC Reg. 375/96, includes amendments up to B.C. Reg. 4/2014 - January 31, 2014 - Schedules 4, 5 and 10).
 - IL Industrial Land Standards
- Site specific factors include:
- Intake of contaminated soil.
 - Toxicity to soil invertebrates and plants.
 - Groundwater used for drinking water.
 - Groundwater flow to surface water used by freshwater and marine aquatic life.
- Most stringent applicable site specific standard is shown.
- Bold** Bold and shaded indicates an exceedance of the CSR standard

Table 1b: Soil Analytical Results - Soluble Parameters and Metals

Parameter	Unit	CSR - IL	TH16-01		TH16-02	TH16-03	TH16-04		TH16-05	
			1.0 m	4.75 m	0.5 m	0.4 m	0.5 m	2.0 m	0.25 m	3.5 m
			25-May-2016	25-May-2016	25-May-2016	25-May-2016	25-May-2016	25-May-2016	25-May-2016	25-May-2016
Physical Parameters										
pH	pH Units	-	7.12	-	6.43	7.78	6.68	7.02	7.74	8.02
Percent Saturation	%	-	-	37.2	37.1	35.3	34.2	-	-	63.1
Soluble Chloride (µg/g)	µg/g	90	-	3	<2	3	<2	-	-	15
Soluble Chloride (mg/L)	mg/L	-	-	8	3	8	3	-	-	24
Soluble Sodium (µg/g)	µg/g	1000 ^{#1}	-	3	<2	2	<2	-	-	20
Soluble Sodium (mg/L)	mg/L	-	-	7	3	6	2	-	-	31
Metals										
Antimony	µg/g	40	0.2	-	0.2	0.2	5.1	4.5	1.2	0.8
Arsenic	µg/g	15 ^{#1}	2.9	-	3.4	3.0	9.9	8.4	5.1	4.1
Barium	µg/g	400 ^{#1}	46.2	-	44.8	47.5	46.0	45.1	86.0	117
Beryllium	µg/g	8	0.2	-	0.2	0.2	0.2	0.2	0.2	0.2
Cadmium	µg/g	1.5-150 ^{#1,2}	0.22	-	0.22	0.21	0.23	0.23	0.27	0.23
Chromium	µg/g	60 ^{#1}	22	-	21	24	27	26	25	20
Cobalt	µg/g	300	7.7	-	7.5	7.8	7.9	7.9	8.2	6.5
Copper	µg/g	250 ^{#1,2}	13.2	-	13.6	14.4	19.7	17.1	27.8	39.7
Lead	µg/g	250-2000 ^{#1,2}	2.8	-	3.7	5.5	10.1	9.4	23.8	43.3
Mercury	µg/g	150 ^{#1}	0.02	-	0.02	0.02	0.01	0.02	0.03	0.04
Molybdenum	µg/g	40	0.4	-	0.3	0.5	1.2	0.6	1.2	1.5
Nickel	µg/g	500	31.1	-	30.4	30	32.8	31.3	21.3	17.6
Selenium	µg/g	10	0.1	-	<0.1	<0.1	0.1	0.2	<0.1	0.3
Silver	µg/g	40	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/g	300	0.3	-	0.3	0.3	1.7	0.8	1	2.9
Vanadium	µg/g	-	42	-	40	43	40	44	54	45
Zinc	µg/g	150-600 ^{#1,2}	37	-	38	48	64	64	74	58
Laboratory Work Order Number			16V098953	16V098953	16V098953	16V098953	16V098953	16V098953	16V098953	16V098953
Laboratory Identification Number			7586225	7586230	7586231	7586261	7586275	7586301	7586319	7586326

NOTES:

- #1 CSR Schedule 5 Substance.
 - #2 Standard is pH dependent. Values shown based on site pH range of 6.43 to 8.02.
 - Not analyzed or no CSR standard exists.
 - < Concentration is less than the laboratory detection limit indicated.
 - CSR BC Contaminated Sites Regulation (BC Reg. 375/96, includes amendments up to B.C. Reg. 4/2014 - January 31, 2014 - Schedules 4 and 5).
 - IL Industrial Land Standards
- Site specific soil factors include:
- Intake of contaminated soil.
 - Toxicity to soil invertebrates and plants.
 - Groundwater used for drinking water.
 - Groundwater flow to surface water used by freshwater and marine aquatic life.
- Most stringent applicable site specific standard is shown.

Bold Bold and shaded indicates an exceedance of the CSR standard

Table 1c: Soil Analytical Results - Volatile Organic Compounds

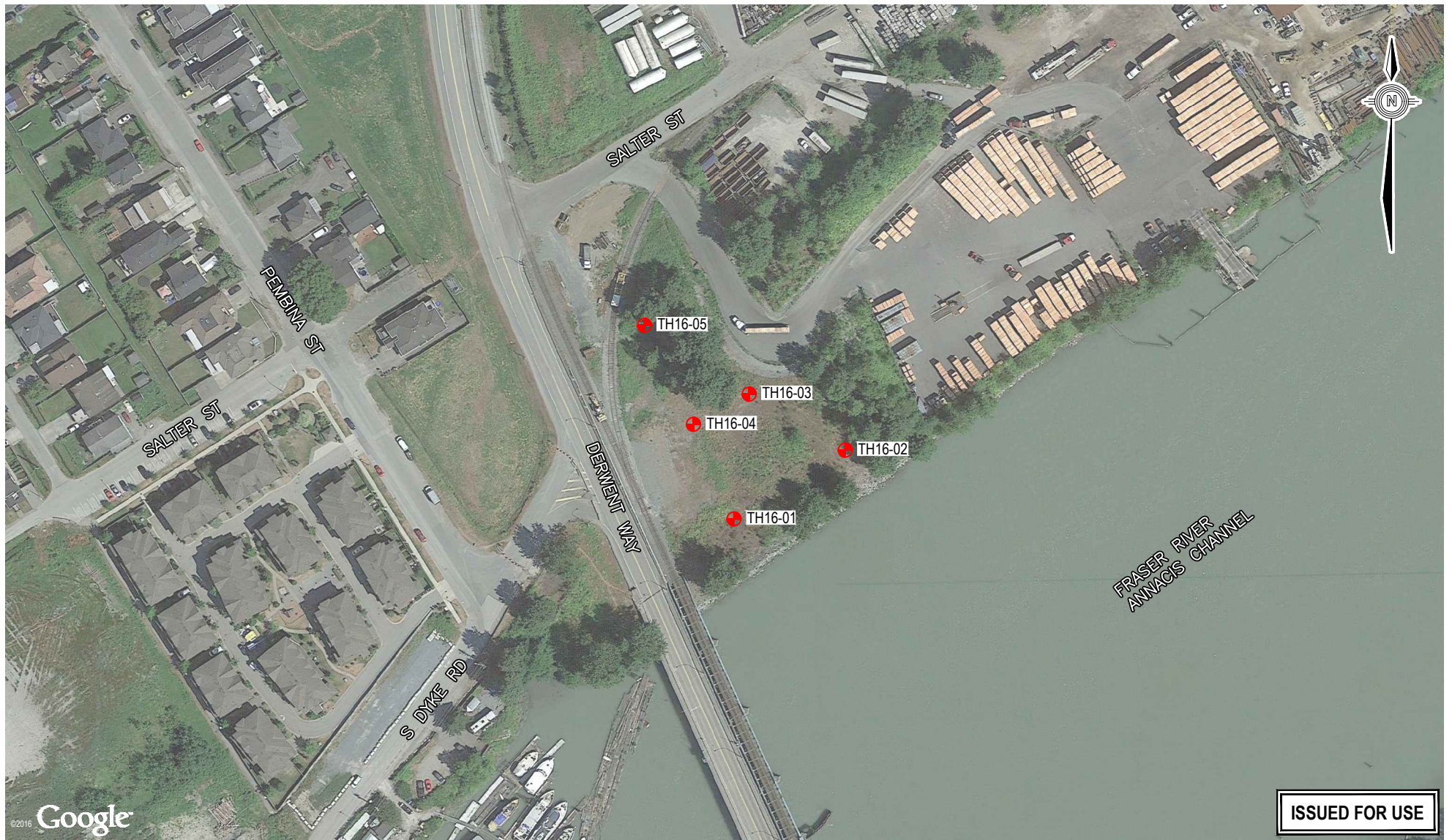
Parameter	Unit	CSR - IL	TH16-01	TH16-02	TH16-03	TH16-04	TH16-05
			1.0 m	0.5 m	0.4 m	0.5 m	3.5 m
			25-May-2016	25-May-2016	25-May-2016	25-May-2016	25-May-2016
Volatile Organic Compounds (VOCs)							
Acetone	µg/g	54,000 #1	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	µg/g	18 #1	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	µg/g	2200 #1	<0.05	<0.05	<0.05	<0.05	<0.05
Bromomethane	µg/g	13 #1	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon tetrachloride	µg/g	50	<0.02	<0.02	<0.02	<0.02	<0.02
Chlorobenzene	µg/g	10	<0.05	<0.05	<0.05	<0.05	<0.05
Chloroethane	µg/g	65 #1	<0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	µg/g	50	<0.05	<0.05	<0.05	<0.05	<0.05
Chloromethane	µg/g	160 #1	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	µg/g	26 #1	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dibromoethane	µg/g	0.73 #1	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	µg/g	10	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	µg/g	10	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	µg/g	10	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	µg/g	50	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	µg/g	50	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethene	µg/g	50	<0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene	µg/g	50 #1	<0.05	<0.05	<0.05	<0.05	<0.05
trans-1,2-Dichloroethene	µg/g	50 #1	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloromethane	µg/g	50	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	µg/g	50	<0.05	<0.05	<0.05	<0.05	<0.05
cis-1,3-Dichloropropene	µg/g	50	<0.05	<0.05	<0.05	<0.05	<0.05
trans-1,3-Dichloropropene	µg/g	50	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone	µg/g	110,000 #1	<0.5	<0.5	<0.5	<0.5	<0.5
4-Methyl-2-pentanone	µg/g	47,000 #1	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	µg/g	73 #1	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	µg/g	9.3 #1	<0.05	<0.05	<0.05	<0.05	<0.05
1,2,4-Trichlorobenzene	µg/g	-	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethene	µg/g	5 #2	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	µg/g	50 #1	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	µg/g	50 #1	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethene	µg/g	0.015 #2	<0.01	<0.01	<0.01	<0.01	<0.01
Trichlorofluoromethane	µg/g	2000 #1	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl chloride	µg/g	7.5 #1	<0.05	<0.05	<0.05	<0.05	<0.05
Laboratory Work Order Number			16V098953	16V098953	16V098953	16V098953	16V098953
Laboratory Identification Number			7586225	7586231	7586261	7586275	7586326

Notes:

- #1 CSR Schedule 10 Substance.
 - #2 CSR Schedule 5 Substance.
 - Not analyzed or no CSR standard exists.
 - < Concentration is less than the laboratory detection limit indicated.
 - CSR BC Contaminated Sites Regulation (BC Reg. 375/96, includes amendments up to B.C. Reg. 4/2014 - January 31, 2014 - Schedules 4, 5 and 10).
 - IL Industrial Land Standards
 - Site specific soil factors include:
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 - Groundwater used for drinking water.
 - Groundwater flow to surface water used by freshwater and marine aquatic life.
- Most stringent applicable site specific standard is shown.
- Bold** Bold and shaded indicates an exceedance of the CSR standard

FIGURES

Figure 1 Environmental Soil Sampling Testhole Locations



ISSUED FOR USE

LEGEND

📍 Approximate Testhole Location

NOTES

1. Imagery from Google Earth Pro.
2. Based on Dwg. LEASE PLAN No. 2016-015 by Vancouver Fraser Port Authority Engineering Department.

SCALE 1:2000



CLIENT



CONTAMINATED SOILS TRANSFER FACILITY

ENVIROMENTAL SOIL SAMPLING
TESTHOLE LOCATIONS



PROJECT NO. VGEO03082-01.007	DWN RH	CKD DT	REV 0
OFFICE VANC	DATE July 18, 2016		

Figure 1

APPENDIX A

TETRA TECH EBA'S GENERAL CONDITIONS

GENERAL CONDITIONS

GEOENVIRONMENTAL REPORT

This report incorporates and is subject to these “General Conditions”.

1.0 USE OF REPORT AND OWNERSHIP

This report pertains to a specific site, a specific development, and a specific scope of work. It is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site or proposed development would necessitate a supplementary investigation and assessment.

This report and the assessments and recommendations contained in it are intended for the sole use of Tetra Tech EBA's client. Tetra Tech EBA does not accept any responsibility for the accuracy of any of the data, the analysis or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than Tetra Tech EBA's Client unless otherwise authorized in writing by Tetra Tech EBA. Any unauthorized use of the report is at the sole risk of the user.

This report is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of Tetra Tech EBA. Additional copies of the report, if required, may be obtained upon request.

2.0 ALTERNATE REPORT FORMAT

Where Tetra Tech EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed Tetra Tech EBA's instruments of professional service), only the signed and/or sealed versions shall be considered final and legally binding. The original signed and/or sealed version archived by Tetra Tech EBA shall be deemed to be the original for the Project.

Both electronic file and hard copy versions of Tetra Tech EBA's instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except Tetra Tech EBA. The Client warrants that Tetra Tech EBA's instruments of professional service will be used only and exactly as submitted by Tetra Tech EBA.

Electronic files submitted by Tetra Tech EBA have been prepared and submitted using specific software and hardware systems. Tetra Tech EBA makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

3.0 NOTIFICATION OF AUTHORITIES

In certain instances, the discovery of hazardous substances or conditions and materials may require that regulatory agencies and other persons be informed and the client agrees that notification to such bodies or persons as required may be done by Tetra Tech EBA in its reasonably exercised discretion.

4.0 INFORMATION PROVIDED TO TETRA TECH EBA BY OTHERS

During the performance of the work and the preparation of the report, Tetra Tech EBA may rely on information provided by persons other than the Client. While Tetra Tech EBA endeavours to verify the accuracy of such information when instructed to do so by the Client, Tetra Tech EBA accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

APPENDIX B

TESTHOLE LOGS

Depth (m)	Method	Soil Description	Graphical Representation	Sample Type	Sample Number	Vapour readings (ppmv)	Notes and Comments	Elevation (m)
0						<div style="display: flex; justify-content: space-around;"> ■ Vapour readings (ppmv) </div> <div style="display: flex; justify-content: space-around; font-size: small;"> 10 20 30 40 </div>		
0.5	Solid stem auger	SAND and GRAVEL (FILL); medium sand with cobbles, fine gravel, and silt; dry; light brown; compact		-	0.5			8
1.0		SAND (FILL); coarse uniform sand; dark brown; moist to wet; loose to compact - Trace fine gravel and trace organics to 1.75 m			1.0			7
2.0					2.0			6
3.5					3.5			5
4.75					4.75			4
5.0		- Grey; damp						
5.5		- Wet						
6.0		SILT; grey; no plasticity; some fine sand, trace clay; trace organics; wet to damp; rapid dilatancy; firm						3
7.0		CLAY with silt; trace fine sand; grey; medium plasticity; trace organics; moist; firm						2
8.0								1
8.5		SAND; coarse sand; dark grey; moist to wet; compact						0
9.0		Elastic SILT; some clay; some organics; medium plasticity; moist; dark grey; firm						-1
9.15		EOH @ 9.15 m - Soil description and Unified Soil Classification is based on visual assessment. - Elevation is approximate and based from Google Earth. - Estimates of soil consistency were made from in situ test results and visual classification of samples. Estimates are based on engineering judgement.						-2
10.0								-3
11.0								-4
12.0								-5
13.0								-6
14.0								-7
15.0								-8



Contractor: Downtree Drilling

Completion Depth: 9.15 m

Drilling Rig Type: Auger Tracked

Start Date: 2016 May 25

Logged By: CMLH

Completion Date: 2016 May 25

Reviewed By: LP

Page 1 of 1

Depth (m)	Method	Soil Description	Graphical Representation	Sample Type	Sample Number	Vapour readings (ppmv)	Notes and Comments	Elevation (m)
0						<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> Vapour readings (ppmv) </div> <div style="display: flex; justify-content: space-around; width: 100px; margin-top: 5px;"> 10 20 30 40 </div>		
0.5	Solid stem auger	SAND and GRAVEL (FILL); medium sand with cobbles, fine gravel, and silt; dry; light brown; compact			0.5			8
1.0		SAND (FILL); coarse uniform sand; dark brown; moist to wet; loose to compact - Trace fine gravel and trace organics to 1.5 m			1.0			7
2.0					2.0			6
3.0					3.0			5
4.0		- Grey; damp - Wet			4.0			4
6.0		SILT; some fine sand; grey; low plasticity; trace organics; wet; rapid dilatency; firm						3
7.0		SILT with clay; some organics; grey; low to medium plasticity; moist; firm to soft						2
8.0		CLAY with silt; some organics; medium to high plasticity; moist; light grey to light brown; firm						1
9.15		EOH @ 9.15 m - Soil description and Unified Soil Classification is based on visual assessment. - Elevation is approximate and based from Google Earth. - Estimates of soil consistency were made from in situ test results and visual classification of samples. Estimates are based on engineering judgement.						-1



Contractor: Downtree Drilling

Completion Depth: 9.15 m

Drilling Rig Type: Auger Tracked

Start Date: 2016 May 25

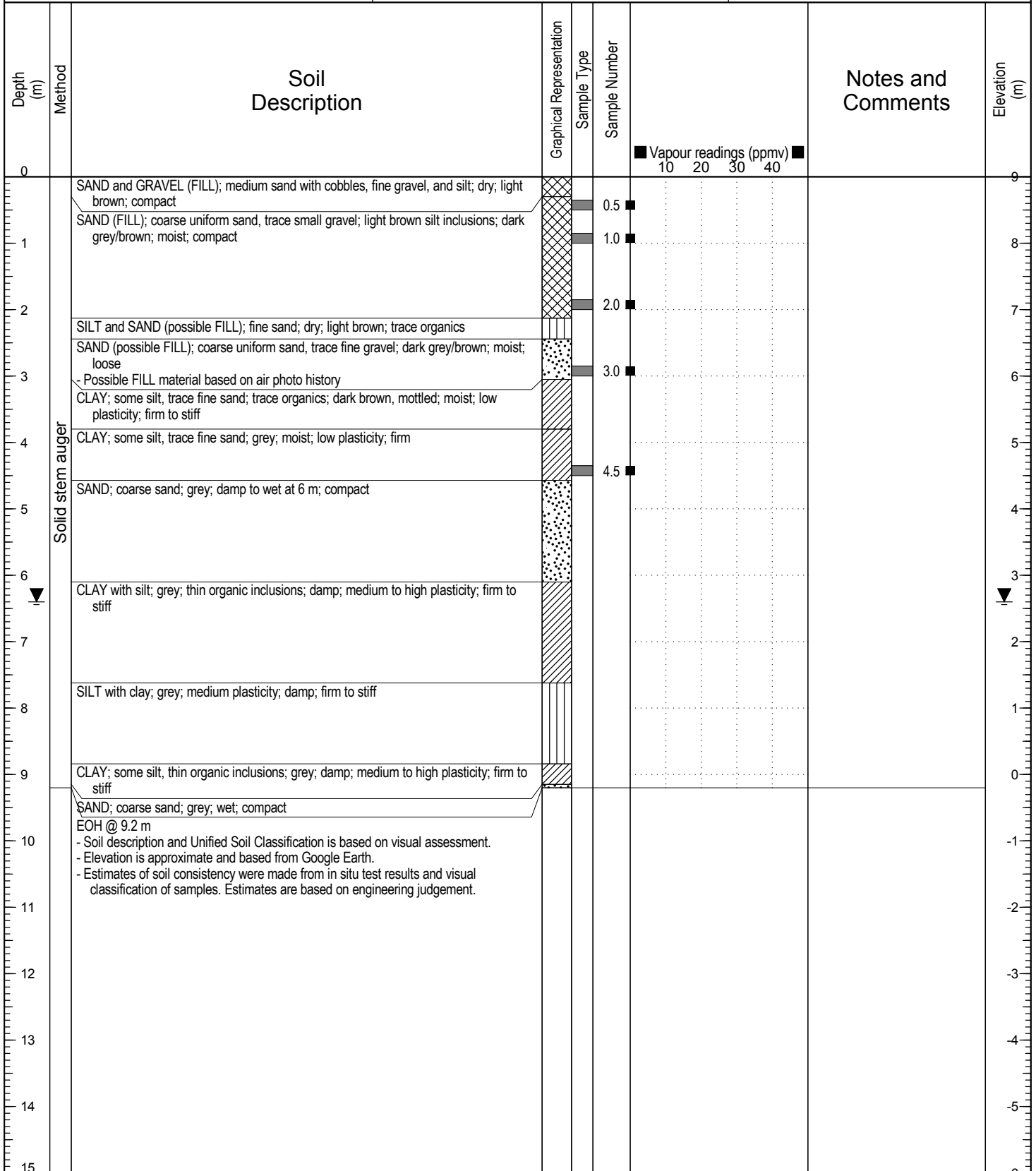
Logged By: CMLH

Completion Date: 2016 May 25

Reviewed By: LP

Page 1 of 1

Depth (m)	Method	Soil Description	Graphical Representation	Sample Type	Sample Number	Vapour readings (ppmv)	Notes and Comments	Elevation (m)
0								9
0.4		SAND and GRAVEL (FILL); medium sand with cobbles, fine gravel, and silt; dry; light brown; compact			0.4			8.6
1.0		SAND (FILL); coarse uniform sand, some small gravel; dark grey/brown; moist; loose to compact			1.0			8.0
2.0					2.0			7.0
3.8		15 cm long strip of black organic matter (possibly tree bark) CLAY with silt; some organics; grey; medium plasticity; moist; firm			3.8			5.2
5.25		Interbedded SILT and SAND - SAND; coarse uniform sand; dark grey/brown; moist; compact - SILT with fine sand; trace clay; some organics; grey; medium plasticity; moist; firm			5.25			3.75
6.0		SAND; coarse sand; grey; damp; compact						3.0
8.0		CLAY with silt; trace organics; grey; medium plasticity; moist; firm - 1 cm thick black organic layer						1.0
9.15		EOH @ 9.15 m - Soil description and Unified Soil Classification is based on visual assessment. - Elevation is approximate and based from Google Earth. - Estimates of soil consistency were made from in situ test results and visual classification of samples. Estimates are based on engineering judgement.						-0.15



Depth (m)	Method	Soil Description	Graphical Representation	Sample Type	Sample Number	Vapour readings (ppmv)	Notes and Comments	Elevation (m)
0						<div style="display: flex; justify-content: space-around;"> ■ Vapour readings (ppmv) ■ </div> <div style="display: flex; justify-content: space-around;"> 10 20 30 40 </div>		9
0.25	Solid stem auger	SAND and GRAVEL (FILL); medium sand with cobbles, fine gravel, and silt; dry; light brown; compact			0.25			8.75
0.5					0.5			8.5
1.0		SAND (FILL); fine sand with silt, trace organics, some fine gravel; grey/brown; moist; loose to compact - Possible FILL material based on air photo history			1.0			8.0
1.5					1.5			7.5
2.0		- 15 cm long strip of black organic matter (possibly tree bark)			2.0			7.0
3.0		SILT with sand (possible FILL); fine sand, some organics; grey; moist; soft to firm			3.0			6.0
3.5		ORGANICS with gravel, sand, silt and clay (possible FILL); black; moist; creosote odour; compact - Possible FILL material based on air photo history			3.5			5.5
4.0		CLAY with silt; some fine sand; moist; medium plasticity; soft						5.0
5.0		CLAY; some sand; some organic and wood fragments; moist; soft to firm						4.0
7.0		- Damp to wet; medium to high plasticity; firm						2.0
9.0		SILT with fine sand; damp; grey; compact						0.0
10.0		SAND; medium to coarse sand, trace silt; wet; compact to dense						-1.0
12.2	EOH @ 12.2 m - Soil description and Unified Soil Classification is based on visual assessment. - Elevation is approximate and based from Google Earth. - Estimates of soil consistency were made from in situ test results and visual classification of samples. Estimates are based on engineering judgement.							-3.8

APPENDIX C

LABORATORY ANALYTICAL RESULTS

**CLIENT NAME: TETRA TECH EBA INC
1000 - 885 DUNSMUIR STREET. 10TH FLOOR
VANCOUVER, BC V6C1N5
(604) 685-0017**

ATTENTION TO: Kalin Johnston

PROJECT: 704-ENG.VGEO03082-01.007

AGAT WORK ORDER: 16V098953

SOIL ANALYSIS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

TRACE ORGANICS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

DATE REPORTED: Jun 03, 2016

PAGES (INCLUDING COVER): 25

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

***NOTES**

VERSION 2: Version 2 was issued to revise sample names, as requested by Lucas Hennecker of Tetra Tech EBA. New report issued June 22, 2016. Version 2 is an amendment of version 1.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



Certificate of Analysis

AGAT WORK ORDER: 16V098953
PROJECT: 704-ENG.VGEO03082-01.007

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: TETRA TECH EBA INC
SAMPLING SITE:

ATTENTION TO: Kalin Johnston
SAMPLED BY:

British Columbia Metals Schedule 4 and 5

DATE RECEIVED: 2016-05-25

DATE REPORTED: 2016-06-03

Parameter	Unit	SAMPLE DESCRIPTION:								
		SAMPLE TYPE:		TH16-01-1.0	TH16-02-0.5	TH16-03-0.4	TH16-04-0.5	TH16-04-2.0	TH16-05-0.25	TH16-05-3.5
		DATE SAMPLED:		5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
		G / S	RDL	7586225	7586231	7586261	7586275	7586301	7586319	7586326
Antimony	µg/g	0.1	0.2	0.2	0.2	5.1	4.5	1.2	0.8	
Arsenic	µg/g	0.1	2.9	3.4	3.0	9.9	8.4	5.1	4.1	
Barium	µg/g	0.5	46.2	44.8	47.5	46.0	45.1	86.0	117	
Beryllium	µg/g	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Cadmium	µg/g	0.01	0.22	0.22	0.21	0.23	0.23	0.27	0.23	
Chromium	µg/g	1	22	21	24	27	26	25	20	
Cobalt	µg/g	0.1	7.7	7.5	7.8	7.9	7.9	8.2	6.5	
Copper	µg/g	0.2	13.2	13.6	14.4	19.7	17.1	27.8	39.7	
Lead	µg/g	0.1	2.8	3.7	5.5	10.1	9.4	23.8	43.3	
Mercury	µg/g	0.01	0.02	0.02	0.02	0.01	0.02	0.03	0.04	
Molybdenum	µg/g	0.2	0.4	0.3	0.5	1.2	0.6	1.2	1.5	
Nickel	µg/g	0.5	31.1	30.4	30.0	32.8	31.3	21.3	17.6	
Selenium	µg/g	0.1	0.1	<0.1	<0.1	0.1	0.2	<0.1	0.3	
Silver	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Thallium	µg/g	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Tin	µg/g	0.2	0.3	0.3	0.3	1.7	0.8	1.0	2.9	
Vanadium	µg/g	1	42	40	43	40	44	54	45	
Zinc	µg/g	1	37	38	48	64	64	74	58	
pH 1:2	pH units	0.05	7.12	6.43	7.78	6.68	7.02	7.74	8.02	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
7586225-7586326 Results are based on the dry weight of the sample

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V098953

PROJECT: 704-ENG.VGEO03082-01.007

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
 CANADA V5J 0B6
 TEL (778)452-4000
 FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: TETRA TECH EBA INC

ATTENTION TO: Kalin Johnston

SAMPLING SITE:

SAMPLED BY:

Soil Salinity - Na & Cl

DATE RECEIVED: 2016-05-25

DATE REPORTED: 2016-06-03

Parameter	Unit	SAMPLE DESCRIPTION:		TH16-01-4.75	TH16-02-0.5	TH16-03-0.4	TH16-04-0.5	TH16-05-3.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
		G / S	RDL	7586230	7586231	7586261	7586275	7586326
Chloride, Soluble	mg/L		2	8	3	8	3	24
Sodium, Soluble	mg/L		2	7	3	6	2	31
Saturation Percentage	%			37.2	37.1	35.3	34.2	63.1
Chloride, Soluble (mg/kg)	mg/kg		2	3	<2	3	<2	15
Sodium, Soluble (mg/kg)	mg/kg		2	3	<2	2	<2	20

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V098953

PROJECT: 704-ENG.VGEO03082-01.007

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
 CANADA V5J 0B6
 TEL (778)452-4000
 FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: TETRA TECH EBA INC

ATTENTION TO: Kalin Johnston

SAMPLING SITE:

SAMPLED BY:

BTEX / VPH (C6-C10) Soil

DATE RECEIVED: 2016-05-25

DATE REPORTED: 2016-06-03

Parameter	Unit	SAMPLE DESCRIPTION:				
		TH16-01-4.75		TH16-02-2.0		TH16-03-3.8
		G / S	RDL	G / S	RDL	G / S
Methyl tert-butyl ether (MTBE)	µg/g	0.1	<0.1	<0.1	<0.1	<0.1
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02
Toluene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05
m&p-Xylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05
Styrene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05
VPH	µg/g	10	<10	<10	<10	<10
VH	µg/g	10	<10	<10	<10	<10
Total Xylenes	ug/g	0.1	<0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits				
Bromofluorobenzene	%	60-140	103	101	98	
Dibromofluoromethane	%	60-140	127	120	124	
Toluene - d8	%	60-140	120	118	113	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

7586230-7586273 Results are based on dry weight of sample.
 VPH results have been corrected for BTEX contributions.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V098953
PROJECT: 704-ENG.VGEO03082-01.007

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: TETRA TECH EBA INC

ATTENTION TO: Kalin Johnston

SAMPLING SITE:

SAMPLED BY:

EPH Soil							
DATE RECEIVED: 2016-05-25				DATE REPORTED: 2016-06-03			
		SAMPLE DESCRIPTION:		TH16-01-4.75	TH16-02-2.0	TH16-03-3.8	TH16-04-2.0
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		5/25/2016	5/25/2016	5/25/2016	5/25/2016
Parameter	Unit	G / S	RDL	7586230	7586257	7586273	7586301
EPH C10-C19	µg/g		20	<20	<20	<20	<20
EPH C19-C32	µg/g		20	<20	<20	45	<20

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
7586230-7586301 Results are based on dry weight of sample.
EPH results are not corrected for potential PAH contributions.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V098953

PROJECT: 704-ENG.VGEO03082-01.007

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: TETRA TECH EBA INC

ATTENTION TO: Kalin Johnston

SAMPLING SITE:

SAMPLED BY:

LEPH/HEPH Soil

DATE RECEIVED: 2016-05-25

DATE REPORTED: 2016-06-03

Parameter	Unit	SAMPLE DESCRIPTION:		TH16-01-1.0	TH16-02-0.5	TH16-03-0.4	TH16-04-0.5	TH16-05-0.25	TH16-05-3.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
		G / S	RDL	7586225	7586231	7586261	7586275	7586319	7586326
Naphthalene	µg/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.24
2-Methylnaphthalene	µg/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.14
1-Methylnaphthalene	µg/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.10
Acenaphthylene	µg/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.08
Acenaphthene	µg/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06
Fluorene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.08
Phenanthrene	µg/g	0.02	<0.02	<0.02	0.03	<0.02	0.03	0.55	0.55
Anthracene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.24
Fluoranthene	µg/g	0.05	<0.05	<0.05	0.07	<0.05	0.06	0.95	0.95
Pyrene	µg/g	0.02	<0.02	<0.02	0.05	<0.02	0.06	0.95	0.95
Benzo(a)anthracene	µg/g	0.02	<0.02	<0.02	0.03	<0.02	0.03	1.01	1.01
Chrysene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.94	0.94
Benzo(b)fluoranthene	µg/g	0.02	<0.02	<0.02	0.02	<0.02	0.03	0.69	0.69
Benzo(j)fluoranthene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.46	0.46
Benzo(k)fluoranthene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.55	0.55
Benzo(a)pyrene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.07	1.07
Indeno(1,2,3-c,d)pyrene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.68	0.68
Dibenzo(a,h)anthracene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.26	0.26
Benzo(g,h,i)perylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.71	0.71
EPH C10-C19	µg/g	20	<20	<20	<20	<20	<20	38	38
EPH C19-C32	µg/g	20	<20	<20	<20	<20	59	346	346
LEPH C10-C19	µg/g	20	<20	<20	<20	<20	<20	37	37
HEPH C19-C32	µg/g	20	<20	<20	<20	<20	58	341	341
Benzo(b+j)fluoranthene	µg/g	0.03	<0.03	<0.03	<0.03	<0.03	0.05	1.15	1.15
Surrogate	Unit	Acceptable Limits							
Naphthalene - d8	%	50-130	80	88	79	97	84	81	81
2-Fluorobiphenyl	%	50-130	82	89	86	97	83	85	85
P-Terphenyl - d14	%	60-130	76	90	81	92	92	92	92

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 16V098953

PROJECT: 704-ENG.VGEO03082-01.007

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: TETRA TECH EBA INC

ATTENTION TO: Kalin Johnston

SAMPLING SITE:

SAMPLED BY:

LEPH/HEPH Soil

DATE RECEIVED: 2016-05-25

DATE REPORTED: 2016-06-03

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
7586225-7586319 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.
7586326 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.
Soil sample is visibly heterogeneous.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V098953

PROJECT: 704-ENG.VGEO03082-01.007

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
 CANADA V5J 0B6
 TEL (778)452-4000
 FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: TETRA TECH EBA INC

ATTENTION TO: Kalin Johnston

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Soil

DATE RECEIVED: 2016-05-25

DATE REPORTED: 2016-06-03

Parameter	Unit	SAMPLE DESCRIPTION:		TH16-01-1.0	TH16-02-0.5	TH16-03-0.4	TH16-04-0.5	TH16-05-3.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
		G / S	RDL	7586225	7586231	7586261	7586275	7586326
Chloromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromomethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl ether (MTBE)	µg/g	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-Butanone (MEK)	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.11
1,2-Dichloropropane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethene	µg/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bromodichloromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
trans-1,3-Dichloropropene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4-Methyl-2-pentanone (MIBK)	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V098953

PROJECT: 704-ENG.VGEO03082-01.007

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
 CANADA V5J 0B6
 TEL (778)452-4000
 FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: TETRA TECH EBA INC

ATTENTION TO: Kalin Johnston

SAMPLING SITE:

SAMPLED BY:

Volatile Organic Compounds in Soil

DATE RECEIVED: 2016-05-25

DATE REPORTED: 2016-06-03

Parameter	Unit	SAMPLE DESCRIPTION:		TH16-01-1.0	TH16-02-0.5	TH16-03-0.4	TH16-04-0.5	TH16-05-3.5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		5/25/2016	5/25/2016	5/25/2016	5/25/2016	5/25/2016
		G / S	RDL	7586225	7586231	7586261	7586275	7586326
Chlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m&p-Xylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06
Bromoform	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2,4-Trichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VH	µg/g	10	<10	<10	<10	<10	<10	<10
VPH	µg/g	10	<10	<10	<10	<10	<10	<10
Total Xylenes	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate	Unit	Acceptable Limits						
Bromofluorobenzene	%	60-140	97	100	94	96	99	
Dibromofluoromethane	%	60-140	114	113	118	116	121	
Toluene - d8	%	60-140	112	111	109	114	111	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 7586225-7586326 Results are based on dry weight of sample.

Certified By:

Quality Assurance

CLIENT NAME: TETRA TECH EBA INC
PROJECT: 704-ENG.VGEO03082-01.007
SAMPLING SITE:

AGAT WORK ORDER: 16V098953
ATTENTION TO: Kalin Johnston
SAMPLED BY:

Soil Analysis															
RPT Date: Jun 03, 2016			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

British Columbia Metals Schedule 4 and 5


Antimony	7594539		0.3	0.3	NA	< 0.1	109%	70%	130%	101%	90%	110%
Arsenic	7594539		3.1	2.8	7.6%	< 0.1	110%	70%	130%	94%	90%	110%
Barium	7594539		75.1	82.3	9.1%	< 0.5	100%	70%	130%	105%	90%	110%
Beryllium	7594539		0.3	0.3	NA	< 0.1	89%	70%	130%	96%	90%	110%
Cadmium	7594539		0.23	0.22	4.7%	< 0.01	120%	70%	130%	98%	90%	110%
Chromium	7594539		31	30	1.8%	< 1	106%	70%	130%	98%	90%	110%
Cobalt	7594539		9.7	10.1	4.7%	< 0.1	107%	70%	130%	96%	90%	110%
Copper	7594539		26.6	26.7	0.3%	< 0.2	103%	70%	130%	102%	90%	110%
Lead	7594539		4.0	4.1	2.9%	< 0.1	97%	70%	130%	102%	90%	110%
Mercury	7594539		0.02	0.03	NA	< 0.01	93%	70%	130%	105%	90%	110%
Molybdenum	7594539		0.2	0.2	NA	< 0.2	103%	70%	130%	101%	90%	110%
Nickel	7594539		27.3	27.8	2.1%	< 0.5	107%	70%	130%	103%	90%	110%
Selenium	7594539		<0.1	<0.1	NA	< 0.1				101%	90%	110%
Silver	7594539		<0.5	<0.5	NA	< 0.5	73%	70%	130%	96%	90%	110%
Thallium	7594539		<0.1	<0.1	NA	< 0.1	107%	70%	130%	102%	90%	110%
Tin	7594539		0.4	0.4	NA	< 0.2	106%	70%	130%	109%	90%	110%
Vanadium	7594539		61	63	3.0%	< 1	107%	70%	130%	102%	90%	110%
Zinc	7594539		50	49	1.5%	< 1	108%	70%	130%	97%	90%	110%
pH 1:2	7594539		5.82	5.83	0.2%	< 0.1	98%	90%	110%	100%	95%	105%

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Soil Salinity - Na & Cl

Chloride, Soluble	7586230	IHR	579	549	5.3%	< 2	97%	80%	120%	101%	85%	115%
Sodium, Soluble	7586230	IHR	296	294	0.7%	< 2	83%	80%	120%	102%	85%	115%
Saturation Percentage	7586230	20151	31.7	32.1	1.3%	<	101%	80%	120%			

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Certified By: 

Quality Assurance

CLIENT NAME: TETRA TECH EBA INC
PROJECT: 704-ENG.VGEO03082-01.007
SAMPLING SITE:

AGAT WORK ORDER: 16V098953
ATTENTION TO: Kalin Johnston
SAMPLED BY:

Trace Organics Analysis

RPT Date: Jun 03, 2016			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
LEPH/HEPH Soil															
Naphthalene	65757	7586225	<0.01	<0.01	NA	< 0.01	101%	80%	120%			104%	50%	130%	
2-Methylnaphthalene	65757	7586225	<0.01	<0.01	NA	< 0.01	100%	80%	120%			98%	50%	130%	
1-Methylnaphthalene	65757	7586225	<0.01	<0.01	NA	< 0.01	100%	80%	120%			101%	50%	130%	
Acenaphthylene	65757	7586225	<0.01	<0.01	NA	< 0.01	100%	80%	120%			105%	50%	130%	
Acenaphthene	65757	7586225	<0.01	<0.01	NA	< 0.01	101%	80%	120%			105%	50%	130%	
Fluorene	65757	7586225	<0.02	<0.02	NA	< 0.02	100%	80%	120%			106%	50%	130%	
Phenanthrene	65757	7586225	<0.02	<0.02	NA	< 0.02	98%	80%	120%			87%	60%	130%	
Anthracene	65757	7586225	<0.02	<0.02	NA	< 0.02	100%	80%	120%			108%	60%	130%	
Fluoranthene	65757	7586225	<0.05	<0.05	NA	< 0.05	101%	80%	120%			105%	60%	130%	
Pyrene	65757	7586225	<0.02	0.02	NA	< 0.02	100%	80%	120%			106%	60%	130%	
Benzo(a)anthracene	65757	7586225	<0.02	<0.02	NA	< 0.02	100%	80%	120%			108%	60%	130%	
Chrysene	65757	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			105%	60%	130%	
Benzo(b)fluoranthene	65757	7586225	<0.02	<0.02	NA	< 0.02	96%	80%	120%			91%	60%	130%	
Benzo(j)fluoranthene	65757	7586225	<0.02	<0.02	NA	< 0.02	100%	80%	120%			107%	60%	130%	
Benzo(k)fluoranthene	65757	7586225	<0.02	<0.02	NA	< 0.02	100%	80%	120%			100%	60%	130%	
Benzo(a)pyrene	65757	7586225	<0.05	<0.05	NA	< 0.05	99%	80%	120%			96%	60%	130%	
Indeno(1,2,3-c,d)pyrene	65757	7586225	<0.02	<0.02	NA	< 0.02	100%	80%	120%			102%	60%	130%	
Dibenzo(a,h)anthracene	65757	7586225	<0.02	<0.02	NA	< 0.02	101%	80%	130%			96%	60%	130%	
Benzo(g,h,i)perylene	65757	7586225	<0.05	<0.05	NA	< 0.05	97%	80%	120%			101%	60%	130%	
Naphthalene - d8	65757	7586225	80	92	14.0%		101%	80%	120%			89%	50%	130%	
2-Fluorobiphenyl	65757	7586225	82	102	21.7%		100%	80%	120%			91%	50%	130%	
P-Terphenyl - d14	65757	7586225	76	98	25.3%		105%	80%	120%			93%	60%	130%	
EPH C10-C19	65757	7586225	<20	<20	NA	< 20	105%	70%	130%			99%	65%	120%	
EPH C19-C32	65757	7586225	<20	<20	NA	< 20	102%	70%	130%			99%	80%	120%	

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Volatiles Organic Compounds in Soil

Chloromethane	65753	7586225	<0.05	<0.05	NA	< 0.05	98%	80%	120%			113%	60%	140%
Vinyl Chloride	65753	7586225	<0.05	<0.05	NA	< 0.05	98%	80%	120%			108%	60%	140%
Bromomethane	65753	7586225	<0.05	<0.05	NA	< 0.05	99%	80%	120%			113%	60%	140%
Chloroethane	65753	7586225	<0.05	<0.05	NA	< 0.05	99%	80%	120%			109%	60%	140%
Trichlorofluoromethane	65753	7586225	<0.05	<0.05	NA	< 0.05	97%	80%	120%			112%	70%	130%
Acetone	65753	7586225	<0.5	<0.5	NA	< 0.5	100%	80%	120%			116%	70%	130%
1,1-Dichloroethene	65753	7586225	<0.05	<0.05	NA	< 0.05	99%	80%	120%			110%	70%	130%
Dichloromethane	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			109%	70%	130%
Methyl tert-butyl ether (MTBE)	65753	7586225	<0.1	<0.1	NA	< 0.1	100%	80%	120%			95%	70%	130%
2-Butanone (MEK)	65753	7586225	<0.5	<0.5	NA	< 0.5	100%	80%	120%			99%	70%	130%
trans-1,2-Dichloroethene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			107%	70%	130%
1,1-Dichloroethane	65753	7586225	<0.05	<0.05	NA	< 0.05	99%	80%	120%			107%	70%	130%

Quality Assurance

CLIENT NAME: TETRA TECH EBA INC
PROJECT: 704-ENG.VGEO03082-01.007
SAMPLING SITE:

AGAT WORK ORDER: 16V098953
ATTENTION TO: Kalin Johnston
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Jun 03, 2016			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
cis-1,2-Dichloroethene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			104%	70%	130%	
Chloroform	65753	7586225	<0.05	<0.05	NA	< 0.05	99%	80%	120%			105%	70%	130%	
1,2-Dichloroethane	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			105%	70%	130%	
1,1,1-Trichloroethane	65753	7586225	<0.05	<0.05	NA	< 0.05	99%	80%	120%			99%	70%	130%	
Carbon Tetrachloride	65753	7586225	<0.02	<0.02	NA	< 0.02	100%	80%	120%			97%	70%	130%	
Benzene	65753	7586225	<0.02	<0.02	NA	< 0.02	100%	80%	120%			103%	70%	130%	
1,2-Dichloropropane	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			104%	70%	130%	
Trichloroethene	65753	7586225	<0.01	<0.01	NA	< 0.01	99%	80%	120%			98%	70%	130%	
Bromodichloromethane	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			103%	70%	130%	
trans-1,3-Dichloropropene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			94%	60%	140%	
4-Methyl-2-pentanone (MIBK)	65753	7586225	<0.5	<0.5	NA	< 0.5	101%	80%	120%			90%	70%	130%	
cis-1,3-Dichloropropene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			95%	60%	140%	
1,1,2-Trichloroethane	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			100%	70%	130%	
Toluene	65753	7586225	<0.05	<0.05	NA	< 0.05	99%	80%	120%			100%	70%	130%	
Dibromochloromethane	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			98%	70%	130%	
Ethylene Dibromide	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			97%	70%	130%	
Tetrachloroethene	65753	7586225	<0.05	<0.05	NA	< 0.05	98%	80%	120%			88%	70%	130%	
1,1,1,2-Tetrachloroethane	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			98%	70%	130%	
Chlorobenzene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			98%	70%	130%	
Ethylbenzene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			95%	70%	130%	
m&p-Xylene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			98%	70%	130%	
Bromoform	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			93%	70%	130%	
Styrene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			94%	70%	130%	
1,1,2,2-Tetrachloroethane	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			97%	70%	130%	
o-Xylene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			99%	70%	130%	
1,3-Dichlorobenzene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			95%	70%	130%	
1,4-Dichlorobenzene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			97%	70%	130%	
1,2-Dichlorobenzene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			94%	70%	130%	
1,2,4-Trichlorobenzene	65753	7586225	<0.05	<0.05	NA	< 0.05	100%	80%	120%			90%	70%	130%	
Bromofluorobenzene	65753	7586225	97	94	3.1%		103%	60%	140%			108%	60%	140%	
Dibromofluoromethane	65753	7586225	114	113	0.9%		98%	60%	140%			101%	60%	140%	
VH	65753	7586225	<10	<10	NA	< 10									
VPH	65753	7586225	<10	<10	NA	< 10									

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

BTEX / VPH (C6-C10) Soil

Methyl tert-butyl ether (MTBE)	65753	7586230	<0.1	<0.1	NA	< 0.1	100%	80%	120%			89%	70%	130%
Benzene	65753	7586230	<0.02	<0.02	NA	< 0.02	100%	80%	120%			99%	70%	130%
Toluene	65753	7586230	<0.05	<0.05	NA	< 0.05	99%	80%	120%			99%	70%	130%
Ethylbenzene	65753	7586230	<0.05	<0.05	NA	< 0.05	100%	80%	120%			93%	70%	130%

Quality Assurance

CLIENT NAME: TETRA TECH EBA INC
PROJECT: 704-ENG.VGEO03082-01.007
SAMPLING SITE:

AGAT WORK ORDER: 16V098953
ATTENTION TO: Kalin Johnston
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Jun 03, 2016			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits		
								Lower	Upper		Lower	Upper		Lower	Upper	
m&p-Xylene	65753	7586230	<0.05	<0.05	NA	< 0.05	100%	80%	120%				98%	70%	130%	
o-Xylene	65753	7586230	<0.05	<0.05	NA	< 0.05	100%	80%	120%				101%	70%	130%	
Styrene	65753	7586230	<0.05	<0.05	NA	< 0.05	100%	80%	120%				95%	70%	130%	
VPH	65753	7586230	<10	<10	NA	< 10										
VH	65753	7586230	<10	<10	NA	< 10										
Bromofluorobenzene	65753	7586230	103	99	4.0%		103%	60%	140%				98%	60%	140%	
Dibromofluoromethane	65753	7586230	127	123	3.2%		93%	60%	140%				106%	60%	140%	
Toluene - d8	65753	7586230	120	115	4.3%		101%	60%	140%				102%	60%	140%	

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Certified By: 



Method Summary

CLIENT NAME: TETRA TECH EBA INC
PROJECT: 704-ENG.VGEO03082-01.007
SAMPLING SITE:

AGAT WORK ORDER: 16V098953
ATTENTION TO: Kalin Johnston
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual B (pH, Electrometric, Soil)	PH METER
Chloride, Soluble	LAB-181-4022, INOR-181-6023	BC MOE Lab Manual Section B	COLORIMETER
Sodium, Soluble	LAB-181-4022, MET-181-6106	BC MOE Lab Manual Section B	ICP/OES
Saturation Percentage	LAB-181-4022	BC MOE Lab Manual Section B	GRAVIMETRIC

Method Summary

CLIENT NAME: TETRA TECH EBA INC
PROJECT: 704-ENG.VGEO03082-01.007
SAMPLING SITE:

AGAT WORK ORDER: 16V098953
ATTENTION TO: Kalin Johnston
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
EPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
EPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS

Method Summary

CLIENT NAME: TETRA TECH EBA INC
PROJECT: 704-ENG.VGEO03082-01.007
SAMPLING SITE:

AGAT WORK ORDER: 16V098953
ATTENTION TO: Kalin Johnston
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(j)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h,i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Naphthalene - d8	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Chloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromomethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

Method Summary

CLIENT NAME: TETRA TECH EBA INC
PROJECT: 704-ENG.VGEO03082-01.007
SAMPLING SITE:

AGAT WORK ORDER: 16V098953
ATTENTION TO: Kalin Johnston
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromochloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylbenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
m&p-Xylene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Styrene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
o-Xylene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
VH	ORG-180-5103	Modified from BC MOE Lab Manual Sec D (VOC)	GC/MS/FID



Method Summary

CLIENT NAME: TETRA TECH EBA INC
PROJECT: 704-ENG.VGEO03082-01.007
SAMPLING SITE:

AGAT WORK ORDER: 16V098953
ATTENTION TO: Kalin Johnston
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
VPH	ORG-180-5103	Modified from BC MOE Lab Manual Sec D (VOC)	GC/MS/FID

revised CAC received May 30/2016



AGAT Laboratories

120 - 8500 Glenlyon Parkway
Burnaby, BC
V5J 0B6
P: 778.452.4000 • F: 778.452.4074

Laboratory Use Only
Arrival Temperature: _____
AGAT Job Number: _____

Chain of Custody Record

Report Information

Company: TEIRA TEST CSA
 Contact: Kate Johnston
 Address: Work with other.
 Phone: _____ Fax: _____
 AGAT Quote #: _____
 Client Project #: 704-ENG-V65003082-01.007

Invoice To: _____ Same as above Yes No
 Company: SAI
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/AFE#: _____

Report Information

1. Name: Kate Johnston
 Email: Kate.Johnston@teira.com
 2. Name: Lucas Hernandez
 Email: L.Hernandez@teira.com

Requirements (Please Check)

BC CSR Soil BC CSR - Water
 AL DW
 IL AW
 PL IW
 CL LW
 RL

Schedule 11 (Please Specify) _____
 CCME (Please Specify) _____
 Other (Please Specify) _____

Report Format

Single Sample per page
 Multiple Samples per page

Excel Format Included

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days
 Rush TAT Day 2 - 100%
 Day 3 - 50%
 Day 4 - 25%

Date Required: _____

PLEASE CONTACT LABORATORY IF RUSH REQUIRED SAMPLE SUBMISSION CUT OFF FOR EFFECTIVE DATE BY 3 PM

Notes: NOV 25 04:43

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	NUMBERS OF CONTAINERS	PRESERVED (Y/N)	HAZARDOUS (Y/N)	Hold for: 60 DAYS
7586207	DUP1	sol	May 25/16					
217	DUP2							
221	THIS-01-0.5			Metals Sodium & Chloride (at Rate)				
225	THIS-01-1.0			Metals Sodium & Chloride (at Rate)				
227	THIS-01-3.0			Metals Sodium & Chloride (at Rate)				
228	THIS-01-3.5			Metals Sodium & Chloride (at Rate)				
230	THIS-01-4.75			Metals Sodium & Chloride (at Rate)				
231	THIS-02-0.5			Metals Sodium & Chloride (at Rate)				
233	THIS-02-1.0			Metals Sodium & Chloride (at Rate)				
257	THIS-02-1.0			Metals Sodium & Chloride (at Rate)				
258	THIS-02-3.0			Metals Sodium & Chloride (at Rate)				

Samples Requisitioned By (Print Name and Sign): L. Hernandez Date/Time: May 25/16

Samples Requisitioned By (Print Name and Sign): _____ Date/Time: _____

Samples Requisitioned By (Print Name and Sign): _____ Date/Time: _____

Page 1 of 3

No: 019600

revised COC received May 30/2014



AGAT Laboratories

120 - 8600 Glenlyon Parkway
Burnaby, BC
V5J 0B6
P: 778.452.4000 • F: 778.452.4074

Laboratory Use Only
Arrival Temperature: _____
AGAT Job Number: _____
Notes: _____

Chain of Custody Record

Report Information

Company: John Tech Corp
 Contact: Faye Johnston
 Address: Vancouver office
 Phone: _____ Fax: _____

AGAT Quote #: _____
 Client Project #: 704-ENG-V6E003082-01.007

Invoice To: _____
 Same as above Yes / No

Company: SAA
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/AFE#: _____

Report Information

1. Name: John Johnston
 Email: John.Johnston@john-tech.com
 2. Name: Lisa Knevel
 Email: Lisa.Knevel@john-tech.com

Requirements (Please Check)

BC CSR Soil BC CSR - Water
 AL DW
 IL AW
 PL IW
 CL LW
 RL

Schedule 11 (Please Specify) _____
 CCME (Please Specify) _____
 Other (Please Specify) _____

Report Format

Single Sample per page
 Multiple Samples per page

Excel Format Included

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days
 Rush TAT Day 2 - 100%
 Day 3 - 50%
 Day 4 - 25%

Date Required: _____
 PLEASE CONTACT LABORATORY IF RUSH REQUIRED SAMPLE SUBMISSION CUT OFF FOR EFFECTIVE DATE BY 3 PM

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	NUMBERS OF CONTAINERS	PRESERVED (Y/N)	HAZARDOUS (Y/N)	Hold for: <input type="checkbox"/> 60 DAYS
F586260	THIS-02-4.0	Soil	May 25/16					
261	THIS-03-0.9							
263	THIS-03-1.0							
272	THIS-03-2.0							
273	THIS-03-3.8							
274	THIS-03-5.25							
275	THIS-04-0.5							
299	THIS-04-1.0							
301	THIS-04-2.0							
313	THIS-04-3.0							
315	THIS-04-4.5							
				Metals Sodium & Chloride (St. Rate) VOCs + TPH STEX / TPH GPH Metals				
				Metals Sodium & Chloride (St. Rate) LPH / TPH Metals				

Samples Released By (Print Name and Sign): _____ Date/Time: _____

Samples Retrieved By (Print Name and Sign): Lisa Knevel Date/Time: May 25/16

Samples Released By (Print Name and Sign): _____ Date/Time: _____

Samples Retrieved By (Print Name and Sign): _____ Date/Time: _____

Page 2 of 3

No: 019601

revised COC received May 30/16



AGAT Laboratories

120 · 8600 Glenlyon Parkway
Burnaby, BC
V5J 0B6
P: 778.452.4000 · F: 778.452.4074

Chain of Custody Record

Report Information

Company: Usta Tech USA
 Contact: Kelvin Johnston
 Address: Vancouver, B.C.
 Phone: _____ Fax: _____
 AGAT Quote #: _____
 Client Project #: 704-ENG-V6E003082-01_001

Report Information

1. Name: Kelvin Johnston
 Email: Kelvin.Johnston@ustatech.com
 2. Name: Laura Horvath
 Email: Laura.Horvath@ustatech.com

Requirements (Please Check)

BC CSR Soil BC CSR - Water
 AL DW
 IL AW
 PL IW
 CL LW
 RL

Schedule 11 (Please Specify) _____
 CCME (Please Specify) _____
 Other (Please Specify) _____

Invoice To Same as above Yes / No

Company: SIA
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E#: _____

Laboratory Use Only

Arrival Temperature: _____
 AGAT Job Number: _____
 Notes: _____

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days
 Rush TAT Day 2 - 100%
 Day 3 - 50%
 Day 4 - 25%

Date Required: _____
 PLEASE CONTACT LABORATORY IF RUSH REQUIRED SAMPLE
 SUBMISSION CUT OFF FOR EFFECTIVE DATE BY 3 PM

Report Format

Single Sample per page
 Multiple Samples per page
 Excel Format Included

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	NUMBER OF CONTAINERS	PRESERVED (Y/N)	HAZARDOUS (Y/N)	Hold for: <input type="checkbox"/> 60 DAYS
7586319	-1115-05-0.5	soil	May 25/16	LCM / Horn / PHT				
320	1115-05-0.5			VOCs + PHT				
321	1115-05-1.0			LCM / Horn / PHT				
323	1115-05-1.5							
325	1115-05-2.0							
326	1115-05-3.5							

Samples Requisitioned By (Print Name and Sign): Laura Horvath
 Samples Requisitioned By (Print Name and Sign): _____
 Samples Requisitioned By (Print Name and Sign): _____

Date/Time: May 25/16
 Date/Time: _____
 Date/Time: _____

Samples Received By (Print Name and Sign): _____
 Samples Received By (Print Name and Sign): _____
 Samples Received By (Print Name and Sign): _____

Page 3 of 3
 No: 019602



AGAT

Laboratories

120 - 8600 Glenlyon Parkway
 Burnaby, BC
 V5J 0B6
 P: 778.452.4000 • F: 778.452.4074

Laboratory Use Only

Arrival Temperature: 16°C
 AGAT Job Number: 16V098953

Notes:

MAY 25 2016

Chain of Custody Record

Report Information

Company: TIERRA TEST ESA
 Contact: Kalin Johnston
 Address: Vancouver Office
 Phone: _____ Fax: _____
 AGAT Quote #: _____
 Client Project #: _____

Report Information

1. Name: Kalin Johnston
 Email: Kalin.Johnston@tierratest.com
 2. Name: Lucas Hennecke
 Email: Lucas.Hennecke@tierratest.com

Requirements (Please Check)

- BC CSR Soil BC CSR - Water
- AL DW
 IL AW
 PL IW
 CL LW
 RL

Invoice To _____ Same as above Yes / No

Company: SAI
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E#: _____

Report Format

- Single Sample per page
 Multiple Samples per page
 Excel Format Included

Turnaround Time Required (TAT)

- Regular TAT 5 to 7 working days
 Rush TAT Day 2 - 100%
 Day 3 - 50%
 Day 4 - 25%

Date Required: _____

PLEASE CONTACT LABORATORY IF RUSH REQUIRED SAMPLE SUBMISSION CUT OFF FOR EFFECTIVE DATE BY 3 PM

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	NUMBER OF CONTAINERS	PRESERVED (Y/N)	HAZARDOUS (Y/N)
758207	Dupl	Soil	May 25/16				
217	Dupl						
221	THIS-01-0.5						
225	THIS-01-1.0						
227	THIS-01-2.0						
228	THIS-01-3.5						
230	THIS-01-4.75						
231	THIS-02-0.5						
233	THIS-02-1.0						
257	THIS-02-2.0						
258	THIS-02-3.0						

Samples Relinquished By (Print Name and Sign):
L Hennecke
 Samples Relinquished By (Print Name and Sign):

 Samples Relinquished By (Print Name and Sign):

Samples Received By (Print Name and Sign):
Hennecke
 Samples Received By (Print Name and Sign):

 Samples Received By (Print Name and Sign):

Date/Time
 Date/Time
 Date/Time

Page 1 of 3

No: **019600**



AGAT

Laboratories

120 - 8600 Glenlyon Parkway
 Burnaby, BC
 V5J 0B6
 P: 778.452.4000 • F: 778.452.4074

Laboratory Use Only

Arrival Temperature: 16°C

AGAT Job Number: 16V098953

Notes:

MAY 25 2016

Chain of Custody Record

Report Information

Company: John Ted Est
 Contact: Kelin Johnston
 Address: Vancouver office

Phone: _____ Fax: _____

AGAT Quote #: _____

Client Project #: _____

Invoice To

Same as above Yes / No

Company: SAA

Contact: _____

Address: _____

Phone: _____

PO/A/E#: _____

Report Information

1. Name: Kelin Johnston
 Email: Kelin.Johnston@phatco.com
 2. Name: Lucas Kennedy
 Email: Lucas.Kennedy@phatco.com

Requirements (Please Check)

- BC CSR Soil BC CSR - Water
- AL DW
- IL AW
- PL IW
- CL LW
- RL

Schedule 11 (Please Specify) _____

CCME (Please Specify) _____

Other (Please Specify) _____

Report Format

- Single Sample per page
- Multiple Samples per page
- Excel Format Included

Date Required: _____

PLEASE CONTACT LABORATORY IF RUSH REQUIRED SAMPLE SUBMISSION CUT OFF FOR EFFECTIVE DATE BY 3 PM

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT
7586260	THIS-02-4.0	Soil	May 25/16	
261	THIS-03-0.9	↓	↓	
263	THIS-03-1.0	↓	↓	
272	THIS-03-2.0	↓	↓	
273	THIS-03-3.8	↓	↓	
274	THIS-03-5.25	↓	↓	
275	THIS-04-0.5	↓	↓	
299	THIS-04-1.0	↓	↓	
301	THIS-04-2.0	↓	↓	
313	THIS-04-3.0	↓	↓	
315	THIS-04-4.5	↓	↓	

Samples Relinquished By (Print Name and Sign):
Lucas Kennedy

Samples Relinquished By (Print Name and Sign):

Samples Relinquished By (Print Name and Sign):

Date/Time: May 25/16

Date/Time: _____

Date/Time: _____

Samples Received By (Print Name and Sign):
Massie

Samples Received By (Print Name and Sign):

Samples Received By (Print Name and Sign):

Date/Time: _____

Date/Time: _____

Date/Time: _____

Page 2 of 3

No: **019601**



AGAT Laboratories

120 - 8600 Glenlyon Parkway
Burnaby, BC
V5J 0B6
P: 778.452.4000 • F: 778.452.4074

Laboratory Use Only
Arrival Temperature: 16°C
AGAT Job Number: 16V098953

Chain of Custody Record

Report Information

Company: Tetra Tech USA
Contact: Kelvin Johnston
Address: Vancouver Office
Phone: _____ Fax: _____
AGAT Quote #: _____
Client Project #: _____

Report Information

1. Name: Kelvin Johnston
Email: Kelvin.Johnston@tetratech.com
2. Name: Lucy Hennelke
Email: Lucy.Hennelke@tetratech.com

Requirements (Please Check)

- BC CSR Soil BC CSR - Water
- AL DW
- IL AW
- PL IW
- CL LW
- RL

Invoice To

Same as above Yes / No
Company: JAA
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/A/E #: _____

Report Format

- Single Sample per page
- Multiple Samples per page
- Excel Format Included

Turnaround Time/Required (TAT)

- Regular TAT 5 to 7 working days
- Rush TAT Day 2 - 100%
- Day 3 - 50%
- Day 4 - 25%

Date Required:

PLEASE CONTACT LABORATORY IF RUSH REQUIRED SAMPLE
SUBMISSION CUT OFF FOR EFFECTIVE DATE BY 3 PM

Notes: MAY 25 PM 4:48

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT
7580319	TH15-05-0.25	Soil	May 25/16	
320	TH15-05-0.5	↓	↓	
321	TH15-05-1.0	↓	↓	
323	TH15-05-1.5	↓	↓	
325	TH15-05-2.0	↓	↓	
326	TH15-05-3.5	↓	↓	

NUMBER OF CONTAINERS
PRESERVED (Y/N)
HAZARDOUS (Y/N)
Hold for: 60 DAYS

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
<u>Lucy Hennelke</u>	<u>May 25/16</u>	<u>Lucy Hennelke</u>	<u>May 25/16</u>

Page 3 of 3

No: 019602



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 16V098953

RECEIVING BASICS:

Received From: Lucas

Waybill #: _____

SAMPLE QUANTITIES:

Coolers: 2 Containers: 134

TIME SENSITIVE ISSUES:

Earliest Date Sampled: May 25, 2016

ALREADY EXCEEDED?

Yes No

NON-CONFORMANCES:

3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's) *use jars when available

(1) 5 + 22 + 15 = 14 °C (2) 13 + 17 + 25 = 18 °C (3) + + = °C (4) + + = °C

Was ice or ice pack present: Yes No 16°C

Integrity Issues:

Account Project Manager: _____ have they been notified of the above issues: Yes No

Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

